



## CMMI for Services: Moving Your Business in the Right Direction

The service industry is one of the fastest-growing segments in the world, with service organizations now making up 80% of the world economy. Still, many service organizations are wondering how they can thrive (or even survive) in lean economic times. Your organization probably shares high-level goals with many others: you want to improve customer satisfaction, performance, and profitability. The idea seems straight forward enough, yet some organizations do this with great success while others fail. Why?

### A Focus on Process

Manufacturing has long understood that to improve the quality of a product, the quality of the processes used to make it must be improved. The same is true for services. Your interaction with a customer is the final result of a series of processes you used to develop and deliver that service. CMMI for Services provides you with proven practices from government and industry so you can understand what has worked for others and how your efforts compare to theirs. Related practices are clustered in process areas and can be implemented collectively to make targeted improvements.

### Improving Customer Satisfaction

Enterprises in the U.S. lose an estimated \$83 billion every year due to poor customer service, according to research firm Genesys, with research firm Greenfield Online and Datamonitor/Ovum analysts. Customer defections result in a loss of \$50.6 billion a year, while \$32.4 billion in business is lost when customers suspend transactions or services altogether due to poor service.

CMMI for Services provides best practices to help you satisfy and keep customers. For example, the Incident Resolution and Prevention process area helps you handle what goes wrong, or—better yet—keep it from going wrong in the first place. The Service Delivery process area helps you understand what it takes to be successful in setting up agreements, taking care of service requests, and operating your service system.

### Improving Performance

Performance is about translating goals into results. Is your organization getting the results you expected? If not, what should you change?

The Strategic Service Management process area can help you figure it out using best practices to decide what services you should be providing, make them standard, and let people know about them. Then, be ready for consistent delivery using the Service System Development process area to see if you have everything you need, including people, processes, consumables, and equipment.

### Improving Profitability

We live in a dynamic world. Technology is changing more and more rapidly, and people typically work for many companies throughout their careers. A focus on process provides the infrastructure and stability necessary to maximize the productivity of people and the use of technology to be competitive.

The Service System Transition process area can help you deal with inevitable technology changes economically, using best practices to get new systems in place, change existing systems, and retire obsolete systems—all while making sure that services continue to be delivered.

The Capacity and Availability Management process area can also be used to improve profitability by helping you control costs while making sure you have the resources you need to deliver services and that they are available when needed.

We hope this newsletter helps you better understand how CMMI for Services can provide the right framework for improvement in your organization. Please contact the SEI at [info@sei.cmu.edu](mailto:info@sei.cmu.edu) if you have any questions, suggestions, or would like more information about the CMMI model or its application.

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SEI Membership  
Carnegie Mellon University  
4500 Fifth Avenue  
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email: [membership@sei.cmu.edu](mailto:membership@sei.cmu.edu)  
[www.sei.cmu.edu/membership](http://www.sei.cmu.edu/membership)



**Paul D. Nielsen**  
Director and CEO

As we celebrate our 25th anniversary during 2010, I—and others from the SEI—will be bringing you highlights of the SEI's accomplishments over the past 25 years—and giving you an inside look at what we're working on today. It's all part of an outreach program we call "Driving the Future of Complex Systems." As part of Carnegie Mellon University, a world-class institution and an international leader in computer science, we've developed models, frameworks, and organizational performance methods that have changed business both here in the United States and across the globe. Our newest model, CMMI for Services, starts a new phase of growth for the SEI and CMMI. Developed to help service organizations, CMMI for Services provides you with the tools and understanding for the best possible delivery of services to your customers.

Now, it's your turn: I'd like to invite you to learn more about the SEI and its work. Help us understand the issues and trends you see in software engineering, process improvement, network security, and architecture around the world. Let's work together to improve our global community. Come to our conferences. Attend our courses. Write to us, [info@sei.cmu.edu](mailto:info@sei.cmu.edu). Visit our website, [www.sei.cmu.edu](http://www.sei.cmu.edu); or call 412-268-5800 (888-201-4479 toll-free). We're ready to work with you.



**Eileen Forrester**  
Program Manager,  
CMMI for Services

Service providers deserve the same opportunity that the development community has enjoyed for years: the opportunity to improve their processes based on community models of practice that specifically address their interests and concerns.

By adapting and extending proven standards and best practices to reflect the unique challenges faced in service industries, CMMI for Services (CMMI-SVC) offers service providers a practical framework for achieving higher levels of service quality, controlling costs, improving on-time performance, and ensuring customer satisfaction. Learn more and get the latest CMMI-SVC news and announcements and updates on course offerings at [www.sei.cmu.edu/cmmi/tools/svc/index.cfm](http://www.sei.cmu.edu/cmmi/tools/svc/index.cfm).



