How to Assure your Subcontractors Quality with Cross Constellations and Multi Models Inspiration

Continues Process Improvement Initiatives

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Agenda

- Background
- The Challenge
- The Solution
- Tips For You
Complex and large organizations or divisions that run a system / product lifecycle End to End, need to use more than just ‘one’ CMMI or on quality related standard.

Our experience shows that these organizations are typically structured as matrix organizations, with functional teams or as a complex of independent smaller business units.
The Challenge

This situation where organization is running a system lifecycle a matrix with internal or external contractors, with

- With partial overall view in interactions and handshakes between these groups is introducing inefficient usage of
  - resources,
  - expensive maintenance of duplicate infrastructures
  - and Organizational Sets of Standards Processes as well as assets,

- May result in less quality and impacting the end product / system.
The Challenge

This situation where organization is running a system lifecycle a matrix with internal or external contractors, with

- separate process improvements on different parts of the system / product lifecycle
The Challenge

This situation where organization is running a system lifecycle a matrix with internal or external contractors = service providers, with

- separate quality management systems and with compliance to different standards (e.g. AS9100c) and qualification (e.g. MIL-STD 217) on different parts of the system / product lifecycle
The Theory in the Models is Nice

However

Real Life is More Complicated

Much More
WIDE-AREA CONNECTIVITY

Systems for Strike:
- Weapons Systems
- Sensors
- Local Area Networks

Systems for TAM:
- Sensors
- Local Area Networks
- Weapons Systems

Systems for Other Missions and Systems of Coalition Partners and Other U.S. Agencies

Messaging, Security, System Management, Storage, etc.

Networking Applications

Workstations

Public Internet

Applications and Application Hosting

Firewall
The Case Study Organization

Government Agency

Structure and Size

- 6 Senior Managers
- ~250 Project / Program Managers
  (running ~450 tasks / projects per year)
- ~900 In-house Development, Service
  and Maintenance Personal
- ~2000 External Contractors
- Internal R&D Team
- Internal Reliability and Performance Team
- Internal maintenance and support units
- Internal manufacturing and assembly units
Organizational risk events are predominantly managerial, not technical.

- Lack of defining business objectives in quantitative terms and structure
- Inadequate definition of 'Good Enough' level
- Inability to differentiate different business objectives and success factors for the different domains and lifecycle phases
- Inadequate resource usage and adjustment to Plan and Objectives
- Failure to identify and manage risks
- Poor or mismanaged service / operational requirements
- Uncontrolled baselines, no configuration management
- Misunderstood business / operational needs and objectives
Common Failures - 2

- Poor contractor acquisition or management
- Lack of skills, capability and training
- Poor planning and tracking
  - Value Stream
  - Equipment
  - Resources
  - Finance
- Poor / misuse of data and measurements
- Inability to estimate accurately
- No quality assurance / control
- Poor communications
The Operational Need

- Management capability level from both professional and knowledge level
- Performance and reporting norms
- Self management and self discipline maintaining personal professional and knowledge capabilities
- Individual and team discipline
- Cooperation and knowledge and resource sharing
- Appropriate visibility of information, data and capabilities
- Quality of readiness and preparedness for performing mission
The Operational Need

- Centralized resource management and appropriate utilization and usage of it
- Multidimensional management (future planning, unit strategy, short term objectives, the immediate objectives)
- Initiating, developing and implementation management of new processes and technologies
- Balanced planning and deploying new processes and tools improvements and new technologies in a measured way that will quantify the improvement vs. expectations
- Information, data and communication security
The Operational Need

Each person working in the implementation organization will need to do the following:

- Access the processes descriptions
- Understand the lifecycle at a top level
- Understand in detail of the processes that he or she performs

In addition, managers must do the following:

- Understand the lifecycle at a top level
- Understand the leadership change management expectations in detail
- Understand how to lead the unit using the new processes
- Access historical measurement data for all processes and product versions performance
- Support implementation of new processes in their own surroundings
- Remove roadblocks to implementation
A Complex Effects-based Environment
Military Combat Services Support
Challenges in the Battlefield C4ISR Systems
The Approach to the Solution Concept

- Best practices in the model focus on activities for providing quality services to the customer and end users.
- To identify improvement targets in main lifecycle areas such as operations, information, governance, people and organizational structure, portfolios, project execution, and finance.
- Select processes that are critical to the system success such as stakeholder management, technical interfaces and integration.
The Approach to the Solution Concept

- Build an action plan composed from the following main steps
  - Organizational map
  - Functional team and groups size and role in the lifecycle
  - Full lifecycle map
  - Setting improvement targets
  - Gap analysis
- Suggesting to the senior management to address the lifecycle and process (as a whole) as a complex of crossing interfaces and to add additional content to the lifecycle map (as a layer)
The Conceptual Solution

- Building on contingency theory, it outlines a comprehensive framework suggesting a fit between the level of Mission interoperability and environmental as well as internal contingencies.

