LOCKHEED MARTIN

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Lockheed Martin, Information Systems & Global Services (IS&GS)

LEVEL 5 THE HARD WAY – PERSEVERING THROUGH ORGANIZATIONAL CHANGES

SCAMPI Time!

- Time to identify the “organization”

Integrated Systems & Solutions

Executive Vice President IS&S

Stanton D. Sloane (Stan)

Functional Staff

Vice President Engineering

Margaret Burns (Peggy)

Vice President Communications

Judith B. Gan (Judy)

Vice President Strategic Planning

Jerry D. Lindstrom (Jerry)

Vice President Finance & Business Operations

Jeffrey D. MacLauchlan (Jeff)

Vice President & CIO

Carla M. Powe (Carla)

Vice President Programs & Mission Success

Pamela Blow-Mitchell (Pamela)

Vice President Business Development

Keith W. Moore (Keith)

Vice President General Counsel

Stephen M. Piper (Stephen)

Vice President Washington Operations

Ann E. Sauer (Ann)

Vice President Human Resources

Cynthia Smith (Cynthia)

Director Ethics & Business Conduct

Joseph C. Kale (Joe)

Director Security

Fred N. Hopewell (Fred)

Lines of Business

Vice President & General Manager DoD Systems

John S. Mengucci (John)

Vice President & General Manager Intelligence Systems

Ronald M. Nakamoto (Ron)

Advanced Concepts Team

Vice President & Managing Director Force Application

Paul C. Bavitz (Paul)

Vice President & Managing Director C3 & Information Operations

Frank B. Campbell (Ted)

Vice President & General Manager Geospatial Intelligence Solutions

Michael M. Thomas (Mike)

Vice President Systems Integration

William L. Graham (Bill)

Vice President & Managing Director Situational Awareness

Jeffrey K. Harris (Jeff)

Vice President & Managing Director Protection

David A. Kier (Dave)

Vice President Intelligence & Homeland Security Systems

Gordon K. McElroy (Gordy)

Vice President Enterprise & Logistics Solutions

Peter E. Rogers (Pete)

Vice President & Managing Director Focused Logistics

Louis A. Kratz (Lou)

Vice President NetCentric Integration

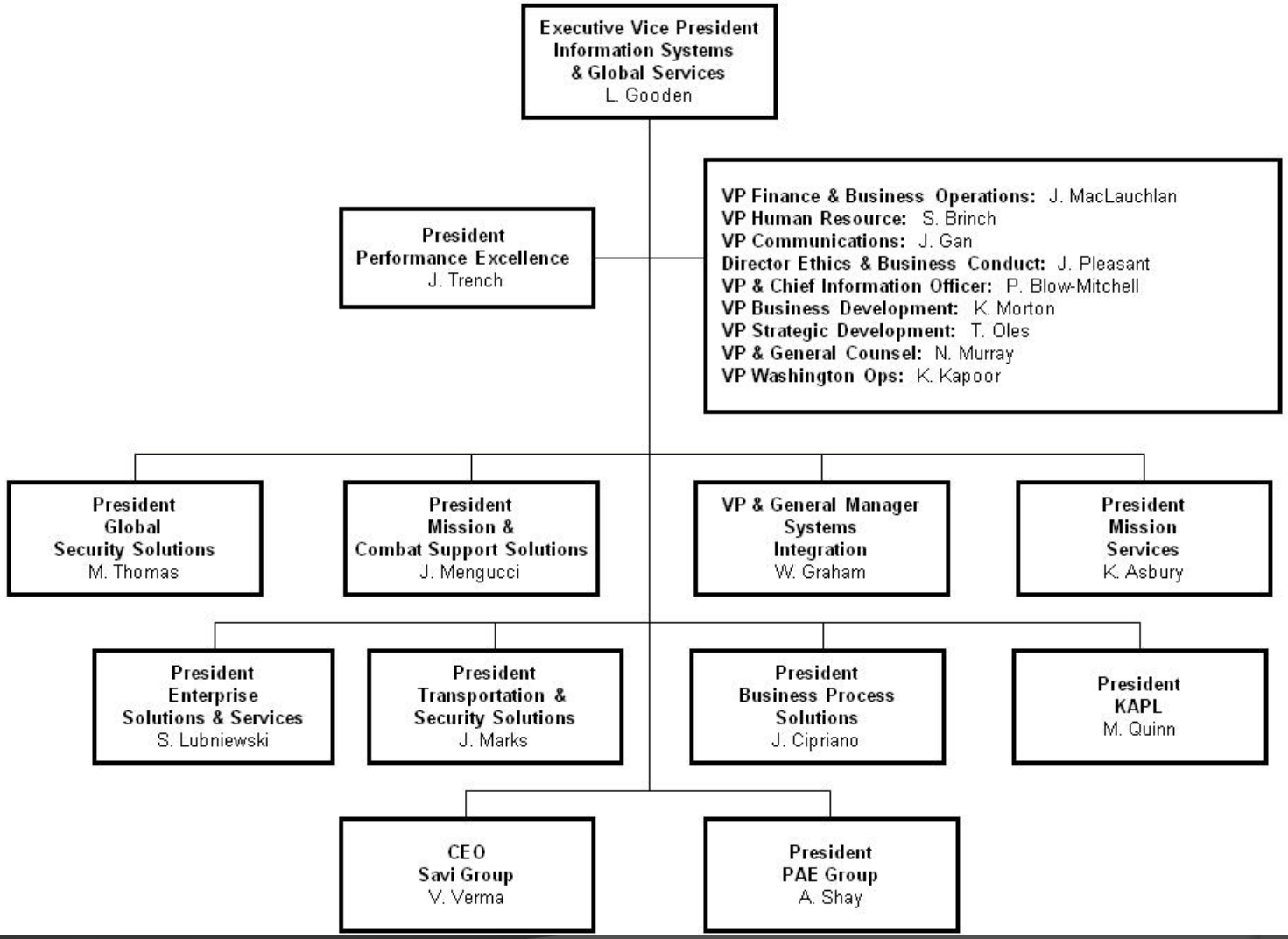
Kimberly C. Sawyer (Kim)

President & CEO SAVI Technology, A Lockheed Martin Co.

