

# Modern Project Management





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## 1.0 The Approach of the Workshop

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The Workshop approaches Project Management by applying Modern Project Management methods.

One of the major problems with Projects is that Managers or persons made responsible for Projects are usually well versed in their own line of business techniques but not given sufficient training or exposure to Project Management techniques. Project Management has become a discipline of its own. Lack of training in such a discipline results in problems that are essentially project based. It becomes important for any organization to address the problem of Project Management by acquiring modern methods based on well established standards. One of these is the **Project Management Institute**.

By the latest count, the Project Management Institute has certified over 125,000 Project Managers out of 250,000 members worldwide. The PMI is a non profit organization that has amassed a wealth of experience in project management. The result of this experience is a guide issued by the PMI's standards committee called the *Guide to the Project Management's Body of Knowledge* or PMBOK, as it is known in the industry. This book has sold more than 400,000 printed copies and is available for free download from the institute. It was recently adopted by ANSI (American National Standards Institute) as the de facto standard for project management. Comparison with ISO9004 (Now ISO10006) shows a major similarity in the approach to improving the quality of project management. In fact, the PMI and ISO worked together on the early drafts of the PMBOK.

Essentially, the PMBOK has two major innovations:

1. It presents 9 areas of knowledge that group all tools, practices and processes needed for project management:
  - 1 area affected by and affecting all of the other knowledge areas:
    - Project Integration Management
  - 4 core knowledge areas leading to specific project objectives:
    - Scope Management
    - Time Management
    - Cost Management
    - Quality Management
  - 4 facilitating areas through which project objectives can be achieved:
    - Human Resources Management
    - Communication Management
    - Risk Management
    - Procurement Management

Each of these 9 knowledge areas consists of several specific processes. For example, the Cost Management area of knowledge consists of 4 major processes:

- Resource Planning
- Cost Estimating
- Cost Budgeting
- Cost Control

The 39 processes are grouped into 5 types or groups of processes: Initiating, Planning, Executing, Controlling and Closing processes.

2. The PMBOK also presents a novel approach of preparing projects by always planning for work to be done in terms of two dimensions. The first dimension is the time line which is based on the Work Breakdown Structure of the project, or its phases.

The second dimension is a vertical dimension whereby within each phase, the 5 groups of processes are executed.

A major shift in traditional thinking results. In each phase, it is therefore possible to execute similar processes. For example, each phase has initiating processes. Each phase would have closing processes that define how a deliverable or a milestone can be achieved. In each phase, we may have cost planning or time control or risk analysis.

This approach avoids the traditional waterfall method applied by project managers and one that forces them within restricted processes.

This workshop follows the structure of the PMBOK closely interleaving it with practical sessions and ending the workshop with around 5 hours of training on Microsoft Project 2003™.

## **2.0 Who Should Attend?**

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Project Management was traditionally the realm of senior vice presidents. Today, professionals in all walks of life get interfaced with various Projects within the organization. They require the discipline of project management. Persons doing any of the following will need to be proficient in the disciplines of Project Management. Any persons involved in the following would benefit:

- Technical personnel managing engineering projects
- Those embarking on promotional drives such as planning and controlling advertising campaigns, preparation of materials for media, printing projects, market surveys and research, etc.
- Marketing personnel
- Those involved in the launch of new products and services
- Contractors
- Launching new products or services
- Starting new departments
- Embarking on Reengineering or TQM projects
- Preparing for exhibitions
- Introducing new equipment or production lines
- Preparing to move to new locations
- Preparing a training plan
- Preparing for mergers, acquisitions, splits, etc.
- Embarking on various technical projects such as IT, installation of ATM', new exchanges, Internet web sites, E-Commerce, etc.
- IT Managers
- Project Leaders
- Operations Managers
- Technical Directors
- Engineers
- Auditors and Financial Comptrollers

- Senior Directors
- Persons involved with launching new services, departments or divisions.

Even if there are persons with Project Management experience or training, it would be of interest to them to review the modern methods included in the workshop.

