Using SCAMPI C for Collective Improvement Across a Multi-Business Program

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The Landscape - Motorola

- A global leader in providing integrated communications solutions and embedded electronic solutions
- Conducts business on six continents
- Creates integrated customer solutions such as:
  - Software-enhanced wireless telephone, two-way radio, messaging and satellite communications products and systems
  - Networking and Internet-access products
  - Embedded electronic products
- More than 66,000 total employees worldwide
- Employees in more than 320 locations in 73 countries
- 23 manufacturing facilities in: USA, Mexico, Brazil, Great Britain, Germany, France, Israel, China, Korea, Taiwan, Malaysia, Singapore
The Situation - BTS

- Base Transceiver Station (BTS) – Key element of Cellular Infrastructure
- Serving 24/7 support to operators such as KDDI, Sprint, Verizon, Alltel, TATA, and China Unicom

Locations:
Arlington Heights, IL
Chandler, AZ
Kraków, Poland

Source Code:
2500 KLOC
C, C++, Assembler
The Global Software Group (GSG) provides cost-effective software and system focused products and services of the highest quality that are responsive to the needs of our customers.
The Challenge – “Collective Improvement”

- The senior manager of BTS calls for “collective improvement” across the program
- Senior managers from BTS and GSG align their goals and objectives
- Participating in a “combined assessment” is discussed as a possible improvement mechanism
The Solution - CMMI Product Suite

- **CMMI provides a wider scope and integrated approach for process improvement**
  
  *both organizations have been using SW-CMM for several years*

- **Provides focus on integrated activities with IPPD**
  
  *(new integrated program / organizational elements to cover)*

- **Provides powerful, flexible appraisal tool with SCAMPI**
  
  *(focus on business needs)*
The Solution – IPPD

**IT – Integrated Teaming**
- Provides team-level vision
- Provides team structure

**IPM – Integrated Project Management for IPPD**
- Provides project-level vision
- Provides project structure

**OEI – Organization Environment for Integration**
- Provides organization-level vision
- Provides support infrastructure
- Manages for integration and collaborative behavior

**Team**

**Project**

**Organization**

**Resources, WBS**
**PP – Project Planning**
**PMC – Project Monitoring & Control**
**MA – Measurement & Analysis**
**RSKM – Risk Management**
**SAM & ISM – Supplier Management**

**PPQA**
**OPF**
**OPD**
**OT**
**CM**

Product architecture, Verification, etc.

Engineering and Other Support PAs
The Solution – SCAMPI C (1)

- **SCAMPI provides tailoring of the appraisal method**
  - Focuses on business needs
  - Structures activities to provide required outputs - FINDINGS
    - Program-specific
    - Site or local organization-specific
  - Can scale to a sample of participating organization, extend to all
    - Focus on 2 Cellular Networks sites and 1 Global Software Group site

- **IPPD-focused SCAMPI C proposed to Senior Management**
  - Three 3-day engagements at each selected site in US and Poland
  - Target IPPD practices AND related / linked practices from other PAs
  - Site-specific findings communicated at each site, then consolidated at the end of the appraisal activities
The Solution – SCAMPI C (2)

- **Senior Management supports IPPD SCAMPI C**
  - Co-Sponsors from the two businesses
  - Team members from across the businesses
  - Authorized and experienced SCAMPI B&C Team Leader

- **Site Managers and BTS project teams participate**
  - Preparation not required, minimum effort to participate
  - Short overview of IPPD at kick-off meeting
  - One interview session for each IPPD-specific PA (OEI, IT, IPM)

- **Focus is on opportunities and actions across the program**
  - Consolidated final findings briefing for Sponsors
  - Post-appraisal action planning
  - Results
The Findings – Overview

- **29 Findings Resulted in**
- **38 Specific Actions Distributed Between**

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<tr>
<th>Category</th>
<th># Findings</th>
<th># Actions</th>
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<td>Scorecard Communication</td>
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<tr>
<td>Team Performance</td>
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The Findings – Example

The Feature Team concepts are new and not clearly defined and communicated …

- No formal mechanisms for balancing “home” organization (e.g., Functional Area) and Feature Team responsibilities (OEI SP2.3-1)
- There is no common definition of a “project” used across BTS (IPM SP1.1-1)
- There is confusion about the responsibilities and authority of the Feature Team Manager (IT SP2.3-1)
- Inconsistent identification of risks that have been captured to mitigate the unclear Feature Team definitions and impacts on integrated teams (RSKM SP2.1-1)
Actions & Results

An action:

• Fully define and deploy process assets to support Feature Teams as Integrated Product Teams (IPT)
  – Full-time resource dedicated to develop detailed process and guidance for Feature Teams
  – All impacted Process Area Teams are making modifications for their areas

• Examples of specific detailed actions
  • Identify skills required for development activities including Feature Team roles
  • Create guidelines for balancing of Functional Area and Feature Team responsibilities
  • Ensure that the Feature Team procedures for conflict resolution are unique, clear and effective
  • Investigate a more flexible approach to how the M-gates framework can be applied to individual Feature Teams
  • Provide Feature Manager ownership of schedule
  • Develop supporting process assets
Lessons Learned

• IPPD is useful at the front-end of process improvement activities not just as something to add at the end (after other process areas are completed)
  – e.g., GSG includes the tailored “IPPD-focused SCAMPI C” method for establishing GSG-Customer Integrated Process

• IPPD is a platform for integrating all business functions and operations

• The SCAMPI “family” of appraisals can be tailored to meet specific business needs
  – SCAMPI B & C are not just “little As”
Some quotes from senior managers

- “This will have an impact on our effectiveness, how we work together across the locations”
  
  BTS Program Director

- “I am very happy with the results…but we are not yet through all of the actions”
  
  GSG BTS Operations Manager
Feedback (2)

- Feedback collected from the participants (via web survey)
Feedback (3)

Collecting feedback from the three sites separately allowed for capturing site specific collaboration issues:
- Strongly Disagree: 0%
- Disagree: 0%
- Neutral: 8%
- Strongly Agree: 8%
- Agree: 84%

The appraisal resulted in changes that will benefit the BTS organization:
- Strongly Disagree: 0%
- Disagree: 25%
- Neutral: 33%
- Strongly Agree: 8%
- Agree: 34%

The appraisal activities allowed me to better understand concepts of Integrated Product and Process Development and how they apply to my work environment:
- Strongly Disagree: 0%
- Disagree: 8%
- Neutral: 33%
- Strongly Agree: 8%
- Agree: 51%

Agree: 34%
Summary

We found that:

- the CMMI product suite is useful to respond to a business issue (not just appraising for a number but focusing on improvement areas)

- IPPD discipline proved to bring value within the overall business or improvement context

- the tailored version of SCAMPI appraisal method used allowed the organization to identify ‘weak’ areas and produce a set of actions to improve the operations of a multi-business program in global environment
Q & A