

# CMMI for Services (CMMI-SVC) Overview

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Pittsburgh, PA 15213

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September 2008



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# Acknowledgments

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In addition to my own material, I'm also using data, wording, and ideas contributed by team members, especially

- Craig Hollenbach
- Brandon Buteau
- Drew Allison
- Eileen Clark



## What I will cover

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Explain why the CMMI-SVC is needed

Describe the development team, status, and release plan

Overview the current services content

Answer common questions and pose tougher questions

Apply the unique service PAs to one or two service examples

Let you know how to participate

Note: I have extra material in the slides for your information that I won't cover.





## Why is the CMMI-SVC needed?

A variety of potential stakeholders approached the SEI asking for help with services. Demand for process improvement in services is likely to grow: services constitute more than 80% of the US and global economy.

Services constitute more than 54% of what the DoD acquires. In FY2006, DoD spent \$146 billion on services. GAO reports a 72% increase in DoD service contracts between 1996 and 2005.\*

Many organizations are cobbling together their own ITIL + CMMI solutions, reinventing the wheel over and over, and that wheel is not designed for services other than IT.

Customers are requesting that their service providers demonstrate a CMMI rating or capability profile, but attempts to use CMMI-DEV in a service setting can distort the integrity of appraisal results.

Service providers deserve a consistent benchmark as a basis for process improvement that is appropriate to the work they do and is based on a proven approach.

\* FY 2006 data is from "DoD throws light on how it buys services [GCN 2006]." GAO data is from GAO report GAO-07-20.



# Volunteer Organizations Working with the SEI



## Team Members

- Eileen Forrester (SEI) – SEI lead and product owner
- Craig Hollenbach (Northrop Grumman) – team lead
- Brandon Buteau (Northrop Grumman) – architect
- Frank Niessink (DNV)
- Lynn Penn (Lockheed Martin)
- Roy Porter (Northrop Grumman)
- Pam Schoppert (SAIC)
- Drew Allison (SSCI)
- Eileen Clark (formerly SRA)
- Rich Raphael (Mitre)
- Sharon Hantla (Boeing)



## Prior members:

- Jerry Simpson, SAIC
- Steve Stern, LMCO
- Jeff Zeidler, Boeing



# CMMI-SVC Purpose, Stakeholders, & History



## Purpose

To extend the CMMI framework to cover the delivery of services

## Key Stakeholders

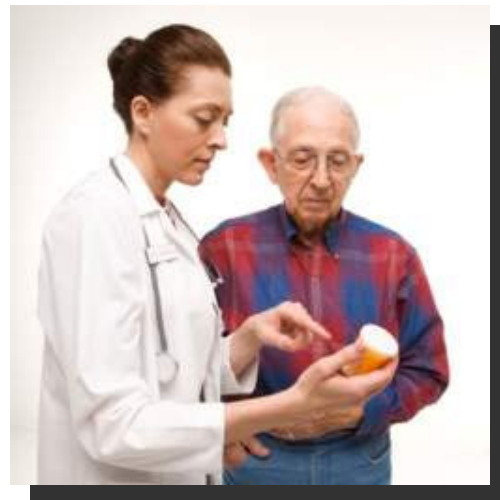
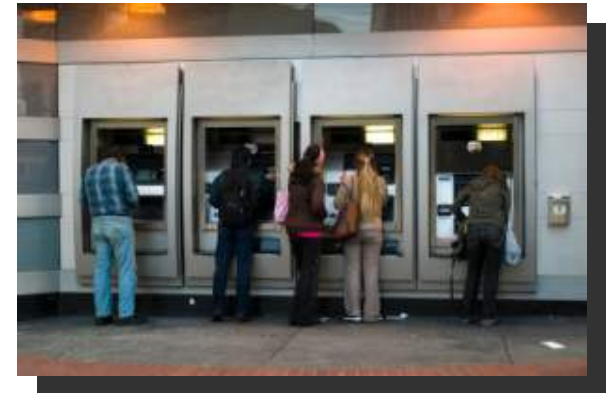
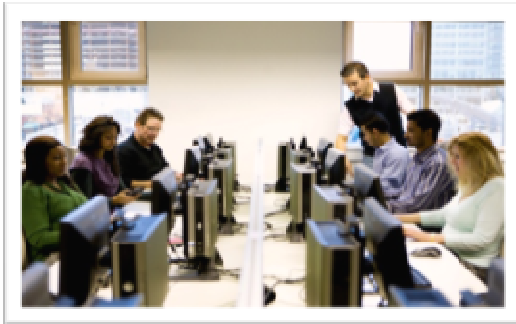
CMMI Steering Group (SG), DoD, NDIA Systems Engineering Division, industry, SEI, SEI partners

## Project History

- In 2004, SG accepted a Northrop Grumman proposal to sponsor a Services CMMI; team began work in August 2005.
- In September 2006, the team produced a full review draft. SG asked the team to suspend work while the CMMI-ACQ was developing.
- In January 2007, the SG allowed the team to seek expert review of the draft.
- In April 2007, the SG asked the team to stop work on the resulting CRs.
- In February 2008, the team was given authority to proceed again.



# Many Types of Services

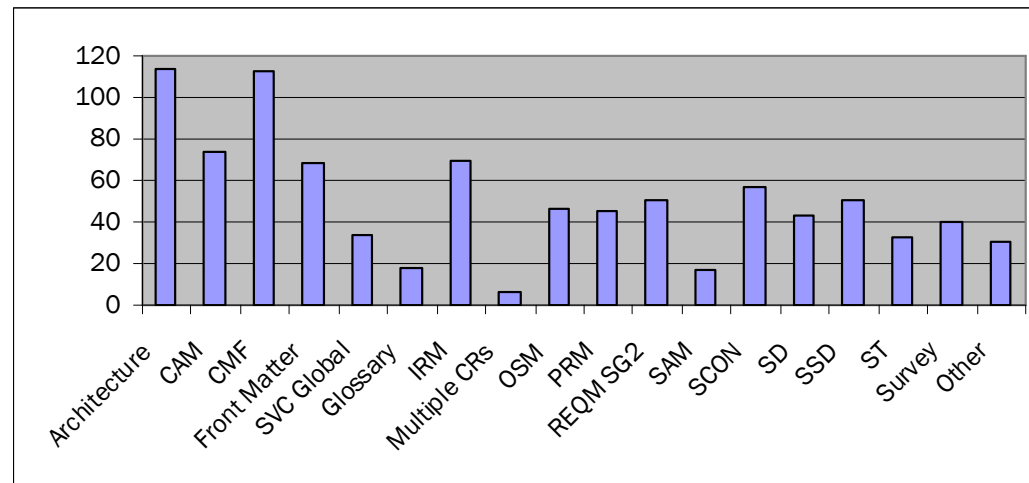


## Current Status

CMMI-SVC team is currently working on the following builds:

- Architectural and editorial change requests
- CMMI Model Foundation change requests (via CMMI Architecture team)
- SVC-unique PA change requests

