

Web Engineering

Bearbeitet von
Emilia Mendes, Nile Mosley

1. Auflage 2005. Buch. xx, 440 S. Hardcover

ISBN 978 3 540 28196 2

Format (B x L): 15,5 x 23,5 cm

Gewicht: 898 g

Weitere Fachgebiete > EDV, Informatik > Hardwaretechnische Grundlagen >
Systemverwaltung & Management

Zu [Leseprobe](#)

schnell und portofrei erhältlich bei

The logo for beck-shop.de features the text "beck-shop.de" in a bold, red, sans-serif font. Above the "i" in "shop" are three red dots of increasing size. Below the main text, the words "DIE FACHBUCHHANDLUNG" are written in a smaller, red, all-caps, sans-serif font.

beck-shop.de
DIE FACHBUCHHANDLUNG

Die Online-Fachbuchhandlung beck-shop.de ist spezialisiert auf Fachbücher, insbesondere Recht, Steuern und Wirtschaft. Im Sortiment finden Sie alle Medien (Bücher, Zeitschriften, CDs, eBooks, etc.) aller Verlage. Ergänzt wird das Programm durch Services wie Neuerscheinungsdienst oder Zusammenstellungen von Büchern zu Sonderpreisen. Der Shop führt mehr als 8 Millionen Produkte.

Table of Contents

1	The Need for Web Engineering: An Introduction	1
1.1	Introduction	1
1.2	Web Applications Versus Conventional Software	3
1.2.1	Web Hypermedia, Web Software, or Web Application?	3
1.2.2	Web Development vs. Software Development	4
1.3	The Need for an Engineering Approach	13
1.4	Empirical Assessment	17
1.5	Conclusions	24
	Acknowledgements	24
	References	24
	Authors' Biographies	26
2	Web Effort Estimation	29
2.1	Introduction	29
2.2	Effort Estimation Techniques	30
2.2.1	Expert Opinion	31
2.2.2	Algorithmic Techniques	32
2.2.3	Artificial Intelligence Techniques	34
2.3	Measuring Effort Prediction Power and Accuracy	39
2.3.1	Measuring Predictive Power	39
2.3.2	Measuring Predictive Accuracy	40
2.4	Which Is the Most Accurate Prediction Technique?	41
2.5	Case Study	42
2.5.1	Data Validation	44
2.5.2	Variables and Model Selection	47
2.5.3	Extraction of effort Equation	67
2.5.4	Model Validation	67
2.6	Conclusions	69
	References	70
	Authors' Biographies	73
3	Web Productivity Measurement and Benchmarking	75
3.1	Introduction	75
3.2	Productivity Measurement Method	76
3.3	Case Study	77
3.3.1	Productivity Measure Construction	79
3.3.2	Productivity Analysis	96

3.4	Conclusions	104
	References	105
	Acknowledgements	105
	Authors' Biographies.....	105
4	Web Quality.....	109
4.1	Introduction	109
4.2	Different Perspectives of Quality	112
4.2.1	Standards and Quality	112
4.2.2	Quality Versus Quality in Use	116
4.2.3	Quality and User Standpoints.....	119
4.2.4	What is Web Quality?	120
4.3	Evaluating Web Quality using WebQEM	123
4.3.1	Quality Requirements Definition and Specification.....	125
4.3.2	Elementary Measurement and Evaluation.....	125
4.3.3	Global Evaluation.....	128
4.3.4	Conclusions and Recommendations.....	129
4.3.5	Automating the Process using WebQEM_Tool	129
4.4	Case Study: Evaluating the Quality of Two Web Applications.....	130
4.4.1	External Quality Requirements	130
4.4.2	Designing and Executing the Elementary Evaluation	131
4.4.3	Designing and Executing the Partial/Global Evaluation	134
4.4.4	Analysis and Recommendations	136
4.5	Concluding Remarks	139
	Acknowledgements	140
	References	140
	Authors' Biographies.....	142
5	Web Usability: Principles and Evaluation Methods.....	143
5.1	Introduction	143
5.1.1	Usability in the Software Lifecycle.....	144
5.1.2	Chapter Organisation.....	145
5.2	Defining Web Usability	146
5.2.1	Usability and Accessibility.....	147
5.3	Web Usability Criteria.....	149
5.3.1	Content Visibility	151
5.3.2	Ease of Content Access	153
5.3.3	Ease of Content Browsing.....	155

5.4	Evaluation Methods	156
5.4.1	User Testing	157
5.4.2	Inspection Methods	159
5.5	Automatic Tools To Support Evaluations	165
5.6	Evaluation of the DEI Application	166
5.6.1	Design Inspection	167
5.6.2	Web Usage Analysis	170
5.7	Concluding Remarks	173
	References	175
	Authors' Biographies.....	179
6	Web System Reliability and Performance:.....	181
6.1	Introduction	181
6.2	Web Application Services	183
6.2.1	Web Resource Classification.....	184
6.2.2	Web Application's Bearing on System Resources...	186
6.2.3	Workload Models and Performance Requirements..	187
6.3	Applications Predominantly Dynamic.....	189
6.3.1	Dynamic Request Service	189
6.3.2	Software Technologies for the Application Logic ...	190
6.3.3	System Platforms.....	193
6.4	Testing Loop Phase	197
6.4.1	Representation of the Workload Model	198
6.4.2	Traffic Generation	199
6.4.3	Data Collection and Analysis	199
6.5	Performance Improvements	203
6.5.1	System Tuning.....	203
6.5.2	System Scale-up	204
6.5.3	System Scale-out	204
6.6	Case Study	205
6.6.1	Service Characterisation and Design.....	205
6.6.2	Testing Loop Phase	208
6.6.3	System Consolidation and Performance Improvement	212
6.7	Conclusions	214
	Acknowledgements	214
	References	214
	Authors' Biographies.....	217
7	Web Application Testing.....	219
7.1	Introduction	219
7.2	Web Application Testing: Challenges and Perspectives	221

