Effective Requirements Management

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www.pmleaderstraining.com
Delivering project management / leadership development seminars and online courses
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Past President, PMI North Carolina Chapter

• Project Management practitioner for over 20 years, including 10 years with IBM, 7 years in IT consulting and 10 years as PMO Program Manager in private and public sectors
• Currently serving: PMO Program Manager, NC Office of State Controller
• PMI Registered Education Provider, Project Management Leaders Training
  • Instructor, selected PMI Chapters and events, PMI SeminarsWorld
  • Online seminar instructor, delivering online courses (www.pmleaderstraining.com) at deeply discounted PMI member rates
  • Essential Leadership Skills for Project Managers (18 PDUs)
  • Effective Requirements Management (18 PDUs)
  • Delivering Successful Projects …Every Time (18 PDUs)
  • Project Managers as Creative and Innovative Leaders (10 PDUs)
• Frequent speaker at PMI Global Congress, including 2012 PMI Global Congress (Oct. 2012)
• Project Manager, NC Office of the State Controller
• Master’s degrees in Pure Math. And in Computer Science, UWaterloo, Canada
• Ph.D (ABD) – all but dissertation – Management Science, UWaterloo, Canada
• Master’s Certificate in IT Project Management, George Washington University
• PMI Leadership Institute Master Class graduate
Abstract

- Requirements are essential considerations in the project life cycle. Product requirements set the product scope.

- Product requirements should determine what is and what is not covered in the product scope.
Abstract

- Successful projects are highly dependent on well-defined and well-understood requirements.

- Implementing requirements management processes, in collaboration with stakeholders, can greatly improve project success rates.
Abstract

This presentation is about

- Effective requirements management and
- implementing requirements management processes in improving project success rates.
Abstract


- It’s “official!” Requirements management is an essential part of the standard for project management.
Discussion:

Why do projects fail?

Why do your projects fail?
Seminar Outline

- Reasons for Project Failure / Project Success
- Requirements Management Processes
- Collect Requirements
- Best Practices for Effective Requirements Management
- Requirements Management for Agile Development
Reasons for Project Success / Failure
based on
Standish Group surveys (CHAOS reports)
from www.standishgroup.com
CHAOS Report
2010 Survey Results
Resolution of Projects

- Challenged - 42%
- Succeeded - 37%
- Failed - 21%

## CHAOS Report
### 2008 vs. 1996 Survey Results
#### Resolution of Projects

<table>
<thead>
<tr>
<th></th>
<th>2008</th>
<th>1996</th>
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<tbody>
<tr>
<td>Challenged</td>
<td>44%</td>
<td>33%</td>
</tr>
<tr>
<td>Succeeded</td>
<td>32%</td>
<td>27%</td>
</tr>
<tr>
<td>Failed</td>
<td>24%</td>
<td>40%</td>
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* Source: Chaos Reports – The Standish Group, www.standishgroup.com*
### CHAOS Report


**Survey Results**

<table>
<thead>
<tr>
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<th>2010</th>
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<th>1996</th>
</tr>
</thead>
<tbody>
<tr>
<td>Challenged</td>
<td>42%</td>
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<td>21%</td>
<td>24%</td>
<td>40%</td>
</tr>
</tbody>
</table>

*Source: Chaos Reports – The Standish Group, www.standishgroup.com*
### Reasons for Project Failure

1. Incomplete requirements 13 %
2. Didn’t involve users 12.4 %
3. Insufficient resources/schedule 10.6 %
4. Unrealistic expectations 9.9 %
5. Lack of executive support 9.3 %
6. Changing Requirements 8.7 %
7. Poor Planning 8.1 %
8. Didn’t need it any longer 7.4 %

Top Ten Reasons for Project Success

1. User Involvement
2. Executive Support
3. Clear Business Objectives
4. Scope Optimization
5. Agile Processes
6. Project Management Expertise
7. Financial Management
8. Skilled Resources
9. Formal Methodology
10. Standardized Tools and Infrastructure

Typical Requirements Issues

1. Customers don’t know what they need.
2. Customers don’t communicate their needs effectively.
3. The development team doesn’t understand the customers’ needs.
4. The customers are not involved in requirements definition.
5. There are too many requirements. The customers want too many functions and features in the product.
6. Users have conflicting requirements.
7. “Unavoidable” scope creeps are being allowed.
8. Requirements changes are not controlled (not managed).
9. Requirements activities performed, not implemented as processes.

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Real Requirements

How the customer explained it
How the Project Leader understood it
How the Analyst designed it
How the Programmer wrote it
How the Business Consultant described it

How the project was documented
What operations installed
How the customer was billed
How it was supported
What the customer really needed

Source: http://www.umsl.edu/~sauter/analysis/random_analysis_thoughts.html
The Glass

To the optimist, the glass is half full.
To the pessimist, the glass is half empty.

To the project manager,
the glass is twice as big as it needs to be.

Source: http://www.businessballs.com
Requirements Management Processes in the Project Life Cycle
Requirements Management Processes

Requirements Management (RM) Processes

• Requirements Planning
• Requirements Development
  - Requirements Definition
  - Requirements Gathering and Elicitation
  - Requirements Analysis
• Requirements Verification
• Requirements Change Management
Requirements Management Processes Across the Project Life Cycle

Diagram showing the evolution of project management processes across the project life cycle, including:
- Requirements Planning
- Requirements Development
- Requirements Verifications
- Req. Change Mgmt.