Release of CMMI-SVC v1.2 is scheduled for March 2009



*CMMI-SVC v0.5 change requests*

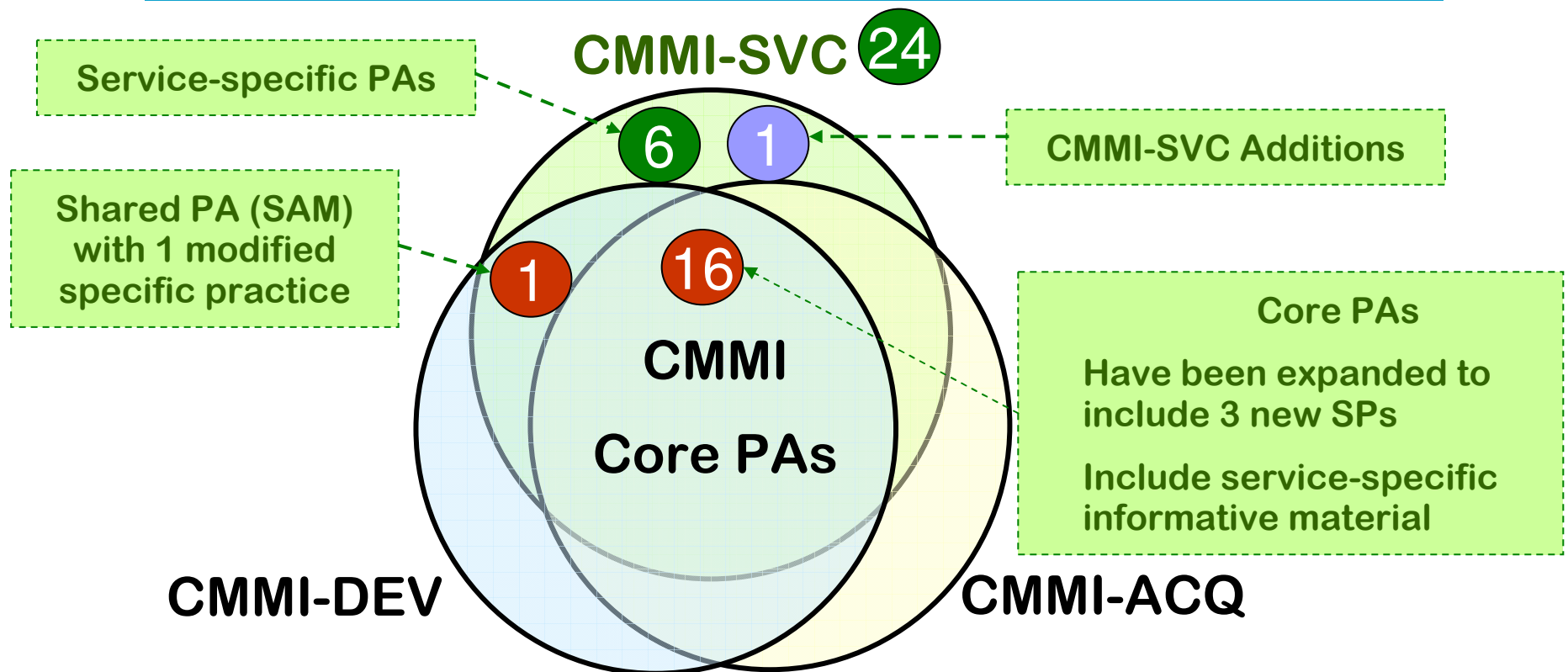




# CMMI-SVC Content and Other CMMI models



**CMMI for Services Model = 23 PAs + 1 PA Addition**



# CMMI-SVC Process Areas in Current Draft

## Process Management

- Organizational Innovation and Deployment (OID)
- Organizational Process Definition (OPD)
- Organizational Process Focus (OPF)
- Organizational Process Performance (OPP)
- Organizational Training (OT)

## Support

- Causal Analysis and Resolution (CAR)
- Configuration Management (CM)
- Decision Analysis and Resolution (DAR)
- Measurement and Analysis (MA)
- Process and Product Quality Assurance (PPQA)

## Project Management

- Capacity and Availability Management (CAM)
- Integrated Project Management (IPM)
- Project Monitoring and Control (PMC)
- Project Planning (PP)
- Requirements Management (REQM)
- Risk Management (RSKM)
- Quantitative Project Management (QPM)
- Service Continuity (SCON)
- Supplier Agreement Management (SAM)

## Service Establishment and Delivery

- Incident Resolution and Prevention (IRP)
- Service Delivery (SD)
- (+) Service System Development (SSD)
- Service System Transition (ST)
- Strategic Service Management (STSM)



# CMMI-SVC Service-Specific PAs: CAM



## Capacity and Availability Management

- To plan and monitor the effective provision of resources to support service requirements

### Notes:

- Isn't this something only IT does?
- Isn't this PP and PMC?
  - But CAM practices are best employed at an organizational level
- Shouldn't this be high maturity?
- Aren't you raising the bar on level 3?
  - Current intent is to keep CAM at ML 3, but to clarify how its implementation relates to the concepts in OPP and QPM at ML 4.
- Might the coverage of both capacity and availability in CAM encourage an overly narrow focus on capacity as the preferred approach to improving availability?



# CMMI-SVC Service-Specific PAs: IRP



## Incident Resolution and Prevention

- To ensure timely and effective resolution of service incidents and prevention of service incidents as appropriate

### Notes:

- Combines the prior IRM and PRM (in v0.5)
- “Incident” has variety of definitions in different contexts
- Relationship of incident *prevention* activities (SG 3) to CAR practices needs to be explained
  - Current thinking is that SG 3 uses the practices of CAR but without necessarily having the insight gained from having a quantitatively managed process with PPMs and PPBs to support the analyses of causes and proposed solutions, and that is what would differentiate IRP SG 3 from CAR. (This is also consistent with the recent efforts to improve understanding of CMMI high maturity practices.)



# CMMI-SVC Service-Specific PAs: SCON



## Service Continuity

- To establish and maintain contingency plans for continuity of agreed services during and following any significant disruption of normal operations

## Notes:

- Some CRs ask for consideration of SCON as CMF
- Not for “normal incidents” but significant disruptions
- Development team has concluded that SCON should not be inserted as part of RSKM, though the relationship between the two needs to be explained.



# CMMI-SVC Service-Specific PAs: SD



## Service Delivery

- To deliver services in accordance with service agreements

## Notes:

- Incorporates agreement management (was REQM SG 2 in v0.5)
- Includes request management (was in IRM)
- Still revising, for example to agree on fit with PP



# CMMI-SVC Service-Specific PAs: SSD



## Service System Development

- To analyze, design, develop, integrate, verify, and validate service systems, including service system components (which include people and consumables), to satisfy existing or anticipated service agreements

### Notes:

- Applies to new and existing service systems
- Engineering PAs in DEV are recommended for improving product development process, large complex systems, and those very familiar with DEV.
- Using SSD may be preferred by service provider organizations that are new to the CMMI Framework—especially those with simple services. Even organizations that use the CMMI-DEV model for service system development may refer to the SSD process area for helpful guidance on applying development practices to service system parts like people, processes, and consumables (these are rarely called out in DEV).



# CMMI-SVC Service-Specific PAs: SST



## Service System Transition

- To deploy new or significantly changed service system components while managing their effect on ongoing service delivery

## Notes:

- Can include deploying something new, replacing something, or retiring
- Strong interrelationships to SD and SSD
- People (end users and others) are part of the service system and must be accounted for in a transition





# CMMI-SVC Service Specific PAs: STSM



## Strategic Service Management

- To establish and maintain standard services in concert with strategic plans and needs

## Notes:

- Outcome is the collection of standard services, including service levels
- Service catalog is common term, but not only option
- Internal and external audiences are important
- Still considering how much service improvement to include here



## What are some common questions?

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What is a service request?

What is a service agreement? Don't you mean SLA?

What is a service level?

Shouldn't the standard service repository be the PAL?

Is this model about SOA or SaaS?

Is this model a replacement for ITIL? Is it compatible with ITIL? Why didn't you just use the ITIL language for things? What about V3?

What's an example of a service system?

What's a service system component?



# Service System



A necessary concept for understanding the effective delivery of services

Portions may not be delivered to the customer or end-user as part of service delivery.

Portions may remain owned by the customer or end-user or another provider before service delivery begins and after service delivery ends.

Encompasses everything required for service delivery, including people, work products, processes, infrastructure, consumables, and customer resources.



# Applying CMMI-SVC to Health Care



# Applying CMMI-SVC to Health Care



The next few slides are about applying CMMI-SVC to health care services, specifically in-hospital pharmaceutical and respiratory services.

Eileen Forrester of the SEI worked with a subject matter expert (SME) who directs these services for a hospital group to apply CMMI-SVC to health care services. The SME had no prior experience with CMMI or model-based process improvement.



# Applying CMMI-SVC Processes to Health Care



Project Management	
Requirements Management	Agreeing what services are needed. Managing the demands for particular drugs and treatments and compliance with state and federal laws. For example, might establish the availability of pharmaceutical and respiratory staff under specific conditions.
Capacity and availability Management	Planning and monitoring to ensure that sufficient resources, such as pharmacists, therapists, drugs, and oxygen, are available on a regular basis to enable delivery of drugs and respiratory care.
Service Continuity	Establishing and maintaining contingency plans for continuity of agreed services during and following any significant disruption of normal operations. In these services, staff may make a plan and rehearse how to restore service after a natural disaster, pandemic, or terrorist attack.



