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<table>
<thead>
<tr>
<th>Version</th>
<th>Date</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.0</td>
<td>28 March 2018</td>
<td>Initial baseline release.</td>
</tr>
<tr>
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<td>4 December 2018</td>
<td>Updated information to reflect CMMI V2.1, including views for Development, Services, and Supplier Management</td>
</tr>
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Introduction to this Guidance

Intended Audience

The audience for this guidance includes anyone who is facing business challenges and wants to address them by using the Capability Maturity Model Integration (CMMI®) V2.0 model. It also includes anyone who would like to systematically, efficiently, and effectively improve the performance of their business by adopting the CMMI.

What is Capability Maturity Model Integration (CMMI)?

CMMI is a performance improvement model for organizations and projects that want to achieve increasingly better performance and address and solve business challenges. Proven effective globally in business and government for over 25 years, CMMI is an integrated framework of best practices that can rapidly improve and sustain any organization’s performance to elevate quality, profitability, and competitiveness.

The CMMI model is not prescriptive; it describes what to do to improve an organization’s capabilities, not how to do it. This makes the model very flexible to meet the unique needs of any business. In addition, CMMI complements and enhances performance improvement in conjunction with other industry models and standards. Use CMMI to establish processes that will help an organization or project meet business objectives and improve performance in ways that matter most.

Why use the CMMI?

CMMI helps businesses to quickly understand their current level of capability and performance both in the context of their own objectives and as compared with other businesses and organizations. If business needs and objectives are not being met, CMMI practices can guide systematic and effective improvement to elevate and optimize performance to better serve the needs of the business and ultimately the customer.

The need for improvement can originate from internal and external sources. Customers may demand improvements. Market forces may drive the need to improve competitiveness. Government or industry regulations may require changes in how an organization operates. Rather than using multiple approaches for achieving similar performance, contractual, or regulatory compliance goals, CMMI provides a single approach for an organization to address these multiple needs.

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Using CMMI provides many benefits including:

- A positive return on performance improvement investments
- Meeting commitments that result in:
  - More timely delivery
  - Fewer last-minute crunches
  - Enhanced cost control
  - Increased quality of solutions
- Increasing management visibility which results in:
  - More rapid response to issues and risks
  - Fewer surprises
  - Met or exceeded customer needs and expectations
  - Reduced defects and customer complaints
  - Reduced rework
  - Lower employee turnover

Additional benefits can be found in Appendix B, Typical CMMI Adoption Roles. This appendix describes different roles involved in adopting the CMMI, the activities performed by those roles, and the associated benefits from using the model.

Why Use this Guidance?

This adoption and transition guidance helps any organization use CMMI as a roadmap for its performance improvement journey. An organization can benefit the most from CMMI by tailoring its practices in a way that best fit its business environment. This guidance places an organization on the right track to effectively apply CMMI practices.

Organizations transitioning from previous versions of the CMMI can benefit by getting CMMI V2.0 upgrade training (Step 1) and then picking up transition activities in Step 2.

<table>
<thead>
<tr>
<th>This Guidance Is...</th>
<th>This Guidance Is NOT...</th>
</tr>
</thead>
<tbody>
<tr>
<td>An overview of activities and considerations when using CMMI to enable performance and process improvement</td>
<td>A detailed checklist or “how to” guide</td>
</tr>
<tr>
<td>Built on lessons learned and best practices derived from a broad variety of industry experiences</td>
<td>A set of activities and considerations for appraisal preparation</td>
</tr>
<tr>
<td>A reference to assist CMMI adoption</td>
<td>The only approach for adopting CMMI</td>
</tr>
</tbody>
</table>

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How to use the Guidance

This guidance describes high-level steps for adopting CMMI in an organization. Each step includes a brief description, activities to perform when implementing the step, and suggestions to consider when performing the activities. The step may include additional information such as examples, elaborations, training, tools, and techniques. This guidance is designed and intended to continually improve and be kept current with the latest techniques, content, technologies, and other trends by the CMMI Institute with practical input from CMMI Partners and users.

Figure 1 shows the parts of the CMMI V2.0 Product Suite. This guidance is just one resource in the integrated CMMI V2.0 Product Suite and will aid organizations with the successful adoption of, or transition to, CMMI V2.0. This guidance serves as a navigator to assist users to understand how all the product suite resources fit together and to efficiently utilize these resources to support their business objectives.

Figure 1. CMMI V2.0 Product Suite

In addition to other product suite elements, CMMI Institute provides several resources for adoption and transition. For a detailed list of adoption and transition resources, refer to Appendix A.

The adoption and transition guidance follows the primary categories in the CMMI V2.0 model of “Doing,” “Managing,” “Enabling,” and “Improving” as part of its six-step approach. Figure 2 lists these categories and their Capability Areas. Each step in this adoption and transition guidance lists the Category that corresponds to and supports that step.
Figure 2. Categories and Capability Areas

For more details about Categories, Capabilities, and Practice Areas, refer to Appendix B in this document and Part One: About CMMI V2.0 and Executive Summary and Appendix A: Predefined Model Views – Categories and Capability Areas in the model.
Figure 3. Steps for Applying CMMI for Continuous Improvement

Select (CTRL + Click) a step to go to that section.

01 LEARN
Learn how CMMI will benefit the organization

02 ESTABLISH OBJECTIVES
Develop and communicate business performance and improvement objectives

03 ANALYZE
Map current organizational processes to the CMMI

04 DEVELOP ACTION PLAN
Develop, keep updated and follow an improvement plan to get from the current state to the desired state

05 DEPLOY IMPROVEMENTS
Deploy and follow updated organizational processes, and measure performance

06 ASSESS CAPABILITY
Assess organizational capabilities
LEARN

Step 1: Learn how CMMI will benefit the organization

In this step:

- Get to know CMMI
- Learn how CMMI can be applied to the organization and business
- Understand the benefits from adopting CMMI
- Develop a business case for adoption or transition

An organization must first understand its reasons for improvement and change. Communicating with an organization’s owner or sponsor, typically a senior or executive manager, throughout the improvement journey is vital to achieve success and drive change.

To obtain the commitment necessary for a successful CMMI adoption, it is important to:

- Establish a common understanding of CMMI
- Explain how CMMI will provide value to the organization
- Secure senior management support and sponsorship

Senior Management:

Senior management is a management role for within an organizational and in-scope projects, that:

- Sets the strategy, direction, and expectations for performance and process efforts
- Ensures that processes are aligned with business objectives and needs
- Reinforces and rewards the development and use of processes to ensure their improvement and sustainment
- Monitors the performance and achievements of the processes
- Provides adequate resources for process and performance improvement
This step establishes a foundation for understanding CMMI and how it fits into an organization’s efforts to improve performance and capability. The next step is to establish business and improvement objectives and identify the areas in CMMI that can help address the organization’s needs. **Figure 4** provides a summary list of the key Step 1 activities and considerations.

