



Software Engineering Institute | Carnegie Mellon

ASAP: Applying Services (CMMI-SVC) and People CMM

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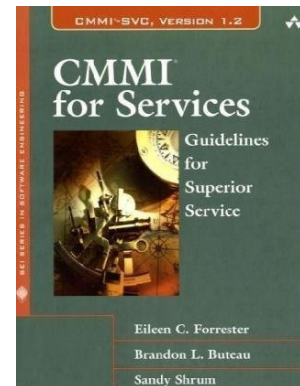
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Objectives

- This presentation discusses the importance of applying a system of practices from both CMMI-SVC and People CMM models in order to enhance an organization's ability to effectively manage its human capital management system, while delivering services.
- Specific focus is on how the models can help to balance work commitments with resource capacity requirements while ensuring resources are available when needed.

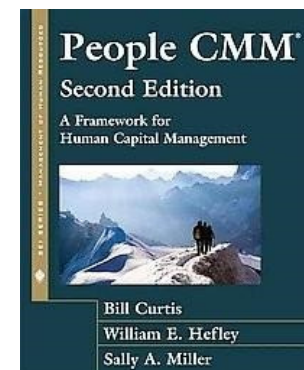
CMMI-SVC and People CMM

The **CMMI® for Services** (CMMI-SVC) is a comprehensive set of guidelines and activities to help organizations establish and improve processes for delivering services



Forrester, Buteau, and Shrum, (2009)

The **People CMM®** is a comprehensive set of guidelines and activities that enable organizations to attract, develop, improve, and retain the workforce required to build their products and deliver services



Curtis, Hefley, & Miller (2009)

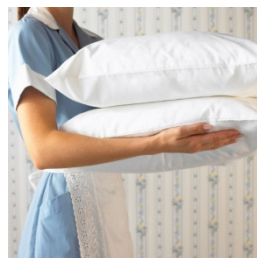
Definitions: Service and Human Capital

Service

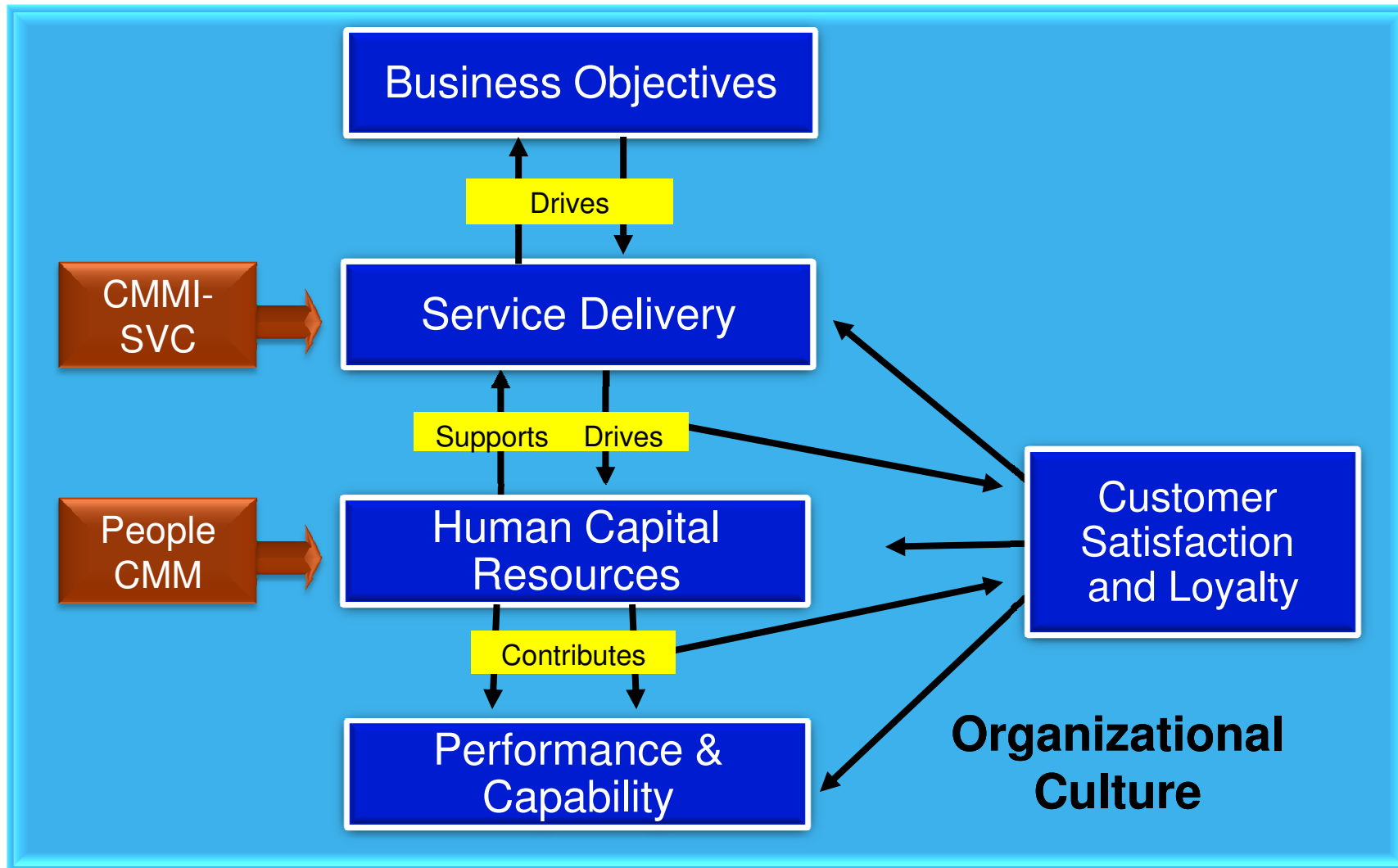
A product that is intangible and nonstorable. Services are delivered through the use of service systems that have been designed to satisfy service requirements. Many service providers deliver combinations of services and goods. A single service system can deliver both types of products. Services may be delivered through combinations of manual and automated processes.

