



Second International Off-The-Shelf Development Method Workshop (IOTSDM) Report

Presented at ICCBSS'2007

Software Engineering Institute
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Workshop Agenda

Introduction including Name, Organization, Personal Experience, and Personal Goals

Workshop Challenge, History, Goals, and Format

Position Paper Presentation

Discussion of:

- OBD Method Tasks and related Techniques and Work Products
- Teams and Roles
- Relationship to other Disciplines
- Production, Storage, Maintenance, and Usage of a Common 'Standard' OBD Method Framework

Wrap-Up:

- Accomplishments / Areas of Consensus
- Future Tasking





The Challenge:

Why are We Here?



The Challenge

Different Projects and Organizations use:

- Different Terminologies describing
- Different OTS-Based Development (OBD) Methods consisting of
- Different Method Components

OBD Method Components are not well integrated into 'Standard' Software *and* System Development Methods.

Relationship between OBD Method Components and the Method Components of 'other' Disciplines is not well understood:

- Requirements Engineering
- Architecture Engineering
- Management





Workshop History:

What Came Before?



Workshop History

First Workshop last year at ICCBSS'2006 in Orlando, Florida

3 Position Papers Presented:

- “Toward Upgrade Risks Assessment for OTS Development” by Erik Putrycz of the National Research Council of Canada
- “Evolutionary Process for Integrating COTS-Based Systems (EPIC)” by Cecilia Albert and Lisa Brownsword
- “A Process for COTS Software Production Evaluation” by Tricia Oberndorf





Workshop Goals:

What Should We Do?



Workshop Goals

Gather People Interested in OTS-Based Development (OBD) Methods

Develop/Refresh Professional Contacts

Collect Experiences, Perspectives, and Recommendations

Discuss OBD Method Components:

- Tasks and Techniques
- Work Products
- Teams and Roles
- Relationships to other Disciplines and Activities

Discuss Production, Storage, Maintenance, and Usage of a Common 'Standard' OBD Method Framework

Report Results





Workshop Format:

How Will We Do Our Work?



Workshop Format

Working Group rather than Mini-Conference Track

Only one Position Paper to get Us in the Mood

Hands-On Brainstorming and Discussion:

- Need Scribe

Collection of Discussion Points, Questions, and Recommendations

Report of Workshop Outcome Generated and Published:

- Need Report Writer(s)





Workshop Results:

