

Project Management - Project and Environment



Chapter 1: Project and Environment

1	Project and environment	1-1
1.1 1.1.1 1.1.2 1.1.2.1 1.1.2.2 1.1.2.3 1.1.2.4	Definition of project Definition of project according to IPMA Definition of project according to DIN 69901 Division of work Projects without a project specific organisation Uniqueness of conditions Borderline cases	1-1 1-1 1-1 1-2 1-2 1-2
1.2 1.2.1	Definition of project management POSDCORB	1-3 1-3
1.3 1.3.1 1.3.2 1.3.2.1 1.3.2.2 1.3.2.3 1.3.2.4	Coordination of processes Process coordination in business administration Mechanism of coordination Management by hierarchy Management by self determination Management by programs and rules Management by scheduling	1-4 1-4 1-4 1-5 1-5
1.4 1.4.1 1.4.2 1.4.3 1.4.4 1.4.5	Project types External projects Internal projects Investment projects Organisational projects Research and Development projects (R&D)	1-6 1-6 1-6 1-7 1-7
1.5 1.5.1 1.5.2 1.5.2.1 1.5.3 1.5.4 1.5.4.1 1.5.4.2 1.5.4.3 1.5.4.4	Stakeholder analysis Project and stakeholder Identification of stakeholders and expectations Concernment analysis Results of the stakeholder analysis Example City planning: central station Munich Construction logistics Town Administration point of view Point of View of DB-Project Combination of the different Point of Views	1-7 1-7 1-8 1-10 1-10 1-12 1-12 1-14 1-14
1.6 1.6.1 1.6.2 1.6.3 1.6.4 1.6.5 1.6.6 1.6.7	Cross Impact Analysis and Sensitivity Model Selection of variables Matrix of criteria Matrix of sensitivity Matrix of consensus Index of influence Role allocation Adjacency Matrix	1-15 1-16 1-17 1-17 1-18 1-18 1-20



Project Management - Factors of Success



Chapter 2: Factors of Success

2	Factors of success	2-1
2.1 2.1.1 2.1.2	General Remarks Ancient development General management and project management	2-1 2-1 2-2
2.2	Frequent failures at the project processing	2-3
2.3 2.3.1 2.3.2 2.3.2.1 2.3.2.2 2.3.2.3 2.3.2.4	Definition of Project success Examples for different definition of success Different views on the Project Investment Projects Government/ Public authority Projects Non-monetary Projects Sustainability	2-3 2-4 2-4 2-4 2-5 2-6 2-6
2.4 2.4.1 2.4.2 2.4.3 2.4.3.1 2.4.3.2 2.4.3.3 2.4.3.4 2.4.3.5 2.4.4.1 2.4.4.2 2.4.4.3 2.4.4.3 2.4.4.4 2.4.4.5	Determination of Factors of Success Project management Factors Factors of success Identify Formulate Measures to achieve Measurement of factors Measurement of success Key Performance Indicators (KPI) - Examples Balanced Score Card Job-Scheduling for full-time schools "EastLink" – PPP Project in Australia Long Bay Prison Hospital – PPP Project in Australia Development estimation	2-6 2-6 2-7 2-7 2-8 2-8 2-8 2-9 2-9 2-9 2-9 2-10 2-11 2-11
2.5 2.5.1 2.5.2 2.5.3 2.5.4 2.5.5	Tools to accomplish Scheduling Tools Assignment of Resources Calculation Quality control Communication	2-13 2-13 2-14 2-15 2-15 2-17
2.6 2.6.1 2.6.2	Abstract factors of success Lechler Survey Soft skills	2-17 2-17 2-18



