Reengineering the Acquisition/Procurement Process: Requirements Collection Methodology

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California Institute of Technology

and

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• Project Methodology
• Requirements Collection
  – Customer Sessions
  – Customer Voting
  – Stakeholder and Process Performer Sessions
• Preliminary Benchmarking
• Quick Hits
• Where are we Now?
Major improvement can come about through a single paradigm change, or by a combination of smaller but important changes.

**Gather requirements**
- Customers, stakeholders, process performers (you!), and suppliers

**Assess current state of the process**
- What & how we do it now

**Benchmark**
- Best practices

**Future State**
- What & how we should do it

**Near-term and Long-term**
- Identify “quick hits” & long-term actions

**Agreement**
- Obtain agreement & implement the agreement
Methodology: Project Plan

- Each phase has required products and independent reviews

- Phase A: Concept Studies/Development
  - Validate Customers, Stakeholders, and Process Performers
  - Requirements; Concept; Prelim. Concept of Operations; Prelim. Project Plan
  - Concept Review

- Phase B: Preliminary Design
  - Requirements (baseline); Prelim. Design; Concept of Operations; Project Plan; Integrated Baseline (tech-sched-cost)
  - Pre-PDR peer reviews; PDR; Confirmation Review

- Phase C: Final Design & Build

- Phase D: System Assembly, I&T, and Launch

- Phase E: Operations & Sustainment
Acquisition Reengineering Activity 1: Gather Customer Requirements

• Activity 1 - Requirements Generation
  – Objective: to capture customer requirements as the basis for proposing a concept (and subsequent design) that meets the requirements in a verifiable manner
  – Requirements are solicited from:
    • Customers – primary customers are Project Managers and Proposal Managers
    • Stakeholders – we have a long list (e.g., Legal, Property, Invoice Management, Engineering and SMA management…)
    • Process Performers – buyers, negotiators, Contract Technical Managers (primary), others
  – Employ a modified version of the JPL Resource Management System technique
  – Products include preliminary requirements set & recommended “quick hits” (Lean Six Sigma Kaizen events and Just-Do-Its) for implementation
  – Establish JPL acquisition process definition
• Requirements collection & analysis tools
• Customer/stakeholder/process performer groups identified
• Collection sessions technique(s) mapped out
• Session pre-work conducted prior to each session

Requirements Collection Method

1. Identify requirements collection & analysis tools
2. Create requirements collection tool
3. Identify customer/stakeholder/process performer groups
4. Map out collection sessions technique(s)
5. Perform sessions pre-work

Sampling of requirement fields
- Source Name
- Source Type, e.g., Project Manager
- Requirement statement
- Requirement rationale
- Requirement impact
- Requirement source
- Mandatory?
- Top Five?
<table>
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<td>15-Apr</td>
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<td>TOTAL</td>
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<td>210</td>
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Customer Voting

Summary
• Following the Customer sessions, performed preliminary data analysis, identified the most commonly voiced/most impactful ideas, and prepared an electronic ballot for Customer voting.
• 51% of customers who attended the Customer Sessions responded.
• Customers were asked to
  (1) make choices from a list of 40 items based on importance (Not Important at all, Fairly Important, Very Important) and
  (2) respond with the Top 5 items from the list by typing the number of his/her selections in an input box.

General
• Email with link to ballot was sent to customers on the morning of Monday, May 17
• Eligible voters: 224
• How many have voted: 115
• Voting complete: May 25

Sample
• Customer voting is one data point — but a very important one.
  – The customer voting process proved to be an excellent communication/feedback mechanism for the customers: they felt they were heard.
  – It also proved to be a useful educational vehicle for the Acquisition Division process performers who attended the sessions.

