PROGRAM / PROJECT MANAGEMENT: Effective Requirements Gathering and Management
Presented by: Karen Yvonne Lucas, PMP

PRESENTER

Karen Yvonne Lucas, PMP, has more than 18 years of experience providing senior level guidance, evaluation, analysis and management to clients having mission critical programs and projects with enterprise reaching operational, marketing and systems components. Ms. Lucas has been the Senior Program Management Consultant, Technical Auditor and Senior Project Manager to a number of Fortune 500 Companies (CitiFinancial, Cable & Wireless, Nextel, Amtrak, UUNet, and MCI WorldCom) and large government clients (DHS, DOJ, IRS, FDIC, DLA) for major projects. Most recently she served in this capacity for CitiFinancial and the National Railroad and Passenger Corporation (AMTRAK) where she oversaw $464 Million of the Capital IT Portfolio as the Senior PMO Officer and was responsible for technical analysis, program/project management mentoring, earned value assessment, and bringing projects into compliance toward success. Ms. Lucas is the Sr. IT Program Management Consultant for BAE Systems on the Department of Homeland Security (DHS), Service Operations Program Directorate Contract.

OBJECTIVE

During this session, Ms. Lucas will present a 9 step process for Project Managers to define and manage project requirements. Known as "PRECISION", this process will assist in capturing and controlling requirements throughout the project.

GOALS

- **Present** a high level description of the Requirements Gathering and Management Process.
- **Relate** Common Requirements Gathering and Management Missteps to Real-Life Experiences.
- **Confirm** Requirements and Communicate the Change Process for the same”
- **Investigate** and analyze the relationship between other systems, development efforts, projects, etc. and the program / project’s requirements
- **Scope** Setting/Adjustment of Requirements after gathering, confirmation, investigation and analysis are complete.
- **Identify** “Current Delivery”, “Point Push Delivery”, and “Out of Scope Delivery” from Requirements Investigation & Analysis
- **Organize** Requirements using Tools (such as: RequisitePro, Caliber, Doors) and construct relationships & dependencies using “Traceability Matrices”
- **Notify** Customer, Team, Developer and Program/Project Management relating to Requirements Gathering and Management, Setting Expectations, and Continued Communications.
1. Requirements Gathering & Management occurs only AFTER a project has been authorized by charter.

2. KEY REQUIREMENTS are found in the IDEA phase artifacts.

3. Requirements Gathering and Management is an ITERATIVE process that DOES NOT end at the end of the SDLC Requirements Phase.
GOALS

Relate Common Requirements Gathering and Management Missteps to Real-Life Experiences.

Remember ...

4. Requirements Gathering is an “active receiving” and not an “active dictation or translation”.

5. Sometimes the customer CANNOT CONVEY what is required without elicitation help. Elicitation is you creating questions that will jog their thought process.

6. Requirements Gathering and Management is a “SERVICE” process to the larger solution.
GOALS


Requirements Decomposition: to break down into component parts. For example, ABCD decomposes to AB and CD. AB then decomposes to A and B, and CD decomposes to C and D.

JAD: JAD (Joint Application Development) process where the requirements team, business team, end-user and technical teams come together to develop a solution by means of a series of collaborative workshops (called JAD sessions) progressing into an end-solution with all team’s buy-in. JAD Materials List: White board; Post-It Paper (for Parking Lot, Expectation Management, Rolling Action Items); Multiple Colors of dry erase or permanent markers; Multiple Pads with Pens (to be given to the participants); Conference room with large enough table; Scribe to take notes.

1:1 Interview: to meet with a solution user, stakeholder, developer, owner to derive the system functions, features, abilities, disabilities, and needs in order to form requirements.

Documentation Review: the process by which a reader in each stakeholder groups “actually attends a meeting with other stakeholder representatives to read the document line-by-line, section-by-section, to ensure that all pertinent information is conveyed and related to the parent level objectives. In addition to structure, grammar, etc. – the documentation review will show items like (a) conceptual misunderstandings, (b) incomplete or ambiguous requirements; and/or (c) logical gaps, misunderstandings or needs.

System Process Walk-Through: The process of using and observing the day-to-day use of the system, process, solution being mapped. The Requirements technician will be able to draw on the hands-on viewpoint when crafting relationships and the order of events in requirements.

