

Content

0 Introduction 8

0.1 Target Group and Basis of this Book 8

0.2 Working with this Book 8

0.2.1 Structure and Organization 8

0.2.2 Application and Didactic Concept 8

1 Fundamentals of Project Management 9

1.1 Essential ICB 3.0 Chapters 9

1.2 Learning Objectives..... 9

1.3 Project, Project Management and Project types 9

1.4 Project Success, Project Management Success and Success Factors 10

1.5 Project Orientation..... 12

1.6 The Red Thread – the PM Phases of DIN 69901 14

1.6.1 Process 14

1.7 Cross-References 16

2 Initialization – the Project Initialization 17

2.1 Essential ICB 3.0 Chapters 17

2.2 Learning Objectives..... 17

2.3 Choice of Projects 17

2.3.1 Evaluation of the Project Idea - Value Benefit Analysis 18

2.3.2 Project Definition - the Project Outline 19

2.3.3 Cross-references..... 20

3 Definition..... 21

3.1 Essential ICB 3.0 Chapters 21

3.2 Learning Objectives..... 21

3.3 How Does a Project Begin? The Project Start-Up..... 21

3.3.1 Cross-references..... 24

3.4 Objectives and Requirements 25

3.4.1 Objective Definition, Objective Scope 25

3.4.2 Objective Functions, Objective Types..... 26

3.4.3 Objective Formulation, Objective Compatibility..... 29

3.4.4 Cross-references..... 31

3.5 Environment and Interested Parties 32

3.5.1 Environment Analysis..... 32

3.5.2 Interested parties (stakeholders)..... 34

3.5.3 Process 35

3.5.4 Cross-references..... 38

3.6 Project Phases 39

3.6.1 Elements of the Phase Planning 39

3.6.2 Action Models..... 41

3.6.3 Cross-references..... 43

3.7 Project Organization..... 44

3.7.1 Classic Forms of Project Organization 44

3.7.2 Comparison of Project Organizations 48

3.7.3 Criteria for the Selection of the Project Organization 49

3.7.4 Project Roles..... 50

3.7.5 Cross-references..... 51

4 Planning 52

4.1 Essential ICB 3.0 Chapters 52

4.2 Learning Objectives..... 52

4.3 Project structure 52

4.3.1	The Work Breakdown Structure (WBS)	52
4.3.2	Structuring of the Work Breakdown Structure	53
4.3.3	Design Principles of the Work Breakdown Structure	54
4.3.4	Work Packages	57
4.3.5	Coding of the Work Breakdown Structure	59
4.3.6	Approach Regarding the Preparation of the WBS	60
4.3.7	Cross-references	60
4.4	Logic Planning and Deadlines	61
4.4.1	Process	61
4.4.2	Elements in the Network Diagram	62
4.4.3	Calculating the Network Diagram	66
4.4.4	Example Network Diagram and Linked Bar Chart	68
4.4.5	Optimizing the Network Diagram	69
4.4.6	Background	70
4.4.7	Cross-references	70
4.5	Resources	71
4.5.1	Process	71
4.5.2	Estimation Methods	75
4.5.3	Cross-references	76
4.6	Cost + Finance	77
4.6.1	Cost Planning	77
4.6.2	Cost Histogram and S-Curve	79
4.6.3	Cross-references	81
4.7	Risks and Opportunities	82
4.7.1	What is risk management for and what are risks?	82
4.7.2	Risk strategy	83
4.7.3	Process	83
4.7.4	Background	88
4.7.5	Cross-references	89
4.8	Quality	90
4.8.1	The need for quality management in the project	90
4.8.2	Process	91
4.8.3	Background	95
4.8.4	Cross-references	95
4.9	Contractual Aspects of the Project Work	96
4.9.1	Procurement	96
4.9.2	Contracts, Contract Types	97
4.9.3	Defaults	97
4.9.4	Contract and Claims Management	99
4.9.5	Background	99
4.9.6	Cross-references	100
5	Control	101
5.1	Essential ICB 3.0 Chapters	101
5.2	Learning objectives	101
5.3	Project Controlling	101
5.3.1	Types of the Progress Measurement	103
5.3.2	Earned Value Analysis (EVA)	105
5.3.3	The most important abbreviations and definitions	108
5.3.4	Milestone Trend Analysis (MTA)	109
5.3.5	Cost Trend Analysis (CTA)	110
5.3.6	Control	110
5.3.7	Project Reporting - The Status Report	111
5.3.8	Cross-references	112