Human Capital

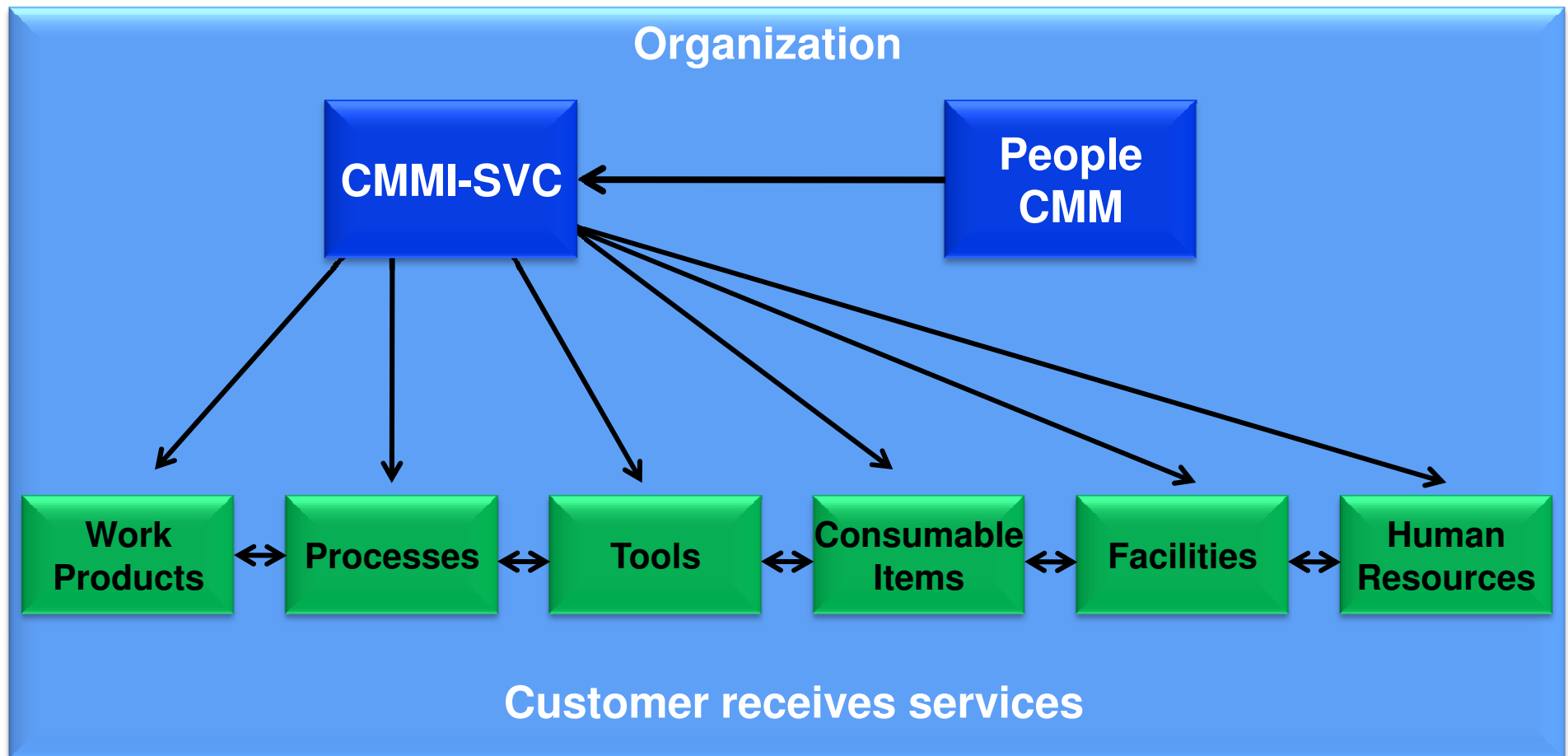
The people an organization needs to perform its business activities. Used especially when workforce practices and activities are to be applied to the people in the organization collectively rather than as individuals. Human Capital Management is an approach to people management (or workforce management) that treats it as a high-level strategic issue.



