Ex-1 Opportunity Qualification

Is it really a project?

You just have selected a project to work on for the next three days.

The first step is to inform the team members what it is all about. A lot of information is available on the project and you may discuss it for hours.

Please focus on finding answers to the following questions.

1. At a glance - what's the scope of the tasks in hand?

2. Based on the PMI definition of projects - is the selected task a project and why? Which of the listed criteria fit?

3. Do you know the key role-players in the project, who are they and what do they expect from 'project management'?

When answering questions in the project you have to write down *assumptions* and *constraints*. Assumptions are considered as facts for the purpose of the planning. You have to validate all assumptions with the stakeholders. A validated assumption becomes part of the project scope or a constraint or an out-of-scope element. Never let an invalidated assumption become an element of the project. If you do so, you will suffer the consequences of the *Garbage in – Gospel out* (GIGO) syndrome.

4. Start creating a list of basic *assumptions* and *constraints*.

Project: *A temporary endeavor undertaken to create a unique product, service or result.*

Constraint: *Applicable restriction that will affect the performance of the project. Any factor that affects when an activity can be scheduled.*

Assumption: *Assumptions are factors that, for planning purposes, are considered to be true, real or certain. Assumptions affect all aspects of project planning, and are part of the progressive elaboration of the project. Project teams frequently identify, document, and validate assumptions as part of their planning process. Assumptions generally involve a degree of risk.*

References: PMBOK® Chapter 1

Use a metaplan wall or flipchart to present your results to the group.

Ex-2	Initiation

Stakeholder Analysis

Stakeholders can affect a project positively or negatively. For the project team, information about the stakeholders is crucial and the expectations of the stakeholders need to be managed.

Stakeholders can have special roles. Stakeholders supporting the project are normally the sponsor (the source of authority to carry-out the project), the champion (who possesses the knowledge and the desire to carry-out the project) and promotors (who also want to run the project and see it succeed).

On the other hand, there are the skeptics (it never worked before in this company), the hedgers (I do not have the power to stop you, but I will make your life difficult) and the assassins (I will kill the project as soon as possible).

You as a project manager have to deal with all of them. If you ignore politics, then you can master all the tools & techniques of modern project management, but your project is doomed to failure.

1. Carry out a stakeholder analysis.
2. Define how you will manage stakeholder expectations.

Stakeholder: *Individuals and organizations that are actively involved in the project, or whose interests may be positively or negatively affected as a result of project execution or project completion. They may also exert influence over the project and its results.*

References: PMBOK® Knowledge Area 10 - Communication

Use a metaplan wall or flipchart to present your results to the group.

Ex-3	Initiation

Scope Management Plan

Scope Management is the basis of any kind of systematic project management. In the early phases of a project the project manager and the project team should focus on that process. Without defined objectives you will not be able to decide what's in the project and what is not. You will not be able to calculate time, cost, the resources needed or anything else.

In most cases, the customer of the project needs help to develop the 'clear stated objectives'. Even so, a project charter exists and you should check if you are able to answer the following questions:

1. What business processes is the project directly related to?
2. What's the 'pain' the project is based on? What inconviences does the project incur?
3. What are the main deliverables of the project - and how do they compare against the inconvenience to the customer?
4. What are the critical success factors (CSF) of the project?
5. Continue - What are the main assumptions when starting the project?
6. What are the constraints of the project?

Scope: *The sum of products and services to be provided as a project. Project scope is the work that must be done to deliver a product with the specified features and functions. Product scope is the features and functions that characterize a product or service.*

References: PMBOK® Knowledge Area 5 - Scope

Use a metaplan wall or flipchart to present your results to the group.

Ex-4	Initiation

WBS (Work Breakdown Structure), RAM (Responsibility Assignment Matrix)

The Work Break Structure is a kind of hierarchical break-down of all the deliverables of the project (the total scope of the project).
At the highest level (level 0) is the main objective of the project or phase. At the lowest level of WBS are all the Work Packages needed to complete the project. A WBS can be structured in many ways. Activity-based and object orientated WBS are the most commonly used approaches. For every project you should create at least two WBS; one object-orientated and one activity-based. Then you should check the two WBS for consistency. Is every object created by an activity? Is an activity performed, which does not create an object?