What We Did



Workshop Results

Method Metamodel

Traditional (OTS-Related) Disciplines

OTS-Related Tasks and Techniques

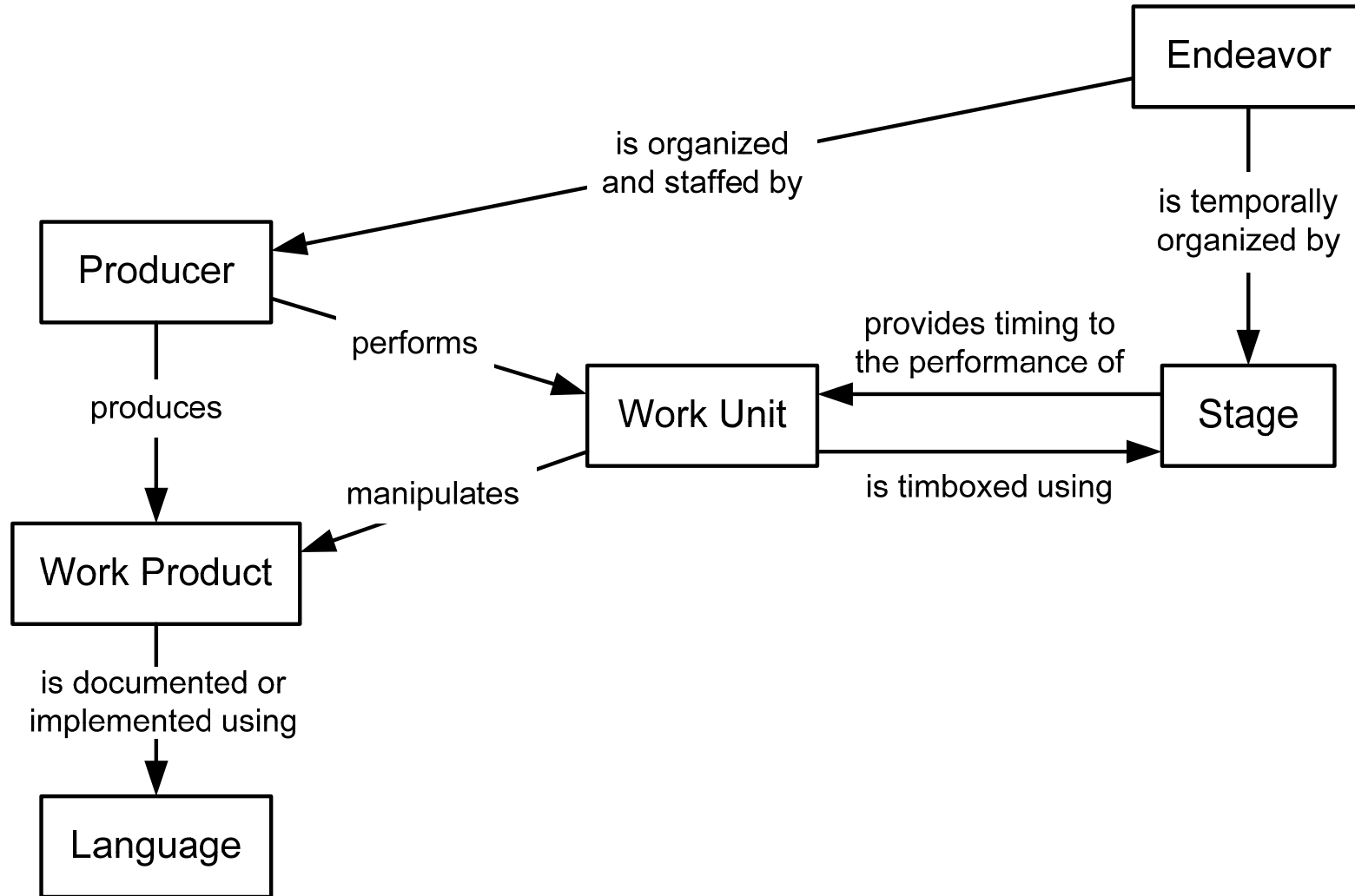
OTS-Related Work Products

OTS-Related Teams, Roles, and Responsibilities

Production, Storage, Maintenance, and Usage of a Common
'Standard' OBD Method Framework



OPF Method Metamodel



Traditional OTS-Related Disciplines

Management

Requirements Engineering

Architecture Engineering

Design

Implementation

Integration

Testing

Quality Assurance

Configuration Management

Reuse Engineering (?)



OTS-Related Tasks 1

OTS Planning (Mgmt +)

Identify Candidate OTS Components (AE + Reuse E)

Characterize Individual Candidate OTS Components (AE + Reuse E + Design)

Evaluate/Test/Analyze/Inspect Individual Candidate/Selected OTS Components and their Sources (Architecture Engineering, Testing, QA, Human Factors, Specialty Engineering including Safety, Security, Reliability, ...)

Make the Make/Buy/Reuse/Outsourcing Decision for each architectural element including OTS components (Architecting and Management oversight)

Select OTS Components and Sources (Architecture)

Monitor Status of OTS Components and their Sources over Time: (multiple mgmt, reuse, architecture?) Marketplace/Government/Reuse Repositories/Legacy System



OTS-Related Tasks 2

Negotiate Requirements (Requirements, Architecting, management)

Negotiate/Update Business Processes including Training (business process engineering, management, architecture, requirements)

Acquire OTS Components (management)

- Negotiate price, schedule, features

Engineer Architecture with OTS Components (arch)

Design, Implement, and Test “Glue” Subsystem/SW/HW Components (Wrappers/Proxies/Connectors/Converters/Transformers/...) DIT

Integrate OTS Components (integration)



OTS-Related Tasks 3

Tailor (Configure) OTS Component (Design, Implementation, Installation)

Baseline Component (Configuration Control and Configuration Identification)

Evaluate/Test/Analyze/Inspect Executable Architecture including OTS (Architecture Engineering, Testing, QA, Human Factors, Specialty Engineering including Safety, Security, Reliability, ...)

Manage Source management Relationships (management)

Manage Component Licenses / Export Control (legal and financial)

Maintain OTS-Based System and Architecture (maintenance and architectures)

Technology assessments (organizational architecture engineering)



Observations

Mapping from tasks to disciplines is complex.

Disciplines do not traditionally include OTS tasks well.

Tend to think in terms of roles and responsibilities instead of disciplines.

Is OTS a multi-disciplinary, cross functional area of concern.

Almost all of these tasks:

- Are ongoing during development/life cycle of system(s)
- Apply to individual systems/subsystems as well as at the enterprise level
- Apply to OTS consumer, regardless of whether system acquirer, prime contractor, or subcontractors

Most of these tasks are variations of existing tasks.

Most of these tasks are high-level abstract tasks that need to be specialized for OTS/Legacy, etc.

Too difficult to get right immediately. Requires iterative incremental work to produce taxonomy.



OTS-Related Techniques

Market Research

Risk Analysis

Cost/Benefit Analysis

Feasibility Analysis

Schedule Analysis

Return On Investment (ROI) Analysis

Source (Vendor) Analysis



OTS Work Products

OTS Plan

OTS Source Description Documents

OTS Component Description Documents

OTS Screening Criteria and Rationale

OTS Cost-Benefit Analysis

Buy-Make-Reuse Decision

Requirements Specifications / Repository

Architecture Documentation

Vendor-Relationship Plan (Non-COTS?)



OTS-Related Teams, Roles, and Responsibilities

Management Team

Requirements Team

Architecture Team

Design/Implementation/Test Team

Integration Team

Test Team

Reuse Team

Source Analysis (Market Research?) Team

OTS Component Selection Team (Architecture Team?)



Common 'Standard' OBD Method Framework

Are we Ready?

Production?

Storage and Maintenance?

Future?





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