Uniqueness: requires that no two requirements state the same objective even if used in two separate functions; there must be a commonality – a place where one feature most properly owns the requirement and the other becomes a user of its results. Uniqueness also refers to numbering of requirements and allows for traceability between requirements without misunderstanding.

Parent-Child Relationships: The parent is the highest level requirement and the child is the lowest. Parent requirements draw from the project objectives and are communicated in the Vision and Concept of Operations Documents.

Tools & Schema Importance: Tools in requirements gathering and management can make the Requirements Manager’s job easier or harder depending on the objective. As in home improvement, choose the right tool for the right job without overkill. If the project does not require tie-in to large systems and efforts, a full implementation of DOORS, CALIBER or REQUISITE PRO may be well out of order. Similarly, an enterprise development project should use an enterprise requirements tool such as DOORS, CALIBER or REQUISITE PRO for everything from logging requirements, to identifying common attributes to creating test plans, use cases and scenarios.
GOALS

Confirm Requirements and Communicate the Change Process for the same

Perhaps the most important communication plan component is that relating to Requirements Management and the changes that may be made to requirements. The ability to communicate effectively the requirement, its negotiation, its delivery and its use is tantamount to gold in successful solution development. Communicating Requirements and their changes is “gold” because it helps to contain the time, money, resources, and expectations. The Requirements Manager then is responsible for the 2nd most important aspect of the project’s delivery – but it comes 1st, making it nearly as important as the solution itself until that solution is seen and used.

Validation Meetings

Requirements Documents

Project Management Information System (PMIS) &/or Requirements Management System

Diagram Meetings

JAD Session

Requirements Traceability – Parent / Child Relationships

Team Meeting

Project Portal

E-Mail

Remember …

8. If the solution is the heart itself, the requirements are the blood circulating through to make it pump.

9. Multiple Methods of Communication can help or hinder your success – carefully choose which to use; then, use them with routine, consistently and without change until the solution is complete.
**GOALS**

**Investigate** and analyze the relationship between other systems, development efforts, projects, etc. and the program / project’s requirements

The process of “investigation” has six key steps:

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Review all available material on the desired solution and the solution(s) in place (if any).</td>
</tr>
<tr>
<td>2</td>
<td>Determine the current processes, systems, paths, exceptions, data, rules, etc. for the solution to be developed. Map these items in written and diagram format so that they can be used in more than one manner toward the solution.</td>
</tr>
<tr>
<td>3</td>
<td>Determine all systems that will be touched as it “moves forward” – then – see if there is an impact to how that process, system, path, exception, data, rule, etc. currently works.</td>
</tr>
<tr>
<td>4</td>
<td>Determine all systems that will be touched as it “sends backward” – then – see if there is an impact to how that process, system, path, exception, data, rule etc. currently works and/or receives.</td>
</tr>
<tr>
<td>5</td>
<td>Identify all ownership parties to each system mapped in steps 1, 2 and 3 above – then – determine if they can see any additional system, process, path, exception, data, rule etc. impacts.</td>
</tr>
<tr>
<td>6</td>
<td>Create a relationship hierarchy, place items on the “risk register” where the results of the investigation indicate that there is an unresolved matter, and discovery document.</td>
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**Remember ...**

10. **Investigation** is the process of inquiring into a matter through research, follow-up, study, or formal procedure of discovery.

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**GOALS**

**Scope** Setting/Adjustment of Requirements after gathering, confirmation, investigation and analysis are complete.

Once a clear picture is available for the requirements requested, the following must be occur:

- Determine which requirements are most logical to include together,
- Advise the Program/Project Manager, Development Manager, and other persons on the Communications Plan of the same.

**NOTE:** A more senior Requirements Manager may also be able to also identify functional releases and negotiate their schedule with the business owner / stakeholders to the benefit of the project and the solution.