• Voting analysis focused on five “cuts” at the data:
  1. Those items receiving the largest number of “5” ratings
    • Ten items received 35 or more votes in this range, which means that at least 30% of those who voted rated them the most important (despite some voters finding the item not applicable to them).
  2. Those items receiving the largest number of combined “4” and “5” ratings.
    • Thirteen items received 50 or more votes in this range, which means at least 44% of those who voted rated them high (despite some voters finding the item not applicable).
  3. Those items receiving the largest number of “Top Five” designations.
  4. Those items specific to Commodities receiving high ratings.
  5. Those items specific to Subcontracts/Bypass receiving high ratings.
From: Taylor, Randall L (2680)
Sent: Monday, May 17, 2010 9:03 AM
To: Vanek, Tom (2600-Affiliate); Taylor, Randall L (2680)
Subject: Here's your CUSTOMER BALLOT for Acquisition Reengineering -- Vote Now!
Importance: High

Thank you again for participating in the Acquisition Reengineering Project customer requirements sessions. We held 24 customer sessions, with 224 persons participating.

We have analyzed the hundreds of brainstorming points that were generated. We've identified the suggestions that were most frequently heard and/or seem most likely to make a significant difference in acquisition/procurement process effectiveness and efficiency. These are included in your Customer Ballot (instructions below).

Voting should take you about 20 minutes. There are 40 items for you to rate in terms of importance to you. You do not need to provide a rating to every question. When you finish the ratings, you can indicate the items that represent your “Top Five” priorities.

Please note that we are still in the data-gathering phase. Just because an item receives the most votes does not guarantee that we will be able to implement it. We are collecting ideas from administrative divisions, stakeholders, and process performers as well as doing some preliminary benchmarking of process best practices. As explained at the sessions, our plan is to review your voting and this other data, identify near- and medium-term improvement tasks (and the resources required), and come back with a proposed improvement plan.


Important Note: When clicking the link to the ballot, you may be requested for your JPL username and password. If prompted, please enter your Username in this format: JPLusername. Your responses will be kept confidential. We are requesting you to input your username and password since we are only allowing those that have participated in our customer sessions to access the ballot. If you have any trouble accessing the ballot, or have technical issues please contact Tom Vanek at tvanek@jpl.nasa.gov.

Randy
The following are the items rated a 5 on the scale ranging from 1: Not important at all to 5: Very important.

<table>
<thead>
<tr>
<th>Priorities</th>
<th>Vote count of 5s only</th>
<th>PCT</th>
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</thead>
<tbody>
<tr>
<td>Reduce the time it takes to place a procurement (#1).</td>
<td>62</td>
<td>53.9%</td>
</tr>
<tr>
<td>The status of my procurement should always be visible to know where my item is, or if any problems or issues arise (#8).</td>
<td>54</td>
<td>47%</td>
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<tr>
<td>Have a capability to handle emergency procurements (#16).</td>
<td>44</td>
<td>38.2%</td>
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<td>Acquisition personnel need to understand the impact to our project/task/year-end schedule when we have a delay in an item purchased (#4).</td>
<td>44</td>
<td>38.2%</td>
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<tr>
<td>Provide us a single point of contact in Acquisition &amp; interact with us early (#10).</td>
<td>37</td>
<td>32.2%</td>
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</table>

The following are the items rated either 4 or 5 on the scale ranging from 1: Not important at all to 5: Very important.

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<tr>
<th>Priorities</th>
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<th>PCT</th>
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<td>The status of my procurement should always be visible to know where my item is, or if any problems or issues arise (#8).</td>
<td>79</td>
<td>68.7%</td>
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<td>Reduce the time it takes to place a procurement (#1).</td>
<td>75</td>
<td>65.2%</td>
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<td>Have a capability to handle emergency procurements (#16).</td>
<td>69</td>
<td>60%</td>
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<tr>
<td>Acquisition personnel need to understand the impact to our project/task/year-end schedule when we have a delay in an item purchased (#4).</td>
<td>62</td>
<td>53.9%</td>
</tr>
<tr>
<td>Provide ordering and tracking tools that are user friendly (#19).</td>
<td>62</td>
<td>53.9%</td>
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## Administrative Divisions/Stakeholder Sessions