CMM-SVC and People CMM: Working Together



Delivering Services through a Service System



Service system: everything needed to enable service delivery

Focus: Balancing Work Commitments with Resource Capacity Requirements



Balancing Work Commitments with Resource Capacity Requirements

Questions to ask:

Do we have enough human capital resources to deliver the service?

Do the human resources have the required capabilities; the right mix of knowledge and skills, to deliver the service?

Are the human capital resources aware of the organizational business goals, vision, and mission?

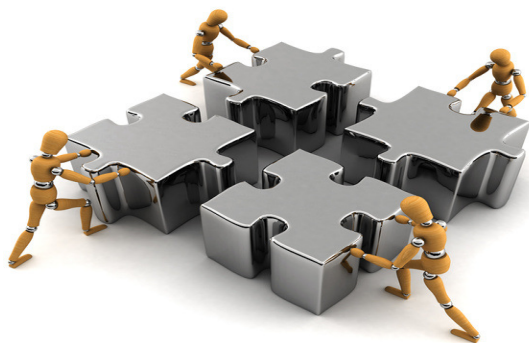
Do the human capital resources have the ability to communicate and coordinate efforts effectively?

Do the human capital resources have the “resources” (space, tools, equipment, etc) required to deliver service?

Do we have the right mix of human capital resources when we need it; current and future?

Answering the Questions: CMMI-SVC Connections

- Ensuring effective service system performance
- Ensuring you have adequate resources (**capacity**) when they are needed (**availability**)
- Providing and allocating resources appropriately
- Ensuring the workforce gets the work done and customers are happy because they received the service they require



**Capacity and
Availability
Management**

Answering the Questions: Capacity and Availability Management (CAM) -1

Addresses establishing and maintaining a comprehensive strategy to manage capacity and availability to meet customer needs

- Addressing and understanding the current use of all resources and services
- Examining service demand and how resources are provided, used, and allocated
- Analyzing trends in change of requirements
- Understanding current capability of workforce to satisfy demand
- Understanding overall system performance