### Figure 4. Step 1 Activities and Considerations Table

<table>
<thead>
<tr>
<th>Activities</th>
<th>Considerations</th>
</tr>
</thead>
</table>
| Develop a basic understanding of CMMI:  
- What is CMMI?  
- Who uses CMMI?  
- How does it help?  
- What benefits does it provide? | Research information about CMMI.  
Visit the [CMMI Institute website](https://www.cmmi-institute.com) for information about:  
- CMMI and FAQs  
- CMMI overview  
- The *Foundations of Capability* class or other [Training](https://www.cmmi-institute.com/training)  
- [Case studies](https://www.cmmi-institute.com/training)  

<table>
<thead>
<tr>
<th>Develop a basic understanding of how CMMI Capability Areas apply in the organization.</th>
<th>Based on the basic understanding of the model, at a high-level, determine how CMMI Capability Areas fit the organization. For example, identify how <em>Planning and Managing Work</em> relates to the management of the organization’s projects, or how <em>Ensuring Quality</em> can be used to improve product and service quality.</th>
</tr>
</thead>
</table>
| Develop a business case. | Based on a high-level understanding of CMMI and how it fits the organization, develop a business case and present to senior management to secure sponsorship and commitment. The Harvard Business Review has published a great resource for developing a practical business case:  

**Additional Information**

**Capability Areas:** A group of related Practice Areas that can provide improved performance in the skills and activities of an organization or project. A Capability Area view is a subset of the CMMI model that describes a predefined set of Practice Areas that make up a specific Capability Area.
With any improvement effort, change is inevitable. For improvement efforts to be successful, change must be managed. Organizations that have successfully managed change know how to overcome the natural resistance that results from it. Resistance to change comes in many forms and often starts early in the improvement process. As part of looking at CMMI for its performance and improvement efforts, the organization must also address how it will manage change and the resistance that comes with it. There are several critical elements needed to make change successful. Figure 5 shows the elements needed for successful change and what can happen if those elements are not addressed.

At the beginning of implementing any change, an organization must communicate:

- The reason for the change
- The expected benefits
- The support and guidance needed to incorporate the change into work efforts
- How individuals will be affected
- The need to involve everyone in the change

Part of learning about CMMI includes learning about the organization and the people working in it. By learning more about the organization, it becomes easier to:

- Understand its culture and norms

**Transition Tip:** Even if your management, projects, and teams are familiar with previous versions of CMMI, it is important to understand and frequently communicate the improvements and differences in CMMI V2.0 in order to obtain commitment and support for making the change to the new version. CMMI Institute has information and materials to explain the benefits from adopting CMMI.
• Identify and manage possible areas of resistance
• Learn the key issues driving behavior

Learning about and applying CMMI are often the easiest aspects of performance improvement and the changes that comes with them. Understanding the organizational culture and dealing with resistance are typically the most difficult parts of any change effort. The existing organizational culture may either enhance or slow down the adoption of CMMI.

It is important to know the issues that matter to each group in the organization. For example, senior managers and executives typically focus on financial concerns and overall impact on the organization. They will ask questions such as:

• How much is this going to cost?
• How much time is this going to take away from work efforts?
• How much revenue will this create?
• How much profit will this add to the bottom line?
• What is the anticipated return on investment?
• How does this affect my people?
• What will it take to implement the change?

To manage change successfully, plan to address the issues and questions that are raised by each group in the organization. Be prepared to answer questions like these without using CMMI terminology or technical jargon. Communicate in terms that are understood and used within the organization whenever possible. Expect these questions to start early in the improvement effort and continue throughout.

Obtaining senior management support is one, if not the most, critical element of successful change. Senior management should demonstrate active commitment, support, and behavior in championing the improvement changes.

Adoption and Transition Tip:
Developing a communication and stakeholder management plan can help to keep the channels open when resistance is encountered. Recording Frequently Asked Questions (FAQs) can help to ensure consistency in messaging and understanding.
ESTABLISH OBJECTIVES

Step 2: Establish performance improvement objectives aligned to your organizational objectives

In this step:

- Identify the most critical objectives to business success
- Establish performance improvement objectives based on the organization’s business objectives
- Understand which parts of CMMI relate to these performance improvement objectives
- Identify infrastructure needs to support improvement efforts
- Identify measures of success for meeting objectives
- Develop an improvement plan and keep it updated
- Continually communicate with stakeholders

All organizations typically have some idea of their business objectives. Identify and prioritize the business challenges and issues that are putting the most important objectives at risk or preventing them from being met. Keeping each of these elements aligned is important to ensure that the right improvements are being addressed. Figure 6 provides a summary list of the key Step 2 activities and considerations.
Figure 6. Step 2 Activities and Considerations Table

<table>
<thead>
<tr>
<th>Activities</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Record business needs and objectives.</td>
<td>List business goals, risks, and Key Performance Indicator (KPI) measures. Refer to Appendix E – Building Business Goals, Risks, and KPIs.</td>
</tr>
<tr>
<td></td>
<td>This step corresponds to and can be supported by the Practice Areas and Capability Areas contained in the CMMI Model Category of “Doing.” Start by identifying any existing business goals, objectives, and strategic plans. Work with managers and affected stakeholders to define organizational needs and objectives. Affected stakeholders should include the people performing the work, as they will have the most insight into issues and challenges. Include both short-term and long-term objectives. A CMMI Institute Certified Lead Appraiser can use the CMMI Performance Report as a template for recording this information and ensuring your CMMI journey focuses on the most important aspects of your business.</td>
</tr>
<tr>
<td>Record performance improvement objectives.</td>
<td>Performance improvement objectives:</td>
</tr>
<tr>
<td></td>
<td>• Are derived from organizational business needs and objectives</td>
</tr>
<tr>
<td></td>
<td>• Focus on addressing challenges or issues affecting the current projects</td>
</tr>
<tr>
<td>Prioritize business and performance improvement objectives.</td>
<td>Prioritize objectives based on the value to the organization, risks, and constraints.</td>
</tr>
<tr>
<td>Develop measurable targets for performance improvement objectives.</td>
<td>Measurable targets:</td>
</tr>
<tr>
<td></td>
<td>• Are meaningful to the organization</td>
</tr>
<tr>
<td></td>
<td>• Address effectiveness of the improvements</td>
</tr>
<tr>
<td></td>
<td>• Assess progress towards achieving objectives</td>
</tr>
</tbody>
</table>
### Activities

#### Considerations

<table>
<thead>
<tr>
<th>Targets should be:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Specific</td>
</tr>
<tr>
<td>• Measurable</td>
</tr>
<tr>
<td>• Attainable, agreed upon</td>
</tr>
<tr>
<td>• Realistic</td>
</tr>
<tr>
<td>• Time-based</td>
</tr>
</tbody>
</table>

**Target Practice Areas that relate to the prioritized performance improvement objectives.**

Based on a high-level understanding of the Capability Areas identified in Step 1, review the Practice Areas in each that address the objectives and improvements challenges directly.

There are many approaches that may work in an organization; the challenge is to couple this deep understanding of CMMI with knowledge about the unique aspects of the business and organization.

A CMMI Institute Partner-Sponsored Individual can help an organization perform this task.

- These professionals bring deep knowledge of CMMI and how to apply it in a variety of organizational contexts.
- Refer to the [CMMI Institute Partner directory](#) for CMMI Institute Partner-Sponsored Individuals that meet your business needs.

