Pushing a Big Rock Up a Steep Hill: Acquisition Lessons Learned From DoD Applications Storefront

Morris, Michael
“Pushing a Big Rock Up a Steep Hill”:
Acquisition Lessons Learned From DoD Applications Storefront

Acquisition Research: Creating Synergy for Informed Change

Mr. Michael Morris
SPAWAR Systems Center Pacific
14 May 2014
Agenda

- Introduction
- Problems with the Defense Acquisition System
  - The Current Process
  - Industry Approach
- Overview of Recommended Solution
- Ozone Widget Framework
- Widgets in Action
- DOD Storefront and PEO C4I Marketplace Overview
- Widget Governance Process
- Conclusion
Industry has already fine-tuned its use of widgets and mobile applications

- Rapidly evolving software development paradigm
- A driving force in delivery of web-based dynamic content

Using standard acquisition processes in DOD, by the time new solutions are deployed to the warfighter, the technology is obsolete

Several programs within the DOD have started similar initiatives that hold the promise of reducing the “heavy lifting” required as part of the current acquisition process
What is a Widget?

- Lightweight
- Single-purpose
- User configured
- Web-enabled application
- Provides summary information or a limited view into a larger application
- Also used alongside related widgets to provide an integrated view
Defense Acquisition System Challenges

- Defense Acquisition System was designed to purchase “big ticket” items like aircraft carriers and fighter planes

- Excessive development and update cycles
  - Private sector cycles are 12 - 18 months
  - Defense IT systems routinely require 48 - 60 months

Average Build Time: 7+ years
Average Build Time: 18 mos.
Joint Capabilities Integration and Development System (JCIDS) Process Flow Chart

Capability Requirement Identification (including planning, studies, and other activities)

**OVERVIEW**

- **Enclosure A:** Capability Requirement Identification (Operational Planning or Other Studies/Activities)
- **Enclosure B:** Document Generation (ICDs, PC/PDs, CDDs, CPDs, Joint DCRs, UOMs/UOAs/LEOs)
- **Enclosure C:** Document Submission, Gatekeeping, and Process Metrics
- **Enclosure D:** Deliberate Requirements Validation Process (ICDs, PC/PDs, CDDs, CPDs, Joint DCRs)
- **Enclosure E:** Urgent Requirements Validation Process (UOMs/UOAs/LEOs)

**Enclosure F, Para 1:** Joint DCR Implementation
- Validated urgent requirement?
  - Yes: Transition enduring requirement?
    - Yes: Need successor documents (CDD/CPD/note DCR)?
      - Yes: END
      - No: END
    - No: END
  - No: Response as deliberate requirement?
    - Yes: END
    - No: END

**Enclosure F, Para 2 (Nominal Process):** Interaction with Deliberate Acquisition Process
- Validated deliberate requirement?
  - Yes: END
  - No: END

**Enclosure F, Para 2 (Process Variation):** Interaction with Rapid Acquisition Process
- Transition enduring requirement?
  - Yes: END
  - No: END

Related Guidance Information:
- **Enclosure F, Para 3:** Interaction of Requirements in Other Processes
- **Enclosure G:** Joint Prioritization
- **Enclosure H:** Requirements Management Certification Training
Industry Approach

Current acquisition rules required for POR systems have caused a major gap between the technology available to the warfighter and that which is available commercially.

- Exacerbated by capabilities of smartphones and tablet computers.
- Greater gap for younger service members raised on commercial technologies and then forced to use outdated systems.

Apple and Google are both known for their mobile operating systems and the applications (or “apps”) that run on them.

- Both companies have “app” stores that allow developers to rapidly deploy applications, but they do so in very different ways.
Overview of Recommended Solution

- A lightweight web application test and integration (T&I) environment
  - Needed to model, test, exercise, and perform certification and accreditation of widget capabilities

- A Widget T&I environment is required for widget technology development throughout the DOD

- A widget T&I environment is needed that incorporates the unique and common aspects of Navy widget environments
PEO C4I Storefront

Vision

- Warfighters access all C4I capabilities via a single, browser-based C4I Storefront
  - Widgets
  - Applications
  - Updates / Patches

- Common PoR processes and a standard mechanism for deployment

- Positive control and visibility into the C4I systems and version available on the network
PEO C4I Storefront
Overview and Benefits

C4I Storefront Ecosystem

PoR Developers
- NITES
- NEXT
- DCGS-N
- MTC2
- ...