# Applying CMMI-SVC Processes to Health Care



## Service Establishment and Delivery (1 of 4)

### Strategic Service Management

The hospital organization would establish a range of standard pharmaceutical and respiratory services to meet the needs of its customers, and then periodically analyze data from customers of pharmaceutical and respiratory services to revise these services to meet those needs. Standard services would include service-level agreements, which might specify, for example, response times for emergent and non-emergent treatment and prescriptions by the service providers.

By analyzing the set of services and user data, the organization might realize that they have a demand not only for corrective respiratory services, but also for services that could optimize the performance of athletes and musicians. The provider could then add standard respiratory performance services to their service line.



# Applying CMMI-SVC Processes to Health Care



## Service Establishment and Delivery (2 of 4)

### Service System Development

For pharmaceutical and respiratory services, the service system includes facilities, such as the pharmacy supply rooms; shelves and equipment, such as that for measurement, delivery of drugs, and breathing equipment (infrastructure); doctors, nurses, pharmacists, therapists, and technical specialists (people); (consumables) such as drugs and oxygen; and diagnosing, prescribing, drug preparation, scheduling, planning, budgeting, and treating (processes).





# Applying CMMI-SVC Processes to Health Care



## Service Establishment and Delivery (3 of 4)

### Service Delivery

Establish agreements and a request management approach. For these services, a request might be for a prescription for a new pain medication ordered for a patient in ICU, a consultation from a PharmD to doctors considering medications for a patient with an already complex drug regimen, or a respiratory therapist to come to the emergency department to treat a child suffering a severe asthma attack.

For pharmaceutical and respiratory services, this would mean preparing a schedule of pharmacists and therapists, preparing and delivering drugs and respiratory care, monitoring supplies of drugs and equipment, acquiring consumables, tracking customer satisfaction, and maintaining the infrastructure of the pharmacy and treatment facility.



# Applying CMMI-SVC Processes to Health Care



## Service Establishment and Delivery (4 of 4)

Service System Transition	Suppose the state in which a hospital group operates passed a law that nurses are no longer able to administer certain drugs, except in the presence of a pharmacist. These practices would be invoked to make the changes to people and processes that would be required to comply with the law while continuing to provide service.
Incident Resolution and Prevention	An incident might be delivery of a medication in the wrong dosage or media or failure to deliver the respiratory equipment in the time needed for the emergency treatment.



# What are the remaining big issues?

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Use of the word “project” in the service context.

The SEI is considering other options for how to describe work that is not development. This is relevant not only for services, but also for potential future CMMI constellations. (This issue is unlikely to be resolved with the first release of CMMI-SVC.)

Providing more help with applying CMF material in service context.

Handling joint appraisals and organizations that need more than one constellation to cover all their work.

Deciding how to qualify, train, and certify lead appraisers.

Ensuring applicability and usability for different service types.

Providing enough informative material for different service types without enlarging the model too much.

Supporting a huge market of adopters.



# Learning more

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## Opportunities for stakeholders:

- First offering of the pre-release one-day training October 30 in Vancouver Washington after the Lead Appraiser workshop.
- Additional one-day trainings in Denver, Mar de Plata, Arlington, Frankfurt, and London. Possible offerings in Australia, South Africa, and Israel.
- Webinar for SPIN members October 23.
- Planning to put a version of this overview online with a voice track.
- Possible public workshops coming in Europe and Australia.
- First public offering of the one-day training will be March 20, 2009 at the SEPG Conference in San Jose.





## How can you participate?

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Pilot and provide experience reports. Let us know if you'd like to be listed on our web site as an early adopter.

Review or implement the draft CMMI-SVC, especially for applicability in various service domains.

Write additional scenarios for service types.

Contribute exercises and examples for appraisal training.

Suggest typical work products and other informative material for specific service types.

Provide mappings to other frameworks and models that you use.

Contact [partner-info@sei.cmu.edu](mailto:partner-info@sei.cmu.edu) if you aren't a partner and would like to learn about becoming one. We are accepting licensing requests now.



## How can you stay informed?

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Get more information about CMMI-SVC

- CMMI website: <http://www.sei.cmu.edu/cmml/>
- CMMI for Services Public Workspace (<http://bscw.sei.cmu.edu/pub/bscw.cgi/0/424939>) contains
  - Draft CMMI-SVC model, v0.5 (outdated!)
  - Q&As and notices
  - Information on joining CMMI-SVC information email list
  - Other communication products when available

Write to [cmml-comments@sei.cmu.edu](mailto:cmml-comments@sei.cmu.edu) with comments and questions

When in doubt, contact SEI CR: [customer-relations@sei.cmu.edu](mailto:customer-relations@sei.cmu.edu)



## Contact information

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## References

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CMMI - <http://www.sei.cmu.edu/cmml/cmml.html>

ITIL - <http://www.ogc.gov.uk/index.asp?id=2261>

itSMF - <http://www.itsmf.com/>

BS 15000 - <http://www.bs15000.org.uk/>

COBIT - <http://www.isaca.org/>

ITSCMM - <http://www.itservicecmm.org/>

Interpreting Capability Maturity Model Integration (CMMI) for Operational Organizations, Brian P. Gallagher, Technical Note, CMU/SEI-2002-TN-006, April 2002

Interpreting Capability Maturity Model Integration (CMMI) for Service Organizations – a Systems Engineering and Integration Services Example, Mary Anne Herndon, SAIC, et al, Technical Note, CMU/SEI-2003-TN-005, November 2003

Services CMMI Public Website - <https://bscw.sei.cmu.edu/pub/bscw.cgi/0/424939>





# Applying CMMI-SVC to Education



# Applying CMMI-SVC to Education



What follows is a scenario for how CMMI-SVC could apply to educational services, developed by Eileen Clark, formerly of SRA, now of Clark Consulting.

She worked with a subject matter expert in education services, who had no background in CMMI (or even process improvement), to apply CMMI-SVC to educational services.



# Applying CMMI-SVC PAs to Education



Project Management	
Requirements Management	Managing the requirements of the educational services to be delivered (high school courses that meet state requirements for graduation must educate 2000 students, including 25% of whom are English Language Learners, and 12% of whom are in special education).
Capacity and Availability Management	Planning and monitoring to ensure that sufficient resources (staff, consumables) are available on a regular basis to ensure continued delivery of services.
Service Continuity	Planning and rehearsing to ensure that critical educational services can be delivered in the event of a major disaster.



# Applying CMMI-SVC PAs to Education



<b>Service Establishment and Delivery</b>	
Service Delivery	Preparing and maintaining a class schedule, teaching classes, monitoring student performance, acquiring consumables, tracking customer satisfaction, and maintaining the educational infrastructure.
Service System Development	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).
Service Transition	Rolling out changes to the existing service system (e.g., planning when and how to implement the new curriculum, provide sufficient professional development, and monitor implementation).
Incident Management	Monitoring and managing unexpected failures of service delivery (e.g., student fails a class, teacher calls in sick, school opening delayed due to snow) and routine requests for service (e.g., new student enters school, new course offered).



