

Contents

1 Agile Software Development: An Introduction and Overview	1
1.1 Introduction	1
1.2 What is Agile Development?	2
1.3 Research on Agile Software Development	2
1.4 Main Themes in this Book	7
1.5 Conclusion	11
References	11
Author Biographies	12
 2 Towards an Understanding of the Conceptual Underpinnings of Agile Development Methodologies	 15
2.1 Introduction	15
2.2 The Challenges of Contemporary Software Development	16
2.3 What's New About Agile Development?	19
2.4 Principles of Sociotechnical Systems	21
2.5 ADM and the System of Systems Methodologies (SOSM)	23
2.6 Implications for Research and Practice	25
2.7 Conclusion	26
References	27
Author Biographies	29
 3 Agile Software Development Methods: A Comparative Review	 31
3.1 Introduction	31
3.2 An overview of agile methods	33
3.3 Comparative review of the existing agile methods	36
3.4 Discussion	49
3.5 Conclusion	52
Acknowledgements	53
References	53
Author Biographies	58
 4 Three 'C's of Agile Practice: Collaboration, Co-ordination and Communication	 61
4.1 Introduction	61
4.2 Fieldwork	62
4.3 Results	69
4.4 Discussion	79
4.5 Conclusion	82
Acknowledgements	82
References	83
Author Biographies	85

5 From Exotic to Mainstream: A 10-year Odyssey from Internet Speed to Boundary Spanning with Scrum	87
5.1 Introduction.....	87
5.2 Research Methodology	89
5.3 Study One Results: Racing the E-bomb	94
5.4 Study Two Results: A New Software Development Process	97
5.5 Study Three Results: Balancing Speed and Quality	100
5.6 Study Four Results: Boundary Spanning with Scrum	103
5.7 Discussion and Conclusion.....	106
References.....	108
Author Biographies.....	109
 6 An Ideal Customer: A Grounded Theory of Requirements Elicitation, Communication and Acceptance on Agile Projects	 111
6.1 Introduction.....	111
6.2 Research Method	112
6.3 What is the Experience of the Customer?.....	114
6.4 Is the Customer a Single Person or a Team?	115
6.5 What practices enhance the effectiveness of the customer?	123
6.6 Discussion and Conclusion.....	134
References.....	139
Author Biographies.....	141
 7 Pair Programming: Issues and Challenges	 143
7.1 Introduction.....	143
7.2 Horse Trading Problem: Understanding Pair vs. Solo	145
7.3 Pair Programming Studies	147
7.4 Repeat Programming	156
7.5 Conclusion	160
References.....	160
Author Biographies.....	162
 8 Architected Agile Solutions for Software-Reliant Systems.....	 165
8.1 Introduction.....	165
8.2 Key Principles.....	168
8.3 How Much Architecting is Enough?	172
8.4 Early Architected-Agile Success Cases	173
8.5 Implications for Practice and Future Research	180
8.6 Conclusion	180
References.....	182
Author Biographies.....	183

9 Agile Interaction Design and Test-Driven Development of User Interfaces– A Literature Review	185
9.1 Introduction	185
9.2 Agile Interaction Design	186
9.3 User Interface Test-Driven Development	191
9.4 Conclusion	199
References	199
Author Biographies	201
 10 Organizational Culture and the Deployment of Agile Methods: The Competing Values Model View	203
10.1 Introduction	203
10.2 Organizational Culture and the Competing Values Model	204
10.3 Organizational Culture and the Deployment of Agile Methods	208
10.4 Conclusion	217
References	218
Author Biographies	222
 11 Future Research in Agile Systems Development: Applying Open Innovation Principles Within the Agile Organisation	223
11.1 Introduction	223
11.2 Innovation in Agile Development – The Current State of Research	224
11.3 Contemporary Thinking on Innovation – Open Innovation	225
11.4 Project Management in An Open Agile Environment	227
11.5 Conceptual Framework to Guide Future Research	227
11.6 Conclusion and Implications for Future Research	230
Acknowledgements	232
References	232
Author Biographies	234
 Index	237