

Contents

1	Transition Towards Sustainability: The Need of Radical Innovations	1
1.1	The Sustainability Challenge	1
1.2	Evolution of Approaches to Sustainability	3
1.3	Functional Economy: A Promising Model	6
1.4	The Product-Service System Concept and its Sustainability Potential	7
1.5	Research Scope and Questions	8
1.6	Research Methodology	10
	References	13
2	Product-Service System Innovation: A Promising Approach to Sustainability	17
2.1	Product-Service System Innovation and its Sustainability Potential	17
2.2	PSS Definition and Classification	19
2.2.1	PSS Definition and Main Characteristics	19
2.2.2	PSS Classification	22
2.3	PSS Potential Benefits	24
2.4	PSS Drivers	28
2.5	PSS Barriers	29
2.5.1	Barriers for Companies (and in General for PSS Promoters)	30
2.5.2	Barriers for Customers	31
2.5.3	Context-Related Barriers	33
2.5.4	A Matter of Institutions	34
2.6	Sustainable PSS Design	34
	References	36
3	Introducing and Scaling Up Sustainable Product-Service Systems: Insights from Transition Studies	41
3.1	Clarifying the Concept of System Innovation	41
3.1.1	Defining System Innovations	41
3.1.2	System Innovations and Sustainable PSS Innovations	43

3.2	System Innovation Dynamics: The Multi-level Perspective Model	44
3.2.1	Socio-technical Regimes, Niches and Landscape.	44
3.2.2	Dynamics in Socio-technical Transitions	46
3.3	Socio-technical Experiments and Their Contribution in Triggering Transitions	48
3.3.1	Defining Socio-technical Experiments	48
3.3.2	Mechanisms Through Which Socio-technical Experiments Can Contribute to Transitions	50
3.3.3	Socio-technical Experiments as Labs, Windows and Agents of Change	52
3.3.4	Dynamics in Socio-technical Experiments (and Niches Formation)	52
3.4	Introducing and Scaling Up Sustainable PSSs: Companies' Experiences and a Conceptual Framework	58
3.4.1	Insights from Transition Studies and Their Relevance in Relation to Sustainable PSS Innovations	58
3.4.2	A Conceptual Framework	60
3.4.3	Insights from Companies' Experience	62
3.4.4	Conceptual Framework Refinement.	74
3.5	Concluding Remarks	76
	References	77
4	Towards a New Way of Designing and Managing the Societal Embedding of Sustainable Product-Service System	81
4.1	Design and Radical Change for Sustainability.	81
4.2	An Experimental Design Experience: The Cape Town Sustainable Mobility Project	84
4.2.1	Project Background.	84
4.2.2	Incubation	85
4.2.3	Socio-technical Experimentation	87
4.2.4	Main Intermediate Project Results and Next Steps	92
4.3	A New Role for Strategic Design for Sustainability: Designing Transition Paths and Socio-technical Experiments	93
4.3.1	A New Strategic Design Attitude	94
4.3.2	A New Set of Strategic Design Capabilities	100
4.3.3	A New Knowledge Base	101
4.4	Design Process	101
4.4.1	Phases	102
4.4.2	Activity Clusters	105
4.4.3	Design Process Overview.	108
4.4.4	Supporting Tools	111
4.5	Designing Transition Paths for the Societal Embedding of Sustainable PSSs	113
	References	114

- 5 Where Do We Go from Here? 117**
 - 5.1 Research Findings 117
 - 5.2 Research Limitations 119
 - 5.3 Future Research Directions 120
 - 5.3.1 Improving and Refining the Results Achieved
in this Research 120
 - 5.3.2 Applying the Research Results in Other Fields 121
 - References 122

Sustainable Product-Service Systems
Between Strategic Design and Transition Studies

Ceschin, F.

2014, XV, 122 p. 21 illus., Softcover

ISBN: 978-3-319-03794-3