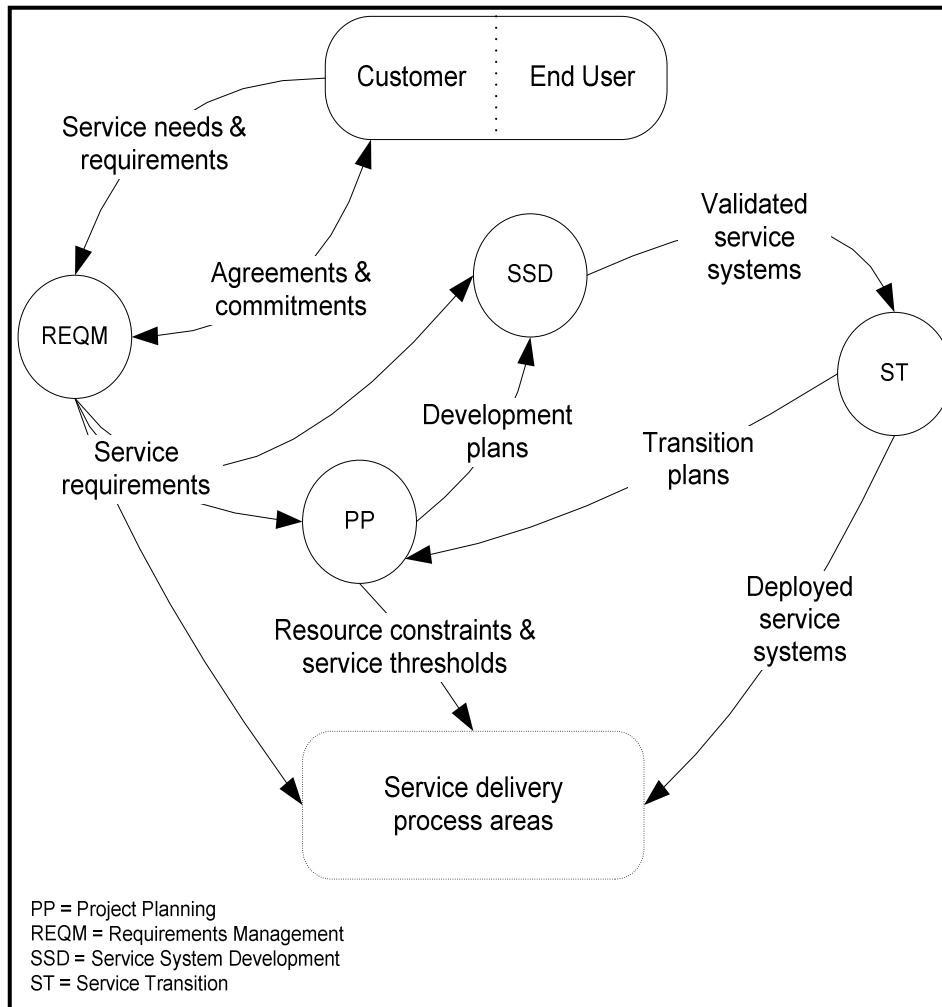
# Applying CMMI-SVC PAs to Education



<b>Service Support</b>	
Problem Management	Identifying and resolving the underlying causes of repeated similar incidents or significant incidents (e.g., students routinely do not pass proficiency tests, or students engage in repeated disruptive behavior).
<b>Process Management</b>	
Organization Service Management	Developing, implementing, and continually improving organization-wide educational services and service processes (e.g., curriculum development, assessing student and teacher performance, and teacher-student communications).



# Key Service Establishment Process Area Relationships

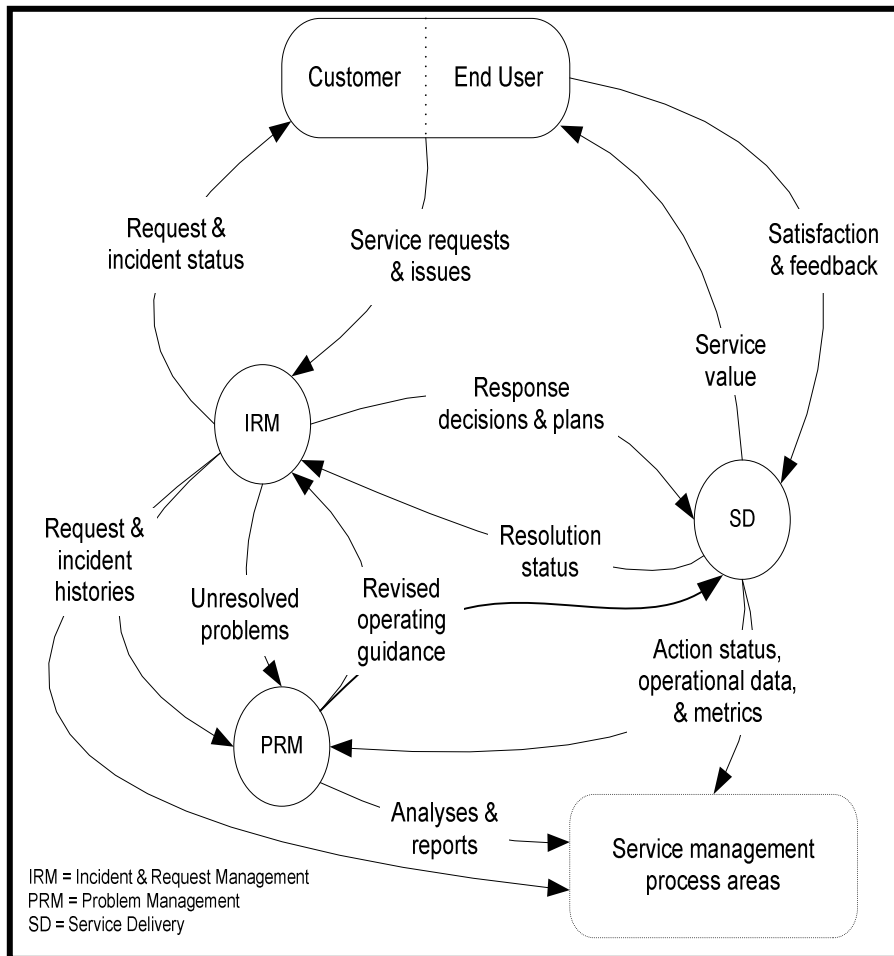


## The service provider

- Establishes an agreement with the customer to provide the educational services
- Determines the education requirements
- Develops plans to implement the services
- Develops, modifies, or enhances its service system (e.g., curriculum, infrastructure, quality management system, processes, data collection and reporting)
- Transitions the service system into operation



# Key Service Delivery Process Area Relationships



Service provider using the Service Systems delivers education/training to the student/learner

Student provides feedback to service provider

Customer and/or the student contacts the service provider to report issue with the services delivered (e.g., no report card received)

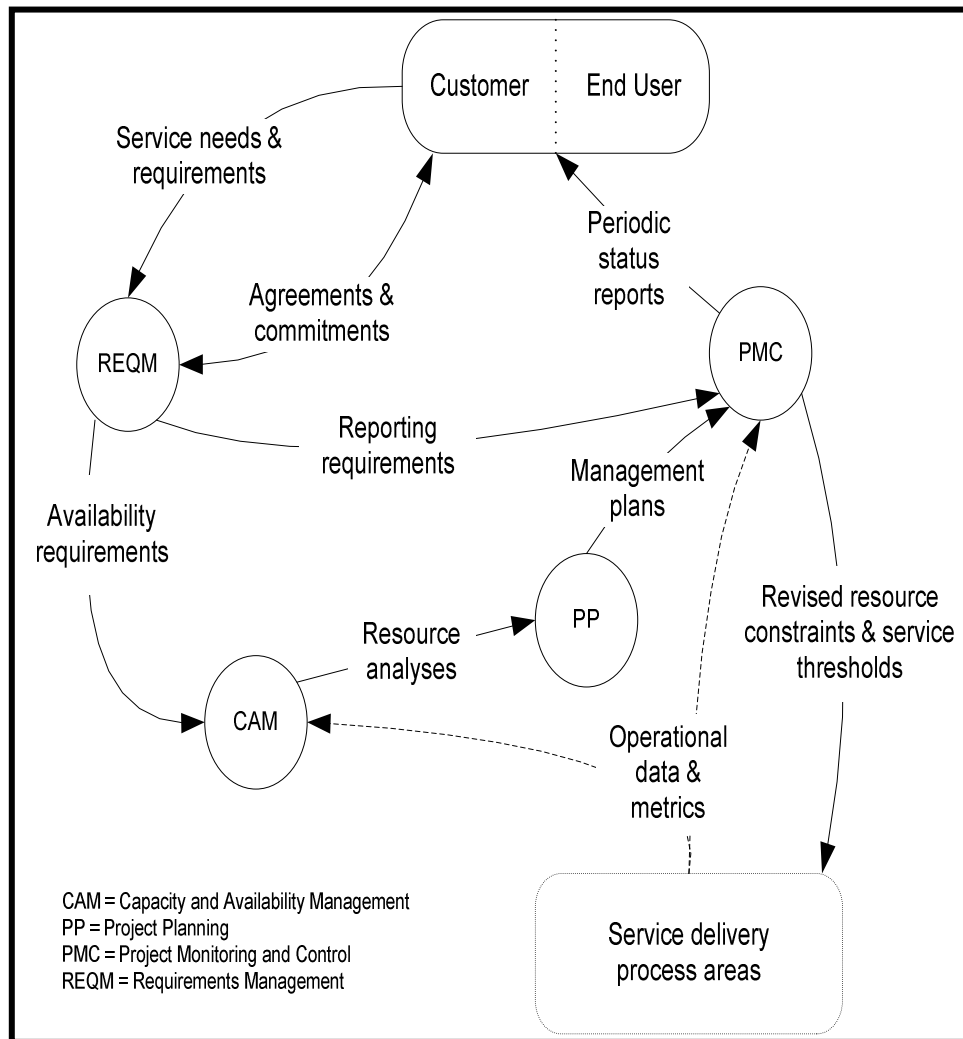
Customer and/or student contact service provider to request service (e.g., new student)

