

Table of Content

List of Tables.....	xv
Table of Figures.....	xix
List of Abbreviations	xxi
1. Introduction	1
1.1. Overview.....	1
1.2. Innovation and Contribution	3
1.3. Structure of the Thesis	7
2. Lead User Product Development	9
2.1. Overview.....	9
2.2. The Lead User Concept	10
2.2.1. <i>Conceptual Fundamentals</i>	10
2.2.2. <i>Methodological Ancestors</i>	13
2.2.3. <i>Lead User Characteristics</i>	16
2.2.4. <i>Analogous Markets</i>	20
2.2.5. <i>Motivational Background</i>	22
2.3. The Lead User Method	28
2.3.1. <i>The Traditional Lead User Method</i>	28
2.3.2. <i>Selected Methodological Adaptions</i>	31
2.3.3. <i>Selected Adaptions to Lead User Classification</i>	34
2.3.4. <i>Selected Adaptions to Lead User Identification</i>	37
2.3.5. <i>Selected Adaptions to the Methodological Scope</i>	42
2.4. Lead Users in Practice	43
2.4.1. <i>Applications and Recommendations</i>	43
2.4.2. <i>Performance Measurement</i>	45
2.4.3. <i>Relevance in Practice</i>	47
2.5. Derived Challenges	51

3. Consumer Preferences	55
3.1. Overview.....	55
3.2. Preference Measurement	56
3.2.1. <i>Conceptual Fundamentals</i>	56
3.2.2. <i>Preference Modelling</i>	58
3.2.3. <i>Utility Modelling</i>	61
3.3. Methodological Applications	62
3.3.1. <i>Compositional Methods</i>	62
3.3.2. <i>Decompositional Methods</i>	65
3.3.3. <i>Hybrid Methods</i>	67
3.3.4. <i>Relevance in Science and Practice</i>	69
3.4. Prediction of Preference Data	70
3.4.1. <i>Definition and Classification</i>	70
3.4.2. <i>Item- and User-based Collaborative Filtering</i>	74
3.4.3. <i>Applications in Practice</i>	76
3.5. Derived Challenges	79
4. The Preference-Driven Lead User Method	83
4.1. Overview.....	83
4.2. Conceptual Basis.....	84
4.2.1. <i>Fundamental Challenges</i>	84
4.2.2. <i>Methodological Adaption</i>	87
4.2.3. <i>Basic Concept</i>	89
4.3. Detailed Description of the Phases.....	94
4.3.1. <i>Phase 1 – Preparation for Project Launch</i>	94
4.3.2. <i>Phase 2 – Identification of Trends and Internal Contributions</i>	95
4.3.3. <i>Phase 3 – Exploration of the User Community</i>	97

4.3.4.	<i>Phase 4 – Survey and Preference Measurement</i>	101
4.3.5.	<i>Phase 5 – Lead User Workshop</i>	104
4.3.6.	<i>Implementation</i>	107
4.4.	<i>Application in Mountain Biking</i>	110
4.4.1.	<i>Preface of the Story</i>	110
4.4.2.	<i>Phase 1 – Preparation for Project Launch</i>	111
4.4.3.	<i>Phase 2 – Identification of Trends and Internal Contributions</i>	112
4.4.4.	<i>Phase 3 – Exploration of the User Community</i>	114
4.4.5.	<i>Phase 4 – Survey and Preference Measurement</i>	115
4.4.6.	<i>Phase 5 – Lead User Workshop</i>	123
4.5.	<i>Implications</i>	126
5.	Empirical Comparison in the Field of Industrial IT Security	129
5.1.	<i>Overview</i>	129
5.2.	<i>Introduction to the Application Field</i>	130
5.2.1.	<i>The Field of Industrial IT Security</i>	130
5.2.2.	<i>IT Security in Critical Infrastructures</i>	134
5.2.3.	<i>User Innovations in IT Security</i>	137
5.3.	<i>Application of the Traditional Lead User Method</i>	138
5.3.1.	<i>Preface - Enhanced Security for Critical Infrastructures</i>	138
5.3.2.	<i>Phase 1 – Preparation for Project Launch</i>	139
5.3.3.	<i>Phase 2 – Identification of Key Trends</i>	141
5.3.4.	<i>Phase 3 – Exploration</i>	143
5.3.5.	<i>Phase 4 – Improvement</i>	145
5.4.	<i>Application of the Preference-Driven Lead User Method</i>	146
5.4.1.	<i>Phase 1 – Preparation for Project Launch</i>	146
5.4.2.	<i>Phase 2 – Identification of Trends and Internal Contributions</i>	147

5.4.3.	<i>Phase 3 – Exploration of the User Community</i>	147
5.4.4.	<i>Phase 4 – Survey and Preference Measurement</i>	151
5.4.5.	<i>Phase 5 – Lead User Workshop</i>	154
5.5.	Implications.....	155
6.	Empirical Verification of Strengths and Weaknesses	157
6.1.	Overview	157
6.2.	Verification in the German Automotive Industry	158
6.2.1.	<i>The Application Field of Automotive Development</i>	158
6.2.2.	<i>Survey Preparation and Data Collection</i>	161
6.2.3.	<i>Descriptive Results and Regression Analysis</i>	162
6.3.	Verification in the German Mechanical Engineering Industry	166
6.3.1.	<i>The Application Field of Mechanical Engineering</i>	166
6.3.2.	<i>Survey Preparation and Data Collection</i>	168
6.3.3.	<i>Descriptive Results and Regression Analysis</i>	169
6.4.	Verification in the German Field of Market Intelligence.....	173
6.4.1.	<i>The Application Field of Market Intelligence</i>	173
6.4.2.	<i>Survey Preparation and Data Collection</i>	174
6.4.3.	<i>Descriptive Results and Regression Analysis</i>	177
6.5.	Cross-Industry Findings	184
6.5.1.	<i>Methodological Basement</i>	184
6.5.2.	<i>Descriptive Results</i>	184
6.5.3.	<i>Strengths and Weaknesses</i>	185
6.6.	Implications.....	189
7.	Conclusion and Outlook	191
7.1.	Conclusion	191
7.2.	Outlook.....	193

Literature	195
Web-based References	233