CMMI ACQUISITION MODEL (CMMI-ACQ):
DRIVING PROCESS IMPROVEMENT

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Agenda

- Overview
- GM IS&S and the CMMI for Acquisition
- CMMI-ACQ Integration at General Motors
Overview

• General Motors now acquires 100% of its IT solutions
• There was no maturity model for organizations that acquire technology
• General Motors partnered with the Software Engineering Institute (SEI) to develop the CMMI-ACQ
• General Motors was the first commercial enterprise to be appraised utilizing the CMMI-ACQ
• The best practices encompassed in the CMMI-ACQ drive quality throughout the IT acquisition process
General Motors Products

1 in every 6 cars in the world is from the GM

- GMC
- Chevrolet
- Cadillac
- Saturn
- Vauxhall
- Saab
- Holden
- Opel
- Hummer
- Pontiac
- Daewoo
- Buick
GM’s Profile

- 280,000 employees worldwide
- $207 billion revenue in 2006
- Products sold in more than 200 countries
- Sold more than 9 million cars and trucks in 2006
- 181 Manufacturing facilities in 35 countries
- 14,000+ dealers in North America alone
- $89 billion of direct materials purchased annually
- 14 million pounds of material received daily
- Approximately 5,000 parts in each vehicle
- 375 million square feet of Manufacturing space including Joint Ventures
- 3,200 sources provide delivery "just in time"
GM’s Global Design & Engineering Centers

15 Design Centers in 12 Countries
GM’s Manufacturing Plants

181 Manufacturing Plants in 35 Countries
GM is a Tightly Integrated Global Company

The Global Environment

- Truly 24x7 – we are always working somewhere
- Region, country and brand stand-alone structures no longer exist
- Suppliers and joint ventures are integral to the model

Drives

- Global collaboration
- Real-time access to critical business information
- Supply chain visibility
- Global regulatory requirements
- Always-on infrastructure (no downtime)
GM has been acquiring – not developing – IT Systems for decades
Evolution of GM IT

First Generation
1984-1996

Second Generation
1996-2003

Third Generation
2003→
The Challenge

How does GM structure the vendor relationship in the 3rd generation outsourced environment?

- Leverage best-in-class suppliers
- Become more nimble
- Focus on our core competencies
- Be better positioned to take advantage of new technologies
- Assure quality of all systems
2007 Global IT Industry

Total IT Operating Budgets: $2.13 Trillion
Total IT Purchases: $1.55 Trillion

75% of every dollar in IT spent is on Acquisition

* Source: Forrester
Research of IT Models

✓ CMM, CMMI
✓ SPICE
✓ IEEE
✓ COBIT
✓ ITIL

Findings:

• Enterprises were acquiring many systems
• Models focused on development and operation
• No models adequately support the acquirer
• Industry was looking for an acquisition model
Software Engineering Institute and GM

- Strategic decision to acquire - not build
- Previously utilized CMMI development
- Recognition that Acquisition is different
- Requires standard model for global deployment

- Thought Leadership in developing maturity models (CMM, CMMI)
- Integrator of best practices in software engineering
- Recognition of value in offering model for acquirers
CMMI-ACQ Model

- Model for being a ‘good customer’
- Effective implementation requires understanding and correctly applying the model

Solicitation & Supplier Agreement Development
Agreement Management
Acquisition Requirements Development
Acquisition Technical Management
Acquisition Validation
Acquisition Verification

CMMI Model Framework (CMF)
16 Project, Organizational, and Support Process Areas
General Motors Implementation of CMMI for Acquisition
GM analyzed and internalized the CMMI-ACQ model

- We determined the core competencies essential to implementing IS&S goals
Implementing the model requires structural change and global standardization

- Organizational Structure
- Common Global Processes
- Common Service Agreements
- Continuous Improvement
CMMI-Acquisition Learnings

- Key insights into successful implementation strategy
  - Build core competencies in retained processes
  - Keep process lean:
    - Build enabling systems
    - Standardize on Acceptance
    - Standardize on Interfaces
    - Standardize on Tools
**Key Lessons**

- **Acquirer ownership of requirements is essential**
  - Relationship with customer/user
  - Continuity between projects

- **Requirements are tightly linked to contracts**
  - Tension within teams if requirements are poor quality
  - Suppliers can take advantage of loose requirements

- **Acquirer must be skilled in requirements engineering**

**Actions**

- Established requirements team
- Requirements prototyping
- Requirements lead oversees projects
- Standard requirements
Architecture

Key Lessons

- Acquirer must retain ownership of architecture
  - Determines technical strategy
  - Assure consistency
  - Assure ‘Best Interest’ of Acquirer

- Architectural philosophy varies within supplier base
  - Variation at company and personal level

- Technical and architectural standards eliminate noise
  - Hurdle should be very high for deviations

Actions

- Enterprise level system engineering team
- Cross area architecture planning meetings
- Lead architect oversees all projects
- Implementation of technical standards
Project Management

Key Lessons

- Acquisition PM is a different mindset than development
  - PM’s shift from “doing” to “managing”, retain accountability
  - Acquisition PM must integrate with supplier PM
  - Clear acceptance and quality measures are critical

- Relationship with customer is critical
  - PM is the key customer advocate in the project

Contract support of PM is critical

Actions

- Standard contracts across areas
- Standard RASIC for all projects
- Integrated GM & supplier project plan
- Standard peer & acceptance reviews
**Supplier Alignment**

**Key Lessons**
- Define the process for the organization and interface to suppliers
- Focus delivery process on acquirer core competencies
- Don’t prescribe the supplier’s methodology
- Supplier teams integrate at different speeds and require a variety of support mechanisms (e.g., training)

**Actions**
- Global System Process Days
- Global face to face training
- Global Coach’s program
- Interactive distance learning
Global Implementation

- Global Standardization is key to GM’s success
  - Global Training on Processes
  - Global Process Coaches
  - Global management and architecture meetings

- Regular Improvement driven by GM users and suppliers
  - Process Releases
  - Contract Updates
SUMMARY

- Through partnership with the SEI, DoD, Suppliers and others, the CMMI-ACQ provides a model for being a great customer.
- The best practices encompassed in the CMMI-ACQ drive quality throughout the IT acquisition process.
- General Motors was the first commercial enterprise to be appraised utilizing the CMMI-ACQ.
- GM recognizes it must excel in Requirements, Architecture, and Project Management to be a successful Acquirer and Customer.
Thank You!

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