**Establish the infrastructure to support and implement improvements.**

To ensure long-term success, performance improvement efforts require an infrastructure that is sustainable over time. Organizations need to identify who is involved in improvement activities and define their roles and responsibilities. Typical roles include:

- Improvement sponsor
- Management steering group
- Process group
- Process action teams

Additional infrastructure resources may include:

- Budget
- Time
- Tools
- Training
- Repository for process assets
- Measurement system and repository
<table>
<thead>
<tr>
<th>Activities</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activities Considerations</td>
<td>For more details on infrastructure and sustainment, refer to content in the following CMMI Practice Areas:</td>
</tr>
<tr>
<td>• Implementation Infrastructure (II): Ensure that the processes important to an organization are persistently and habitually used and improved.</td>
<td></td>
</tr>
<tr>
<td>• Governance (GOV): Provides guidance to senior management on their role in the sponsorship and governance of process activities.</td>
<td></td>
</tr>
<tr>
<td>• Process Asset Development (PAD): Develop and keep updated the process assets necessary to perform the work.</td>
<td></td>
</tr>
<tr>
<td>For more details on performance and performance objectives, review the content in the following CMMI Practice Area:</td>
<td></td>
</tr>
<tr>
<td>• Managing Performance and Measurement (MPM): Manage performance using measurement and analysis to achieve business objectives.</td>
<td></td>
</tr>
<tr>
<td>Record all of the above in an improvement plan, keep it updated and communicate with stakeholders.</td>
<td>The improvement plan for either transition or adoption may include a set of requirements, a budget, a schedule, risks, dependencies, stakeholders, etc.</td>
</tr>
<tr>
<td>For more details on what to include in an improvement plan, review the content in the following CMMI Practice Area:</td>
<td></td>
</tr>
<tr>
<td>• Process Management (PCM): Manages and implements the continuous improvement of processes and infrastructure to:</td>
<td></td>
</tr>
<tr>
<td>o Support accomplishing business objectives</td>
<td></td>
</tr>
<tr>
<td>o Identify and implement the most beneficial process improvements</td>
<td></td>
</tr>
<tr>
<td>o Make the results of process improvement visible, accessible, and sustainable</td>
<td></td>
</tr>
</tbody>
</table>

**Additional Information**

Refer to the appendices in this document for more information on:
- Typical CMMI Adoption Roles and benefits ([Appendix D](#))
- Problem Identification and Resolution using CMMI ([Appendix C](#))
The following sources can be used when identifying business challenges and related opportunities for improvement:

- Stakeholder input
- Customer feedback
- Improvement proposals
- Risks and opportunities
- Lessons learned
- Results from appraisals
- Results from root cause analysis
- Measurements results
- Quality evaluations or audits

When establishing measurable targets, an organization may want to consider using the following resources:

- **Goal-Question-Metric approach** to derive meaningful measures from objectives
- **Goal-Driven Software Measurement** designed to help you identify, select, define, and implement measures to support your business goals

Some items to consider as part of process improvement efforts include:

- Up front interaction with the improvement sponsor and senior management when building the case for performance and process improvement
- Records of previous improvement activities, including issues, decisions, and action items
- Use of terminology that is familiar to the audience by avoiding technical jargon or CMMI terminology
- Determination of the type and frequency of written communication and updates (verbal or written)

The objectives must be clearly communicated to the entire organization. If people understand the reasons for the change and the desired outcome along with their role in making the change, the amount of potential resistance will be reduced.

---

**Transition Tip:**

Previously appraised High Maturity organizations can quickly recognize and leverage the content recorded by the Performance Report. In the CMMI V2.0 Product Suite, the term “High Maturity” involves the use of statistical and other quantitative techniques on selected processes to predict improved business results. High Maturity represents a fundamental shift in how processes are understood, managed, and improved. As organizations move up in process maturity, they gain in-depth understanding of how processes are used and interact, which gives them a clear competitive advantage.
ANALYZE

**Step 3: Map current organizational processes to CMMI**

In this step:

- Map current business processes to CMMI components and practices
- Identify any gaps between the business processes and the CMMI components and practices identified for improvement
- Recommend improvements to address the gaps

This step corresponds to and can be supported by the Practice Areas and Capability Areas contained in the CMMI Model Category of “Enabling.”

It is important to understand the processes currently used in the organization and the extent to which they meet the intent of the CMMI practices. This is an important step as it forms the basis of future improvement activities. **Figure 7** provides a summary list of the key Step 3 activities and considerations.

**Transition Tip:**
Organizations who have previously adopted CMMI V1.3 can leverage the CMMI Institute’s CMMI V1.3 to CMMI V2.0 Practice Mapping to aid in reflecting CMMI V2.0 requirements with their improvement efforts.
### Figure 7. Step 3 Activities and Considerations Table

<table>
<thead>
<tr>
<th>Activities</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perform gap analysis of current processes against the CMMI Practice Areas and practices identified for improvement.</td>
<td>The gap analysis may use a formal appraisal method such as a CMMI Evaluation Appraisal (refer to the <em>CMMI Appraisal Method Definition Document (MDD)</em>). Alternatively, the gap analysis may be performed informally by doing a simple comparison of selected processes to CMMI Practice Areas and other model components. This analysis does more than just identifying gaps in the processes being used. It also involves determining if the processes are utilized, persistent, and habitual. A well-crafted business process is of little value if it is not used. A description and examples of appraisals can be found in the MDD. A CMMI Institute Partner-Sponsored Individual can help an organization perform this task. Refer to the <a href="#">CMMI Institute Partner directory</a> for CMMI Institute Partner-Sponsored Individuals to meet your business needs.</td>
</tr>
<tr>
<td>Record the results of the gap analysis.</td>
<td>Recommendations form the basis for improvement action plans. For more details, review the content in the following CMMI Practice Area:</td>
</tr>
<tr>
<td>Develop and record recommended improvement activities to close any identified gaps.</td>
<td>- <strong>Process Management</strong> (PCM): Manages and implements the continuous improvement of processes and infrastructure to:</td>
</tr>
<tr>
<td></td>
<td>- Support accomplishing business objectives</td>
</tr>
<tr>
<td></td>
<td>- Identify and implement the most beneficial process improvements</td>
</tr>
<tr>
<td></td>
<td>- Make the results of process improvement visible, accessible, and sustainable</td>
</tr>
</tbody>
</table>

**Additional Information**

This information provides a reference for people in the organization to understand how their processes relate to CMMI components and practices. This information also forms the basis for developing action plans for performance improvement in the next step.

The CMMI Model V2.0 Quick Reference Guide and the CMMI V2.0 Practice Mapping are additional resources that provide insights to assist with adoption or transition activities. [Appendix A](#) lists these and other resources.
DEVELOP ACTION PLAN

**Step 4:** Develop and follow action plans and keep them updated

In this step:

- Develop an improvement strategy
- Develop action plans to address performance and process gaps identified in the previous step
- Make changes or improvements
- Define or update processes

This step corresponds to and can be supported by the Practice Areas and Capability Areas contained in the CMMI Model Category of “Managing.”

The step begins by developing the organizational improvement strategy and obtaining commitment from all stakeholders. The strategy includes the benefits of capability and performance improvement and the impact to organizational business objectives.

The improvement strategy requires a firm commitment from the improvement sponsor. Active sponsorship is critical to ensure that the plan and the required resources are available throughout the improvement effort.

**Adoption and Transition Tip:**
Action plans should contain clear and measurable information on when and how actions will be considered closed. By prioritizing those actions that have the greatest impact on the business and performance rather than compliance, it will be easier to convince senior management and stakeholders why the improvements are of value and need to be sustained over time.
This step also develops improvement action plans to address the gaps identified in the previous step and to move the organization towards achieving its objectives. Performing these activities may result in defining or updating processes and making other changes needed to address process gaps. As with any plan, it is important to keep the action plans updated as activities are added, modified, or removed.

As the organization progresses through the action plans, monitor performance to ensure that the desired results are achieved. Performance and results should tie back to the organizational business improvement goals defined in the strategy. **Figure 8** provides a summary list of the key Step 4 activities and considerations.