**Linda Shoer**  
Senior Manager,  
SEI Professional Development Center

The SEI Professional Development Center provides you with expertise through CMMI for Services training that can be applied to your daily work. I'd like to invite you to attend our Introduction to CMMI for Services v1.2 course and sharpen your skills as a CMMI professional. If you're already an expert, you can begin earning an SEI Certification that will qualify you to teach this course to others.

Our suite of courses also offers solutions in disciplines that range from service-oriented architecture to computer security. We encourage you to explore the SEI Professional Development Center to see how our offerings can help in your organization. Visit [www.sei.cmu.edu/products/professionaldev.cfm](http://www.sei.cmu.edu/products/professionaldev.cfm) to learn more.



**Lisa Masciantonio**  
Manager,  
SEI Partner Network

The SEI Partner Network is your source for official CMMI for Services training outside the SEI. SEI Partners offer the Introduction to CMMI for Services v1.2 and the Services Supplement for CMMI v1.2 courses, and because the SEI rigorously tests and certifies Partners, you can be sure that SEI Partners provide the same quality instruction that you would get from the SEI. We're also seeking new Partners—if your organization would like to join us in disseminating this proven model to CMMI users worldwide, consider becoming an SEI Partner and offering the Introduction to CMMI for Services v1.2 to your clients. Take a look at our website, [www.sei.cmu.edu/partners](http://www.sei.cmu.edu/partners), to find a Partner in your area or learn about becoming a Partner.



**Bill Smith**  
SEI Partner

At the beginning of 2009, Bill Smith took a look at expanding Leading Edge Process Consultants, the company that he started a little more than a year earlier. Smith had been teaching the SEI's Introduction to CMMI course and the accompanying Services Supplement for CMMI. And while business was growing via word of mouth, Smith wanted to expand his outreach even further.

To share his experience with others, Smith created the CMMI for Services Diary ([www.CmmiForServicesDiary.com](http://www.CmmiForServicesDiary.com)), which chronicles his experiences starting a new business while following the guidelines of the CMMI for Services model. He launched an alumni network of students who have taken his classes, CMMI Rocks!, using the Ning social networking platform. Smith is also a regular Twitter user, where his informative and sometimes entertaining commentary on the CMMI can be found under the name @CmmiRox.

Smith presented on his recent corporate experience at the NDIA CMMI Technology Conference and User Group Conference in Denver, Colorado, where he reported on the results of applying CMMI-SVC to his own business. He increased his net income in 2009 13-fold during an economic downturn, and attributes much of that increase to the discipline his company gained by applying best practices from CMMI-SVC.

Smith's initial foray into software process improvement happened in the early 1990s. He was leading a technical program at Computer Based Systems Inc. when his manager's manager approached him. "He said 'You know Bill, your team should really be doing peer reviews,'" Smith recalled. "I said 'Okay, what's that?'" The manager handed him a book on software inspections and Smith took it from there.

"To make a long story short, I helped to implement peer reviews in an organization, and it went very well," said Smith, who later went on to work as an advanced systems engineer at Electronic Data Systems (EDS) and as a senior consultant at Abacus Technology Corp. before spending five years at the Systems and Software Consortium Inc. (SSCI). At the SSCI, he consulted with several member companies while also teaching the Introduction to CMMI course 26 times.

"CMMI for Services makes sense for me as a company. I realized the key for long-term success goes far beyond being an effective consultant or trainer. It's also about how well I'm managing my business. It helps me understand if I am estimating accurately, planning effectively, and so on. Adopting bits and pieces of CMMI-SVC has helped me a great deal in structuring my company, and I'm unquestionably seeing a real dollar impact from it already," Smith said.

## Materials

SEI Webinar Series: CMMI for Services by Eileen Forrester  
Archived recording at [www.sei.cmu.edu/library/webinars.cfm](http://www.sei.cmu.edu/library/webinars.cfm)

Additional materials available at  
[www.sei.cmu.edu/cmmi/tools/svc/materials.cfm](http://www.sei.cmu.edu/cmmi/tools/svc/materials.cfm)

- CMMI for Services: A Short Overview Video
- CMMI-SVC one-pager: a high-level overview of the benefits of CMMI-SVC, the types of services that can use CMMI-SVC to improve their delivery of services to customers, and the CMMI-SVC-specific process areas
- A PowerPoint slide that describes the CMMI-SVC-specific PAs in "plain English"
- CMMI-SVC quick reference
- CMMI-SVC goals and practices
- CMMI-SVC white paper by Eileen Forrester
- CMMI-SVC pilot experience report template
- A comparison of CMMI-SVC v1.2, and CMMI-DEV v1.2
- A comparison of CMMI-SVC v1.2, and CMMI-SVC v0.5
- A presentation that shows how CMMI-SVC can be applied to health care
- Slides from the CMMI-SVC Webinar held on October 23, 2008



## Profile: Four Service Industries

Although CMMI for Services is a flexible model that can be used in any service organization, we've profiled four segments of the service industry that we believe could benefit greatly from its use: Healthcare, Telecommunications, Education, and Hospitality.