### **3.0 Introducing Microsoft Project**

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The workshop uses Microsoft Project as a standard tool for the planning and monitoring of Projects. Throughout the sessions, the instructor will demonstrate the following:

- Critical path activities using the CPM
- The concept of PERT for statistical analysis of duration
- Preparing the Master Schedule for IT Projects
- Resource planning
- Using Microsoft Project for planning: resolving schedule and resource conflicts
- Controlling projects through the tracking of time and resources

In most sessions, Microsoft Project 2003 will be used to demonstrate various Project Management techniques such as Work Breakdown Structures, Costing, Risk Management, Collaboration on Projects, Resource Management, etc.

### **4.0 The Form and Duration of the Training**

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The proposed duration of the workshop is 25 actual hours which can be spread over 5 days. More than 40% of this time is spent in practical workout sessions, trying case projects and using different techniques to analyze and control them.

It is strongly advised that attendance should be around 15 persons to allow the instructor enough time to address the needs of each.

### **5.0 The Case Project**

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A Case Project that is typical of the kind of projects to be handled by the attendees will be selected in the workshop. Most sessions will cover workout exercises and will often be based on the Case Project. It will be also be used if Microsoft Project 2003™ is part of the workshop.

### **6.0 The DVD**

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The instructor has prepared a DVD-ROM that contains a variety of supplementary material of use to the attendees such as:

- Articles and presentations on project management
- Articles and presentations on various related issues such as risk management, costing, metrics, etc.
- Demo software
- Training and sample examples for Microsoft Project
- Workshop exercises

- Exercise results from previous workshops
- Templates and forms presented and discussed in the workshop: project plans, costing sheets, communication plans, risk event forms, etc.
- Templates and forms downloaded from various sites to be used as supplementary material to those discussed in the workshop
- A variety of relevant downloads
- A list of interesting web sites
- A bibliography of books on Project Management

The DVD-ROM contains around 2 Gigabytes of material.

## 7.0 The Contents of the Workshop

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The following sessions define the material of the workshop. All the following material will be provided in the handout.

### Session 1 – Introducing Project Management

What is a Project?

- Definition of a Project
- Difference between Operational and Project based companies
- Attributes of Projects
- Sample Projects

What is Project Management?

- Definition of Project Management
- The 3 constraints of Time, Cost and Functions
- What and who are the stakeholders?
- Project management tools and techniques
- Benefits of Project Management
- Relating PM to other principles

Project Managers

- What are the skills of a Project Manager?
- What are the responsibilities of a Project Manager?

The PMBOK stresses a lot on planning for quality in a project. The various processes it proposes are the following and can be applied in different phases of a project:

- Quality Planning
- Quality Assurance
- Quality Control
- Relationship with ISO

Quality is discussed from a technical point of view and is stressed as part of the life of a Project Manager.

### Session 2 – Introducing the PMI and the PMBOK

Introducing the *Guide to the Project Management Body of Knowledge*

The Project Management Knowledge Areas

- 1 area affected by and affects all of the other knowledge areas:
  - Project integration management
- 4 core knowledge areas lead to specific project objectives:
  - Scope, time, cost, and quality
- 4 facilitating areas through which project objectives are achieved:
  - Human resources, communication, risk, and procurement

Presenting the structure of the workshop as based on the PMBOK areas.

The presentation will also discuss the procedure for **Certification** by the PMP and will show the attendees the way towards that.

### **Session 3 – Project Phases and Life Cycles**

One of the basic reasons for project failures is that Project Managers concentrate on defining phases in terms of Product Deliverables and hence miss out on crucial Project Management issues. The PMI follows ISO and other key industry standards in reviewing the way Project Phasing is defined.

This session covers the main concepts behind Project Phases stressing the critical “shift” in thinking by introducing the Two Dimensional approach to Project Phasing.