Answering the Questions: Capacity and Availability Management (CAM) -2

Provides the mechanism to plan for resources via

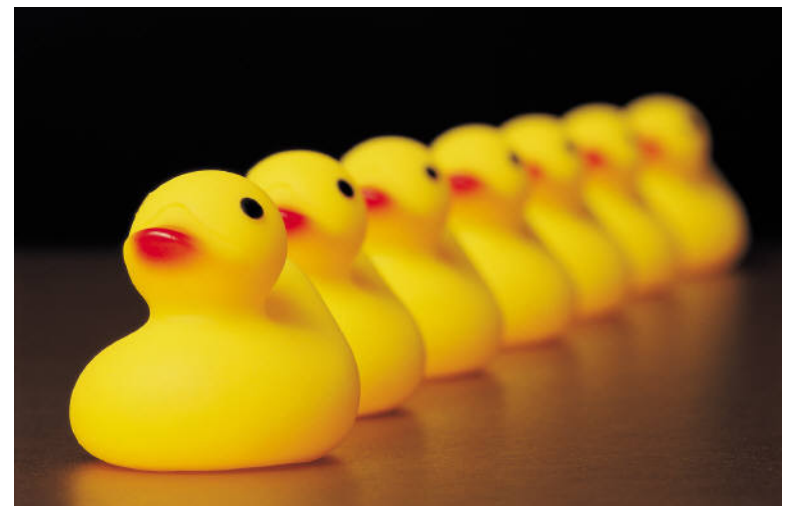
- The specification of measures for managing capacity and availability
- The collection of historical data (and trends) in the various system components
- The analysis of capacity and availability to support resource planning required to address current and future needs
- The establishment of service system representations which give insight into the system's behavior
- The use of the representations in characterizing the range of future demand and the impact of required service levels on the system



Answering the Questions: Capacity and Availability Management (CAM) -3

Provides an avenue for monitoring capacity and availability to manage the resources and the “commitment demands” via

- Monitoring actual capacity and availability (use of resources) regularly
- Proactive identification of issues
- Determining adjustments to resources and services (corrective actions)
- Estimating future changes in resources usage (proactive)
- Analyzing trends in availability



Answering the Questions: Capacity and Availability Management (CAM) -4

CAM processes

- Enable provision of satisfactory service levels to users in a cost-effective manner by addressing capacity and availability of resources in a systematic way
- Enhance organizations' ability to react quickly and to make educated decisions that can have a strategic impact to their success as a service provider
- Promote customer satisfaction: customers get the services they need when they want
- Help to prevent problems that could cause an organization to “lose” business due to “downtime”
- Help to plan for “growth”
- Foster a culture that supports knowledge development and sharing



Answering the Questions: People: Connections for both Models

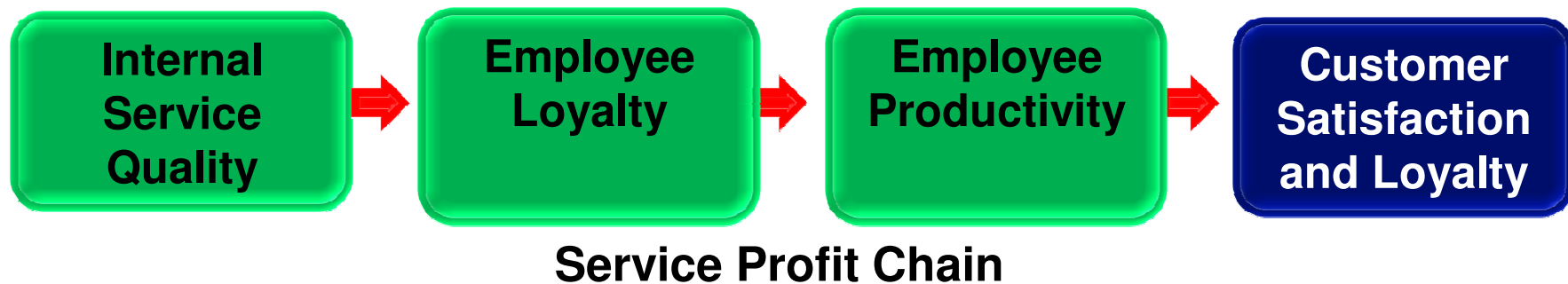
The organization's human capital resources:

- delivers the service(s)
- interfaces with the client



Human Capital: Contributor to Customer Satisfaction

- Employee satisfaction soars when you equip employees with the knowledge and skills to deliver services, creating **Internal Service Quality**
- Employee satisfaction in turn fuels **employee loyalty**, which raises **employee productivity**.
- Higher productivity means greater external service value for customers – which enhances **customer satisfaction and loyalty**. A mere 5% jump in customer loyalty can boost profits 25%--85%.” (Heskett et al. *Harvard Business Review*: RO807L)