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<td>2</td>
<td>Office of Protective Services</td>
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<td>8</td>
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### Process Performer Sessions

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<td>4</td>
<td>Rapid Procurement SCMs</td>
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<td>5</td>
<td>PO SCMs</td>
<td>262</td>
<td>14</td>
<td>20-May</td>
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<tr>
<td>6</td>
<td>Cost Analysts</td>
<td>263</td>
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<td>28-May</td>
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<td>7</td>
<td>University SCMs</td>
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<td>8</td>
<td>Support Services &amp; Construction SCMs</td>
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<td><strong>TOTAL</strong></td>
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<td>105</td>
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Objective: To identify key acquisition/procurement major process improvement areas that might not surface from the requirements collection sessions, but have been previously done by other Acquisition initiatives.

Methodology:
- Literature search, by Booz Allen Hamilton and by JPL, plus review of relevant Acquisition Div. activities.

Reviewed the following Division activities:
- Division Strategic Plan — BAH compared project Preliminary Requirements to the Strategic Plan
- Idea Summits — BAH compared project Preliminary Requirements to the collected ideas
- R2C — JPL reviewed scope of potential Oracle Advanced Purchasing Suite implementation against the Project Plan
- KPIs — BAH compared project Preliminary Requirements to the proposed Key Performance Indicators

Benchmarking resulted in some changes to the Preliminary Requirements (and ideas for Quick Hits and Phase A2/3 study)
Preliminary Requirements

• Objective of preliminary requirements: to serve as the basis for conducting Phase A2/3 conceptual design and targeted benchmarking; also provides a resource to identify Quick Hits for management.

• Methodology
  – Reviewed brainstorming ideas from customers, stakeholders, and process performers
  – Reviewed ballot results
  – Reviewed BAH & JPL benchmarking materials
    • Turned the most popular and/or most promising ideas into preliminary requirements
    • Added a small number of constraints that the new process must comply with

• BAH tested the draft preliminary requirements set against the Division Strategic Plan (goals and actions) and against the Idea Summits brainstorming ideas
  – Results were very good (not identical) alignment.
“Quick Hits” are process improvement ideas that meet the following criteria:
- They have clear value to customers (primarily), stakeholders, and process performers
- They are properly sized to be implemented within 6 months or less (Kaizen-sized or smaller)
- They do not require any programming by Institutional IT
- The necessary resources are available and fit within the Acquisition Division budget (or possible small augmentation)
- Their implementation is not expected to introduce impediments to the broader process reengineering effort

An improvement opportunity that requires more study, or otherwise does not meet the above criteria, would be included in the Phase A/B reengineering activity.

Quick Hits may be implemented in several ways, e.g.:
- Just Do It
- Facilitated focus group
- Acquisition mini-team
- Kaizen event

The list of recommended Quick Hits is a menu for management to choose from. They can be implemented in any order. Apart from Just Do It items, prudence dictates embarking on a maximum of 3 Quick Hits per quarter (to ensure adequate oversight and synergistic coordination with other activities as well as to put less strain on the budget).
Where Are We Now?

- Completed purchase requisition sub-process reengineering (11 “enablers” all operational)
- Completed Standard Subcontract Data Requirements (SDRL/DRDs) (official in command media)
- Received ATP for two Quick Hits
  - Control points sub-process
  - Communication norms
- Initiated planning for Advanced (Targeted) Benchmarking activity
Summary

- Completed 44 requirements collection sessions with 391 persons, representing customers, stakeholders, and process performers

- Conducted customer voting with a 51% response rate

- Performed preliminary benchmarking

- Generated process Preliminary Requirements to guide new process conceptual design

- Provided recommended Quick Hits for management consideration

- Refined the plan for conceptual design phase

—Additional information is available in IEEE paper, “Reengineering the Acquisition/Procurement Process: A Methodology for Requirements Collection” (available from the authors)