Service provider resolves issues and addresses reoccurring issues (e.g., report cards not sent out to parents)

Service provider collects data on service delivery performance (e.g., time required to enroll a new student, time it took to resolve report card issue)



# Key Basic Service Management Process Relationships



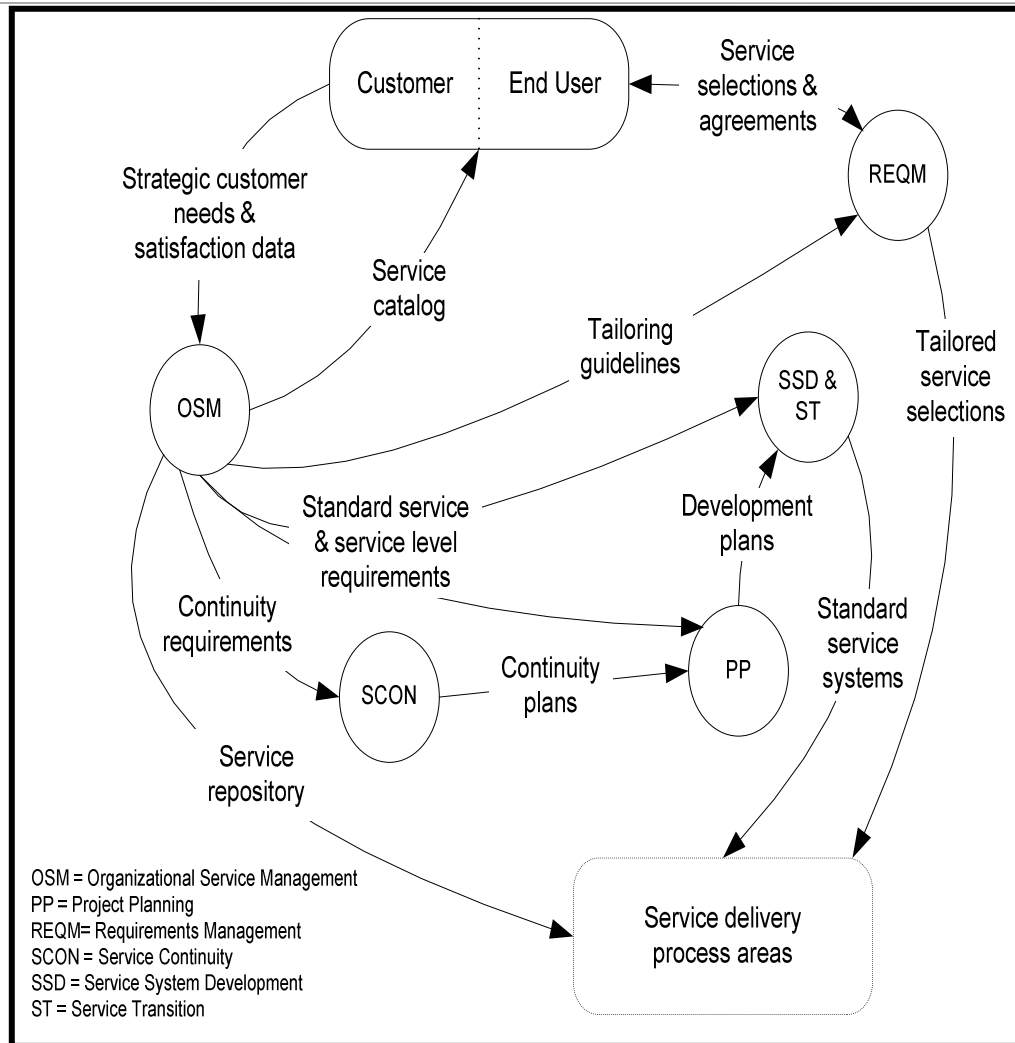
Customer provides education needs and reporting requirements to service provider, while service provider

- Negotiates agreement with customer
- Analyzes capacity and availability requirements based on services requested
- Plans for acquiring additional resources and revises resource constraints and thresholds
- Provides status reports to customer based on operational data and metrics





# Key Advanced Service Management Process Relationships



## Service provider

- Solicits future educational needs from the customer
- Develops service catalog, organization-wide processes (e.g., ), and tailoring guidelines
- Updates plans to implement new standard services
- Modifies and/or enhances service system to provide standard services
- Transitions the updated service system into operations

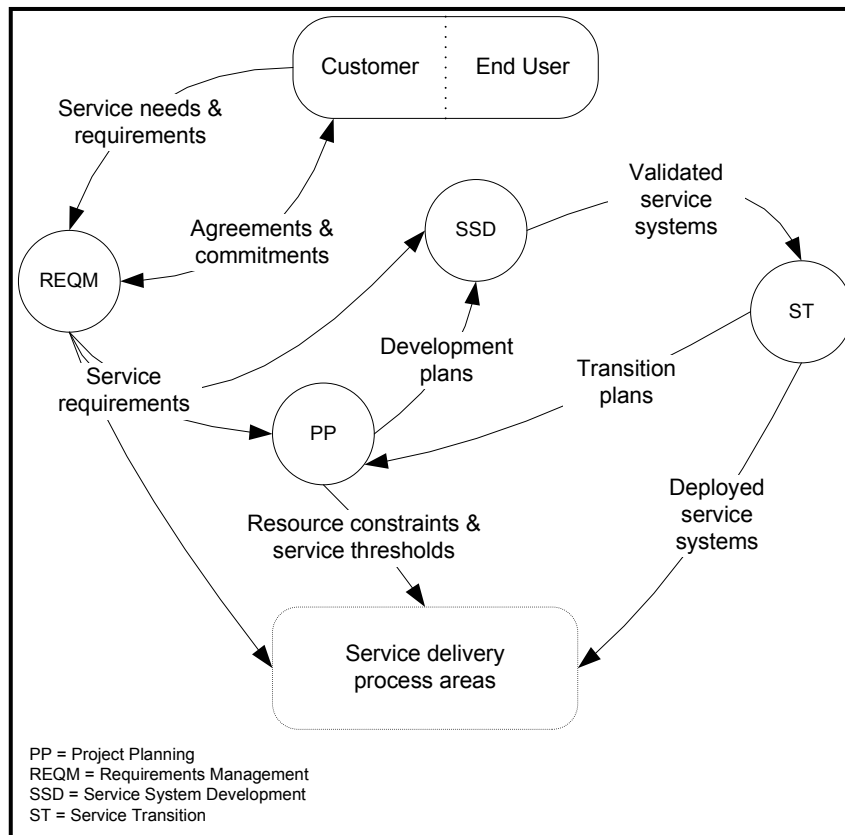


# Key Service Establishment Process Area Relationships



## Service Provider

- Establishes agreements with the customer to provide educational services
- Determines the education requirements
- Develops plans to implement the services
- Develops/modifies/enhances its service system (e.g., curriculum, infrastructure, quality management system, processes)
- Transitions the service system into operation



# Why Apply the CMMI-SVC in the Education Sector Now?



## What is needed?

- An end-to-end system for continuous process improvement for education
- Common terminology to improve communication and increase efficiency
- Common and consistent processes at school, district, state and federal levels
- Ability to scale and adapt educational organizations to assist in achieving educational outcomes

## CMMI-SVC would provide to public education

- A proven maturity model that can be refined to meet education specific requirements, enabling schools to increase student achievement with limited resources and increased expectations

