

Contents

1	Introduction	1
2	State of Prototyping Mobile Application User-Interfaces	5
2.1	Meaning and Purpose of Prototyping	5
2.1.1	Definition of Prototyping	5
2.1.2	Prototype Information Goals	6
2.1.3	Prototyping Paradigms	7
2.2	The Paper-Based Prototyping Approach	9
2.2.1	The Paper-Based Prototyping Session	10
2.2.2	Advantages of the Paper-Based Prototyping Method	11
2.3	Prototyping of Mobile User Interfaces	14
2.3.1	Low-Fidelity Prototyping in the Mobile Context	15
2.3.2	Mixed-Fidelity Prototyping Approaches	17
2.3.3	Influence of the Sketching Media on the Prototyping Process	27
2.3.4	Comparison of Mobile Prototyping Approaches	28
2.4	Research Objectives	32
3	Prototyping Requirements	37
3.1	Identification of Requirements from Literature Research	38
3.1.1	Requirements Regarding the Prototype Design Process	38
3.1.2	Requirements Regarding the Prototype Evaluation	41
3.1.3	Requirements Tool Implications on the Prototype's Nature	44
3.2	Assessment of the Requirement with Expert Practitioners	46
3.2.1	Study Objectives	46
3.2.2	Study Design	47
3.2.3	Results of Expert Survey	49
3.3	Discussion of the Results	56

4	Blended Prototyping—Design and Implementation	59
4.1	Approach and Development	59
4.1.1	Blended Prototyping Design Paradigms	59
4.1.2	Feedback Driven Development	60
4.2	Blended Prototyping—System and Process Architecture	61
4.2.1	System Overview	61
4.2.2	Module 1—The Design Tool	63
4.2.3	Module 2—The Creation Tool	71
4.2.4	Module 3—The Testing Tool	76
4.3	Design Decisions in the System Implementation	78
4.3.1	Implementation of the Design Tool	78
4.3.2	Implementation of the Creation Tool	85
4.3.3	Implementation of the Testing Tool	86
4.4	Discussion of the System Implementation	87
5	Comparative Evaluation of Blended Prototyping	93
5.1	Choice of Comparative Prototyping Tools for the Evaluation	93
5.2	Identifying Performance Indices for the Comparative Evaluation	94
5.2.1	Identifying Candidates from the Requirements Catalog	94
5.2.2	Considering the Type of Evaluation Method	96
5.2.3	Discussing Assessment Methods for Identified Requirements	97
5.3	Conducting the Comparative Study	107
5.3.1	Study Objectives	108
5.3.2	Study Design	108
5.3.3	Study Results	117
5.4	Conclusions of the Comparative Evaluation	126
6	Conclusion and Future Work	129
6.1	Conclusion	129
6.2	Future Work	134
	Appendices	137
	References	153

Prototyping of User Interfaces for Mobile Applications

Bähr, B.

2017, X, 162 p. 29 illus., 23 illus. in color., Hardcover

ISBN: 978-3-319-53209-7