- Moving from the current environment of basic process and way of thinking toward a more controlled and measured process to reduce the overwhelming amount of information that build decisions.
The Conceptual Solution

- We have found that Maturity Models and practices combined with some other industry standards and methods as a new integrated approach can be used as tools to leverage procedures to support the lifecycles and the organizational business objectives and capability, readiness and preparedness to achieve improvement and excellence.
The Proposed Solution Concept

Using the CMMI-SVC as an overall umbrella, to:

• Increase results and effectiveness
• Reduce quality related activities costs by reducing overlaps and choosing the appropriate parts only as part of the ‘whole’
• Reduce administration costs by improving the ability to manage the lifecycle network
• Converged working network helps businesses to save procurement costs of infrastructure
Process Improvement Effort Objectives

• Group Target is Process Improvement:
  • Increase Processes Efficiency
  • Increase Budget utilization
  • Reduce Cost of Poor Quality
  • Increase Uniformity in Processes

• Leading Standards to Compliance with
  • Internal Quality Standard
  • EFQM
  • CMMI Suite
Supporting Quality Standards Scope

- All Groups
  - Smart Grid
  - ISO 25999
- ACQ PMs / PMO
  - PMBOK
  - DoD 5000.01 & 5000.02
- Maintenance and Service
  - MIL-STDs
  - ISO 14000
  - OHAS 18000
Supporting Quality Standards Mapping

SGMM  Tool  Slides
Additional Standards Elements
(applied internally and to contractors)

- ISO 9001-2008 = 216
- OHSAS 18001 = 132
- ISO 27001 = 126
- ISO 27002 = 134
- ISO 14001 = 139
- PMBOK 3rd = 804
- OPM3 = 1402
- DoD-AF V2 = 40
- ISO 20000 = 196
- ITIL V2.0 = 741
- Six Sigma = 148
- MIL-STDs = 127
- EFQM = 804

Not Counted
- Domain Specific Regulations
- LEAN
- SOA-MM

Total of 5009 ‘Additional’ Elements?
Some Mapping Examples
Six Sigma Correlation Snapshot

DEFINE
MEASURE
ANALYZE
IMPROVE
CONTROL

14 out are covered
ITIL – CMMI Correlation Snapshot

Service Delivery

Financial Management for IT Services

Capacity Management

IT Service Continuity Management

Availability Management

Service Level Management

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ITIL – CMMI Correlation Snapshot

Service Support

- The Service Desk
- Incident Management
- Problem Management
- Configuration Management
- Change Management
- Release Management

ITIL Practices:
- PP
- SSC
- SCON
- CAR

CMMI V1.2 Practices:
- M&A
- OT
- QPM
- M&A
CMMI Harmonization
Process Tool
# First Level Filtering (PA Level)

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<th>SVC</th>
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<td>Acquisition Technical Management</td>
<td>Strategic Service Management</td>
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The Most Effective Practices to Ensure Contractors Qualification and Quality

Based on ~1600 tasks and projects analysis

and

Presented with practical usage and implementation tips
Improvement vs. Implementation

Process Improvements

Achieved Improvement

Implementation Effort

ROI

- M&A
- GP 2.8
- OID
- SSAD
- CAR
- AM
- CAM
- QPM OPP
- GP 2.2

- OT
- CM
- RSKM
- SST
- IPM
- DAR
- REQM
- TS
- RD
- PI
- STSM

- GP 2.7
- VAL
- VER
- PP
- PMC

- GP 2.5
- GP 2.4
- GP 2.3
- GP 2.1

High

Low
Improvement vs. Benefit

Add Value

Organizational Benefit

Achieved Improvement
Some of Our Suggestions

Don’t try this at Home without adult helping you
Questions