### Healthcare

Service challenges are plentiful in the healthcare industry: staff shortages, the need to comply with multiple regulations, high patient volume, and the pressure to reduce costs are some of the many that organizations face. As healthcare becomes more competitive, those who provide better, more consistent services and develop a customer-oriented culture stand a better chance in the marketplace. CMMI for Services provides the backbone for these kinds of process improvements, with best practices for meeting critical challenges. The example below shows how some of the process areas could be applied for in-hospital pharmaceutical and respiratory services.

Process area	Application
Capacity and Availability Management	The best practices in this area could be used for planning and monitoring to ensure that sufficient resources, such as pharmacists, therapists, drugs, and oxygen, are regularly available to enable delivery of drugs and respiratory care.
Service System Transition	Suppose the state in which a hospital group operates passes a law prohibiting nurses from administering certain drugs, except in the presence of a pharmacist. These practices could be invoked to make changes to processes that would be required to comply with the law while continuing to provide service.
Service System Development	For pharmaceutical and respiratory services, these practices could help develop the following: Infrastructure: such as the pharmacy supply rooms, shelves, and equipment used for the measurement and delivery of drugs People: doctors, nurses, pharmacists, therapists, and technical specialists Consumables: drugs and oxygen Processes: diagnosing, prescribing, preparing, scheduling, planning, budgeting, and treating

### Telecommunications

In this multi-billion dollar industry with intense competition, operational efficiency is a key factor of success. Businesses must decrease costs to consumers while providing the services they demand. Other challenges include increasing customer loyalty and decreasing the loss of subscribers. Example process areas that can help and some of their benefits are listed below.

Process area	Application
Strategic Service Management	Deciding which services to offer—such as talk/text access levels, multimedia coverage, or international services—is an important part of creating service lines. This area provides best practices to help telecommunications providers make profitable bundling decisions.
Incident Resolution and Prevention	The practices in this area are important in retaining customers. For example, if many customers call to complain about dropped calls or spotty service, providers could track the incidents, work on solutions, and, all the while, communicate with customers to let them know their complaints are being addressed.
Capacity and Availability Management	Ensuring appropriate network capacity and availability while balancing costs is critical. These practices could be used to help providers monitor and allocate resources, and even monitor future demand for services.



## Education

Schools are feeling the pressure of increased expectations but limited resources. To do more with less, the things that are working—that is, the best practices—need to be recognized and applied throughout the entire system. CMMI for Services provides a proven framework that could be used to make today’s outstanding practices common and consistent at school, district, state, and federal levels. Applied more broadly, CMMI for Services could also help educational organizations create end-to-end systems for continuous process improvement year after year. The example below shows how some of the process areas could be applied to educational services.

Process area	Application
Service System Development	These practices could be used in designing, implementing, and validating changes to the existing service system (e.g., integrating the acquisition of curricula with revised or new procedures for implementation and instruction).
Strategic Service Management	Activities such as curriculum development, the assessment of student and teacher performance, and teacher-student communications could be managed using these practices. Overall benefits could include the development, implementation, and continual improvement of organization-wide educational services and service processes.
Service Continuity	Practices in this area could be used for planning and rehearsing to ensure that critical educational services can be delivered in the event of a major disaster.



## Hospitality

The hospitality industry includes many diverse offerings such as hotels, casinos, shops, and conference facilities. This industry has also experienced relatively strong growth in recent years, yet pervasive concerns remain: improvements are needed in operational efficiency, customer experience, and the ability to measure performance. Example process areas that can help and some of their benefits are listed below.

Process area	Application
Supplier Agreement Management	These practices could help in establishing and managing agreements with suppliers such as cleaning services, internet service providers, caterers, and providers of other conference support services. From start to finish, best practices could be used for selecting the suppliers, establishing agreements, and evaluating the services received and using that information to make future decisions.
Capacity and Availability Management	Knowing what you have available and when helps to minimize vacancies and overbooking. Whether customers are at the front desk or booking through a third party, processes need to be in place for knowing your capacity and making decisions accordingly.
Service Continuity	These practices could be used for planning and rehearsing to make sure your guests’ essential needs are met in the case of unexpected challenges, such as utilities failures or large-scale transportation disruptions.

# Tools for Success: Measurement and Analysis in CMMI for Services

Effective measurement and analysis in service industries can be challenging, yet it can provide valuable opportunities for improving your business. You probably know when customers are unhappy and sales and profits are down, but what you really need to know is why and how to fix it.