The Program / Project Manager is to be keenly aware and vigilant re:

- “new requirements”
- “changing requirements”
- “clarified requirements”
- “gold plating”

Inevitably, the requirements come to a point when they should stop evolving. However, requirements and solutions based upon supply-and-demand do not often have this luxury. While requirements elicitation and management are “iterative” and “continuous” – the program / project manager must communicate a drop date for requirements coming into consideration for the solution. At the same time, the program / project manager must constantly keep the new requirement door open to listen to needs and potential solutions. If the end solution is completed on-time, within budget, and with adequate resources – yet does not satisfy the need of the intended client any longer due to growth in a new direction – she or he has done a disservice to the solution by not maintaining an open ear to the issues.
GOALS

**Identify** “Current Delivery”, “Point Push Delivery”, and “Out of Scope Delivery” from Requirements Investigation & Analysis

The next natural phase to move to in requirements is the identification of deliveries associated with the gathered and validated requirements. Customarily there are more requirements that the current budget, time or resource allocation will allow. When this occurs, the Program/Project Manager should make full use of the information found in the Requirements Investigation and Analysis to determine if a requirement can be one of the following:

<table>
<thead>
<tr>
<th>Achieved in the Current Delivery</th>
<th>Achieved in a Point Push Delivery After the Current Delivery</th>
<th>Is Out of Scope for Delivery</th>
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</thead>
<tbody>
<tr>
<td>These requirements are those that were planned, are properly documented and decomposed, relate to existing &amp;/or planned systems in development, and for which no outstanding functional or non-functional, system interface, and data questions exist.</td>
<td>These requirements are those that were: (1) Planned but experienced issues during test so that they could not be integrated in the final solution “on time” but with further remedy they can be pushed out shortly after the delivery date. (2) Not planned but necessary to the proper function of planned requirements.</td>
<td>These requirements are those that were: (1) Not originally requested. (2) Belong to another entity or agency not under current authority. (3) Not properly documented in diagram, design, work artifact or any other reasons – for which the solution could not have included each.</td>
</tr>
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13. **Remember …**
   - Current Delivery and Point Push Delivery assumes that strong Release Management is in place as well as “flexible development” which lend itself to having room for both Waterfall and Iterative XP.
**GOALS**

**Organize** Requirements using Tools (such as: RequisitePro, Caliber, Doors) and construct relationships & dependencies using “Traceability Matrices”.

Organization of requirements, change management for the same, and speed to reference is central to Requirements management. Enterprise tools are available which allow for the entry, categorization, relationship and extensibility to requirements so that the solution’s success is almost guaranteed by any team who uses and develops to the consistent and repeatable methods. Leading tools include: RequisitePro, DOORS and Caliber. Each is equally useful in knowledgeable hands.

Program and Project Managers should insist on the following in the setup of requirements using these tools:

1. Common Attributes
2. Unique Numbering
3. Upload of Supplemental / Clarifying Documents as attachments to the requirement.
4. Parent & Child Relationship for all requirements.
5. Requirements Traceability Matrix
6. Tie-In from Requirements Analysis & Diagramming Tool
7. Tie-In from Requirements Tool to Testing Tool
8. Tie-In from Requirements Tool to Release Tool

Remember ...

14. Get your requirements manager trained on the tool chosen to be used. It can be leveraged when more or larger programs/projects come aboard.
GOALS

**Notify** Customer, Team, Developer and Program/Project Management relating to Requirements Gathering and Management, Setting Expectations, and Continued Communications.

\[ n(n-1)/2 \]

When making changes to your requirements and setting expectation for the same – **continued communications is critical**. Slide 6 speaks to choosing a method and being consistent with the methods chosen. Slide 12 speaks to identifying where communication is needed based on the size of the project team. The below table represents the number project team members and illustrates communication paths needed to properly manage expectations.

<table>
<thead>
<tr>
<th>Potential Communication Paths for Program/Project Managers when changes occur to requirements:</th>
<th>N(N-1)/2</th>
<th>(1) PM ⇒ REQ</th>
<th>(2) PM ⇒ DEV</th>
<th>(3) PM ⇒ BUS</th>
<th>(4) PM ⇒ MKTG</th>
<th>(5) MKTG ⇒ DEV</th>
<th>(6) MKTG ⇒ REQ</th>
<th>(7) MKTG ⇒ BUS</th>
<th>(8) REQ ⇒ DEV</th>
<th>(9) REQ ⇒ BUS</th>
<th>(10) DEV ⇒ BUS</th>
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<tbody>
<tr>
<td>Roles In Program = 5</td>
<td>5(5-1)/2</td>
<td>5(4)/2</td>
<td>20/2 = 10</td>
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<tr>
<td>• Project Manager</td>
<td>• Requirements Analyst</td>
<td>• Developer</td>
<td>• Business Stakeholder</td>
<td>• Marketing Person</td>
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