“Improvement in customer satisfaction has a significant and positive impact on firms’ financial performance” (Gupta and Zeithaml 2006)

Process Area Threads

Maturity Levels	People CMM Threads			
	Developing Individual Capability	Building Workgroups & Culture	Motivating & Managing Performance	Shaping the Workforce
5 Optimizing	Continuous Capability Improvement		Organizational Performance Alignment	Continuous Workforce Innovation
4 Predictable	Mentoring Competency Based Assets	Competency Integration Empowered Workgroups	Quantitative Performance Management	Organizational Capability Management
3 Defined	Competency Development Competency Analysis	Workgroup Development Participatory Culture	Competency Based Practices Career Development	Workforce Planning
2 Managed	Training and Development	Communication & Coordination	Compensation Performance Management Work Environment	Staffing

Defining Human Capital Capability Components



Knowledge represents the comprehension acquired by experience and or study.



Skills represents the proficiency or ability in techniques or tools that an individual must be able to demonstrate.



Process abilities is the capacity to perform individual skills in the sequencing or method used in the organization.

Knowledge

+

Skills

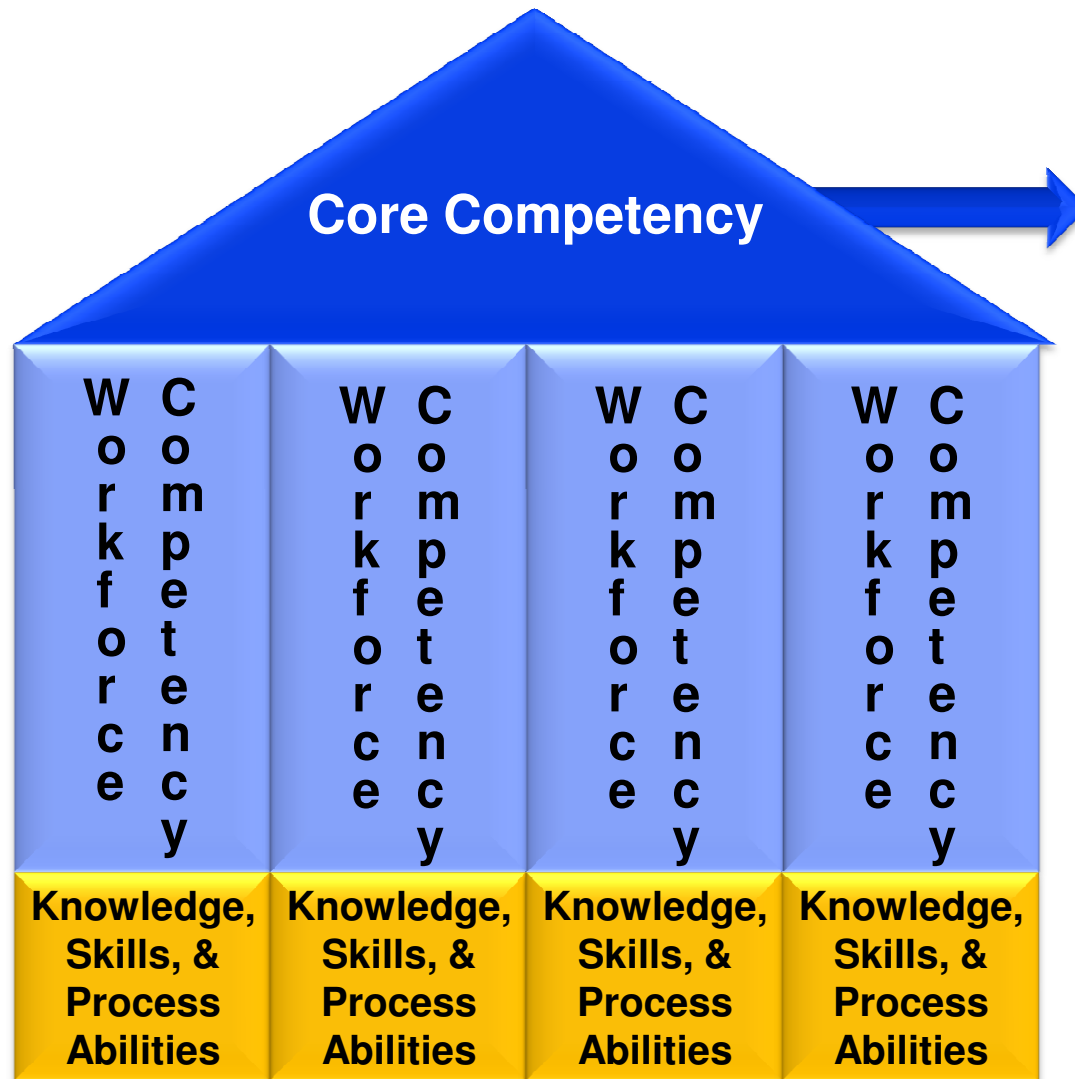
+

**Process
abilities**

=

**Human
Capital
Capability**

Competency Concepts



