Table of Contents

Foreword 5
Acknowledgements 7
Table of Contents 9
List of Figures 11
List of Tables 15
List of Equations 17
List of Symbols 19
1 Introduction 21
1.1 The Invention of the Wheel 21
1.2 Methodological and Modelling Framework 25
1.3 Research Question and Outline 29
2 The Role of Consumers in Innovation Economics 33
2.1 The Neglected Demand Side 33
2.1.1 The Linear Innovation Model 33
2.1.2 The Demand-Pull Modell of Innovation 36
2.1.3 A Multidimensional Perspective on Innovation Processes 40
2.2 An Evolutionary Perspective 43
2.3 The Role of the Demand Side Today 49
3 The New Agent-Based Paradigm 57
3.1 Three Pillars of ABM 57
3.1.1 Modelling from an Agent-Based Perspective 57
3.1.2 A Definition of Agents 59
3.1.3 Simulation as In-Silicio Laboratories 61
3.2 Using ABM as a Scientific Tool 64
3.2.1 Why Do We Need Agent-Based Modelling? 65
3.2.2 Managing the Complexity 66
3.2.3 Two Ways of Using Agent-Based Models 69
3.2.4 The Need for Verification, Validation and Calibration 71
3.3 Implications for the Following Analysis 72
4 An ABM of Heterogeneous Consumers and Demand 75

Bibliografische Informationen
http://d-nb.info/1133090044

digitalisiert durch DEUTSCHE NATIONAL BIBLIOTHEK

4.1 Introducing Remarks 75
4.2 The Baseline Simulation Model 79
4.2.1 Modelling Multi-Dimensional Product Characteristics 79
4.2.2 Basic Procedure of the Simulation Model 82
4.3 Simulation Experiments 85
4.3.1 Innovations in a Multidimensional Characteristic Space 86
4.3.2 Markets in-between Homogeneous and Heterogeneous Demand 93
4.3.3 Implications for Innovation Policies 98
4.4 Discussion 103
5 Networks of Heterogeneous Agents 105
5.1 Informal Knowledge Exchange in Firm Networks 105
5.1.1 Introducing Remarks 105
5.1.2 Knowledge Exchange and Network Formation Mechanisms 108
5.1.3 Model Analysis 111
5.2 The Importance of Consumer Networks 125
5.2.1 Introducing Remarks 125
5.2.2 Bounded Rationality of Consumers 127
5.2.3 The Effects of Consumer Networks 131
5.3 Discussion 139
6 Bounded Morality of Consumers 143
6.1 Introducing Remarks 143
6.2 Model Analysis 145
6.2.1 Baseline Scenario 145
6.2.2 Responsible Innovation and Limited Information 150
6.2.3 Responsible Innovation and Networks 153
6.3 Discussion 156
7 Discussion and Further Research Avenues 159
Literature 163