## Based on use of maturity models in other sectors, the CMMI-SVC model would expect to improve specifically

- Educational and management processes thus enhancing the overall quality of education
- Course design process thus enhancing student learning outcomes
- Mechanisms for measuring continuously student and teacher performance
- Insight into current performance thus identifying areas for improvements
- Teacher-student communications

## By implementing the CMMI-SVC model, educational organizations would

- Identify key activities essential for overall improvement of the educational organization
- Enable the development of a clear educational vision for continuous education improvement
- Facilitate the introduction of best practices for educational and management processes
- Facilitate the use of technology



# System Support & Logistics Experience Report



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# System Support & Logistics Experience Report

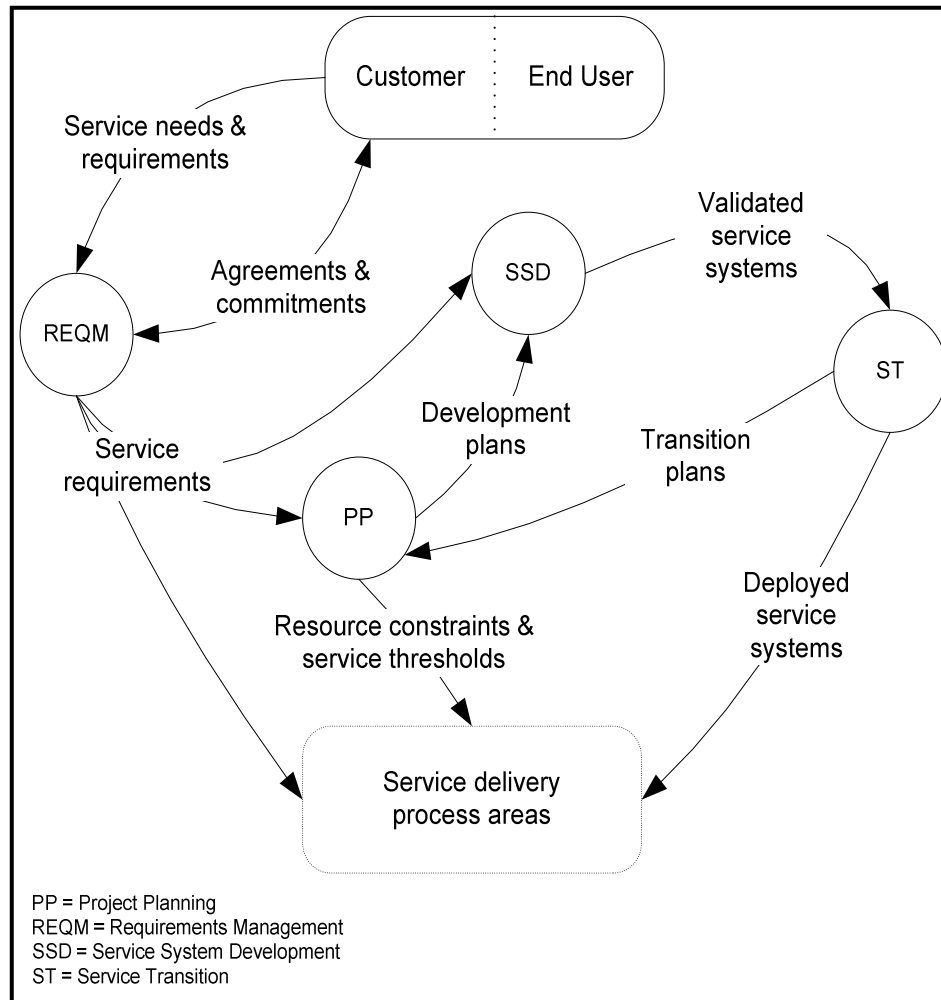


This experience report was developed by Craig Hollenbach of NG IT.

- Based on a Class C appraisal of a Northrop Grumman center of excellence
- Center develops, integrates, and deploys automatic identification technology (AIT), including active and passive RFID, biometric, smartcard, wireless, asset visibility and mobile technology.
- Develops for hand-held or mobile and enterprise environments
- Technical services consist of analysis, design, development, integration, procurement, deployment, training and maintenance.
- For select customers, the center also provides logistical services.
- Has deployed solutions to more than 500 locations, including Afghanistan, Bosnia, Europe, Japan, and Iraq.
- Appraised at CMMI Level 5 (CMMI-DEV)
- Averages 40+ mostly firm fixed price projects at any given time



# NG System Support & Logistics Experience: Key Service Establishment Processes



**REQM** – Performance Support Agreement (PSA) is created for each project. All installation, training, and service parameters MUST be specified.

**PP** – PSA determines how reusable AIT system must be modified, which typically integrates new identification technologies.

**SSD** – PSA determines installations, training, and warehousing system needs. Center uses CMMI-DEV for the development of the service system.

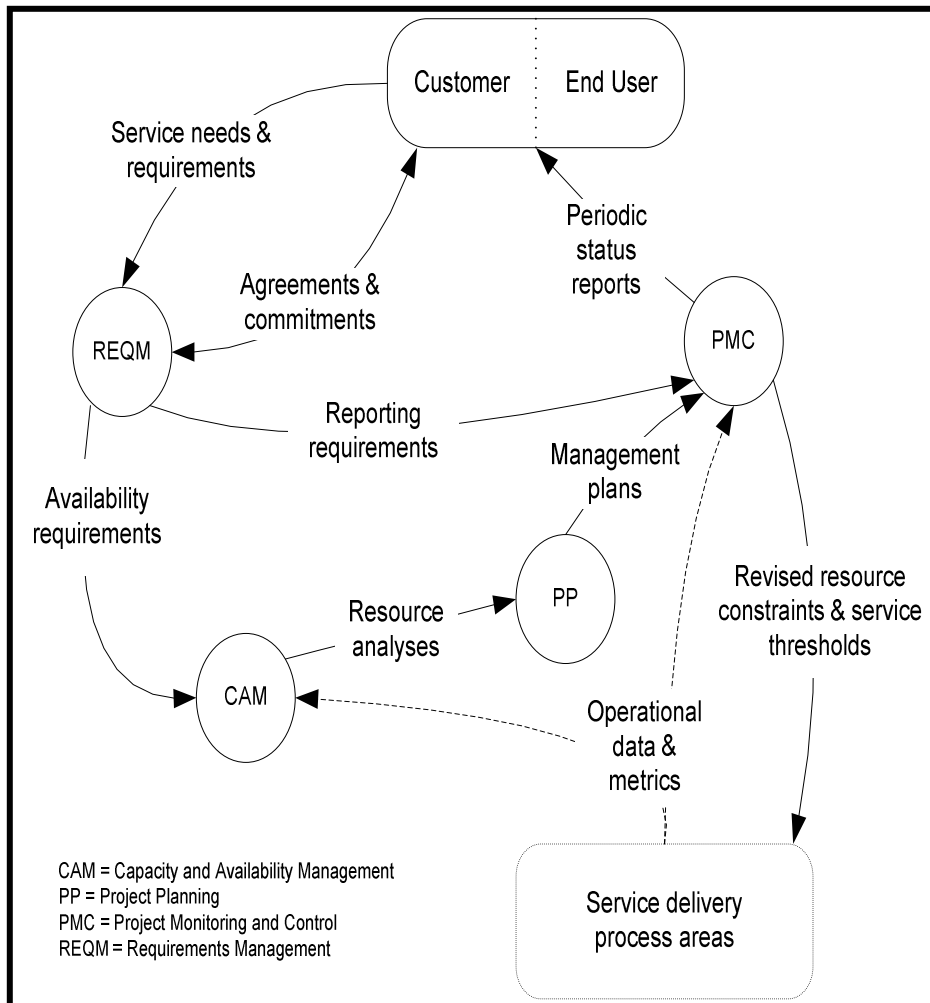
- Service System includes the developed AIT system, all HW and communications equipment, training manuals & aids, shipping, travel preparations, etc.

**ST** – Installs and tests new or updated AIT system at the customer location.

- For warehousing, they use a standard AIT system.



# NG System Support & Logistics Experience: Key Project (Service) Management Process



**REQM** – Performance Support Agreements (PSA) created for all projects.

**CAM** – initial and ongoing planning and monitoring of needs and resources.

- The hard part is addressing and balancing the current and future needs of all projects and customers.
- Cross-trained staff is key.

