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LEVEL 5 THE HARD WAY — PERSEVERING THROUGH ORGANIZATIONAL CHANGES

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SCAMPI Time!

- Time to identify the “organization”
Wait – we just had a reorg!
Information Systems & Global Services

Executive Vice President
Information Systems & Global Services
L. Gooden

VP Finance & Business Operations: J. MacLauchlan
VP Human Resource: S. Brinch
VP Communications: J. Dan
Director Ethics & Business Conduct: J. Pleasant
VP & Chief Information Officer: P. Blow-Mitchell
VP Business Development: K. Morton
VP Strategic Development: T. Oles
VP & General Counsel: N. Murray
VP Washington Ops: K. Kapoor

President
Performance Excellence
J. Trench

President
Global Security Solutions
M. Thomas

President
Mission & Combat Support Solutions
J. Mengucci

VP & General Manager
Systems Integration
W. Graham

President
Mission Services
K. Asbury

President
Enterprise Solutions & Services
S. Lubriowski

President
Transportation & Security Solutions
J. Marks

President
Business Process Solutions
J. Cipriano

President
KAPL
M. Quinn

CEO
Savi Group
V. Verna

President
PAE Group
A. Shay

Wait – we just had a reorg!
Wait – we just had a reorg!
Background

History – Bad Timing

- IS&S (previous name of organization) CMMI Maturity Level 5 set to expire October 2008
- Program contractual requirements to maintain a CMMI rating (in one case, a ML5)
- Organization changes in IS&GS – functional activities being evaluated as “central” versus “de-central” to business units (now product lines)
Background (continued)

- IS&GS formed February 22, 2007
  - Combined two Business Areas within Lockheed Martin Corporation
  - Kept organizational structure and lines of business

- Reorganization June 29, 2007
  - Lines of business reduced by one (combined into 10 companies)
  - Engineering personnel allocated to lines of business (rather than matrixed across lines of business)

- Reorganization June 16, 2008
  - Lines of business reduced by one again (combined into 9 companies)
  - Quality Engineering personnel allocated to lines of business (rather than matrixed across lines of business)
  - “Organization” for CMMI-DEV Appraisal spanned 3 companies and a portion of a 4th company

- Reorganization November 24, 2008
  - Major re-alignment into 7 product lines
  - “Organization” for CMMI-DEV Appraisal spanned 3 product lines and a portion of a 4th product line
    - Scope within the Product Lines changed
Enablers for Success

“Organization” had common processes and process activities

- All 3 product lines and a portion of the 4th product line
  - Basically from the same “heritage” – within scope
- Program Process Standard (PPS)
  - Standard tailoring of Program Process Standard
- Executive Process Steering Committee (EPSC) (review board)
- Measurement program
  - With common development process performance models
- Process Asset Library (PAL)
Enablers for Success - PPS

- Program Process Standard (PPS) contained list of requirements for all programs in the organization
  - Management and control requirements
    - Program Management and Control, Subcontract Management, Contract Management, Program Finance, Supplier Management, Quality, Risk and Opportunity Management, Quantitative Management, Configuration and Data Management, and Decision Analysis
  - Implementation requirements
    - Spanning the entire life cycle, including early definition and operations and maintenance
  - Engineering support requirements
    - Integrated logistics support, readiness, analysis and modeling
- Set of standard tailoring of these requirements
  - Based on program “type”
    - Development, Operations & Maintenance, Engineering Services, System Integration, Internal Research and Development, etc.
Enablers for Success - EPSC

- Executive Process Steering Committee acted as a review board
  - Membership from all Product Lines within the SCAMPI Scope
  - Approval of process assets
  - Approval of further tailoring by programs
  - Approval of program plans implementing program requirements
  - As a mechanism for communication across the organization
    - Representatives from all companies/product lines
    - Representatives from all organizational functions
Enablers for Success – Measurement Program

- Measurement Program across the organization
  - Used program provided data to develop process performance models and process performance baselines for the organization
    - All “organization” product lines participated in providing data
    - Programs used the organizational Process Performance Baselines (PPB) until they had enough data to establish their own PPB
  - Provided training across the organization in quantitative methods and analysis
  - Conducted surveys on the appropriateness and use of organizational measures
  - Published measurement reports and shared through the measurement points of contact and the EPSC
Enablers for Success - PAL

- Process Asset Library contained required processes as well as guidance for implementing the requirements
  - Policies, including the PPS, and Business Processes were required by all functions and programs
    - Tailoring and waivers only as approved by the EPSC
  - Procedures provided guidance in implementing the requirements of the PPS
    - Programs could adopt or adapt to meet program-specific structures or circumstances
Enablers for Success – Operational Excellence