The lowest element of the WBS is a Work Package. A work package is assigned to one responsible person, consists of a chunk of work which can be achieved at once and which consists of 80 to 120 hours of work (rule of thumb).

1. Develop a WBS for your project, which reflects the total scope of the project.
2. Write a work package description for every Work Package

As mentioned above, Work Packages are assignable to one person, the owner. To complete the WBS it is useful to construct a 'responsibility assignment matrix' or RAM. This is a kind of checklist to ensure that every WP is assignable to one and only one person. This is the first step in developing a RAM.

3. Develop an RAM for your project. Identify the people who will be needed on the project team.

4. Decide which organizational structure is appropriate for your project.

WBS: *A deliverable-orientated grouping of project elements that organizes and defines the total work scope of the project. Each descending level represents an increasingly detailed definition of the project work.*

RAM: *A structure that relates the project organization structure to the work breakdown structure to help ensure that each element of the project's scope of work is assigned to a responsible individual.*

References: PMBOK® Knowledge Area 5 - Scope
PMBOK® Knowledge Area 9 - Human Resources
PMBOK® Knowledge Area 10 - Communication

Use a metaplan wall or flipchart to present your results to the group.

Project **Sub-project**	**Work Package Title**		**Requested by:**
Author	**WP no.:**	**WP-responsible:**	**Date:**
Objectives:			
Deliverables:			
Activities:			
Dependencies:			
Reporting mode:			

	Planning values		**Actual values**	
Schedule	Start	End	Start	End
Cost in €				
Capacity in person days				

Approval	**Functional Manager**	**WP-Responsible**	**Project Manager**
Date			
Signature			

Ex-5	Detailed Planning

Schedule

After you have completed your WBS, added risk related and supporting work packages like quality and project management, you are now ready to create your project schedule. The most common techniques to put together the schedule for a complex task are Network Diagram and Gantt chart.

Both techniques are supported by common scheduling tools like MS-Project.

1. Estimate the duration of each work package of your WBS.
2. Determine the areas of dependence between the work packages.
3. Construct a network diagram and calculate early start / end, late start / end, total float and free float. Find the critical path of your project.

Normally you have to break work packages down into activities to find out the precise nature of dependence and duration.

Critical Path: *The series of activities that determines the duration of the project. In a deterministic model, the critical path is usually defined as those activities with float less than or equal to a specific value, often zero. It is the longest path through the project.*

Project Network diagram: *Any schematic display of the logical relationships of project activities. Always drawn from left to right to reflect project chronology. Often referred to as a PERT chart.*

GANTT chart: *A graphic display of schedule-related information. In the typical bar chart, activities or other project elements are listed down the left side of the chart, dates are shown across the top, and activity durations are shown as date-placed horizontal bars.*

Ref.: PMBOK® Knowledge Area 6 - Time

Use a metaplan wall or flipchart to present your results to the group.

Ex-6 Detailed Planning

Cost, Resources

Based on your schedule you are now able to plan the resources. Resources may be human resources or material, equipment etc.

1. To determine the resources draw a Gantt chart based on your network diagram.
2. Allocate the resources to the activities considering the planned effort.
3. Draw a resource histogram for your human resources.

Resources are in nature human or technical. Sometimes, a meeting room can become a bottleneck resource on the project, sometimes, you do not have the right skills available within the company. When drawing the resource histogram, it is useful to distinguish between the different skills required.

References: PMBOK® Knowledge Area 9 – Resources

Based on your histograms you are able to develop a cost estimate for the project. In order to control the project it is not enough to find out the cost on completion. You should also have a plan of when/where costs occur.

4. Based on your Gantt Chart and the resource allocation – develop a diagram showing the expected cash flow and the cost performance base line of your project.

