Building a Cost Effective Portfolio Management System…Yes You Can!

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Jet Propulsion Laboratory,
California Institute of Technology

NASA PM Challenge
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We are JPL’s OCIO

Support the Laboratory in meeting its goals

Infuse the right technologies at the right time

Offer compelling service alternatives

Serve the diverse IT needs of JPL
In today’s IT world, tracking multiple projects of varying sizes, complexity, and schedules is a big challenge.
As Project Managers, you need to track and coordinate multiple project lifecycles from Inception to Rollout
Managing a Project portfolio using paper-based or manual methods is inefficient
Automating a Project Portfolio streamlines lifecycle processes
Key Points

OCIO needed visibility into all IT projects

Implementing BuildIT has kept Projects on track

We’ve only just begun
OCIO needed visibility into all IT Projects

How many IT projects are going on right now?

Are projects on time?

What is the true cost for project deliveries?

How can we help?
“Before we had BuildIT, it was almost impossible to know the status of all of the projects we were working on. A week after BuildIT went Live, we knew we had 35 active projects and we knew which ones needed help.”

-Michael Stefanini, JUMP Process Owner, Section Manager of IT Project Management and Application Development
A Standard Process was Established
OCIO Process Derived from RUP and tailored to JPL Needs

- Inception
  - Project Vision & Scope
  - Major Features
  - High Level Budget & Schedule

- Elaboration
  - Software Requirements & Business Processes
  - Project Plan

- Construction
  - Implementation Plan
  - Training Development
  - Test Plans

- Transition
  - Lessons Learned
  - Deployment Configuration
Phase Reviews Provide the Mechanism to Control the Process

Checklists and Artifacts are Completed

Commitment from responsible team members and interfaces

Align projects with the organization’s directive and enforce policies
Scorecards Provide Objective Approval and Commitment

Scorecards are what count!

Elaboration Review

<table>
<thead>
<tr>
<th>Reviewer Name</th>
<th>Project Title</th>
<th>Review Date</th>
</tr>
</thead>
</table>

*An Evaluation of a “1” or “2” requires specific directions in the Notes field*

<table>
<thead>
<tr>
<th>5 – Domain Architect</th>
<th>Evaluation</th>
<th>Waived</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Questions to Answer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.1. The Project Plan documents Implementation, Support, Operations, High-level Solution Architecture, Solutions, Justifications, Schedules, Budgets, and Risks that I intend to support. <strong>Required</strong></td>
<td>□1 □2 □3 □4</td>
<td>□</td>
<td></td>
</tr>
<tr>
<td>5.2. The System Requirements Document (SRD) describes functional and non-functional testable requirements that are thoroughly and clearly defined. <strong>Required</strong></td>
<td>□1 □2 □3 □4</td>
<td>□</td>
<td></td>
</tr>
<tr>
<td>5.3. The CASB Checklist for Architecture Approval of IT Projects has been completed, including both Inception Phase and Elaboration Phase criteria. <strong>Required</strong></td>
<td>□1 □2 □3 □4</td>
<td>□</td>
<td></td>
</tr>
<tr>
<td>5.4. A High-level Solution Architecture has been provided. <strong>Required</strong></td>
<td>□1 □2 □3 □4</td>
<td>□</td>
<td></td>
</tr>
<tr>
<td>5.5. Related possible Architecture Concepts Reuse has been presented and the Project is leveraging existing architectures and/or applications to the extent feasible.</td>
<td>□1 □2 □3 □4 □N/A</td>
<td>□</td>
<td></td>
</tr>
<tr>
<td>5.6. The Architecture is traceable to requirements.</td>
<td>□1 □2 □3 □4 □N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.7. The solution selected and the Architectures that will be used are good choices and will enable us to meet the sponsor’s goals.</td>
<td>□1 □2 □3 □4 □N/A</td>
<td>□</td>
<td></td>
</tr>
<tr>
<td>5.8. The solution selected and the Technologies that will be used are good choices and will enable us to meet the sponsor’s goals.</td>
<td>□1 □2 □3 □4 □N/A</td>
<td>□</td>
<td></td>
</tr>
<tr>
<td>5.9. Do you recommend this Project go through a Delta Review</td>
<td>□Yes □No</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Other Observations**

5.10. Additional Comments. **Add any Additional Comments here**
A Project Portfolio Management System was Born
BuildIT was Built on an Internal Platform Enabling Re-Use
Key Capabilities were Based on PMI & ITIL Recommendations
Project Managers and Team Members Speak the Same Language

- Need to teach the vocabulary behind the process
- Must practice effective Change Management
- Standard terminology is used and artifacts are consistent
What are any major new issues and what are you doing about it?

Are there any action items or milestones due or overdue?