Key milestones and outputs:
- Project Charter
- Project Plan
- RDD
- FSD
- SOW
- Test Plan
- Accepted Deliverables
- Archived Project Documents

Graphical representation showing the progression of project management tasks over time, with arrows indicating the flow of processes from starting the project to finishing the project.
Requirements Management Processes

- Requirements Planning
- Requirements Development
- Requirements Verification
- Requirements Change Management

- Gathering & Elicitation
- Requirements Definition
- Requirements Analysis

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Requirements Management

- Consists of the following Requirements Processes: Requirements Planning, Requirements Development, Requirements Verification, and Requirements Change Management.

- Includes processes in planning, gathering, defining, refining, organizing, prioritizing, documenting, testing requirements, verifying that requirements are being met, and tracking and controlling requirement changes.
Requirements Planning

• Development, review and approval of a Requirements Management Plan
  – Review by all appropriate stakeholders (Customers, Users, Development / Design Team Leads/Managers)
  – Approval by Project Sponsor and Key Customers
Requirements Development

- Requirements Gathering & Elicitation
- Requirements Definition
- Requirements Analysis
Requirements Gathering and Elicitation

- Collect as many **known** requirements as possible
- Clarify, organize, prioritize the information
- Record, document collected information
- Identify stakeholders’ needs and constraints
- Result – common understanding of the users’ **expressed needs**
Requirements Definition

- Organizing, documenting, defining, refining requirements

Glossary
Assumptions & Constraints
Current Process
Proposed Process
Requirements #1
Requirements Definition Document
Requirements Analysis

• Discover unknown requirements
• Uncover users’ needs not expressed earlier
• As early as possible in the project life cycle
Requirements Verification

• Ensuring all stated requirements are being satisfied
• Includes an analysis how the requirements are being addressed in the development plan, and user acceptance testing and validation
• Formal acceptance is required
Requirements Change Management

- Implementing a Change Control Procedure
- Managing implementation of approved change requests

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Requirements Management Processes

Requirements Management

- Requirements Planning
- Requirements Development
- Requirements Verification
- Requirements Change Management

Gathering & Elicitation

Requirements Definition

Requirements Analysis

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Implementing Requirements Management as Processes with defined Inputs, Tools and Techniques, and Outputs
Collect Requirements

Project Scope Management

- Collect Requirements
- Define Scope
- Create WBS
- Verify Scope
- Control Scope

Project Scope Management

- Collect Requirements
- Define Scope
- Create WBS
- Verify Scope
- Control Scope
# Collect Requirements

(New PM Process in *PMBOK® Guide, 4th edition*)

<table>
<thead>
<tr>
<th>Inputs</th>
<th>Tools and Techniques</th>
<th>Outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Project Charter</td>
<td>1. Interviews</td>
<td>1. Requirements documentation</td>
</tr>
<tr>
<td>2. Stakeholders Register</td>
<td>2. Focus Groups</td>
<td>2. Requirements Management Plan</td>
</tr>
<tr>
<td></td>
<td>3. Facilitated Workshops</td>
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<td></td>
<td>4. Group Creativity Techniques</td>
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<td>5. Group Decision Making Techniques</td>
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<td>6. Observations</td>
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<td></td>
<td>7. Questionnaires and Surveys</td>
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<tr>
<td></td>
<td>8. Prototypes</td>
<td>3. Requirements Traceability Matrix</td>
</tr>
</tbody>
</table>

**Tools and Techniques**

- Interviews
- Focus Groups
- Facilitated Workshops
- Group Creativity Techniques
- Group Decision Making Techniques
- Observations
- Questionnaires and Surveys
- Prototypes
Best Practices in Requirements Management
Requirements Management

- Requirements Planning
- Requirements Development
- Requirements Verification
- Requirements Change Management
  - Gathering & Elicitation
  - Requirements Definition
  - Requirements Analysis
Best Practices for Requirements Management

Initiating
1. If necessary, conduct feasibility study; perform make-or-buy analysis.
2. Develop a strong business case for the project.

Planning
1. Develop a Requirements Management Plan (RMP) and a Requirements Definition Document (RDD). Get the documents reviewed and approved by key stakeholders.
2. Define/utilize Requirements Management Processes, (not just Requirements Activities) and conduct process improvement.
3. Identify lessons learned at Project Kick-off meetings.
4. Identify all stakeholder classes and perform stakeholder analysis.

Executing
1. Hire a skilled Requirements Analyst (RA). Train the RA and the development team on customer requirements, the expected product and related systems.
Best Practices (Continued)

Executing
2. Conduct Requirements Workshops (JAD/customer focus groups) when necessary. Provide an effective Facilitator for Requirements Workshops.
3. Develop prototypes and requirements traceability mechanisms to allow requirements baseline review throughout product development.

Monitoring & Control
1. Establish and utilize a Requirements Change Management process.
2. Use effective monitoring and control tools
3. Perform causal analysis of requirements changes
4. Perform Requirements Risk Analysis / Risk Management (at status meetings).
5. Involve users in requirements verification (product verification).

Closing
1. Gather and apply lessons learned and other process assets to new projects.
Effective Requirements Management

1. Define the Requirements Management Processes appropriate for your project, for your organization.
2. Implement Requirements Management as Processes with defined inputs, tools and techniques and outputs, not as activities.
3. Select suitable tools and techniques to support effective implementation of your requirements management processes.
4. Do not let the tool(s) drive the process.
Requirements Management for Agile / Scrum Development
Apply Requirements Management Processes in Agile/Scrum Development

1. Product backlog
2. Prioritizing requirements
3. Requirements planning
4. Iteration/Sprint planning
5. Collaboration with all stakeholders
   • User stories
   • Requirements analysis and verification
   • Communicating and validating requirements
6. Agile requirements definition and management (RDM)
7. Requirements change management throughout the development cycle
8. Requirements cycle
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Questions
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