## How can you manage better?

There are many things you could start measuring to try to figure it out—so many that you could quickly become overwhelmed with data. Having too much data and no idea what to do with it isn't really an improvement over having no data at all. For measurement and analysis to be effective, it must provide targeted information that helps you to make decisions.

For example, look at the table below. Many different measures could provide insight into each service category.

Service category	Possible measures
Customer satisfaction	<ul style="list-style-type: none"><li>• satisfaction ratings</li><li>• complaints</li><li>• lost accounts</li><li>• service requests or order frequency (lack of orders or service requests can indicate the customer has given up on the service)</li><li>• returns or rework requests from the customer</li><li>• abandon rate (caller gives up) or orders cancelled</li></ul>
Service performance	<ul style="list-style-type: none"><li>• cycle time/service time</li><li>• productivity</li><li>• lead time</li><li>• work-in-process inventory</li><li>• throughput</li><li>• response time</li><li>• wait time (e.g., calls not answered in target number of rings or service requests fulfilled in greater than target time)</li><li>• service requests or orders processed within (or outside of) agreed time limits</li></ul>



The SEI's Goal-Driven Measurement method is designed to help you identify and develop indicators to show how things such as customer satisfaction and service performance change over time.

## Implementing Goal-Driven Measurement

A good place to start if you want to understand how this method can help is our goal-driven measurement course. With useful examples, real-life experiences from the field, and a class notebook filled with helpful checklists, templates, and reference materials, this class provides the tools you need to succeed.

## What are your data trying to tell you?

Having the right data is important, but only if you know how to analyze it. Effective analysis techniques can help you identify the root causes of your problems and develop solutions that keep them from happening again.

The SEI can help you bring proven modeling techniques into the services domain. In fact, we have years of experience providing customized training and coaching on Six Sigma and its application at DoD and commercial organizations.

We have two courses available that teach analysis methods you can use to leverage industry best practices. These courses provide unique hands-on training using analysis tools for process modeling, root cause analysis, simulation and optimization, and design of experiments.

## Training Opportunities

### Improving Process Performance Using Six Sigma (IPPSS)

Does your organization experience the same product and business problems repeatedly? Do your competitors consistently beat you to market? This course teaches you to apply basic statistical techniques to analyze performance, quality, schedule, and cost.

Real-life case studies make up the bulk of this class. For example, a case study focusing on a call center with slipping customer satisfaction ratings takes you through the complete Six Sigma DMAIC approach, from defining the project scope to documenting the realized benefits. This course can also be of benefit to service organizations who want to use short-term process improvement methods to drive quick improvements.

### Designing Products and Processes Using Six Sigma (DPPSS)

Are you ready to try more advanced modeling techniques to gain insight into your service operations, but want to make sure you develop practical skills? This course can help you learn process modeling techniques without overwhelming you with complicated equations and theory.

The case studies in this course teach you to apply the Six Sigma DMADV approach to solve problems and drive radical improvements. Techniques such as discrete event simulation are especially helpful in driving service improvements.

Some of the other topics covered in the course include

- modeling uncertainty and predicting cost and schedule performance
- understanding how to apply design of experiments and optimization techniques



## Tell Us How It's Going

If you are currently implementing CMMI for Services in your organization or with a client and would like to submit a report about your experience, please use the CMMI for Services pilot experience report template on our website. Email the completed template to [cmmi-comments@sei.cmu.edu](mailto:cmmi-comments@sei.cmu.edu).

## CMMI for Services

**In addition to the inaugural offering at SEPG North America, Introduction to CMMI for Services v1.2 will be offered**

August 3-5, 2010 (SEI Pittsburgh, PA)

September 14-16, 2010 (London, England)

December 1-3, 2010 (SEI Pittsburgh, PA)

## Measurement and Analysis

### Analyzing Project Management Indicators

July 13-15, 2010 (SEI Arlington, VA)

October 26-28, 2010 (SEI Arlington, VA)

### Designing Products and Processes Using Six Sigma

December 13-17, 2010 (SEI Arlington, VA)

### Designing Products and Processes Using Six Sigma Instructor Training

July 20-21, 2010 (SEI Pittsburgh, PA)

### Implementing CMMI for High Performance, an Executive Seminar

October 18, 2010 (SEI Arlington, VA)

### Implementing Goal-Driven Measurement

September 21-23, 2010 (SEI Arlington, VA)

December 7-9, 2010 (SEI Arlington, VA)

### Implementing Goal-Driven Measurement Instructor Training

October 5-7, 2010 (SEI Pittsburgh, PA)

### Improving Process Performance Using Six Sigma

August 16-20, 2010 (SEI Pittsburgh, PA)

November 1-5, 2010 (SEI Arlington, VA)

### Improving Process Performance Using Six Sigma Instructor Training

September 1-2, 2010 (SEI Arlington, VA)

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