

GSAW 2003 COTS Integration

COTS Based Systems Issues

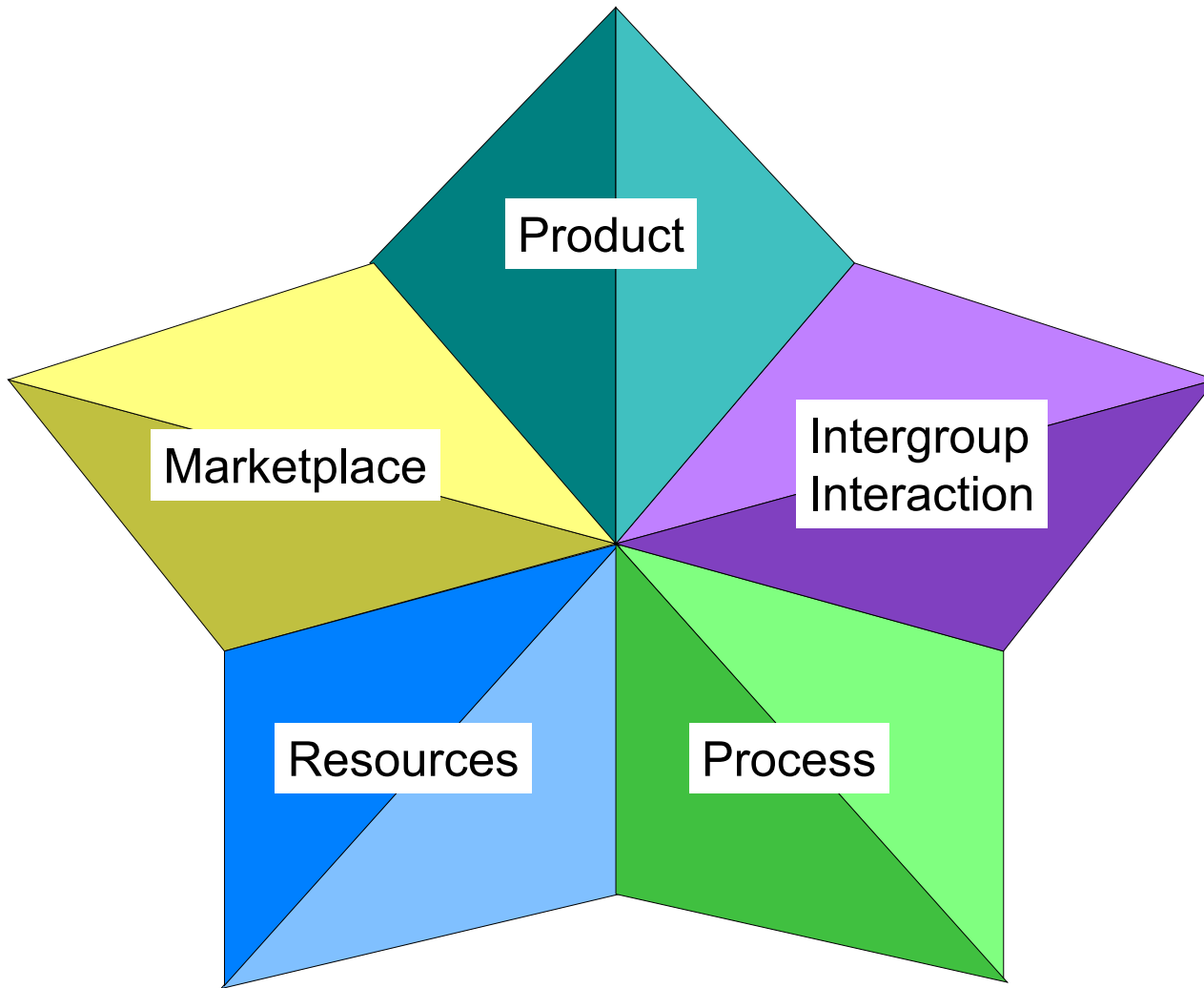
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Issue Dimensions

Some Emerging Issues from Kohl

- RK01** • **COTS ‘certification’**
- RK02** ❖ What is it? Approaches to achieve it?
- RK03** ❖ How to measure or validate it?
- RK04** ❖ As compared to custom built software ‘certification’
- RK05** • **COTS content at major milestone reviews**
- RK06** ❖ SRR, SDR, PDR, CDR, TRR, etc
- RK07** ❖ What content should be presented at each review?
- RK08** • **COTS impacts to lifecycle processes**
- RK09** ❖ Changes to existing processes (requirements, evaluation)
- RK10** ❖ Differences in sequence of activities
- RK11** ❖ Milestone review impacts (see 2nd bullet)