5.4	Information and Documentation	113
5.4.1	Important project documents.....	113
5.4.2	Information Management	115
5.4.3	Cross-references.....	115
5.5	Configuration and Changes.....	116
5.5.1	Process	117
5.5.2	Connection within the Project.....	120
5.5.3	Cross-references.....	121
6	Close-out.....	122
6.1	Essential ICB 3.0 Chapters	122
6.2	Learning objectives	122
6.3	Project Close-Out	122
6.4	Process	123
6.5	Cross-references.....	125
7	Contextual Competences	126
7.1	Essential ICB 3.0 Chapters	126
7.2	Learning objectives	126
7.3	Teamwork.....	126
7.3.1	The Phases of Team Development.....	127
7.3.2	Efficient team composition	128
7.3.3	Team roles according to R. M. Belbin	129
7.3.4	Team Management System of Margerison/ McCann.....	130
7.3.5	Special Team Effects	133
7.3.6	Background	134
7.3.7	Cross-references.....	134
7.4	Communication	135
7.4.1	Organization of the Communication in the Project.....	135
7.4.2	Communication Channels	136
7.4.3	Communication Models.....	137
7.4.4	Non-verbal Communication.....	140
7.4.5	Listening and Feedback	141
7.4.6	Background	142
7.4.7	Cross-references.....	142
7.5	Motivation and commitment	143
7.5.1	Motivation and motivating	143
7.5.2	Needs of the project team members	143
7.5.3	Idea of Man	144
7.5.4	Background	145
7.5.5	Cross-references.....	145
7.6	Leadership.....	146
7.6.1	Development.....	146
7.6.2	Management Styles	146
7.6.3	Leadership techniques	147
7.6.4	Leadership activities.....	147
7.6.5	Situational Leadership.....	149
7.6.6	Leadership Characteristics.....	151
7.6.7	Background	152
7.6.8	Cross-references.....	152
7.7	Conflicts and Negotiation	153
7.7.1	Conflicts	153
7.7.2	Action Strategies in Case of Conflict.....	156
7.7.3	Cooperative Conflict Resolution as an Action Strategy.....	157
7.7.4	The Harvard Concept.....	158

7.7.5	Crises	161
7.7.6	Background	161
7.7.7	Cross-references.....	161
7.8	Ethics.....	162
7.8.1	Descriptive and normative ethics	163
7.8.2	Ethics and Project Management	164
7.8.3	Background	167
7.8.4	Cross-references.....	167
7.9	Creativity and Problem Resolution	168
7.9.1	Creativity, Creative Techniques	168
7.9.2	Problems, Problem Resolution Process.....	168
7.9.3	Problem Resolution Techniques	170
7.9.4	Example Diagrams for Problem Identification	171
7.9.5	Background	172
7.9.6	Cross-references.....	173
7.10	Health, Environment, Safety	174
7.10.1	Preventive Measures	174
7.10.2	Important Laws and Regulations.....	174
7.10.3	Cross-references.....	175
8	Literature.....	176
8.1	Project management	176
8.2	Normen.....	177
8.3	Leadership, management, organization	177
8.4	Soft skills	177
8.5	Humor, tension, creativity	178
8.6	Internet sources.....	178
8.7	Studies	179
8.8	Quotations	180
9	Abbreviations	181
10	Tables and figures.....	183
10.1	Tables.....	183
10.2	Figures	184
11	Authors & publisher	187