**Figure 8. Step 4 Activities and Considerations Table**

<table>
<thead>
<tr>
<th>Activities</th>
<th>Considerations</th>
</tr>
</thead>
</table>
| Develop and follow an improvement strategy and keep it updated. | An improvement strategy typically includes:  
  - Business considerations  
  - Objectives and constraints  
  - Possible approaches to meeting the objectives and constraints  
  - Requirements  
  - Needed resources, e.g., skills, environment, tools, new technologies  
  - Risks and how they will be mitigated |
| Establish priorities for improvement actions. | Prioritize improvement actions based on the value to the organization, resource constraints, and the impact on achieving performance objectives. This will help gauge how much work is ahead and the order in which items should be addressed. |
| Develop action plans to address gaps. | The action plans define all aspects of the effort, tying together the following in a logical manner:  
  - Tasks  
  - Roles and responsibilities  
  - Budgets  
  - Schedules and milestones  
  - Risks  
  - Resources and skills  
  - Stakeholder involvement  

For more details, review the content in the following CMMI Practice Areas:  
  - **Estimating** (EST): To aid in estimating the size, effort, duration, and cost of the work and resources needed to develop, acquire, or deliver the solution |
<table>
<thead>
<tr>
<th>Activities</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Planning (PLAN):</strong> Develop plans to describe what is needed to</td>
<td>• Develop plans to describe what is needed to accomplish the work within the standards and constraints of the organization, including the:</td>
</tr>
<tr>
<td>accomplish the work within the standards and constraints of the</td>
<td>o Budget</td>
</tr>
<tr>
<td>organization, including the:</td>
<td>o Schedule</td>
</tr>
<tr>
<td>• <strong>Implementation Infrastructure (II):</strong> Ensures that the processes</td>
<td>o Resource demand and capacity</td>
</tr>
<tr>
<td>important to an organization are persistently and habitually used</td>
<td>o Quality and functionality requirements</td>
</tr>
<tr>
<td>and improved</td>
<td><strong>Governance (GOV):</strong> Provides guidance to senior management on their role in the sponsorship and governance of process activities</td>
</tr>
<tr>
<td>**Review plans with the improvement sponsor to obtain commitment and</td>
<td>Secure continued visible sponsorship and support for the improvement efforts.</td>
</tr>
<tr>
<td>approval.</td>
<td><strong>Make changes or improvements based on the action plans.</strong> Remember, even though some changes may be easy to implement, they may take a long time to roll-out and to become persistent and habitual.</td>
</tr>
<tr>
<td><strong>Define or update processes where appropriate.</strong></td>
<td><strong>Record the processes the way they are actually performed.</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Refer to Appendix F for more information on recording processes.</strong></td>
</tr>
<tr>
<td></td>
<td><strong>A CMMI Institute Partner-Sponsored Individual can help an organization perform this task; refer to the CMMI Institute Partner directory to find a CMMI Institute Partner-Sponsored Individual</strong></td>
</tr>
</tbody>
</table>

**Additional Information**

It is important to involve the people affected by the changes in making the improvements. This increases buy-in and reduces resistance to the changes.
DEPLOY IMPROVEMENTS

**Step 5:** Deploy improvements and measure results

In this step:

- Pilot new and changed processes
- Deploy new and changed organizational processes and assets
- Measure the performance of newly deployed organizational processes and assets against the business and performance improvement objectives

This step corresponds to and can be supported by the Practice Areas and Capability Areas contained in the CMMI Model Category of “Improving.”

This step involves piloting and deploying the process improvements identified in action plans from the previous step, typically an iterative process. Process improvements are often rolled out gradually to assess performance. Piloting improvements enables an organization to evaluate the impact of performance improvements to ensure they are successful before wider deployment. Deployment involves managing the implementation of new or updated processes in a consistent and sustainable way. There may be multiple improvement initiatives, concurrent improvements, and deployments in an organization. Coordinate the deployment of processes to avoid confusion, waste, contradictory results, and adverse effects.

Adoption and Transition Tip:
Not every improvement may scale as it is deployed on a broader basis. Piloting improvements helps to understand which improvements have the greatest impact and benefit for the entire organization.
As performance improvements are deployed, care should be taken to ensure that processes are built, followed, and made persistent and habitual. Figure 9 provides a summary list of the key Step 5 activities and considerations.

**Figure 9. Step 5 Activities and Considerations Table**

<table>
<thead>
<tr>
<th>Activities</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measure performance of existing processes and their targeted improvements.</td>
<td>As the organization accumulates historical data, process performance can be measured. Historical data may be used to identify performance differences between current and improved processes.</td>
</tr>
</tbody>
</table>
| Develop, keep updated, and follow a process deployment plan. | The deployment plan typically includes the following:  
  • Deployment strategy  
  • Improvement requirements  
  • Estimated budget, schedule, risks, etc.  
  • Updated vs. new processes  
  • Communication methods  
  • List of affected stakeholders  
  • Training  
  • Implementation expectations |
| Pilot new or changed processes.                 | Define and use criteria for selecting which improvements to pilot. Typical criteria include:  
  • Risk  
  • Impact of change  
  • Number of work efforts affected  
  • Cost  
  • Expected results |
| Analyze results of pilots.                     | Use results from pilots to:  
  • Compare performance results of the pilot to existing performance measures  
  • Determine if the pilot is successful enough to deploy the process to other parts of the organization  
  • Make changes to the piloted process  
  • Update the deployment plan as needed |
<p>| Deploy processes as appropriate.               | Establish the necessary infrastructure to ensure that processes are built, followed, sustained, and improved over time. The term “infrastructure” refers to everything needed to implement, perform, and sustain the organization’s set of processes. The infrastructure includes: |</p>
<table>
<thead>
<tr>
<th>Activities</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitor adoption of recently deployed improvements.</td>
<td>Continue to monitor the process over time by reviewing:</td>
</tr>
<tr>
<td></td>
<td>• Organization’s performance measures</td>
</tr>
<tr>
<td></td>
<td>• Comparison of historical performance to the performance of new or updated processes</td>
</tr>
<tr>
<td></td>
<td>• Persistence and habit in the use of the processes and assets</td>
</tr>
<tr>
<td></td>
<td>By monitoring improvement adoption and performance against organizational business objectives, an organization can verify and quantify the benefits of the improvements.</td>
</tr>
<tr>
<td></td>
<td>This activity may also result in new opportunities for improvement and updates to action plans.</td>
</tr>
<tr>
<td></td>
<td>For more details on deployment improvements and measuring results, review the following CMMI Practice Areas:</td>
</tr>
<tr>
<td></td>
<td>• <strong>Process Management</strong> (PCM): Manages and implements the continuous improvement of processes and infrastructure to:</td>
</tr>
<tr>
<td></td>
<td>o Support accomplishing business objectives</td>
</tr>
<tr>
<td></td>
<td>o Identify and implement the most beneficial process improvements</td>
</tr>
<tr>
<td></td>
<td>o Make the results of process improvement visible, accessible, and sustainable</td>
</tr>
<tr>
<td></td>
<td>• <strong>Managing Performance and Measurement</strong> (MPM): Manage performance using measurement and analysis to achieve business objectives.</td>
</tr>
</tbody>
</table>
• How they are being used

As processes become persistent and habitual, they become an integral part of the organization’s norms and culture. Persistent and habitual processes endure after the people who defined them are gone.