The following subjects are discussed:

Project Phases and Life Cycles

- Typical Life Cycles by Sector

- Product Life Cycles

Difference between product and project life cycles

The two dimensions of Project Management

- Dimension 1: Phasing or Work Breakdown Structure (WBS)

  - Definition

  - Examples

  - Relationship between WBS and organizational Structure

  - Relationship between WBS and phases

  - Different types of WBS

- Dimension 2: the 37 processes of the PMBOK

  - The breakdown of each of the 9 areas into its own processes

  - The grouping of the PM processes into:

    - Initiating processes

    - Planning processes

    - Executing processes

    - Controlling processes

    - Closing processes

Stressing the importance of applying some processes in different phases

Process Interactions

- How processes interact with one another

- How processes lead from one phase to another

- How processes have input and output

- The tools of the processes

Customizing Process Interactions

The use and importance of iteration and its benefits in some types of projects.

### **Session 4 – Quality and Project Management**

One of the key core areas in the PMBOK is the Management of Quality. This is defined in this session and related to the corresponding concepts in ISO9000 standards.

The definition of Quality is critical and is given as “The totality of characteristics of an entity that bear on its ability to satisfy Stated or Implied needs”. It becomes one of the Project Manager’s most important tasks to clarify and convert all implied needs into stated needs.

The session covers a variety of concepts such as the difference between Grade and Quality, the Cost of Quality being made up of the cost of conformance and non-conformance.

Project Quality Management includes 3 processes required to ensure that the Project will satisfy the needs for which it was undertaken. These are the processes stated in the PMBOK as: Quality Planning, Quality Assurance and Quality Control. These will be discussed in this session.

Several templates and documents are presented to show how projects can benefit from Quality Management: (Testing scripts, Delivery and Acceptance Procedures, Change Control Requests, etc).

### **Session 5 – Work Breakdown Structures as a Planning Tool**

The WBS is considered the key document in the Project Plan and hence justifies a special session on its own. The session stresses the importance of proper planning by the right definition of the WBS. Different ways of breakdown are discussed: by product breakdown, by major deliverables, by major activities, by geography if needed.

The WBS is a foundation document of Project Management. It represents a graphical or outline view of the Hierarchy of Elements that decomposes the Project Plan into discrete work tasks. It is an outcome oriented analysis of the work in a project that defines the total Scope of the project and hence is Deliverable oriented.

The WBS document helps us:

- Clarify work requirements
- Assign responsibilities through  
The Responsibility Assignment Matrix (RAM)
- Allocated resources to tasks
- Schedule tasks and deliverables
- Identify and track costs
- Monitor performance (Cost and schedule)
- Report results
- Analyze risks

The session will setup the WBS for the **Case Project** using Microsoft Project 2003.

It will show how the WBS can lead to **Time Planning and Scheduling**.

### **Session 6 – Phases 1 and 2: Initiating and Planning Projects**

The main focus of this session is to provide the attendees with a robust structure for a Project Plan. This is presented as a Template. It is discussed and examples will be worked out with the attendees.

Most projects can be broken down into 4 phases the first two of which are discussed in this session:

- The Initiation Phase
- The Planning (Or elaboration) Phase
- The Implementation (Or execution or construction or building) Phase
- The Transition Phase

**Initiating Projects:** This is one of the most important activities in a project. This is the phase that is responsible for preparing the business case, to the extent necessary, to justify the launching of the project.

During this phase, we create a high level view of the Project's Goals and Constraints. We capture what customers and key stakeholders regard as essential for the success of the project and we help the stakeholders merge different perspectives into a common understanding.

**Planning Projects:** This is the phase that most Project Managers underestimate, to their peril. The workshop concentrates on the presentation of the elements needed to Plan a Project:

- This phase elaborates all plans defined in Phase 1
- It presents a much more detailed iteration of the first Phase
- Most of the work would be involved in defining the 3 sides of the Project Triangle: costs, functions and time.
- Other PM Processes are also executed in the Planning Phase:

- Risk analysis
- Quality Planning
- Communications
- Human Resources

The deliverables of this phase is: the APPROVED Project Plan which signals an agreement by the stakeholders to commit themselves to building the deliverables as per the approved Project Plan.

The Project Plan consists of the following

- Updated Project Definition (prepared in Phase 1)
- Scope Plan or Functional Specifications
- Master Project Schedule
- Master Project Budget
- Master Risk Assessment Document

It has become generally accepted these days that a project that is properly initiated and planned will have much less risk of failing to meet its objectives.