Testing & Integration Environment

Ashore Storefront

Afloat Storefronts
(Navy Tactical Cloud Marketplace)

Increased Speed to Capability

CAPABILITY DEVELOPMENT
- Current (12 – 18 Months)
- Proposed (6 Months)

TESTING (OT & IA)
- Current (6 – 8 Months)
- Proposed (2 – 3 Weeks)

FIELDING
- Current (2 Weeks)
- Proposed (Days)

Reduced Total Ownership Costs

- Cost per app rather than per platform
- Fielding cost down
  - Upload once; available for all approved platforms
  - Automate delivery of widgets, applications, and services
  - No tech visit necessary for installation
- Sustainment cost down
  - Automate distribution of updates / patches
New OV-1

- **The Storefront T&I environment provides:**
  - Automated submission of new warfighter capabilities
  - Manual and automated integration, functional, and IA testing of widgets and applications
  - Rapid approval process to push new warfighter capabilities to the operational environment

- **The PEO C4I Storefront provides:**
  - PEO C4I capabilities to ashore users
  - Distribution of PEO C4I capabilities from ashore to the tactical environment

- **The Navy Tactical Cloud Marketplace provides:**
  - Afloat users the ability to discover, access, and use PEO C4I capabilities
  - Provides feedback on capabilities received, updated, and installed back to the PEO
Navy App Store Enterprise

PoR Developer
Submit Widget / Application

SSC-Pacific
OWF OMP
Repository
Governance
Distribution
Update Manager

PRNOC
UARNOC
OWF OMP
Repository
Distribution
Update Manager

PEO C4I Storefront

CANES/ACS
Tactical Cloud Marketplace

OMP MetaData
Widget Binaries
Application Bundles
Storefront Metadata
Zipped Data

Repository
Widget / Application Install Manager

PaaS
Widget / Application Install Agent

Installation Environment

Apps Data Services

Automatically Updates CDMDOA, SPIDER, NDE, ILS, etc.
PoR View, Access & Query Widget / Application Configuration on Each Ship

T&I Environment
Ashore Environment

Afloat Environment

12
Proposed Widget Governance Process

Development

POR Sponsored Widgets

Test & Integration Processes

Trusted Environment

Exit Criteria Met: Widget Approved

Storefront

Approved Widgets

Trusted Environment

OPTEV / ODAA Approved Processes

Acceptance

Integration Testing

Approval Board

Configuration Management

Exposure

Metrics Collection

Discovery

Metrics Collection

IA

Functional Testing

Approval Board

Warfighter Deployment

Development Repository
SDK
API
Source Code
Better Buying Power and Culture Change

▼ Better Buying Power 2.0

- Control Costs Throughout the Product Lifecycle
  - Supports the rapid IT widget governance process
- Eliminate Unproductive Processes and Bureaucracy
  - Supports the widget governance process with increased user input
- Promote Effective Competition
  - Encourages the creation of more widgets
Conclusion

DOD must modify its acquisition philosophy to get new capabilities in the hands of the warfighter

- Light weight mobile applications
- Access to services and data sources
- Streamlined processes for accredited PORs
  - Allows rapid fielding of associated Widgets
- PEO C4I Marketplace and accompanying Widget Governance Process
  - Cost effective and expedient
  - Provides trusted and secure capabilities

The future of warfare is information dominance and speed to capability can provide the tactical or strategic advantage our warfighters need
Mr. Michael Morris
michael.a.morris4@navy.mil
619-553-1260
BACKUPS
Ozone Widget Framework

- A platform that offers infrastructure services to simplify the development of workflows and presentation-tier application integration.

- It is also a layout manager for the operation of widgets on a single web page.
Accelerating Acquisition To Enable Rapid Fielding of New Capabilities

PEO C4I Storefront & Navy Cloud

Missions Support Modules: Widgets, Application, Services

PEO C4I Storefront
Utility Cloud
Data Cloud
Storage Cloud
CANES

Afloat

User Access

Widget & Apps
T&I Environment

Agile Widget/App Approval
MTC2
DCGS-N
NITES Next
C2RPC

Data
Analysis

Data Service

Audio
Text
Imagery
Video

Storage Cloud
Enterprise Cloud

Utility Cloud

Test widget

widgets

apps

app
 Widget Governance Process Overview

1. Developers
2. Test & Integration Processes
3. POR Sponsored Widgets
4. Exit Criteria Met: Widget Approved
5. Operational Repository Widget/Service Warehouse

OPTEV / ODAA Approved Processes:
- Acceptance
- Integration Testing
- Functional Testing
- Approval Board

Storefront:
- Approved Widgets

Warfighter Deployment

Metrics Collection
Exposure
Configuration Management
Discovery
Metrics Collection
Storefront Operational Concept

Operational User

T&I Storefront Environment

Widget Developer

Operational Storefront Environment

Submit

Feedback

Discover

Consume

Feedback

Promote