Review the measures collected to understand performance over time to determine if the collected performance data is relevant and critical to the work and to the business or if it needs to be changed. An organization may not get it right the first time, so it should review the data and adjust plans accordingly.
ASSESS CAPABILITY

Step 6: Assess capability and performance

In this step:

- Assess processes and assets
- Measure and assess performance
- Update improvement plans as needed
- Continue the improvement journey

This step corresponds to and can be supported by the Practice Areas and Capability Areas contained in the CMMI Model Category of “Improving.”

This step involves appraising processes and the improvements made to them, and then assessing the impacts of those improvements on performance.

There are multiple ways to assess capabilities and performance including:
• Conducting internal appraisals or process reviews against CMMI
• Partnering with a CMMI Institute Partner-Sponsored Individual to conduct appraisals, e.g., CMMI Evaluation Appraisal, CMMI Benchmark Appraisal, CMMI Sustainment Appraisal

It is important that organizations validate that their processes and performance are in alignment with business and performance improvement objectives. CMMI appraisals assist in:

• Demonstrating the value of improvements to the business
• Motivating stakeholders for continued buy-in
• Driving continuous improvement
• Determining competitive position in the market

Figure 10 provides a summary list of the key Step 6 activities and considerations.

**Figure 10. Step 6 Activities and Considerations Table**

<table>
<thead>
<tr>
<th>Activities</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assess processes and assets.</td>
<td>Assess progress against the improvement plan at an appropriate frequency.</td>
</tr>
<tr>
<td>Assess performance results against performance and business objectives.</td>
<td></td>
</tr>
<tr>
<td>Update improvement and action plans and continue the improvement journey.</td>
<td>Improvement is not a one-time effort. As organizations complete activities, they should plan for the next iteration in a continuous improvement journey.</td>
</tr>
</tbody>
</table>

**Additional Information**

An organization may want to achieve formal recognition of the effectiveness of their processes. This can serve as both an internal confirmation of the need for continual improvement efforts and an external acknowledgement that the organization is committed to quality and to continuous improvement.

Formal recognition can be gained through conducting a CMMI Benchmark Appraisal. If the organization plans to conduct a CMMI Appraisal, a CMMI Institute Certified Lead Appraiser must lead the appraisal. The results of a CMMI Benchmark Appraisal can be used to compare the organization to other organizations in their industry.

The continuous improvement journey may involve:

• Evolution of the organization’s business objectives
• The need for improved performance
• New areas for improvement

Once this step is completed, repeat the cycle by going back to Step 1 to learn about any new updates made to the CMMI Product Suite.

**Figure 11. Adoption and Transition Guidance Cycle**
## Appendix A

### Additional Information for Successfully Adopting or Transitioning to CMMI

This Appendix contains a list of resources that are part of the integrated CMMI V2.0 Product Suite to aid organizations with successful adoption or transition. **Figure 12** provides a summary of the complete set of adoption and transition resources available.

**Figure 12. CMMI V2.0 Adoption and Transition Resources**

<table>
<thead>
<tr>
<th>Resource</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CMMI Institute Website</strong></td>
<td>The CMMI Institute website provides information about CMMI Institute’s offerings to support capability and performance improvement.</td>
</tr>
<tr>
<td><strong>CMMI Institute Help Center</strong></td>
<td>The CMMI Institute Help Center provides individuals and organizations with proactive support and speedy solutions to questions. You can review the <a href="mailto:info@cmmiinstitute.com">CMMI Frequently Asked Questions (FAQs)</a> or email <a href="mailto:info@cmmiinstitute.com">info@cmmiinstitute.com</a>.</td>
</tr>
<tr>
<td><strong>CMMI Institute Partner Resource Directory</strong></td>
<td>The Partner Resource Directory is a searchable database of highly trained individuals in organizations trusted to deliver quality, leading-edge CMMI Institute services and technologies throughout the global business community. Organizations looking to get an appraisal, obtain training, or receive consulting on implementing CMMI processes in their organization can find a Partner to help.</td>
</tr>
<tr>
<td><strong>CMMI Institute Resource Center</strong></td>
<td>The CMMI Institute Resource Center is a collection of every CMMI Institute digital resource in one place. Browse through the collection of presentations, webinars, articles, case studies, whitepapers, and more.</td>
</tr>
<tr>
<td><strong>CMMI Appraisal Method Definition Document (MDD)</strong></td>
<td>The MDD defines requirements, activities, and guidance for conducting effective and reliable appraisals against CMMI. The MDD is available for purchase or is available to some CMMI Institute certified individuals based on role.</td>
</tr>
<tr>
<td><strong>CMMI Institute Account Dashboard</strong></td>
<td>Register for an account on the CMMI Institute website or log in to an existing account to find materials that you have purchased or have access to based on your certified role. Based on your access, you will find links to the CMMI Model Viewer, MDD, and course materials on the dashboard.</td>
</tr>
<tr>
<td>Resource</td>
<td>Purpose</td>
</tr>
<tr>
<td>---------------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>CMMI Training Resources</td>
<td>Find CMMI Institute and Partner training resources, class schedules, and information about training and certification options on the CMMI Training Resources page.</td>
</tr>
<tr>
<td>Quality Policies</td>
<td>The Quality Policies page lists quality policies for appraisals, trainings, and certifications.</td>
</tr>
</tbody>
</table>

Additional References

The CMMI Adoption and Transition Guide contains references to a few external resources. These resources are cited below.


Appendix B

Figure 13 summarizes the Categories, Capability Areas, and Practice Areas that are part of CMMI V2.0.

Figure 13. Categories, Capability Areas, and Practice Areas
Appendix C

Figure 14 lists common business problems, their possible underlying causes, and the CMMI Practice Areas that could help. For a list of CMMI Practice Areas, see Figure 13 in Appendix B.

