Achieving Successful CMMI-DEV Practice Implementation Across Diverse Distributed Environments In Small Organizations
Agenda

- Process Improvement Key Factors & Challenges for Distributed Small Businesses
- Scenario for Implementing Process Improvement Practices Across Distributed Small Businesses
- Bridging Distributed Environments Using CMMI-DEV for Distributed Small Businesses
- CMMI-DEV Practice Implementation for Distributed Small Businesses
- Steps for CMMI-DEV Practice Implementation for Distributed Small Businesses
- Strategy Map for Using Audits and Appraisals
- Lessons Learned – Success Factors
Process Improvement Key Factors & Challenges for Distributed Small Businesses

Challenges

<table>
<thead>
<tr>
<th>Dynamic Requirements</th>
<th>Impact of customer co-location on requirements management &amp; tasking</th>
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</thead>
<tbody>
<tr>
<td>Aggressive Schedules</td>
<td>Immediate effect of changing customer priorities &amp; direction</td>
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<td>Limited Resources</td>
<td>Typical work performed on a fixed LOE or time &amp; material basis.</td>
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<td>Diverse Applications</td>
<td>Lack of institutionalized project management procedures, templates and project past performance data.</td>
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<tr>
<td>Customer Types</td>
<td>Customers have different cultures &amp; performance expectations,</td>
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Distributed small businesses often function in focused markets as:
- Suppliers of specialized on-site technical services, key personnel or products
- Domain specialists
- Staff augmentation

These focused markets may not provide needed revenue or market share growth to readily prosper in today’s economy.

Costs of improving management practices are considered key investments in these vulnerable cash flow environments.

Both near and long term cash flow analysis typically includes factors such as:
- Customer base stability & revenue cycles
- Projected revenue growth
- Costs of acquiring appropriate resources to improve management practices, such as training, process engineers and collaborative software and hardware.
Understanding and improving project management practices is a key factor in revenue growth.

Planning improvement of project management typically includes assessment of critical factors such as:

- Required resources (available staff, feasible schedule, platforms, facilities, collaborative tools)
- Past performance data (costs, schedules, lessons learned)
- Training in the domain
- Risk identification and impact assessment
- Risk mitigation

Process models such as CMMI and ISO 9000 provide practical knowledge bases for improving management practices.

Obtaining CMMI benchmarks and ISO 9000 certifications are often stepping stones to expand government and commercial customers.

Selecting and implementing any process models is both costly and can be risky as there are no guarantees of success in distributed customer sites.
Planning a process improvement strategy typically includes identifying problematic projects with typical issues such as:

- Inaccurate planning data for costs and schedule
- Limited resources and ambitious schedules
- Lack of experience and staff training
- Excessive staff turnover rate
- Stability of current customer base
- Projection of market growth
- Over commitment of key staff

Implementing a process improvement strategy, distributed businesses should customize a path of small, adjustable steps.

An example of a path of small steps is a hybrid approach of improving project management practices in CMMI-DEV first.

The CMMI project management practices can provide a framework for future adoption of ISO 9000.
CMMI-DEV Provides Commonality

- Customer focused
- Requires continuous improvement
- Built on processes
- Focuses on resource management
- Based on measurement and analysis

Bridging Techniques to Achieve Institutionalization

- Provide shared remote access
- Conduct site visits to understand different environments & cultures
- Take the initiative to talk daily
- Schedule weekly telecons with individuals at each site
- Integrate technical and engineering activities with life-cycle development tools that adapt to the dynamics of customer environments

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in Small & Medium Organizations

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Frameworks of the CMMI models provide:

- **Increases** in implementation efficiency due to redundancy in model functions, such as Project Management & Support Process Areas and generic practices.
- **Minimal opportunities for conflicts** with staff and resources with **adequate** model understanding.
Steps for CMMI-DEV Practice Implementation for Distributed Small Businesses

**Understand the Integrated Business Objectives**
- Market Area
  - current
  - revenue/profit
  - projected growth

**Collect Lessons Learned**
- What did we do well?
- Where were we lucky?
- What do we need to improve?

**Evaluate Business Opportunity**
- “risk of winning”

**Identify Project Specific Risks**
- Cost, schedule, technical impacts
  - mitigation planning data
  - customer involvement
  - monthly statusing

**Develop Project Plan**

**Key growth investments:**
- CMMI-DEV, ISO 9001-2000
- Process training
- Collaborative H/W & S/W
- Process engineer support

**Contract Type**
- new
  - customer
  - technical complexity
- staff

**Impact Metrics**
- cost
- schedule
- technical

**Track Risks**
- current
- new

**Evaluate Mitigation Plans**

**High, Medium, Low Risk Template**

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Strategy Map for Using Audits & Appraisals for Distributed Small Businesses

Strategy to achieve full goal satisfaction in all Process Areas for Maturity Level 3.

- **Internal audits**
  - Quality PM or staff auditing of processes

- **Pre-Readiness Reviews**
  - Internal mini-team analysis of body of evidence

- **Readiness Reviews**
  - Formal analysis of body of evidence
  - Assess readiness until proven

- **Appraisals**
  - SCAMPI C
  - SCAMPI B
  - SCAMPI A

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Lessons Learned in Managing CMMI-DEV Practice Implementation for Distributed Small Businesses

- Understand that all process improvement opportunities are investments and have costs and risks as-well-as eventual returns on investment.
- Receive sustained management commitment in providing a dedicated project lead, suited support personnel, and resources.
- Avoid “surprises” by incorporating regular progress reviews into weekly senior management telecons.
- Include distributed site staff members in planning and reviewing practice implementation to understand the continuity and costs and identify the key risks, such as customer culture & expectations.
- Use the guidance of an SEI-trained lead appraiser from the beginning for strategy planning, model and appraisal training, and appraisals.
- Work from a thorough Process Improvement Plan which includes risks, costs, and schedule.
Lessons Learned in Managing CMMI-DEV Practice Implementation for Distributed Small Business (continued)

- Implement practices with the use of consistent and approved tailored templates.
- Coordinate team process implementation and information sharing across geographically distributed sites using a collaborative file sharing capability e.g., SharePoint.
- Maintain progress and schedule by conducting weekly telecons with each support team member individually.
- Schedule and perform regular independent reviews of artifacts by the project lead and members of the support team.
- Conduct pre-readiness reviews before all appraisals.
You Have Just Seen: Challenges and steps in implementing CMMI-DEV practices across a distributed small business from the “30,000 feet” level.

Questions or Comments?
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