The session will present the elements and activities contained in each of the two major phases. Sample templates will be prepared for use by the attendees in initiating and planning their projects.

## **Session 7 – Risk Management**

An increasingly popular project management technique is the ongoing management of the project risks. This introduction covers how the PMBOK breaks down the risk management processes into:

- Risk Identification
- Risk Quantification
- Risk Response Development
- Risk Response Control

Risk analysis has become part of the arsenal of the modern day Project Management. In the past, most risk was end loaded in the project. This was due to the lack of Risk Management practice. The session will go through the cycle of identifying risks:

- Risk Assessment: covers the following tasks: risk identification, risk analysis and quantification per project and the prioritization of risk.
- Risk Control: covers risk management and planning which is the exercise of dealing with different types of risks: to accept a risk, to mitigate it or to avoid it. The second task is that of monitoring the risks of the project.

The session also covers the practice of Expected Monetary Value which is the risk computation applied when a Project Manager has more than one option to consider. **EMV** provides the Project Manager with a suitable way of decision making under uncertainty.

### **Session 8 – Phases 3 and 4: Project Building and Transition**

Ironically, most of the effort in a project is spent on the last two major phases, the phases where the final product or service is built and during which the end users receive these products and services. However, in terms of Project Management, if Phases 1 and 2 are properly executed, adverse risks in Phases 3 and 4 are reduced and the project approaches a higher chance of success.

There are various processes that are active during these two phases. The session covers such processes and indicates how the Project Plan gets executed, monitored and controlled during these two phases.

### **Session 9 – The Project Management Team**

One of the key issues in Project Management is the understanding of the role of the Project Manager. In modern terms, the Project Management team should also be subject to modern Team Dynamics principles.

The various typical or generic roles in a Project Team are discussed. Stress is laid on the role, responsibilities and skills of the Project Manager as well as the various other members of the team.

### **Session 10 – Costing and Estimating of Projects**

This session covers a few essential tools and techniques such as:

- Techniques for cost estimating a project / product
- Budgeting techniques
- Costing of staff and indirect costs

The session will also show how Resource Planning is covered using Microsoft Project 2003.

### **Session 11 – Evaluating and Selecting Projects (If Time Permits)**

While planning projects, there will be various options within a project. Furthermore, comparison between different projects may be required. Finally, the project manager may need to select different products or services for a project. The following two techniques will be presented:

- Cost Benefit Analysis (Discounted Cash Flow)
- Selecting project by using the Weight Scoring Index method

The following options can be presented in the workshop depending on the timing followed and the requirements of the attendees.

### **Session 12 – Earned Value Analysis (If Time Permits)**

(Note: this may not be so relevant to the Public Sector as its projects do not “earn”. However, the Public Sector should recognize that projects executed on its behalf by contractors will benefit greatly if Earned Value Analysis is applied).

The Project Manager would have to be involved in the continuous comparison of planned work, completed work and actual work done at any one stage in the project. Moreover, such comparisons can be projected forward to analyze the overall completion figures of a project. Finally, similar analysis can be applied by phase, unit, responsible, product breakdown, etc.

Earned value is a management technique that relates resource planning to schedules and to technical performance requirements. Earned value analysis (EVA) uses earned value as the tool for integrating cost, schedule, and technical performance management, and risk management

EVA provides a powerful technique that integrates scope, cost, and schedule.

- It provides schedule and budget variance
- It objectively measures project performance
- It measures a project’s progress
- It forecasts its completion date
- It forecasts its final cost
- Is an industry standard method

EVA is based on 3 data points ONLY

- Budgeted Cost of Work Scheduled (BCWS)
- Budgeted Cost of Work Performed (BCWP)
- Actual Cost of Work Performed (ACWP)

Variances, Estimates at completion and other Indices can be derived from these.

EVA Asks about the Past:

- Are we on schedule?
- Are we on cost?
- What are the significant variances?
- Why do we have variances?
- Who is responsible?
- What is the trend to date?
- And at any time, about the Future:



And about the future:

When will we finish?  
What will it cost at the end?  
How can we control the trend?