Remember: The budget is required to complete the project, whereby the price is negotiated on the market. If the price is less than the budget, then you have a strategic project - and your company can only have a number of strategic projects.

References: PMBOK® Knowledge Area 7 - Cost

Use a metaplan wall or flipchart to present your results to the group.

Ex-7	Detailed Planning

Risk

Every project inherits risks. Risks are divided into chances and risks. Chances affect the project positively and risks negatively. There are empirical studies that prove the direct relationship between good project risk management and schedule performance.

To identify chances and risks, you should ask yourself what can accelerate the project, and what can go wrong in the project ('Murphy's law'). Concentrate on the elements of the WBS and map the identified risks to WP's.

The steps in the process of risk management are:

1. Identify all risks
2. Determine their probability of occurring
3. Determine their impact
4. Define risk response strategy, i.e. acceptance, mitigation, transference and avoidance. (These results in the additional budget required for risk management).
5. Review the risks regularly.

Carry out a risk management analysis for your project by going through the steps 1 to 4 above.

The same process applies for taking advantage of possible chances. Concentrate on the quick wins.

Risk Acceptance: *This technique of the risk response planning process indicates that the project team has decided not to change the project plan to deal with a risk, or is unable to identify any other suitable response strategy.*

Risk Avoidance: *Risk avoidance is changing the project plan to eliminate the risk or to protect the project objectives from its impact. It is a tool of the risk response planning process.*

Risk Mitigation: *Risk mitigation seeks to reduce the probability and/or impact of a risk to below an acceptable threshold.*

Risk Transference: *Risk transference is seeking to shift the impact of a risk to a third party together with ownership of the response.*

References: PMBOK® Knowledge Area 11 - Risk

Use a metaplan wall or flipchart to present your results to the group.

Ex-8 **Executing the Project**

Team Building

Team roles and their constellation in your project team are essential for the efficiency of team work. 'The Belbin Way' of building an efficient team is to select your team members considering not only their competence regarding the project scope but also considering their team roles. You should avoid having one role occupied by several people. This will be reason for latent conflicts.
Likewise, if you are confronted with an existing team – the Belbin team roles may help you to develop a set of tools to support this team in working together.

1. Analyse the roles in your team.
   Which roles are missing?
   Which roles are occupied by more than one person?

2. What are the strengths of your team?
   What are the areas where your team needs support, rules, techniques and regulations to work efficiently?

3. Define a strategy to make your team work effectively and efficiently together (how to substitute missing team roles, how to avoid permanent conflict situations).

Good books related to this topic are:

Principles of Management, CliffsQuickReview, ISBN 0-7645-6384-X
Team Roles at Work, Butterworth Heinemann, ISBN 0-7506-2675-5
Managing without Power, Butterworth Heinemann, 0-7506-5192-X

References: PMBOK®Knowledge Area 9 - Human Resources

Use a metaplan wall or flipchart to present your results to the group.

Communication Planning

Communication is essential in a project and communication procedures need to be defined. A communication plan consists of four parts: the stakeholder analysis and the communication actions towards them, the reporting plan (who will receive which reports in which frequency?), the meeting plan (how many meetings will take place, where and when?) and the filing structure (where is all the project information located and who is responsible for which document?).

1. Define a communication plan which details how communication should be structured in your project.

2. Define a filing tree structure for the deliverables of the project and the product of the project.

The key players in your project need to be informed about the project's progress and the main decision points. Certainly they are not interested in every detailed task or even work package. To keep them informed of the major steps of the project and to focus them on the key decision points, milestone reports proven their merit. They are also the basis for 'Milestone Trend Reports' later in the project during implementation and controlling phases.

1. Define the major milestones – points of importance - in your project.

Milestone: *A significant event in the project, usually completion of a major deliverable.*

References: PMBOK®Knowledge Area 10 - Communication

Use a metaplan wall or flipchart to present your results to the group.

