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

Acquisition Research: Creating Synergy for Informed Change

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14 May 2014
1. REPORT DATE  
**14 MAY 2014**

2. REPORT TYPE

3. DATES COVERED  
**00-00-2014 to 00-00-2014**

4. TITLE AND SUBTITLE  
’Pushing a Big Rock Up a Steep Hill’: Acquisition Lessons Learned From DoD Applications Storefront

5a. CONTRACT NUMBER

5b. GRANT NUMBER

5c. PROGRAM ELEMENT NUMBER

5d. PROJECT NUMBER

5e. TASK NUMBER

5f. WORK UNIT NUMBER

6. AUTHOR(S)

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)  
SPAWAR Systems Center Pacific, 53560 Hull Street, San Diego, CA, 92152-5001

8. PERFORMING ORGANIZATION REPORT NUMBER

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)

10. SPONSOR/MONITOR’S ACRONYM(S)

11. SPONSOR/MONITOR’S REPORT NUMBER(S)

12. DISTRIBUTION/AVAILABILITY STATEMENT  
Approved for public release; distribution unlimited

13. SUPPLEMENTARY NOTES  
AFCEA 11th Annual Acquisition Research Symposium, 14-15 May 2014, Monterey, CA.

14. ABSTRACT

15. SUBJECT TERMS

16. SECURITY CLASSIFICATION OF:

<table>
<thead>
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<th>a. REPORT</th>
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17. LIMITATION OF ABSTRACT  
Same as Report (SAR)

18. NUMBER OF PAGES  
22

19a. NAME OF RESPONSIBLE PERSON

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Standard Form 298 (Rev. 8-98)
Prescribed by ANSI Std Z39-18
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Using standard acquisition processes in DOD, by the time new solutions are deployed to the warfighter, the technology is obsolete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.
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
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

PoR View, Access & Query
Widget/Application
Configuration on Each Ship

T&I Environment

POE C4I Storefront
PRNOC
UARNOC
OWF OMP
Repository
Distribution Service
Update Manager

Automatically Updates
CDMDOA, SPIDER,
NDE, ILS, etc.

Afloat Environment

PEO C4I Storefront

CANES/ACS

Tactical Cloud Marketplace

OMP Metadata
OWF Widgets

Repository

Widget Binaries
Application Bundles
Storefront Metadata
Zipped Data

Widget/Application Install Manager

PaaS

Installation Environment

Apps Data Services

Afloat Environment

Assore Environment
Proposed Widget Governance Process

Development Repository
SDK
API
Source Code

Developers

POR Sponsored Widgets

OPTEV / ODAA Approved Processes

Test & Integration Processes

Entrance Criteria
Prerequisites
Source Code Documentation

Widget A

Exit Criteria
Met: Widget Approved

Storefront

Approved Widgets

Trusted Environment

Warfighter Deployment

Operational Repository
Widget/Service Warehouse

Metrics Collection
Exposure

Acceptance
IA
Functional Testing
Approval Board

Configuration Management

Discovery

Metrics Collection

Acceptance
IA
Functional Testing
Approval Board
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
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
Presenter Contact Information

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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.
PEO C4I Storefront & Navy Cloud

Accelerating Acquisition To Enable Rapid Fielding of New Capabilities

PEO C4I Storefront
Missions Support Modules: Widgets, Application, Services

Widget & Apps T&I Environment
Agile Widget/App Approval

MTC2
DCGS-N
NITES Next
C2RPC

Utility Cloud
Storage Cloud
Data Cloud
Analytics

Data Service
Audio
Text
Video

Imagery

Enterprise Cloud

Afloat

User Access

Apps
Utility Cloud
Data Cloud
Storage Cloud
CANES
Widget Governance Process Overview

1. Developers
   - Development Repository
     - SDK
     - API
     - Source Code
   - POR
     - Sponsored Widgets

2. Test & Integration Processes
   - Entrance Criteria
     - Prerequisites
   - Source code documentation
   - Widget A
   - Trusted Environment

3. OPTEV / ODAA Approved Processes
   - Acceptance
   - Integration Testing
     - IA
   - Functional Testing
   - Approval Board
   - Metrics
     - Collection
     - Exposure
     - Configuration Management

4. Exit Criteria Met: Widget Approved

5. Operational Repository
   - Widget/Service Warehouse
   - Approved Widgets
   - Widget A
   - Trusted Environment
   - Storefront
   - Warfighter Deployment
   - Metrics
     - Collection
   - Discovery
   - Exposure