**PP** – PSA is a tailored version of standard schedule, cost model, personnel, risks.

- Based on CAM resource analysis
- Includes thorough coordination with stakeholders
- Usually a firm fixed price contract

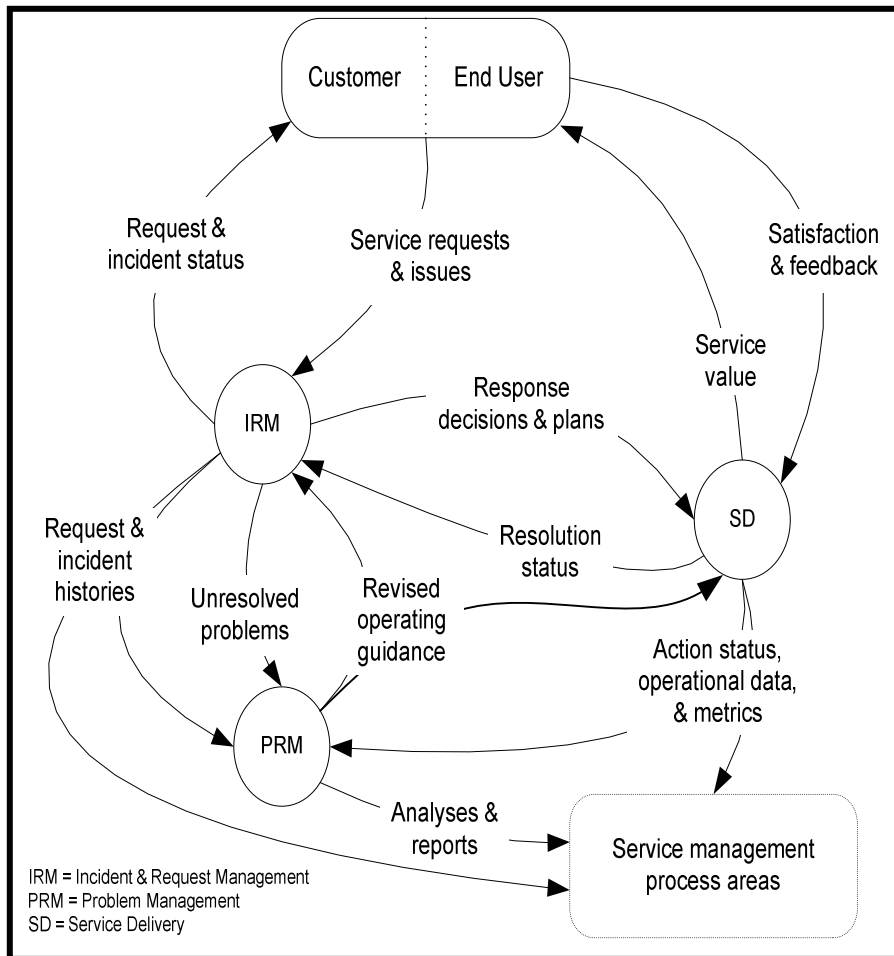
**PMC** – constant monitoring of daily status reports from sites, including the warehouse.

- Bi-monthly telecons and monthly reports to all customers
- Site issues are tracked to closure (e.g., site personnel need more training than planned to understand the system)





# NG System Support & Logistics Experience: Key Service Delivery Process



## IRM – Uses multiple methods.

- Initial requests are tracked through PSA and ongoing planning with customer.
- Incidents are tracked to closure via a daily install/train status report.
- Ongoing support and warehousing requests are handled via a government help desk system.

## PRM – Analyzes incidents for applicability to other uses of same identification technology.

## SD – Includes:

- Preparation for service delivery: Schedules, gathering of incidental materials and tools, travel arrangements, rental cars, security clearances, medical shots and records, Govt. approvals to travel.
- Delivery of installation, training, support, or warehousing services
- Maintenance of service system: Equipment (e.g., scopes), installation guide, maintenance procedures, and test cases to test installation; training materials (schedules, lesson plans).





# Experience Report from an IT Services Pilot



# Experience Report from an IT Services Pilot



Experience report by Drew Allison of SSCI from piloting CMMI-SVC

Leverage points for IT services from prior CMMI use

Measurement challenges for services, and initial ideas from Drew Allison.



# Challenges

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Few examples or little knowledge of assets for OSM (e.g., Service Catalogues), REQM SG2 (SLAs)

Few examples or little knowledge of standard lifecycle definitions for services (OPD PS 1.2, PP SP 1.3)

Supporting inherited applications that are already fielded

Deployment to frequently changing and non-standard live environment where

- infrastructure is owned by customer
- CM of infrastructure is controlled by customer
- service transitions are managed by service provider AND others

Orientation toward over-reliance on tools, not processes



# Objective Evidence Questions in Appraisal

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PIID owner would benefit from help by someone experienced in CMMI-DEV PIID preparation

Many plans in CMMI-SVC:

- Do they map to existing artifacts?
- If so, how?

Where to use existing artifacts, enhance existing artifacts, create new artifacts

Measurement in a service environment

- Establishing baselines (for one-year contracts? how extensive?)
- What if IT infrastructure is owned by the customer? Impact on CAM and CM.



# Good News



Existing CMMI-DEV process assets and knowledge made it easier to recognize solutions and speed action planning

- Example: may have to add roles, responsibilities, and training for service management, support, and delivery, but templates and examples for doing so already exist

CMMI emphasis on defined processes at maturity level 3 is solving some issues

- Hard to perform QA for services without defined service processes in place
- Strategic training needs for services identified

For IT services, there is detailed guidance in ITIL

- CMMI – the “what,” process framework; ITIL – the “how”

Appreciated that CMMI-SVC offers best practices that focus where most of the time is spent (delivery rather than development)



# Leveraging CMF and CMMI-DEV Processes for IT Services



Identify common processes: revise process assets defined only for development efforts (CMMI-DEV centric)

OT: training groups will need help understanding service roles/responsibilities, identifying strategic training needs for services

OPF, OPD: decide whether and how process groups will interface to reduce stovepipes, reinventing the wheel

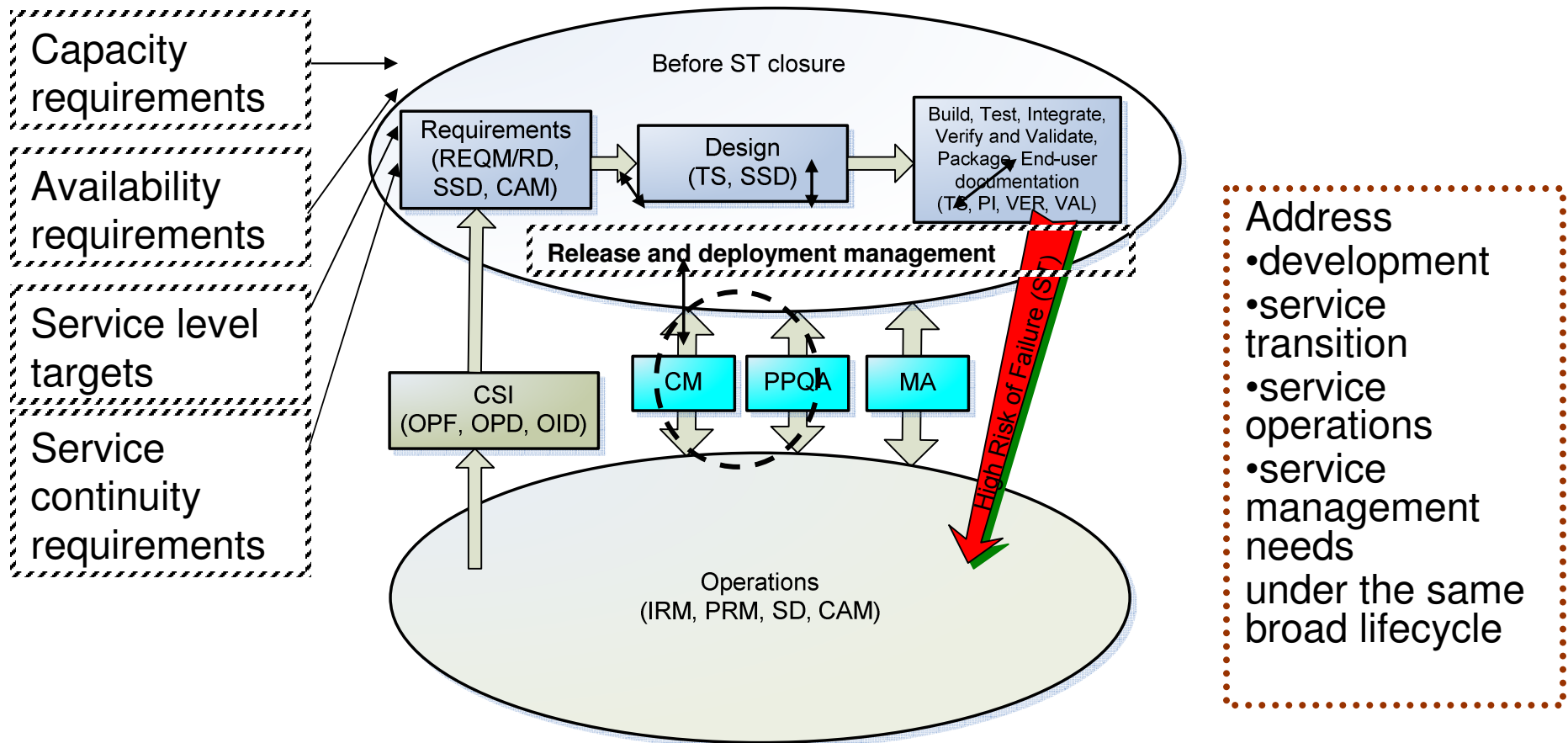
Support PAs: identify touch points between development and services