**Figure 14. Problem Identification and Resolution Using the CMMI**

<table>
<thead>
<tr>
<th>Common Business Problem</th>
<th>Underlying Causes</th>
<th>Potential CMMI Solutions (by Practice Area)</th>
</tr>
</thead>
</table>
| Delivered solution does not meet customer needs | • Wrong solution delivered  
• Bad requirements  
• Poor testing  
• No stakeholder feedback  
• Lack of customer involvement | PLAN, PR, RDM, PQA, SDM, STSM, VV |
| Customer complaints | • Inconsistent delivery  
• Rude personnel  
• Always have an excuse  
• Quality issues  
• Service levels not met | EST, PQA, RDM, SDM |
| Late delivery | • Poor/no estimating or planning  
• Poor progress tracking  
• Lack of critical resources  
• Excessive overtime  
• Too much rework  
• Constantly changing requirements  
• Unexpected external incidents or other disruptions | EST, IRP, MC, PLAN, RDM, RSK |
| Costly solutions | • Poor estimating/planning  
• Gold plating  
• Too much rework  
• Acceptance of too many changes/too much work without understanding impact  
• Lack of understanding customer needs | CM, DAR, EST, MC, PLAN, RDM, RSK |
| Poor quality | • Badly defined requirements  
• Attempts to “test quality” into services or products  
• Lack of time to test  
• Poor design | PLAN, PQA, PR, RDM, VV |
<table>
<thead>
<tr>
<th>Common Business Problem</th>
<th>Underlying Causes</th>
<th>Potential CMMI Solutions (by Practice Area)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Business Problem</td>
<td>Underlying Causes</td>
<td>Potential CMMI Solutions (by Practice Area)</td>
</tr>
<tr>
<td></td>
<td>• Inexperienced technical personnel</td>
<td></td>
</tr>
<tr>
<td>Constantly stretched</td>
<td>• Poor/no estimating or planning</td>
<td>CM, DAR, EST, MC, PLAN, RDM, RSK</td>
</tr>
<tr>
<td>resources</td>
<td>• Excessive overtime</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Wrong resources</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Acceptance of too many changes/too much work without understanding impact</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Poor management</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Lack of commitment</td>
<td></td>
</tr>
<tr>
<td>Problems are always a</td>
<td>• Lack of problem anticipation</td>
<td>CM, CONT, PAD, PLAN, RSK, IRP</td>
</tr>
<tr>
<td>surprise</td>
<td>• Poor planning</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Short-term organizational “memory”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Sugarcoating</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Problem avoidance (“burying head in the sand”)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Lack of corrective or preventative action</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• No viable responses to problem</td>
<td></td>
</tr>
<tr>
<td>Constant fire-fighting</td>
<td>• Poor/no estimating or planning</td>
<td>CM, EST, GOV, II, OT, PCM, PLAN</td>
</tr>
<tr>
<td></td>
<td>• Inexperienced technical personnel</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Dependency on heroes for success</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Acceptance of too many changes or work without understanding impact</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Poor management</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Lack of commitment</td>
<td></td>
</tr>
<tr>
<td>Poor retention of</td>
<td>• Overreliance on heroes</td>
<td>CM, EST, OT, PAD, PCM, PLAN</td>
</tr>
<tr>
<td>personnel</td>
<td>• Poor/no estimating or planning</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Excessive overtime</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Wrong resources</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Acceptance of too many changes/too much work without understanding impact</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Poor management</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Poor morale</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Corporate “brain drain” (loss of key personnel and experience)</td>
<td></td>
</tr>
<tr>
<td>Everything is priority</td>
<td>• Poor planning</td>
<td>DAR, PLAN, RDM</td>
</tr>
<tr>
<td>1</td>
<td>• Poor morale</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Excessive overtime</td>
<td></td>
</tr>
<tr>
<td>Common Business Problem</td>
<td>Underlying Causes</td>
<td>Potential CMMI Solutions (by Practice Area)</td>
</tr>
<tr>
<td>-----------------------------------------</td>
<td>------------------------------------------------------------------------------------</td>
<td>-------------------------------------------</td>
</tr>
<tr>
<td>• Poor quality</td>
<td>• Lack of focus on what is important to the business and performance</td>
<td></td>
</tr>
<tr>
<td>Too much rework</td>
<td>• Poor planning</td>
<td>MC, PLAN, PQA, PR, VV</td>
</tr>
<tr>
<td>• Excess or unnecessary cost</td>
<td>• Poor morale</td>
<td></td>
</tr>
<tr>
<td>• Excessive overtime</td>
<td>• Poor quality</td>
<td></td>
</tr>
<tr>
<td>Constantly reinventing the wheel</td>
<td>• No sustainable infrastructure</td>
<td>DAR, II, PAD, PCM, TS</td>
</tr>
<tr>
<td>• Lack of clear repeatable process</td>
<td>• Sporadic or no training/learning</td>
<td></td>
</tr>
<tr>
<td>• Lack of focused training for business needs</td>
<td>• No organizational memory</td>
<td></td>
</tr>
<tr>
<td>Supply chain issues</td>
<td>• Lack of clear requirements</td>
<td>PLAN, PQA, RSK, SAM, SSS</td>
</tr>
<tr>
<td>• Ambiguous or no agreements</td>
<td>• Limited selection of solutions</td>
<td></td>
</tr>
<tr>
<td>• Risks in the supply chain</td>
<td>• Lack of clear and consistent responsibilities</td>
<td></td>
</tr>
<tr>
<td>• Delivery delays</td>
<td>• Poor quality</td>
<td></td>
</tr>
<tr>
<td>Inexperienced personnel and management</td>
<td>• Lack of clear governance</td>
<td>GOV, MC, OT, PLAN, PQA</td>
</tr>
<tr>
<td>• Lack of clear repeatable process</td>
<td>• Lack of clear and consistent responsibilities</td>
<td></td>
</tr>
<tr>
<td>• Sporadic or no training/learning</td>
<td>• Lack of focused training for business needs</td>
<td></td>
</tr>
<tr>
<td>• Lack of focused training for business needs</td>
<td>• No organizational memory</td>
<td></td>
</tr>
<tr>
<td>• Poor resource, skills, and knowledge planning</td>
<td>• Poor quality</td>
<td></td>
</tr>
<tr>
<td>Low productivity</td>
<td>• Lack of clear, repeatable processes</td>
<td>EST, GOV, II, OT, PLAN</td>
</tr>
<tr>
<td>• Lack of training</td>
<td>• Poor accountability</td>
<td></td>
</tr>
<tr>
<td>• Lack of infrastructure</td>
<td>• Lack of infrastructure</td>
<td></td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Common Business Problem</th>
<th>Underlying Causes</th>
<th>Potential CMMI Solutions (by Practice Area)</th>
</tr>
</thead>
</table>
| Inconsistent service delivery           | • Lack of a collaborative approach between the service provider and customer  
• Lack of an approved service agreement and lack of adherence to it  
• Inability to deliver services due to any of the following factors: failure of service components, failure to check readiness of the service system, absence of clear service delivery procedures or lack of awareness about such procedures (if they exist)  
• Dependency on heroes to deliver services rather than on established practices and procedures                                                                 | CONT, IRP, PQA, SAM, SDM, STSM             |
| Never finishing                         | • Incorrect scoping  
• Incorrect estimation methods  
• Failure to revise plans and schedules based on changing customer demands  
• Inadequate resources/incorrect resource estimation and planning  
• Lack of obtaining commitments from relevant stakeholders                                                                 | EST, II, MC, PLAN, RSK                    |
| Never enough time/budget                | • Poor planning  
• Lack of resources  
• Excess or unnecessary cost  
• Poor monitoring  
• Excessive overtime                                                                                                                                  | EST, GOV, MC, PLAN, RSK                   |
| Constant requirements changes           | • Incorrect and/or incomplete change management process  
• Lack of clearly understood requirements process  
• Weak or inadequate validation, verification, and peer review processes                                                                                   | CM, MC, PLAN, PR, RDM, VV                 |
<table>
<thead>
<tr>
<th>Common Business Problem</th>
<th>Underlying Causes</th>
<th>Potential CMMI Solutions (by Practice Area)</th>
</tr>
</thead>
</table>
| Poor decision making    | • Not sure of the exact “problem” (and so not able to define the problem statement)  
• Lack of relevant and adequate skill sets to use decision-making techniques and to determine the risks and impacts of decisions  
• Not involving affected stakeholders during problem definition and/or decision-making process  
• Taking decisions based on “assumptions” rather than on actual (measurable and verifiable) data  
• Inability to identify criteria for evaluation of alternatives  
• Inability to identify alternatives for particular problem  
• Inability to define a problem from a state of confusion | DAR, II, OT, PLAN, SAM, TS |
Appendix D

Typical CMMI Adoption Roles

This section contains information and perspectives on people who use and commonly benefit from CMMI. Each of the roles are described along with their unique perspective, approach, and the benefits they realize leveraging the CMMI model. These are roles and not individuals or positions, and may be combined, split, or fulfilled differently in each organization.

Role Title: Buyer of Solutions from Companies Using CMMI

Role Description

This role includes senior management and those who control the budget, select and manage solution suppliers, and hold approval authority for buying solutions for an organization. This role appreciates the business value that suppliers and vendors leveraging CMMI demonstrate through high quality delivery of products and services.

