

Table of Contents

Certificate of Authorship and Originality.....	ii
Acknowledgements.....	iii
Abstract.....	v
Zusammenfassung.....	vi
List of Publications.....	vii
Table of Contents.....	viii
List of Figures.....	x
List of Tables.....	xi
List of Abbreviations.....	xii
Chapter 1. Introduction.....	1
1.1 Impact of Technology Convergence	1
1.2 Background and Motivation.....	4
1.3 Research Question and Research Method	12
1.4 Outline of this Dissertation.....	19
1.5 References	21
Chapter 2. Understanding Drivers, Impact, and Diversity of Convergence Dynamics for Strategic Insights – A Comprehensive Meta-Analysis.....	27
2.1 Introduction	28
2.2 Theoretical Background	31
2.2.1 Driver: Technology, Market and Regulation.....	32
2.2.2 Impact: Substitutive and Complementary Convergence.....	34
2.2.3 Heterogeneity: Intra-industry and Cross-Industry Convergence	36
2.3 Method.....	38
2.4 Findings	41
2.4.1 Printed Electronics	41
2.4.2 Information and Communication Technology	43
2.4.3 Ubiquitous Health.....	45
2.4.4 Nutraceuticals and Functional Foods	47
2.4.5 FinTech.....	49
2.4.6 Biotechnology	50
2.4.7 Bioeconomy.....	52
2.4.8 New Energy Storage.....	54
2.5 Discussion and Conclusion	57
2.6 References	63

Chapter 3. Technology Strategies in Converging Technology Systems: Evidence from Printed Electronics 69

3.1 Introduction	71
3.1.1 Converging technology systems and the related knowledge base	74
3.1.2 Technology strategy in the context of converging technology systems	75
3.2 Context and Method	80
3.2.1 Research context	80
3.2.2 Method and Data Collection	82
3.2.3 Data Analysis	85
3.3 Results	88
3.4 Discussion	92
3.5 Conclusion.....	99
3.5.1 Limitations and Future Research	100
3.6 Acknowledgements	103
3.7 References	104

Chapter 4. Machine Learning-Based Method to Cluster a Converging Technology System: The Case of Printed Electronics 111

4.1 Introduction	112
4.2 Theoretical Background	114
4.3 Case and Method	118
4.4 Findings	123
4.5 Conclusion and Limitation	126
4.6 References	129

Chapter 5. Discussion and Outlook 133

5.1 Discussion	133
5.2 Limitations and Outlook.....	141
5.3 References	144

Chapter 6. Appendix 147