Project Management PAs: identify the role that classic project management will play

Engineering PAs: decide where engineering processes can or should be leveraged



# End-to-End Lifecycle Process Approach



**The CMMI Product Suite was released January 2002 and today...**

- **CMMI website averages 20,000 visits/day**
- **Over 90,000 people have been trained**
- **Over 3,000 “class A” appraisals have been reported to the SEI**
- **Global adoption is steadily growing**



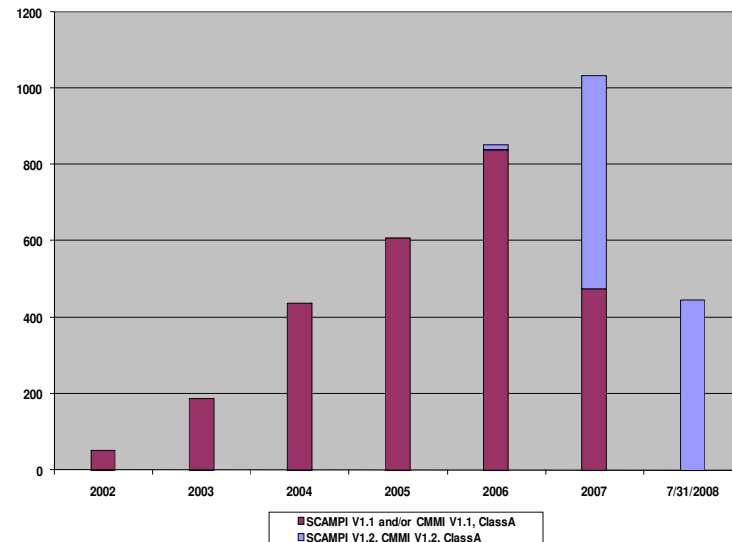
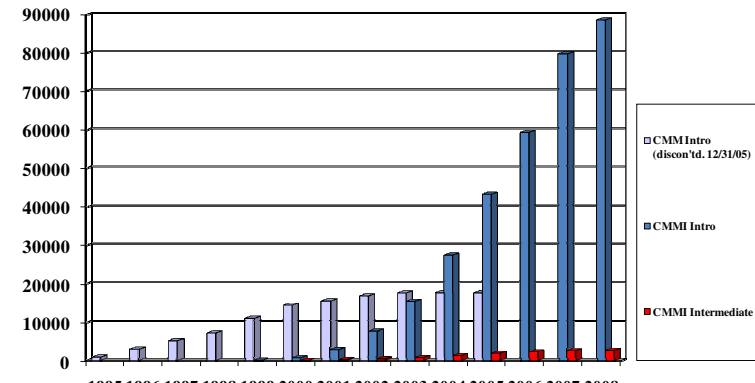


# CMMI-DEV Adoption Has Been Rapid



- Intro: 90+K trained as of 7/31/08
  - 35K in last two years
  - Growth now linear, not exponential
- SEI-sanctioned translations available
  - Japanese
  - Traditional Chinese
  - French
- SCAMPI A appraisals
  - Growing by 200 per year
  - (Rightmost bar represents a partial year)

Intro to the CMM and CMMI Attendees  
(Cumulative) as of 7-31-08

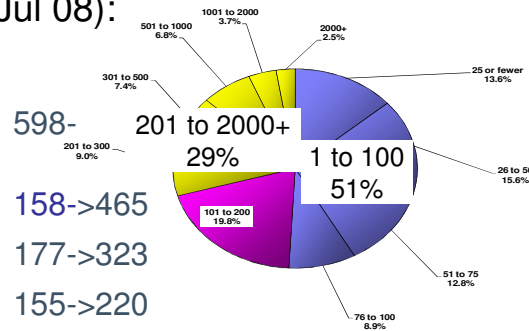


# CMMI Adoption Has Been Broad

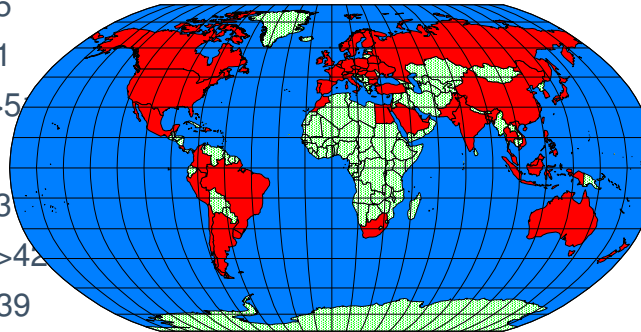


25 countries with 10 or more appraisals (Aug 06 -> Jul 08):

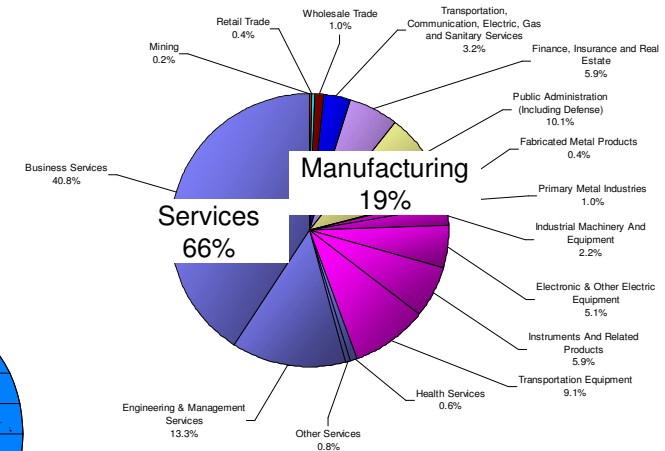
- USA >1034
- China 158->465
- India 177->323
- Japan 155->220
- France 65->112
- Korea (ROK) 56->107
- Taiwan 31->88
- Brazil 39->79
- Spain 25->75
- U.K. 42->71
- Germany 28->54
- Argentina 15->47
- Canada 18->43
- Malaysia 15->42
- Mexico <10->39
- Australia 23->29
- Egypt 10->27
- Chile <10->20
- Philippines 14->20
- Colombia 10->18
- And Italy, Israel, Singapore



Est'd 900,000+ work in org's that have had a SCAMPI A appraisal.



- SCAMPI A reports from 60 countries
- 72% of adopters are commercial org's
- 2/3 Services; 1/5 Manufacturing
- Approx. 70% of adopters in US are contractors for military/gov't or are gov't



<http://www.sei.cmu.edu/appraisal-program/profile/profile.html>  
Statistical analyses by the presenter.



Software Engineering Institute

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CMMI for Services (CMMI-SVC)  
Forrester, September 2008  
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