Vikram Verma (Vic)

Wait – we just had a reorg!

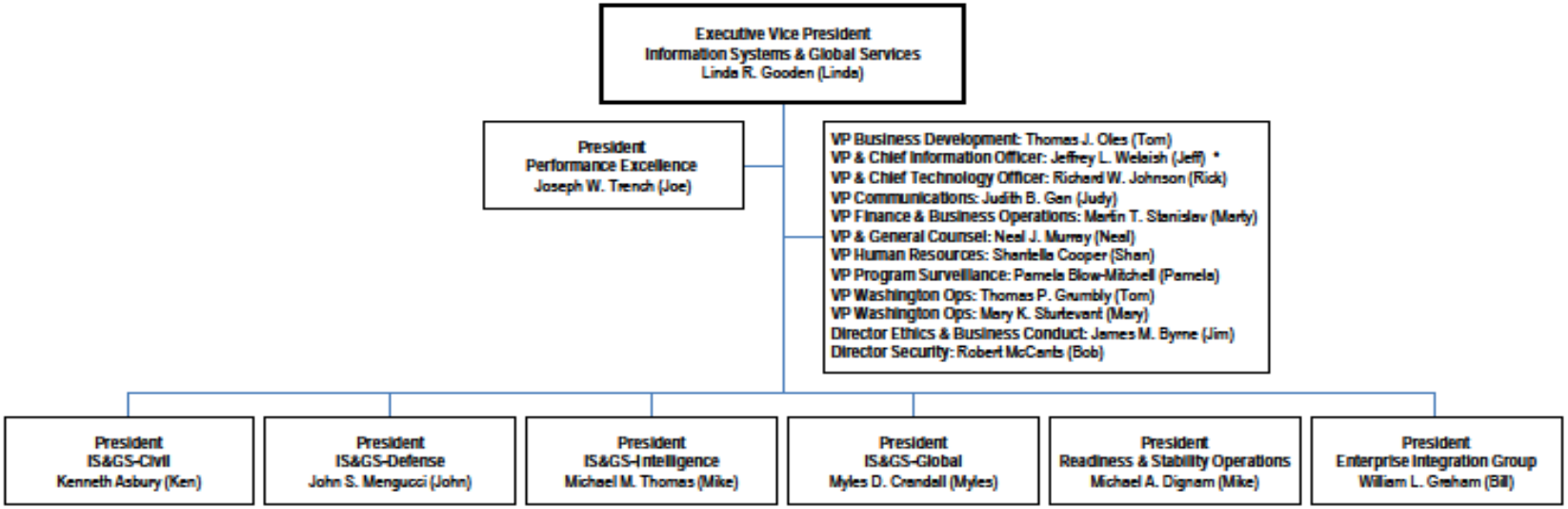
Information Systems & Global Services



Wait – we just had a reorg!

Information Systems & Global Services

September 16, 2009



*Acting **

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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 the 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

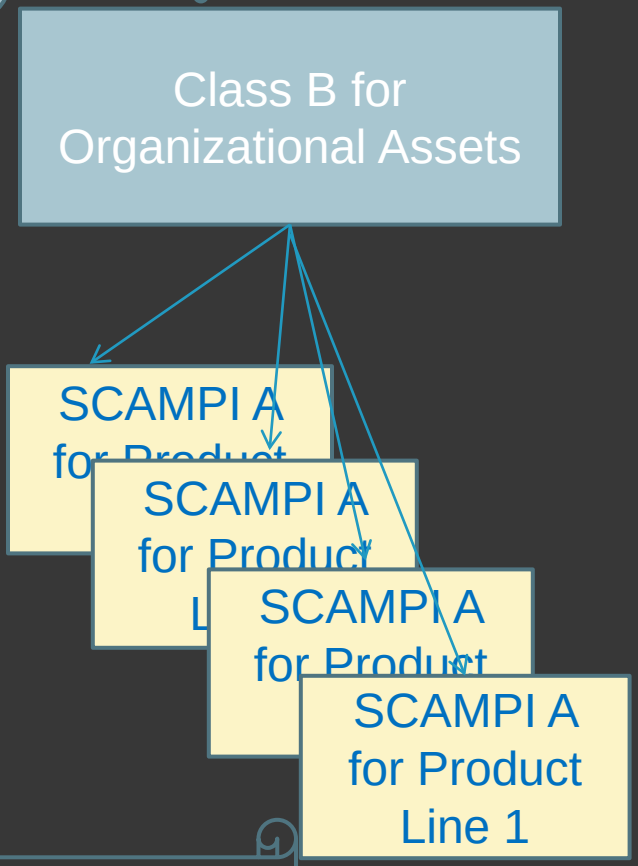
- Process Asset Library contained required processes as well as guidance for implementing the requirements
  - Policies, including the PPS, and Business Processes were required by all functions and programs
    - Tailoring and waivers only as approved by the EPSC
  - Procedures provided guidance in implementing 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

One set of Org PIIDs => Reduced cost



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

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

What Went Wrong?

Class B for Organizational Assets

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

- 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

What Went Wrong? (2)

SCAMPI A for Product Line x

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

- 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

What Went Wrong? (3)

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

- 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?

Class B for Organizational Assets

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

- 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

What Went Right? (2)

SCAMPI A for Product Line x

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

- 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

What Went Right? (3)

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

- 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

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?