What are your next steps for the next reporting period?
Tracking Mechanisms Enable Weekly Status Reporting

- **Variance**
  - What goals were not achieved? Has your plan been impacted? Did you achieve early successes? How is the actual project differing from the plan and what impact does that have?

- **Get Well Plan**
  - How do you intend to deal with the variance? What is your plan to recover slippage? How will you deal with the consequences or benefits of the deviation?
## Standard Project Sites Organize Project Artifacts

### Status Title
TeamCenter Enterprise 4.0, 2007 Upgrade

### Technical Status
Green

### Technical Status Text
Transition Review was conducted on July 28. Project artifacts have been posted on JUMP project site. Team has transitioned to operational mode. Upgrade to TCE09 is under analysis and scheduled to start in FY12.

### Resource Status
Green

### Resource Status Text
Transition Review was conducted on July 28. Project artifacts have been posted on JUMP project site. Team has transitioned to operational mode. Upgrade to TCE09 is under analysis and scheduled to start in FY12.

### Schedule Status
Green

### Schedule Status Text
Transition Review was conducted on July 28. Project artifacts have been posted on JUMP project site. Team has transitioned to operational mode. Upgrade to TCE09 is under analysis and scheduled to start in FY12.

### Start Date
11/3/2008

### Inception End Date
1/23/2009

### Elaboration End Date
4/2/2009

### Construction End Date
3/31/2011

### Transition End Date
5/23/2011

### Rollout Date
5/6/2011

### Overall Project Status
Green

### Near Term Goal
Transition team from upgrade to normal operational mode.

### Current Delivery Status

### Variance

### Get Well Plan

### Next Steps?

### MMR Date
12/9/2010

### Scope Status
Green

### Scope Status Text
Transition Review was conducted on July 28. Project artifacts have been posted on JUMP project site. Team has transitioned to operational mode. Upgrade to TCE09 is under analysis and scheduled to start in FY12.

### Description
Transition Review was conducted on July 28. Project artifacts have been posted on JUMP project site. Team has transitioned to operational mode. Upgrade to TCE09 is under analysis and scheduled to start in FY12.
The Anatomy of BuildIT has Numerous Features that all Integrate Effectively

<table>
<thead>
<tr>
<th>Topic</th>
<th>TCE ORR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review ID</td>
<td></td>
</tr>
<tr>
<td>Submitted by</td>
<td>Van Why, Richard W (1731)</td>
</tr>
<tr>
<td>Submitter's Affiliation</td>
<td>173</td>
</tr>
<tr>
<td>Origination Date</td>
<td>4/26/2011</td>
</tr>
<tr>
<td>RFA Type</td>
<td>Suggestion</td>
</tr>
<tr>
<td>Slide/Reference</td>
<td>Alert Notification</td>
</tr>
<tr>
<td>Statement of Concern</td>
<td>Alerts for Issues need to also go to 173 Bradley folks. Right now it only goes to PDMS. Also re-evaluate monitoring. Is Net IQ enough?</td>
</tr>
<tr>
<td>Recommended Action</td>
<td>Figure out alert escalation process. Discuss with Jonathan Chiang and SA’s. Make sure there are no deltas. Need to determine that the app level monitoring.</td>
</tr>
<tr>
<td>Assigned To</td>
<td>Tung, Lenny (172J)</td>
</tr>
<tr>
<td>Due Date</td>
<td>5/10/2011</td>
</tr>
<tr>
<td>Disposition</td>
<td>Submitted</td>
</tr>
<tr>
<td>Disposition Rational / Response</td>
<td>PDMS Support Escalation process is as follows: Alerts are going out to both 173 and 172 SA’s. On the 172 side, the PDMS411 distribution list will be utilized for the automated mass notification. The 172 SA’s, David Tan on the front-end and Huyen Duong on the middle-tier and backend, will be the escalation owners. They will make the initial analysis and determination of the escalation path. If infrastructure assistance is needed, they will be in charge of notifying 173 Operation Lead, Josh Steinwald, who will act as the single point of contact for PDMS requests. If application assistance is needed, they will be in charge of notifying PDMS development - Bakul Lalla is the dev lead. The NetIQ basic monitoring has been turned on for PDMS production servers. More targeted monitoring will be engineered to expand the monitoring capabilities -- still under evaluation.</td>
</tr>
</tbody>
</table>

Tools are provided to gather ideas, brainstorm, document RFA’s and meet checklist items
BuildIT Tools: Risk List

- Catalog and Track all identified project risks and mitigations.
- All standard risk information are tracked on the BuildIT Project site.
BuildIT Tools: Document Tracking

- Track and Control Project Documentation
- Directory Structure consistent across all sites
- Integrates with Office Applications
- Full workflow and reporting capability
# BuildIT Tools: Technology Positions

**Technology**  
.NET Framework

**POC**  
Hahn, DarrylC (1723) 🍊

**SME**  
David Butler, John Chou, Evan Chan, Johnny Yu, Neal Patel, Alina Shahnazari

**Parent Tech.**

**Description**

The **Microsoft .NET Framework** is a software framework that can be installed on computers running Microsoft Windows operating systems. It includes a large library of coded solutions to prevent common programming problems and a virtual machine that manages the execution of programs written specifically for the framework. The .NET Framework is a key Microsoft offering and is intended to be used by most new applications created for the Windows platform.