Role Activities

- Uses practices for supplier selection and management
- Understands the risk of doing business using suppliers and the risks each may bring
- Mitigates supplier risks
- Requires suppliers to adopt the CMMI and understand what a supplier’s CMMI capability, or maturity, means
- Uses the CMMI practices to understand and address risk in the supply chain
- Evaluates risk and determines the quality required to rank incoming proposals to eliminate unsuitable bidders and select the supplier with the lowest risk
- Manages technical interactions
- Manages contractual issues on both sides
- Accepts deliverables
- Transitions deliverables and solutions to operations

Benefits to Role

- Effectively and efficiently reduces risk to the buying organization
- Ensures that the highest quality suppliers are identified and selected
- Suppliers are managed throughout the solution period of performance
- Results in clear and unambiguous agreements
- Improves the interactions between suppliers and the buying organization
- Minimizes disputes

Role Title: Improvement Sponsor

Role Description
This role includes senior management, including the “C-Suite,” e.g., Chief Executive Officer (CEO), Chief Operating Officer (COO), Chief Financial Officer (CFO), Chief Information Officer (CIO), but these roles are specific to those organizations adopting the CMMI and conducting appraisals and other forms of assessments to determine their capability.

Role Activities

- Funds and oversees process improvement initiatives
- Articulates the strategy and business objectives
- Ensures alignment of strategy and business objectives
- Aligns process improvement with performance objectives
- Provides explicit requirements for senior management activities in supporting and sustaining improvement efforts
- Ensures that resources are available to implement the process improvement efforts
- Approves appraisal objectives

Benefits to Role

- Enables process consistency across the organization
- Ensures the improvement effort supports achieving objectives
- Promotes a common understanding of the process improvement objectives
- Fosters better coordination and communication among work groups
- Increases customer satisfaction
- Reduces cost
- Monitors alignment and achievement of objectives
- Gains competitive advantage
- Attracts and retains top talent
- Positions organization for growth
- Improves performance
- Reduces overhead cost
- Improves time to market
- Keeps current with market trends
- Uses integrated model to strengthen position in the market
- Increases growth and expands marketability
- Gets assurance of improvements
- Uses flexibility in model to meet organizational needs and reduce process overhead
- Improves workforce management
- Provides career path for developing the workforce
- Changes organizational behavior to better achieve strategy and business objectives
- Addresses and sells a wider set of capabilities because of the integrated model
Role Title: Practitioner

Role Description
This role includes people in an organization who are following the processes and who get the most direct benefit from using and improving processes. It is crucial that these people are involved with the improvement activities, as they are the ones who must live with them every day.

Role Activities
- Follows the processes
- Provides feedback, inputs, and ideas for improving process and performance
- Participates in process groups, action teams, etc.

Benefits to Role
- Reduces rework
- Understands what is being done and why
- Provides structure for how work is done
- Stops reinventing the wheel
- Does the job better
- Minimizes overtime
- Shares best practices
- Reduces chaos and stress
- Gives a voice to practitioners in determining and making commitments
- Provides structure for defining explicit roles and responsibilities
- Ensures they have the skills and expertise needed to perform their roles and responsibilities
- Provides an environment conducive to increased performance
- Provides guidance for working together effectively and efficiently
- Provides guidance for navigating multiple priorities and reporting relationships
- Sustains existing expertise across the organization
- Increases individual competency growth
- Improves individual performance

Role Title: Process Group Member

Role Description
This role includes the people assigned responsibility for improving and sustaining process and performance in the organization. The assignments can be full-time or part-time.

Role Activities
- Ensures process improvement activities are aligned with improving performance and meeting business strategy and objectives
- Provides process improvement guidance to promote understanding throughout the organization
• Coordinates and communicates improvement activities and benefits with stakeholders
• Solves organizational process and performance problems
• Assesses process capabilities and performance
• Identifies and provides needed improvements and training
• Identifies and addresses gaps in process implementation
• Uses source model disciplines in an integrated way

Benefits to Role

• Plans improvement efforts using a clear evolutionary path within Practice Areas
• Supports process persistence and sustainment with explicit infrastructure and governance
• Changes organizational behavior to better achieve strategy and business objectives
• Reduces the impact of process changes
• Establishes common process roles

Role Title: Quality Manager

Role Description

Quality manager is a role that includes individuals or groups whose main responsibility is for ensuring end-to-end holistic quality in the processes, their execution, and resulting solutions. This includes quality control, quality assurance, peer reviews, testing, verification and validation, and related activities.

Role Activities

• Identifies potential process improvements
• Provides guidance for determining if processes are being followed
• Helps identify if current processes support the existing work
• Supports providing management and stakeholders insight into process adoption and effectiveness
• Identifies non-compliance issues in process implementation
• Analyzes quality data to:
  o Identify patterns and trends
  o Anticipate problems and issues

Benefits to Role

• Maximizes quality of solutions
• Increases customer experience and satisfaction
• Enhances brand reputation
• Improves performance by avoiding non-valued-added activities
• Ensures processes work more effectively for practitioners and the organization
• Reduces rework
• Improves practitioner satisfaction and morale

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Role Title: Project Manager

Role Description
This role includes managers who are responsible for managing the day-to-day activities for producing and delivering solutions. This can include task, project, and program-level management roles.

Role Activities
- Supports the process improvement activities
- Negotiates and confirms commitments
- Organizes teams and projects
- Reviews project and improvements
- Keeps senior management informed
- Enables communications throughout the organization
- Leverages the skills and experience of employees
- Encourages and enables active participation in improvement efforts
- Revises plans, schedules, budget, and resources as needed

Benefits to Role
- Manages project to ensure solutions are on-time and within budget
- Enables effective allocation of resources
- Reduces employee turnover
- Increases clarity of assignments
- Minimizes non-value-added activities
- Ensures delivered solutions satisfy customer needs and expectations

Role Title: Workforce Manager

Role Description
This role is responsible for developing and sustaining a workforce that effectively meets the current and future needs of the organization. This can include task, project, and program-level management roles.

Role Activities
- Provides guidance for effective career development
- Enables consistent employee evaluations
- Aligns compensation, rewards, and recognition with performance
- Aligns workforce development and capability with strategy
- Fosters workforce empowerment
- Enables effective competency development
- Provides a framework for:
  - Establishing a productive work environment
  - Providing effective training and mentoring
  - Communication and coordination

Benefits to Role

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• Increases capability of practitioners
• Aligns workforce capability to business strategies and objectives
• Helps understand and meet expectations and outcomes
• Increases employee morale
• Improves performance
• Reduces turnover

Working with a CMMI Institute Partner-Sponsored Individual

What is a CMMI Institute Partner-Sponsored Individual?

CMMI Institute certifies individuals to teach official CMMI Institute courses, such as *Foundations of Capability*, and *Building Development Excellence*. Some individuals are also trained and qualified as CMMI Institute Certified Instructors or Lead Appraisers (LAs). These Instructors and Lead Appraisers may provide consulting services for organizations wanting to adopt the CMMI. When working with one of these individuals, make sure that they work under the umbrella of a CMMI Institute Partner organization.

When acting as technical advisors, these experienced professionals work with clients to help them adopt CMMI to best meet their business needs and objectives. In some cases, this may involve conducting a CMMI Appraisal. Based on their experience in the industry and their quality record, these experts have been certified by CMMI Institute to deliver official training courses and appraisal services.