7.2.1	Testing the Non-functional Requirements of a Web Application	222
7.2.2	Testing the Functional Requirements of a Web Application	225
7.3	Web Application Representation Models	227
7.4	Unit Integration and System Testing of a Web Application	230
7.4.1	Unit Testing	230
7.4.2	Integration Testing	232
7.4.3	System Testing	233
7.5	Strategies for Web Application Testing	233
7.5.1	White Box Strategies	234
7.5.2	Black Box Strategies	237
7.5.3	Grey Box Testing Strategies	241
7.5.4	User Session Based Testing	242
7.6	Tools for Web Application Testing	243
7.7	A Practical Example of Web Application Testing	246
7.8	Conclusions	257
	References	258
	Authors' Biographies	260
8	An Overview of Process Improvement in Small Settings	261
8.1	Introduction	261
8.1.1	Why Do Organisations Initiate SPI Efforts?	262
8.1.2	Process Improvement Cycle	265
8.1.3	Process Assessments	267
8.2	Implementation in Small Settings	269
8.2.1	Availability of Funds	269
8.2.2	Resources For Process Improvement	269
8.2.3	Process Model	270
8.2.4	Training	270
8.2.5	Relevance of Practices in Assessment Models	271
8.2.6	Changing Behaviour	271
8.2.7	Piloting Practices	272
8.2.8	Where To Start	272
8.3	Conclusions	274
	References	274
	Author's Biography	275
9	Conceptual Modelling of Web Applications:	
	The OOWS Approach	277
9.1	Introduction	277
9.2	A Method to Model Web Applications	278

9.2.1	OO-Method Conceptual Modelling.....	279
9.2.2	OOWS: Extending Conceptual Modelling to Web Environments.....	280
9.3	A Strategy To Develop the Web Solution	286
9.4	Case Study: <i>Valencia CF Web Application</i>	287
9.5	Conclusions	300
	References	300
	Authors' Biographies.....	301
10	Model-Based Web Application Development.....	303
10.1	The OOHDM approach – An Overview.....	303
10.1.1	Requirements Gathering.....	304
10.1.2	Conceptual Design	305
10.1.3	Navigational Design.....	305
10.1.4	Abstract Interface Design.....	306
10.1.5	Implementation.....	306
10.2	Building an Online CD Store with OOHDM.....	307
10.2.1	Requirements Gathering.....	307
10.2.2	Conceptual Modelling	313
10.2.3	Navigation Design.....	315
10.2.4	Abstract Interface Design.....	321
10.3	From Design to Implementation.....	327
10.4	Discussion and Lessons Learned.....	331
10.5	Concluding Remarks	332
	Acknowledgements	332
	References	332
	Authors' Biography	333
11	W2000: A Modelling Notation for Complex Web Applications.....	335
11.1	Introduction	335
11.2	Modelling Elements.....	337
11.3	Models	341
11.3.1	Adaptability	343
11.3.2	Tool Support.....	346
11.4	Example Application	346
11.4.1	Information Model	348
11.4.2	Navigation Model.....	353
11.4.3	Presentation Model.....	356
11.4.4	Service Model	358
11.5	Conclusions and Future Work	362
	References	362
	Authors' Biographies.....	363

12	What You Need To Know About Statistics	365
12.1	Describing Individual Variables	365
12.1.1	Types of Variables	365
12.1.2	Descriptive Statistics	367
12.2	The Normal Distribution	374
12.3	Overview of Sampling Theory	375
12.4	Other Probability Distributions.....	378
12.5	Identifying Relationships in the Data	379
12.5.1	Chi-Square Test for Independence	380
12.5.2	Correlation Analysis.....	384
12.5.3	Regression Analysis	390
12.5.4	Analysis of Variance (ANOVA)	400
12.5.5	Comparing Two Estimation Models	405
12.5.6	Final Comments	407
	Author's Biography	407
13	Empirical Research Methods in Web and Software Engineering.....	409
13.1	Introduction	409
13.2	Overview of Empirical Methods	411
13.3	Empirical Methods in an Improvement Context.....	415
13.4	Controlled Experiments	416
13.4.1	Introduction	416
13.4.2	Design	417
13.4.3	Operation.....	419
13.4.4	Analysis and Interpretation	420
13.5	Case Study	422
13.5.1	Introduction	422
13.5.2	Case Study Arrangements	423
13.5.3	Confounding Factors and Other Aspects.....	423
13.6	Survey	424
13.6.1	Survey Characteristics.....	424
13.6.2	Survey Purposes	425
13.6.3	Data Collection.....	426
13.7	Post-mortem Analysis.....	426
13.8	Summary.....	428
	References	428
	Authors Biographies	429