Product Release Planning

Methods, Tools and Applications

Günther Ruhe

CRC Press
Taylor & Francis Group
Boca Raton London New York

CRC Press is an imprint of the
Taylor & Francis Group, an **informa** business
AN AUERBACH BOOK

Contents

FOREWORD XI
ACKNOWLEDGMENTS XV

PART A: FOUNDATIONS

CHAPTER 1

Overview and Introduction 3

1.1 What is Release Planning and Why Do We Care? 3
1.2 Misconceptions about Release Planning 4
1.3 How the Book is Structured 8
1.4 Some Assumptions to Share 10
1.5 Who Should Read This Book? 13
1.6 Expected Benefits 15

CHAPTER 2

Decisions and How to Make Them 17

2.1 Introduction 17
2.2 Three Product Release Decision Scenarios 18
2.3 Classification of Decisions 21
2.4 Decision-Making versus Decision Support 23
2.5 The Decision-Making Process 24
2.6 Evolutionary Problem Solving 28
2.7 An Integrated Approach to Decision-Making 31

CHAPTER 3

Features and Their Prioritization 33

3.1 Introduction 33
3.2 Features 34

3.3 Feature Elicitation 36
3.4 Criteria for Feature Prioritization 37
3.5 Selection of Stakeholders 39
3.6 Prioritization by Comparison: The Analytic Hierarchy Process AHP 41
3.7 Prioritization by Scoring 44
3.8 Prioritization Method Multi-Score 47
3.9 Voice-of-the-Stakeholder Analysis 48

PART B: METHODS

CHAPTER 4

Planning for Product Releases: An Overview 67

4.1 Introduction 67
4.2 The Planning Onion 68
4.3 Release Planning in a Nutshell 69
4.4 Rigorous Release Planning Methods 70
4.5 Release Planning in Practice: The Status Quo 78

CHAPTER 5

Modeling for Product Release Planning 85

5.1 Introduction 85
5.2 Decision Variables and Horizon of Planning 86
5.3 Dependencies between Features 86
5.4 Pre-Assignments 89
5.5 Effort Constraints 91
5.6 Cost Constraints 91
5.7 Resource Constraints 91
5.8 Risk Constraints 94
5.9 Planning Objectives 95
5.10 Generation of Qualified Alternative Solutions 100
5.11 How All the Modeling Components Come Together 102

CHAPTER 6

EVOLVE II: A Systematic Method for Planning Product Releases 105

6.1 Introduction 105
6.2 Evolutionary Problem Solving for Product Release Planning 106
6.3 EVOLVE II: Description of the Process 109

6.4 Comparison with Other Methods 120
6.5 Applicability 122

CHAPTER 7

Re-Planning of Product Releases 125

7.1 Introduction 125
7.2 Problem Formulation 127
7.3 Re-Planning Method H2W* 128
7.4 H2W* Process Description 132
7.5 Illustrative Case Study 136

CHAPTER 8

Staffing for Product Releases 145

8.1 Introduction 145
8.2 Background and Related Work 147
8.3 Staffing for Maximum Total Release Value 157
8.4 Staffing for Minimum Project Duration 160
8.5 Staffing for Maximum Competence Match 161
8.6 Industrial Case Study 167

CHAPTER 9

Advanced Topics 171

9.1 Introduction 171
9.2 Effort Estimation for Release Planning 172
9.3 Decision Support by Explanation of Results 177
9.4 Release Planning in Consideration of Design Constraints 184
9.5 The Impact of Uncertainty in Operational Release Planning 189

PART C: TOOLS

CHAPTER 10

Tool Support 201

10.1 Introduction 201
10.2 Support For Prioritization: The Tool VeryBestChoice*Light* 203
10.3 Product Release Planning: The ReleasePlanner™ Tool 210
10.4 Staffing: The Tool RASORP 221

PART D: APPLICATIONS

CHAPTER 11

Case Study: Product Roadmapping 227

11.1 Introduction 227
11.2 Preparation for Planning 228
11.3 Prioritization of Features by Stakeholders 232
11.4 Planning without Tool Support 234
11.5 Generation of Optimized Release Plan Alternatives 239
11.6 Re-Running the Process 245

CHAPTER 12

Case Study: Staffing for Product Releases 251

12.1 Introduction 251
12.2 Baseline 252
12.3 The Impact of Improved Productivity 256
12.4 The Impact of Predicted and Unpredicted Absence of Developers 259
12.5 The Impact of Unpredicted Change of Effort Estimates 261
12.6 The Impact of Adding New Features During Development 261
12.7 Decision Support for Hiring 263
12.8 Discussion 264

CHAPTER 13

Case Study: Adaptable Project Management 265

13.1 Introduction 265
13.2 An Adaptable Project Management Approach 266
13.3 Case Study 269
13.4 Discussion of Results 279

CHAPTER 14

Application Scenarios 283

14.1 Introduction 283
14.2 Roadmapping for Multiple Products 285
14.3 Planning with Consideration of Quality Demands 288
14.4 Agile Project Management Following Scrum 292
14.5 Planning for Competitiveness of Products 294
14.6 Project Portfolio Planning 296

CHAPTER 15

How to Get It Started 299

15.1 Introduction 299
15.2 Step 1: Characterize and Understand 299
15.3 Step 2: Define the Problem and Its Stakeholders 300
15.4 Step 3: Define the Process 301
15.5 Step 4: Execute the Process 301
15.6 Step 5: Analyze the Process and Its Performance 302
15.7 Step 6: Package Experience and Results 302
15.8 Cost-Benefit Analysis 303
15.9 Final Remarks 304

REFERENCES 305

INDEX 319