# Project Management - R&D Organization

## Course 369 – 32 Hours

### Overview

"Project Management" is a key process for delivering a successful project. The Project Manager should have the skill set to manage and monitor 9 knowledge areas including: Integration, Scope, Time, Cost, Quality, Human Resource, customers, risks and procurement. There are many generic skills that are essential to a project manager, when examining the software R&D organization, these skills should be tuned and refined to meet the R&D personnel specific domain. While time, scope and HR management are main activities of internal R&D managers, customer procurement and budget management are somewhat of less importance. This class will provide the students with the understanding of the project manager responsibilities and will equip the student with tools and techniques that are specifically relevant to the R&D organization. The class also introduces the complexity of global product management that is very common in today global R&D organizations.

### On Completion, Delegates will be able to

- Understand the role and responsibilities of a product manager
- Be equipped with tools and techniques to manage required knowledge areas (Mainly Scope, Time, Resource, Risk and Quality management)
- Be introduced to Budget, Procurement and customer management
- Be equipped with a set of tools to assist them to manage and monitor a project successfully.

### Who Should Attend

- Novice project managers
- R&D team leaders
- QA team leaders
- Product Managers
- System Analysts.

### Prerequisites

- Familiarity and experience in R&D and development lifecycle.
- Prior experience in managing a project or a team is highly recommended.

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## Course Contents

### Chapter 1 - Introduction to Project Management

- What is a project?
- Project Management History and motivation.
- Project Management Institute PMI & PMBOK
- Project management responsibilities.
- The 5 processes & the 9 Knowledge Areas
- The project management golden triangle.
- Facts and Figures.
- Main actors in a project.
- The software project unique characteristics.
- What is a Successful Project?

### Chapter 2 – Development Project Lifecycle

- Quick computer history session
- Eduard Yourdon and System Analysis
- The V model
- The square root model
- The waterfall model
- The spiral model
- Initiative stage
- Current status analysis stage
- Requirement stage
- Requested system analysis stage
- Implementation research stage
- Top Level Design stage
- Detailed Design stage
- Development stage
- Quality Control
- Quality Assurance
- Deployment and maintenance stage.
- Project closing stage

### Chapter 3 – Project Scope Management

- What I wish for vs. what is required
- Project requirements
- Requirements vs. “Objectives and Goals”
- Requirement types
- S.M.A.R.T. Requirements
- Critical Success Factors
- Success Criteria
- Requirements transformation to Working Packages
- Project internal and external Scope diagrams (DFD Diagrams)
- Work Breakdown Structure – WBS
- Organization Breakdown Structure – OBS
- Scope Management QA (Cross Matrix, Coverage Matrix)

**Chapter 4 – Project Time Management**

- Working units (Tasks) dependencies
- Network diagrams History
- Network diagrams
- PERT - Project Evaluation and Review Technique
- CPM – Critical Path Method
- Tasks time effort measurement techniques
- GANTT
- Slack time
- Project time buffer
- Time constraints
- Time constraints conflict resolution techniques

**Chapter 5 – Resource Management**

- Resources vs. Constraints
- Resources Types
- Resource allocations
- Developers in project behavioral patterns
- Resource Cost
- Resource leveling
- The project timeline
- Critical Chain Method
- Buffer Management

**Chapter 6 – Quick Introduction Budget Management**

- Budget Management Goal
- The R&D budget
- Cost and the R&D PM
- R&D Project Budget Internals
- Cash flow
- R&D Site budget
- Return On Investment - ROI
- Main budget and finance concepts (IRR, NPV)
- The startup budget - case study
- The service company budget – case study
- The producer budget – case study

**Chapter 7 – Quick introduction Risk Management**

- What is a risk?
- Risk vs. Problem Vs. Challenge.
- Identifying Risks
- Risk matrix
- Monitoring Risks and the control plan
- Risk management techniques
- Risk Monitoring
- Risk reporting

**Chapter 8 – Introduction to Quality and Control**

- Quality Management plan
- Quality Management Resources
- Verification, Qualification and Validation
- Errors-Defects-Bugs
- Quality Techniques
- Document Testing Techniques
- Walkthrough
- Inspection
- Fish Bone diagram
- Quality meetings and reporting
- Change Management

**Chapter 9 – TBD - Quick Introduction to Customer Management, Supplier Management and Procurement**

- Who is the customer?
- Customer types
- Customer involvement
- Who is the supplier?
- The supplier motivation
- Managing suppliers (Freelancers & Contractors)

**Chapter 10 – Project Finalization**

- The process of project finalization
- Marketing your success
- Case studies
- Why do projects fail?
- Project management tools and solutions
- Exercises

**Chapter 11 – Quick Introduction to the Global Project Management challenge**

- The global challenge
- A global team
- Measuring cultural difference
- Working with US team members
- The culture gap or How US team members see IL team members.

**Chapter 12 – Final Exercise**

- A guided mini scale project that summarizes the topics learned in the class or a test.
- Exercise will include the following:
- PERT
- Working Units
- Resource Allocation
- GANTT
- Cost Benefit Technique