

GSAW 2002 COTS Integration

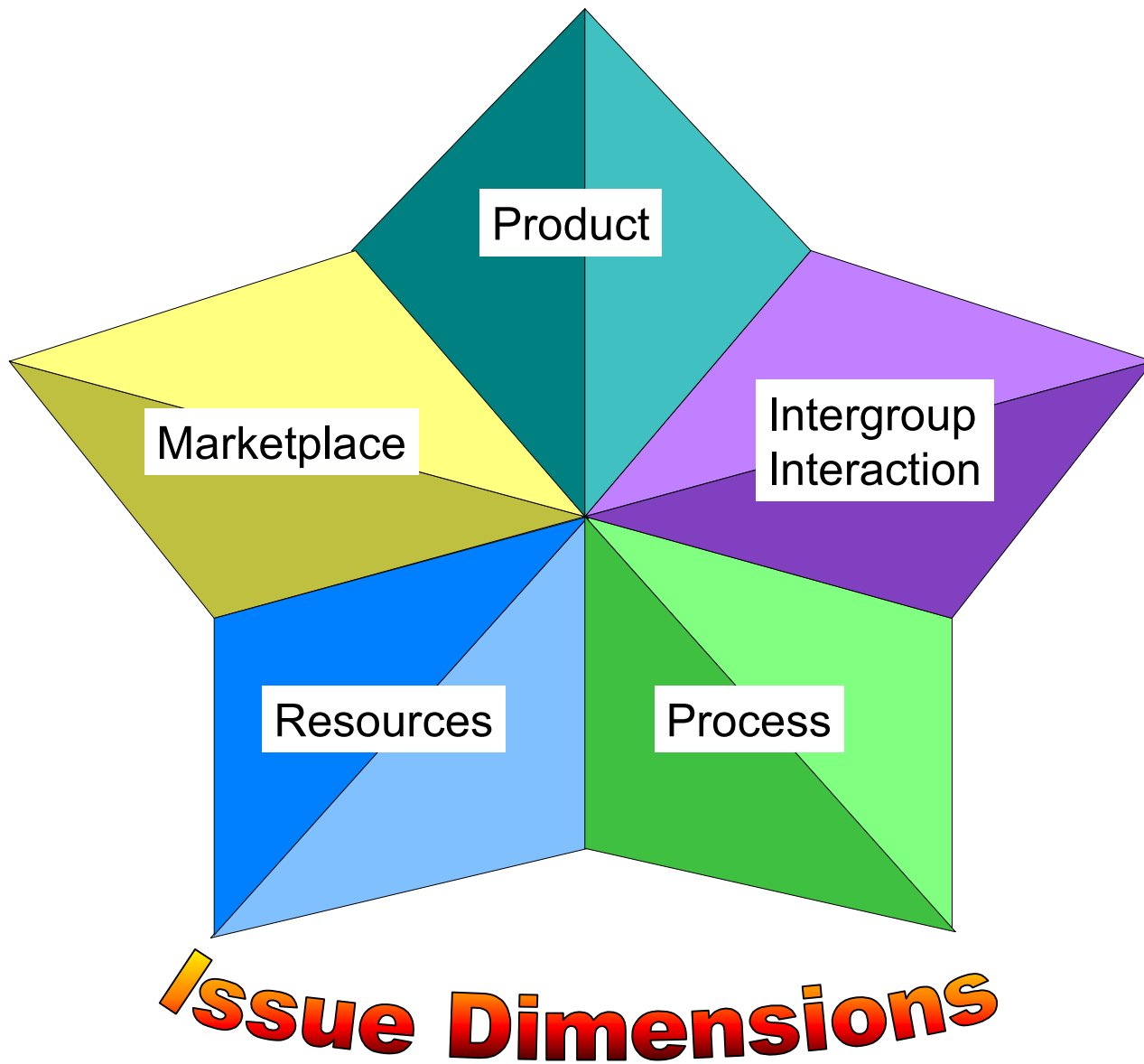
COTS Integration Issues

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Key for following charts:

- “Gn” indicates GSAW 2001 issue and ranking
- “A” indicates Aerospace study issue

Product Issues

- **Requirements vs. COTS capabilities (G1)**
- **Integration of**
 - ❖ Multiple COTS products (G2)
 - ❖ Incompatibilities among COTS products (A)
 - ❖ COTS products with new/reuse software (G5)
- **COTS independent architecture (G3)**
 - ❖ Designing architectures for COTS evolution (A)
 - ❖ Designing in safety, security, supportability (A)
- **Mission risk (G6)**
- **Cross platform portability (G11)**
- **Standards: good, bad, ugly? (G14)**
- **API breakage (“unplug and replay”) (G15)**
- **Dormant functionality or features (G18)**
- **Adverse effects of product upgrades on system (A)**

Process Issues - Developer

- **Robust initial and periodic COTS product evaluation (A)**
- **Prototyping in a system context (A)**
- **Testing in operational context (G12)**
 - ❖ Regression testing of upgrades in system context (A)
- **Adapting software and systems engineering processes for CBS development and maintenance (A)**
- **Still need systems and software engineering (A)**
- **Need enhanced CM processes (A)**
- **Planning for COTS upgrades and evolution during development and maintenance (A)**
- **Selection of hardware platforms with availability of COTS software as key criterion (A)**

Process Issues - Customer and User

- **Acquisition and support strategies (G16)**
- **Adapting customer/user processes to CBS acquisition, operations and maintenance (A)**
- **Processes for trading cost, schedule, requirements, and O&M concepts (A) against COTS capabilities**
 - ❖ **Need requirements prioritization (A)**
- **Need contracts compatible with CBS development and maintenance (A)**
- **Standardized processes for safety certification and security accreditation of CBS needed (A)**
- **Standardized license processes to ensure suitability of licenses and maintaining currency (A)**

Resource Issues

- **Cost vs. benefit of upgrading (G7)**
- **Acquiring and maintaining CBS skills (G9)**
- **Accurately costing all aspects of CBS development and maintenance (A)**
- **Optimal scheduling of upgrades (A)**
- **Increased computer resources for upgrades (A)**
- **Modifying COTS is a BAD idea! (A)**
- **Need cost and schedule management reserves (A)**
- **Reallocating time and effort across life cycle (A)**
 - ❖ More time for evaluation, prototyping and analysis (A)
 - ❖ Less time for implementation; more time for integration (A)

Marketplace Issues

- **Product maturity (G4)**
 - ❖ Dropped or de-emphasized platforms and products(A)
 - ❖ Changes in fees and fee structure for licenses and services (A)
- **Marketplace maturity (G8)**
 - ❖ Vendor volatility (A)
- **Vendor responsiveness (G17)**
 - ❖ Changes in type and quality of vendor support (A)
- **Definition of COTS (=“for sale”) (G19)**
- **Suitability of licenses for user application (e.g., expiring keys, export restrictions) (A)**
- **Release schedule, content and quality unpredictable (A)**
- **Rapid technology turnover and limited support of past releases (A)**

Intergroup Interaction Issues

- **Customer resistance to COTS--NIH (G10)**
- **Excessive customer bias toward COTS (A)**
- **Vendor relationships (G13)**
- **Establishing and maintaining active partnership between customer, developer and user (A)**
- **Need flexible and efficient responses to unexpected impacts by customer/user (A)**

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?