The combination of technology and production skills that create an organizations products and services and provide its competitive advantage in the marketplace (*Prahaled & Hamel, 1990*)

Answering the Questions: People CMM Connections

- Understanding the work to be performed “committed work”
- Hiring individuals who have the knowledge and skills to perform the “committed work”
- Training for critical skills and development opportunities for future assignments
- Workforce has the tools and resources “the work environment” to perform the “committed work”
- Developing the communication skills to enhance coordination of the “committed work”
- Coordinating workforce activities with current and future business needs and ensuring workforce is available to address the “committed work” and strategic objectives



Staffing

Training
& Development

Work
Environment

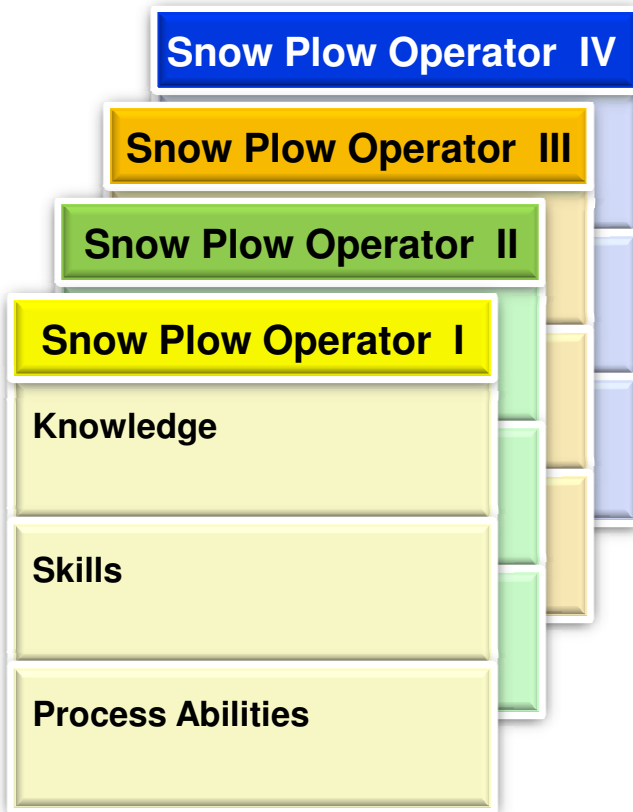
Communication
& Coordination

Workforce
Planning

Workforce Planning Concepts



Understanding Capability and Capacity - 1



Snow Plow Operator Competency Family



Current Resource Profile (initial inventory)

Workforce Competency	Staffing by Capability Level			
	I	II	III	IV
Snow Plow Operator	17	25	12	5
Dispatcher	2	8	4	1

Current Resource Needs (one year cycle)

Workforce Competency	Current Staffing Level Needed			
	I	II	III	IV
Snow Plow Operator	23	30	15	7
User Training	4	9	6	2



Strategic Resource Needs (two to five year)