Ex-10	Detailed Planning

Project meetings and Project Presentation

Once you have developed your project plan it is time to get the project started.
There are two essential presentations – the "Kickoff" meeting and the approval by the steering committee:

1. Draw up an agenda for your project kickoff meeting.
   What do you want to achieve –
   what are the objectives of the meeting?
   Who should attend the meeting?

2. Present your project plan to the steering committee.
   Which elements of the plan need to be emphasized?
   Which elements should not be presented in public?

References: PMBOK®Knowledge Area 10 - Communication
PMBOK®Knowledge Area 4 - Integration

Use a metaplan wall or flipchart to present your results to the group.

Info	Detailed Planning

Procurement

Some tasks need to be supported by external suppliers. The reason may be that insufficient internal resources are available or that the customer wants to integrate a certain supplier into the project.

You, as a project manager, have to decide if everything will be produced by the project team or if some tasks may be better performed by external suppliers.

1. Carryout a make-or-buy analysis for your project.
2. On which criteria would you evaluate a supplier?

References: PMBOK®Knowledge Area 12 - Procurement

Use a metaplan wall or flipchart to present your results to the group.

Earned Value, MTA and Project reporting

One basic principle of project management is "plan the work and work the plan".

Your project plan helps you to control the project, to assess progress and to identify any deviation from the plan. Deliverables will be produced and change requests will be submitted.

Two useful techniques to control the project are:

1. Earned Value Analysis (EVA) and
2. Milestone Trend Analysis (MTA)

EVA shows the overall progress on the project on 3 graphs (BCWS – Budgeted Cost of Work Scheduled, BCWP – Budgeted Cost of Work Performed and ACWP – Actual Cost of Work Performed).

MTA shows you schedule performance on the critical path.

Earned Value Formula Summary

Term	***Description***	***Meaning***
ACWP	Actual Cost of work performed	Actual costs incurred in performing the project work so far
BCWP	Budgeted cost of work performed	The budgeted (planned) cost for work performed so far
BCWS	Budgeted cost of work scheduled	The planned profile of expenditure against time for the project
CPI	Cost performance index	The ratio of the value of the work to the actual incurred cost: CPI = BCWP/ACWP
CTC	Cost to complete	Cost of work still to be done
CV	Cost variance	A measure of performance in cost terms: CV = BCWP – ACWP
ECAC	Estimated cost at completion	The project completion cost of the project: ECAC = CPI / PB
ECD	Estimated completion date	The date at which the project is estimated to be completed: ECD = SPI / Project Duration
PB	Project budget	The budgeted cost of work performed when the project is completed. Sometimes called BAC (Budget at Completion)
SPI	Schedule performance index	The ratio of the work performed to the work scheduled: SPI = BCWP/BCWS
SV	Schedule variance	The difference between the budgeted cost of work performed and work scheduled: SV = BCWP – BCWS

References: PMBOK®Knowledge Area 10 - Communication
PMBOK®Knowledge Area 4 - Integration

Use a metaplan wall or flipchart to present your results to the group.

Info	Project Delivery

Configuration Management and Change Control

Configuration is the catalogue of the project. Every item is specified in the catalogue. The use of the item is also shown. After an item is included in the configuration, then it cannot be changed without an approval procedure.

This approval procedure is called Change Control. A change can affect scope, time, cost, quality or risk. A formal (official) Change Request is submitted to the Change Control Board. For one project there can be several change control boards, depending on the complexity of the project.

1. Define all items which need to be included in the configuration of your project.
2. Which attributes will your configuration items specify?
3. Define a change control procedure for your project.
4. Who shall be a member of the Change Control Board?

Configuration Management: *Configuration management is any documented procedure used to apply technical and administrative direction and surveillance to:*

- *Identify and document the functional and physical characteristics of any item or system.*
- *Control any changes to such characteristics.*
- *Record and report the change and its implementation status.*
- *Audit the items and systems to verify conformance to requirements.*

Change Control Board (CCB): *A formally constituted group of stakeholders responsible for approving or rejecting changes to the project baselines.*

References: PMBOK®Knowledge Area 4 - Integration

Use a metaplan wall or flipchart to present your results to the group.