The framework’s Base Class Library provides a large range of features including user interface, data and data access, database connectivity, cryptography, web application development, numeric algorithms, and network communications. The class library is used by programmers, who combine it with their own code to produce applications.

Programs written for the .NET Framework execute in a software environment that manages the program’s runtime requirements. Also part of the .NET Framework, this runtime environment is known as the Common Language Runtime (CLR). The CLR provides the appearance of an application virtual machine so that programmers need not consider the capabilities of the specific CPU that will execute the program. The CLR also provides other important services such as security, memory management, and exception handling. The class library and the CLR together constitute the .NET Framework.


**Status**  
Core

**Position Detail**  
.NET Framework is an industry accepted solution that has been implemented heavily in the OCIO’s software application solutions.

**Acceptable Use**  
Use for GUI implementation, middle tier, web based projects, windows desktop applications, business logic, and SOA integration efforts.
The Inception Plan was the First Automated Online Form
User Experience Group Reviews all Applications and Web Sites

(previous text)

UX TEAM TIP OF THE WEEK

There are several issues related to text characteristics that can help ensure a Web site communicates effectively with users:

- Use familiar fonts that are at least 12-points
- Use black text on plain, high-contrast background
- Use background colors to help users understand the grouping of related information

Even though it is important to ensure visual consistency, steps should be taken to emphasize important text. Commonly used headings should be formatted consistently, and attention-attracting features, such as animation, should be used when appropriate.

Best Practices

UX Rules and Recommendations

These are subject to change. However, there will be a notification if any changes are made.

Mandatory:

- Terminology
  - Must use consistent navigational, contextual, and graphical labeling within application (and across OCIO)

- Navigational Elements
  - Navigational items must be constantly placed, exits clearly labeled, current location discernible, and presented in a logical and intuitive order

- Help
  - Help materials must be easily recognizable.
    - Recommended Placement - Top Right, Bottom Center
      - At least, Level I Help Desk also

- Point of Contact Link
  - Point of Contact information link must be easily recognizable
  - Recommended Placement - Top Right, Bottom Center
    - Business Project Lead contact information
Training Materials are Integrated into BuildIT
Implementing BuildIT has kept Projects on Track
Upper Management Support was Crucial to Establishing BuildIT Adoption
CIO Required that All Projects be Registered on the Development Pipeline
Establish a Process and BuildIT Coordinator

- Walk the users through the tool
- Expedite the JUMP Process
- Audit projects for compliance

Full Project and Process Support
Resistance is Futile – You Will be Assimilated
False Assumptions were made that BuildIT takes longer for the Project Lifecycle

- Metrics were captured to find out the duration that it took for each phase to be completed
- A case study was also performed to determine the amount of time and budget spent using BuildIT
Visual Metrics Reporting Gives Management the Big Picture
Upper Management Gains Visibility into the Overall Project Portfolio
BuildIT Site is Accessible to Management
We’ve Accomplished a lot in 5 years
Our Main Goals Were Achieved

- Pipeline, weekly status updates, and metrics tools were developed
- Roles, responsibilities, and technology position statements were defined
- UX Experience working group established
- Automated first online form

Accomplishments
How Do We Know We’ve Been Successful?
BuildIT Feedback for Continuous Improvement

- Performed ongoing assessments with users
- Developed specialized Affinity Groups
- Provide upper management with meaningful metrics
We’ve Only Just Begun
A Re-BuildIT Plan is in the Works
We Would Like to Convert all Word Templates to Online Forms

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**Success Criteria**

**Click here to see examples**

Research is conducted to evaluate current Commercial Off The Shelf offerings that offer similar capability/functionality.

An evaluation of the capabilities is performed on the 172G VM provisioning system to understand if it can meet the requirements for this project.

A prototype provisioning system is procured or developed and its capabilities are demonstrated to key stakeholders within the OCIO.

**Risks and Mitigations**

**Click here to see examples**

<table>
<thead>
<tr>
<th>Risk</th>
<th>Probability</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resources – required expertise from Remedy/SharePoint/UCS currently allocated to other projects</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Time needed to understand AWS/VPC APIs/scripts</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Schedule – End of FY proposed delivery may result in insufficient QA</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Customer Adoption Issues</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>
Integration with MS Project will make a Master Rollup of all Projects more Visible
Summary

OCIO needed visibility into all IT projects
Implementing BuildIT has kept Projects on track
We’ve only just begun
Thank You