- Organizational activity – chartered by corporate – across all of Lockheed Martin
- Operational Excellence utilizes Six Sigma techniques
  - Green Belts/ Black Belts/ Master Blackbelts – assigned throughout programs
  - Direct relationship to “high maturity” process improvement initiatives
    - Evidence showed that this initiative directly contributed to the acceptance and progress of high maturity through the organization (programs and Product Lines)
SCAMPI Concept for IS&GS

Organization assets reviewed to determine if they were capable of supporting a CMMI-DEV ML5 using Class B

Class B team representatives on each company SCAMPI A
- To brief rest of team and provide continuity
- To allow organization artifact review to progress faster

Separate Product Line SCAMPI A’s using the organizational artifacts from the Class B

Different ratings for each product line
- Mature development Process Performance Models (PPM) and baselines
- Maturing non-development program PPMs and baselines

Same appraisal tool would be used in Class B and as the basis of each SCAMPI A

One set of Org PIIDs => Reduced cost
What Went Wrong?

- Could not get commitment on whether the PPMs were sufficient for a high maturity rating
  - Examples provided during Class B weren’t entirely accepted or rejected – they just raised additional questions
  - Needed input from programs (QPM/CAR), so a number of issues were pushed to individual product line SCAMPI A’s rather than being closed in the Class B
- Class B took much longer than expected
- Ended with team agreeing to disagree
  - No final resolution within the Class B – resolution was accomplished during the SCAMPI A’s
- Planned savings did not materialize because Organization PIIDs had to be reworked several times

Organization assets reviewed to determine if they were capable of supporting a CMMI-DEV ML5 using Class B

Class B for Organizational Assets
Appraisal team came into the SCAMPI A with certain assumptions and concepts of high maturity

- Looking for specific artifacts to affirm their thoughts
- Different programs implemented practices in different ways
  - Caused some re-verification of assumptions to ensure that goals/practices were met
- Significant time was spent in debating organizational concepts and implementation of high maturity practices
  - Because Class B did not provide a final resolution
- Some assumption that process improvements and innovations would show an *immediate* impact on organizational baselines
  - Too large an organization to get “immediate” results to baselines
  - Period of performance of some programs very long so impacts may take years to be evident
During the Class B:
- Appraisal Tool selected
  - Tool selected very capable and complex, but teams did not receive sufficient training in tool to take advantage of its capability and complexity
    - Each mini-team used the tool in a different way
    - Mechanics of tool seemed to take as long as the analysis of the evidence
  - Team spent long hours analyzing CMMI implementation / expectations
    - Rationale was to get a “full” understanding of the organization to support the SCAMPI A’s
  - Comments and actions were not fully resolved in the tool during the Class B

For the SCAMPI A’s
- Because comments and actions were not fully resolved in the tool, had to reassess every comment left in the tool from the Class B
  - Sometimes more difficult than “starting all over”
- After first two SCAMPI A’s (ML5 Appraisals), Appraisal Tool Selected for Class B – Re-evaluated
  - Tool was not used for the last two ML3 Appraisals
    - Used simple spreadsheets instead
What Went Right?

- External Class B team members learned about the organization prior to looking at individual focus program PIIDs
  - Understood organizational terms going into the SCAMPI As
- Internal Class B team members learned about the high maturity issues raised
  - Understood the type of evidence that would be required

Organization assets reviewed to determine if they were capable of supporting a CMMI-DEV ML5 using Class B
What Went Right? (2)

Program overview briefings focused on setting high maturity expectations for program implementation
- Strong Program Managers
- Briefing slides were annotated with PA/SP that was being addressed
  - To acclimate the appraisal team

Lead Appraisers pre-coordinated with the SEI Quality Audit team to ensure the right evidence was reviewed
- SEI Quality Audit process for pre-submission information went smoothly – with questions raised early
- Gave Lead Appraisers a good idea of what was required
- Few questions asked by the auditor once the full data package (SAS, Appraisal Plan, Final Briefing) was submitted

Separate Product Line SCAMPI A's using the organizational artifacts from the Class B
During the Class B:
- Use of the tool during the Class B gave the appraisal team a brief introduction on some of the capabilities of the tool.

For the SCAMPI A’s:
- Appraisal team members very familiar with the tool were able to fly through the mechanics.
  - Familiarity was equated to participation in the Class B.
- Reports generated made generating the out-briefings easier.

Same appraisal tool would be used in Class B and as the basis of each SCAMPI A.
Summary

- **Success!**
  - All organizational entities achieved their target maturity level rating
    - 2 at ML5; 2 at ML3

- **But Why?**
  - Establishing the high maturity audit criteria provided a common understanding of the High Maturity Appraisal expectations
  - Mature programs showed the use of and contribution to organizational PPMs and PPBs
  - Lean/Six Sigma activities showed an institutionalization of causal analysis
  - Lead appraisers and experienced teams understood the nature of the business and the programs
Questions?