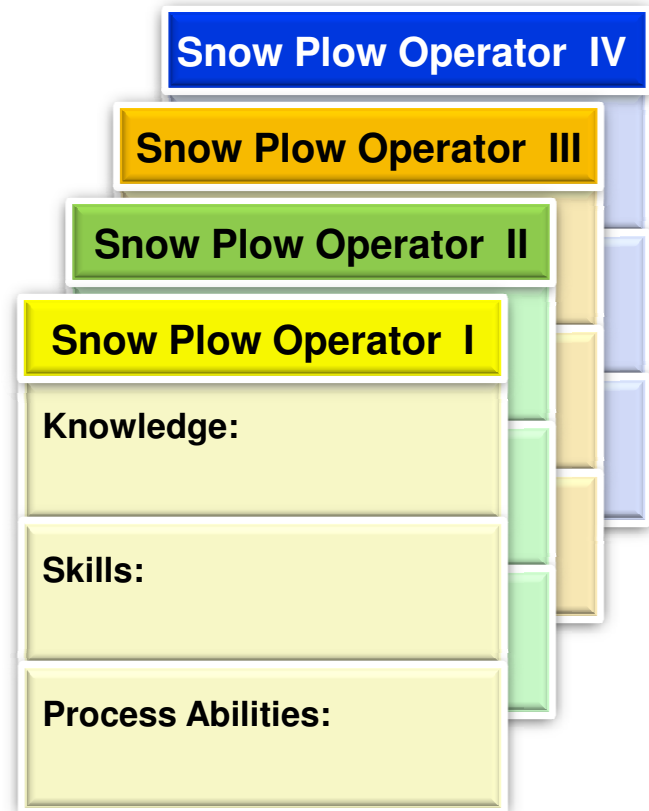
Workforce Competency	2012 Staffing Level Needed			
	I	II	III	IV
Snow Plow Operator	31	35	18	9
Dispatcher	4	10	8	3

Understanding Capability and Capacity - 2

From counting heads to understanding Capability



10 Snow Plow Operators
5 Dispatchers
4 Mechanics



Workforce Capability Profile

Workforce Competency	Staffing by Capability Level			
	I	II	III	IV
Snow Plow Operator	17	25	12	5
Dispatcher	2	8	4	1

Resource: Human Capital: Q&A

Questions	Answers	
	People CMM	CMMI-SVC: CAM
Do we have enough human capital resources to deliver the service?	Staffing	CAM, SD
Do they have the knowledge and skills to deliver the service?	Training & Development	
Are they aware of the organizational business goals, vision, and mission?	Communication & Coordination	
Do they have the ability to communicate and coordinate efforts effectively?	Communication & Coordination	
Do they have the resources required to deliver service?	Work Environment	CAM
Do we have the right mix of human capital capability when we need it?	Workforce Planning	

Benefits of Using People CMM to Support CMMI-SVC

Customers can be assured

- that the organization has a plan in place to ensure availability of the human capital resources required to deliver services now and in the strategic future
- training and development of the human capital resources are in alignment and support the strategic direction of the organization
- committed work is performed with increased productivity
 - human resources with the appropriate training on processes, the right knowledge and skills, and are committed to the work to be performed are more productive
- human capital resources with the required capabilities are ready to deploy when needed
- proactive planning can minimize cost to the organization which can be passed onto the customer



Conclusion -1

The demand for services can fluctuate:

- customers demand new and improved services
- organizations expect additional growth in their businesses

For all service systems people are a key component

An organizational approach to managing human capital includes a strategy for:

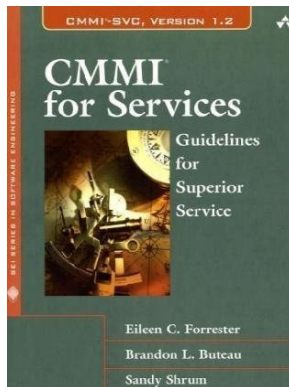
- planning for now and for the future
- having the right mix of trained people available to deliver the services
- understanding trends in historical measurements of incoming work and trends in service system components needed to deliver the services



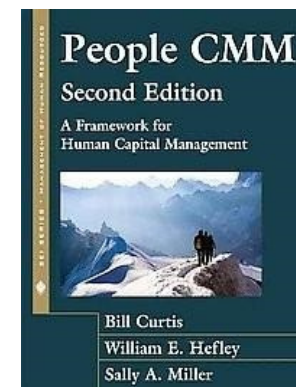
Conclusion - 2

Practices from the People CMM in combination with practices from CMMI-SVC provide the necessary activities to make tactical decisions with strategic impact.

A sound service system supported by sound human capital practices can contribute to developing a competitive advantage in the marketplace.



Forrester, Buteau, and Shrum, (2009)



Curtis, Hefley, & Miller (2009)

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