Product Issues

- PD01 • **Requirements vs. COTS capabilities**
- **Integration of**
- PD02 ❖ Multiple COTS products
- PD03 ☞ Incompatibilities among COTS products
- PD04 ❖ COTS products with new/reuse software
- PD05 • **COTS independent architecture**
- PD06 ❖ Designing architectures for COTS evolution
- PD07 ❖ Designing in safety, security, supportability
- PD08 • **Mission risk**
- PD09 • **Cross platform portability**
- PD10 • **Standards: good, bad, ugly?**
- PD11 • **API breakage (“unplug and replay”)**
- PD12 • **Dormant functionality or features**
- PD13 • **Adverse effects of product upgrades on system**

Process Issues - Developer

- PC01 • Robust initial and periodic COTS product evaluation**
- PC02 • Prototyping in a system context**
- PC03 • Testing in operational context**
- PC04** ❖ Regression testing of upgrades in system context
- PC05 • Adapting software and systems engineering processes for CBS development and maintenance**
- PC06 • Still need systems and software engineering**
- PC07 • Need enhanced CM processes**
- PC08 • Planning for COTS upgrades and evolution during development and maintenance**
- PC09 • Selection of hardware platforms with availability of COTS software as key criterion**

Process Issues - Customer and User

- PC10 • Acquisition and support strategies**
- PC11 • Adapting customer/user processes to CBS**
- PC12 • acquisition, operations and maintenance**
- PC13 • Processes for trading cost, schedule, requirements, and O&M concepts against COTS capabilities**
- PC14 • ❖ Need requirements prioritization**
- PC15 • Need contracts compatible with CBS development and maintenance**
- PC16 • Standardized processes for safety certification and security accreditation of CBS needed**
- PC17 • Standardized license processes to ensure suitability of licenses and maintaining currency**

Resource Issues

- R01** • **Cost vs. benefit of upgrading**
- R02** • **Acquiring and maintaining CBS skills**
- R03** • **Accurately costing all aspects of CBS development and maintenance**
- R04** • **Optimal scheduling of upgrades**
- R05** • **Increased computer resources for upgrades**
- R06** • **Modifying COTS is a BAD idea!**
- R07** • **Need cost and schedule management reserves**
- R08** • **Reallocating time and effort across life cycle**
- R09** ❖ **More time for evaluation, prototyping and analysis**
- R10** ❖ **Less time for implementation; more time for integration**

Marketplace Issues

- M01 • Product maturity**
- M02** ❖ Dropped or de-emphasized platforms and products
- M03** ❖ Changes in fees and fee structure for licenses and services
- M04 • Marketplace maturity**
- M05** ❖ Vendor volatility
- M06 • Vendor responsiveness**
- M07** ❖ Changes in type and quality of vendor support
- M08 • Definition of COTS (=“for sale”)**
- M09 • Suitability of licenses for user application (e.g.,
expiring keys, export restrictions)**
- M10 • Release schedule, content and quality
unpredictable**
- M11 • Rapid technology turnover and limited support of
past releases**

Intergroup Interaction Issues

- IG01 • Customer resistance to COTS--NIH**
- IG02 • Excessive customer bias toward COTS**
- IG03 • Vendor relationships**
- IG04 • Establishing and maintaining active**
- IG05 partnership between customer, developer and user**
- IG06 • Need flexible and efficient responses to unexpected impacts by customer/user**

What are Your Experiences with CBS?

- **Successes**

- ❖ What successes have you experienced (directly or indirectly)?
- ❖ What factors contributed to the success?

- **Problems/Failures**

- ❖ What problems have you experienced (directly or indirectly)?
- ❖ What factors caused the problems?
- ❖ What would you do differently to remove the problem or reduce its impact in the future?

Survey on COTS Upgrade Release Frequency

1. In your experience, what is the average duration between releases of a given COTS Product?
 - ❖ GSAW 03 = x months (range: x to x)
2. For system(s) with which you have experience, how frequently are system upgrades released that incorporate COTS software upgrades?
 - ❖ GSAW 03 = x months (range: x to x)