How to find a CMMI Institute Partner-Sponsored Individual

CMMI Institute works with a network of licensed Partner organizations that employ certified individuals who are qualified to provide official courses and appraisals services. CMMI Institute Partner-Sponsored Individuals can be found in CMMI Institute [Partner Directory](#). In some cases, CMMI Institute can provide services directly to your organization.

The [CMMI Institute Partner Network](#) and certified individuals provide a vast, global reach to help to connect CMMI with users, managers, and executives who can benefit from CMMI solutions. **[CMMI Institute and CMMI Institute Partners are the only source for authentic CMMI services.](#)** Consider needs and expectations when searching for and hiring a CMMI Institute Partner. The Partner should be familiar with items such as:

• The type or domain of work performed by the organization, e.g., supplier management, development, services
• The requirements of the methodologies used by the organization, e.g., Scrum, DevOps
• The scope of the implementation, e.g., large organization, small organization
• The industry, e.g., standards, best practices
• The applicable constraints, e.g., laws, regulations

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An organization should ask the certified individual for references and examples of work that are similar to its needs, goals, and circumstances. **Figure 15** provides a list of adoption steps and considerations for getting help from a CMMI Institute Partner-Sponsored Individual.

**Figure 15. When and How a CMMI Institute Partner-Sponsored Individual Can Help**

<table>
<thead>
<tr>
<th>Adoption Steps</th>
<th>Considerations</th>
</tr>
</thead>
</table>
| **LEARN:** Learn how CMMI will benefit the organization. | An external CMMI Institute Partner-Sponsored Individual may help with:  
  - Providing an overview of CMMI to the organization  
  - Facilitating management buy-in because they may be more likely to listen to external expertise rather than internal  
  - Answering questions about CMMI  
  - Providing advice for starting improvement efforts  
  - Assisting with proposal efforts |
| **ESTABLISH OBJECTIVES:** Develop and communicate business, performance, and improvement objectives. | An outside perspective may provide insights and valuable input for:  
  - Identification of issues and needs  
  - Definition of business, performance, and improvement objectives  
  - Alignment of improvement efforts with needs and objectives |
| **ANALYZE:** Map current organizational processes to the CMMI. | An external CMMI Institute Partner-Sponsored Individual may compare the organization’s current processes to the CMMI by:  
  - Performing an independent gap analysis  
  - Leading the organization’s personnel in conducting a gap analysis or evaluation  
  An external expert can add credibility to the delivery and acceptance of the analysis results. |
| **DEVELOP ACTION PLAN:** Develop, keep updated, and implement an improvement plan to get from the current state to the desired state. | An external CMMI Institute Partner-Sponsored Individual may be able to give management a better idea of what is needed for an improvement effort, including:  
  - Resources  
  - Activities  
  - Schedule  
  - Cost |
<table>
<thead>
<tr>
<th>Adoption Steps</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>An expert may be able to assist in identifying appropriate measurements for addressing business, performance, and improvement objectives.</strong></td>
<td></td>
</tr>
<tr>
<td><strong>DEPLOY IMPROVEMENTS:</strong> Deploy improvements.</td>
<td>The continued assistance of a CMMI Institute Partner-Sponsored Individual can help provide knowledge and expertise to help an organization efficiently deploy improvements and monitor adoption.</td>
</tr>
<tr>
<td><strong>ASSESS CAPABILITY:</strong> Assess organizational capabilities.</td>
<td>An external CMMI Institute Partner-Sponsored Individual may help an organization:</td>
</tr>
<tr>
<td></td>
<td>• Monitor improvement efforts and performance targets</td>
</tr>
<tr>
<td></td>
<td>• Help adjust the improvement plan</td>
</tr>
<tr>
<td></td>
<td>• Plan for formal CMMI Appraisals, if needed</td>
</tr>
<tr>
<td></td>
<td>To be formally appraised, the organization will need to choose a CMMI Institute Certified Lead Appraiser working under the umbrella of a CMMI Institute Partner. The Lead Appraiser will help with:</td>
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<td></td>
<td>• Identifying the organizational and model scope</td>
</tr>
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<td></td>
<td>• Selecting and training Appraisal Team Members</td>
</tr>
<tr>
<td></td>
<td>• Planning the appraisal activities</td>
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</tbody>
</table>
Working with CMMI Institute

The Role of CMMI Institute

CMMI Institute is the owner and steward of the CMMI Product Suite: including the model, appraisal method, courses, certifications, systems, and associated intellectual property.

When to use CMMI Institute

An organization can contact CMMI Institute via info@cmmiinstitute.com or visit the Help Center for general assistance with their CMMI improvement journey. CMMI Institute can assist through their customer service team as an organization adopts CMMI. When new methods, approaches, or other content are identified for potential inclusion in future model updates, CMMI Institute maintains the requirements, updates, and release plans and schedule for the CMMI Product Suite.

Generally, CMMI Institute will point you to experienced CMMI Institute Partner-Sponsored Individuals available through the CMMI Institute Partner network. However, in limited situations, CMMI Institute may work directly with organizations to provide support to:

- Corporate programs for large organizations looking to develop an enterprise-wide improvement program
- Organizations that want internal CMMI subject matter expertise and consulting
- Industry programs for trade associations or government agencies that want to build a strategy for improving performance across an industry
- Organizations interested in piloting new content, methods, or approaches for CMMI

If this describes your organization’s goals, contact CMMI Institute at info@cmmiinstitute.com or +1 412-282-4020.

How to use CMMI Institute

If you have any questions about how to engage the institute directly, please contact CMMI Institute at info@cmmiinstitute.com or +1 412-282-4020.
Appendix E

Building Business Goals, Risks, and KPIs

In order to improve your organization’s performance, you must first understand your business goals along with your ability to meet those goals. This information can also be recorded using the CMMI Method Definition Document (MDD)-required Performance Report template that a CMMI Institute Certified Lead Appraiser will be able to use as a part of appraisal activities.

• Please list the top 3-5 business goals for your organization:

  1.
  2.
  3.
  4.
  5.

• Please list the top 3-5 Key Performance Indicators (KPIs) for your organization:

  1.
  2.
  3.
  4.
  5.

• Please quantify your current performance (list your current KPIs):

  1.
  2.
  3.
  4.
  5.

• Please list the issues or risks to your ability to meet your business goals:

  1.
  2.
  3.
  4.
  5.
Appendix F

Define Your Current Processes

WHY *(What, How, Your CMMI)*

**What** do you do today? List the tasks associated with current activities.

- Work, program, project, and task management
  - Identify the activities, e.g., planning, staffing, scheduling, estimating
- Designing, developing, building, and delivering a service or product
  - Identify the activities, e.g., documenting what the customer wants (identifying the “requirements”), elaborating these requirements to determine how the customer’s needs are met, designing the service or product, building the service or product, testing the service or product to determine if it meets the needs of the customers, deliver the service or product
- Collateral activities associated with service or production
  - Identify the activities, e.g., ensure consistent delivery of service or product (configuration management), ensure consistent and repeatable performance of building service or product (quality), measure activities associated with the production and delivery of service or product, identify risks associated with service or product production
- Organizational support and infrastructure
  - Identify the activities the organization performs in order to enable quality and consistent services and products, e.g., document practices and processes to be used across all services and products, and training associated with enabling the workforce to perform their tasks

**How** do you perform these tasks? After the required activities have been identified elaborate each activity with “how” you perform the activities – the “how” can be bullets, checklists, documents. The formality of the “how” can be determined by your organization.

**Your CMMI:** Use this list of activities and their associated elaboration and map these to the activities within the CMMI (using the view of the CMMI you have decided most applies to your organization).