Chapter 3: Organisation of Projects

3	Organisation of Projects	3-1
3.1	Unique copies and processes	3-1
3.2 3.2.1 3.2.2 3.2.3 3.2.4 3.2.5	WBS – Work break down structure Definition: Work breakdown structure Work packages Structuring and classification Development of a Work break down structure Description of work packages	3-6 3-7 3-7 3-8 3-9 3-10
3.3 3.3.1 3.3.2 3.3.3	Models of proceeding Project Phases Activities Milestones and milestone results	3-10 3-11 3-12 3-13
3.4 3.4.1 3.4.2 3.4.3 3.4.4 3.4.5 3.4.6	Models from the IT sector The Archetype of a cascade The V-Model The prototyping approach The evolutionary model The incremental model The agile project management	3-14 3-14 3-15 3-16 3-16 3-16
3.5 3.5.1 3.5.2 3.5.3 3.5.4	Project organisation Projects exceeding the company Integration of projects to a main organisation Pure project organisation Matrix organisation	3-17 3-17 3-18 3-19 3-19



Project Management - Scheduling Costs and Resources



Chapter 4: Scheduling Costs and Resources

4	Scheduling Costs and Resources	4-1
4.1 4.1.2 4.1.3 4.1.4 4.1.5 4.1.5.1 4.1.5.2 4.1.6	Calculation of Cost and Resources Structures Function of production Resource Interaction Costs and Resources Overhead Cost Direct Overhead (Project Overhead) Indirect overhead Resource Requirement Planning	4-1 4-2 4-4 4-5 4-6 4-8 4-10 4-11
4.2 4.2.1 4.2.2 4.2.2.1 4.2.2.2 4.2.2.3 4.2.3.1 4.2.3.2 4.2.3.3	Cost estimation methods Cost estimation by consulting experts Cost determination by cost indicators and cost indicators systems "Kilogram Cost Method" Cost indicators based on standard structures Premises for the use of project cost data base Parametric cost estimations Example of parametric cost estimation Model COCOMO e.g. in IT-Sector Function point method	4-12 4-13 4-13 4-14 4-16 4-17 4-17
4.3 4.3.1 4.3.2 4.3.3	Accompanying monitoring of costs Monitoring Costs Alternative 1: Basic version Monitoring Costs Alternative 2: Reduced De-Luxe-Version Monitoring Costs Alternative 3: De-Luxe-Version	4-18 4-19 4-19 4-20



Project Management – Scheduling Duration and Target Dates



Chapter 5: Scheduling duration and target dates

5	Scheduling duration and target dates	5-1
5.1 5.1.1 5.1.2 5.1.3	Sequential planning and time scheduling From the work breakdown structure to sequence planning Steps of sequential planning and time scheduling Available techniques of sequence planning and time scheduling	5-1 5-1 5-2
5.2	Theory of Graphs	5-2
5.3 5.3.1 5.3.2 5.3.2.1 5.3.2.2 5.3.2.3 5.3.3	Scheduling on time axis Production planning Sequential planning Activity Event Relationship Target date planning	5-5 5-6 5-6 5-6 5-7 5-7 5-8
5.4 5.4.1 5.4.2 5.4.3	Representations of Schedules Gantt-Diagram Path-Time-Diagram Network Diagram	5-8 5-8 5-9 5-12
5.5 5.5.1 5.5.2 5.5.3 5.5.4	Network Plans Event Node Network plan Activity Arrow Network Plan Activity Node Network Plan Decision Network Plan	5-13 5-13 5-13 5-14 5-15
5.6 5.6.1.1 5.6.1.2 5.6.2.2 5.6.2.1 5.6.2.2 5.6.2.3 5.6.2.4	Network plan technique Determination of Ranks (Causal Sequence) Tabular elaboration of Ranks Algorithm of Ford Assignment of Dates Forward calculation Backward calculation Floats Critical Path	5-16 5-16 5-17 5-18 5-22 5-23 5-24 5-26
5.7 5.7.1 5.7.2 5.7.3 5.7.4 5.7.5 5.7.6 5.7.7	Fuzzy Networks Mathematical Modelling Relationships Combined Relationships Potential of Preference Fuzziness in the Optimisation Procedure Optimisation Algorithm Sequence Perspective	5-26 5-27 5-28 5-30 5-31 5-34 5-34