



MANAGING RISK

CMMI-SVC vs SPICE-SVC

A critical analysis of weaknesses and strenghts



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Agenda

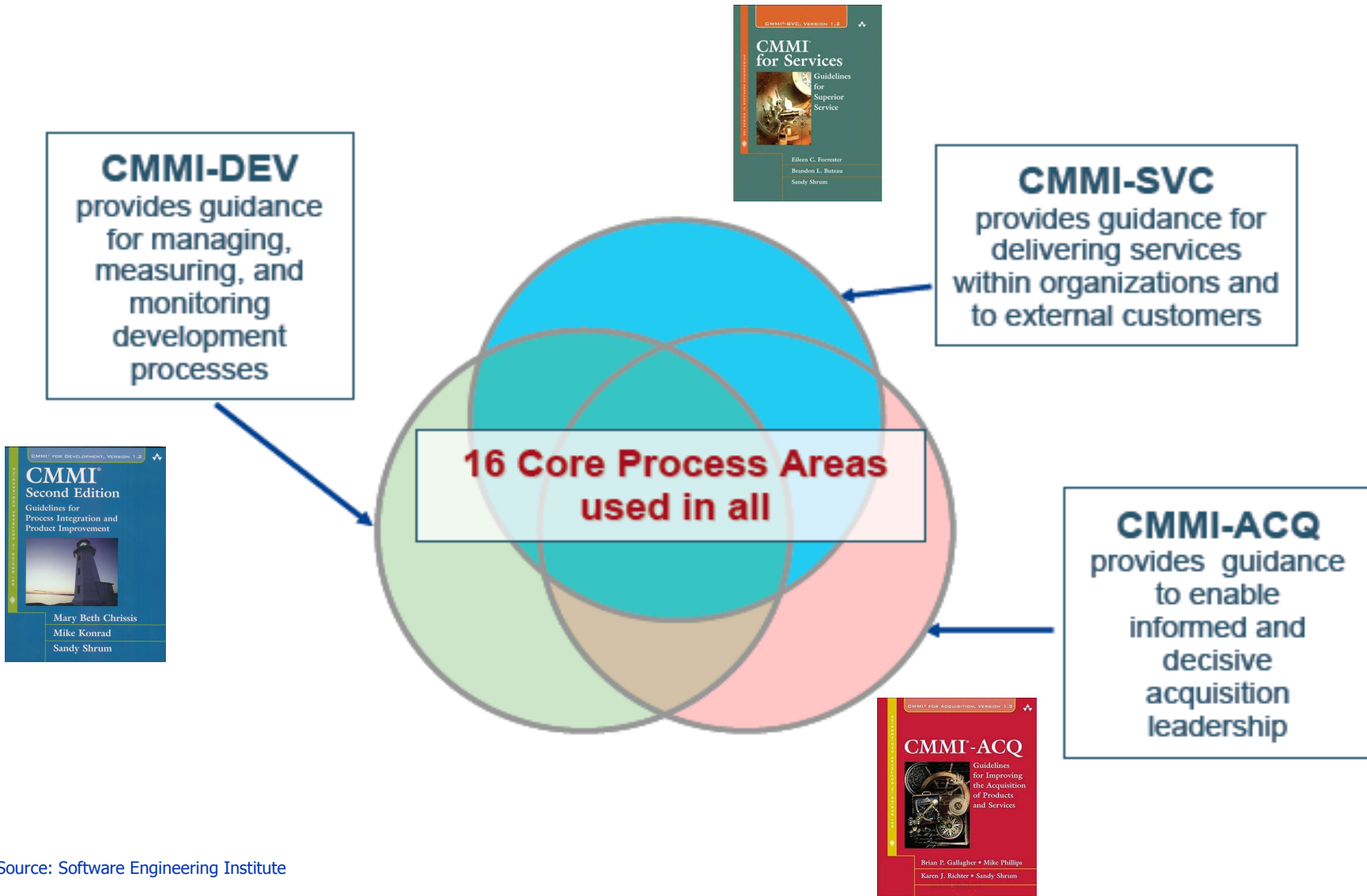
- (Extremely) Brief historical background of Service Management models
- Overview of CMMI-SVC and SPICE-SVC
- Comparison of general features
- Comparison of processes by category
- Comparison of measurement frameworks for capability/maturity
- Concluding remarks



Historical Background

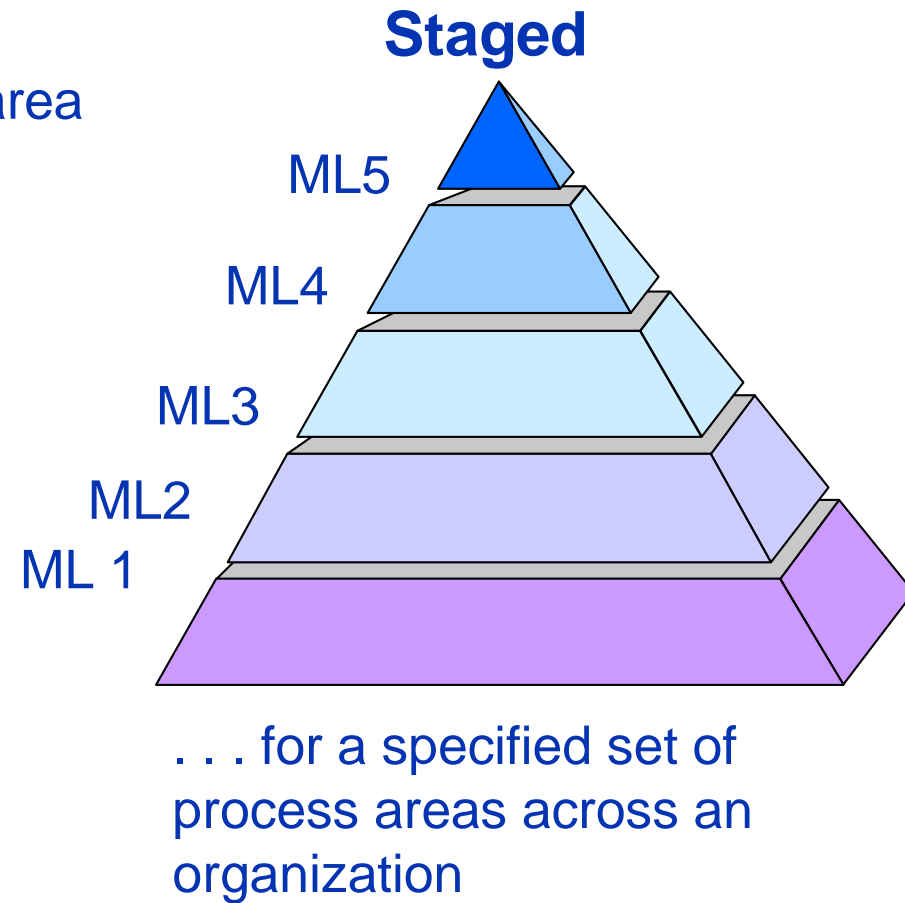
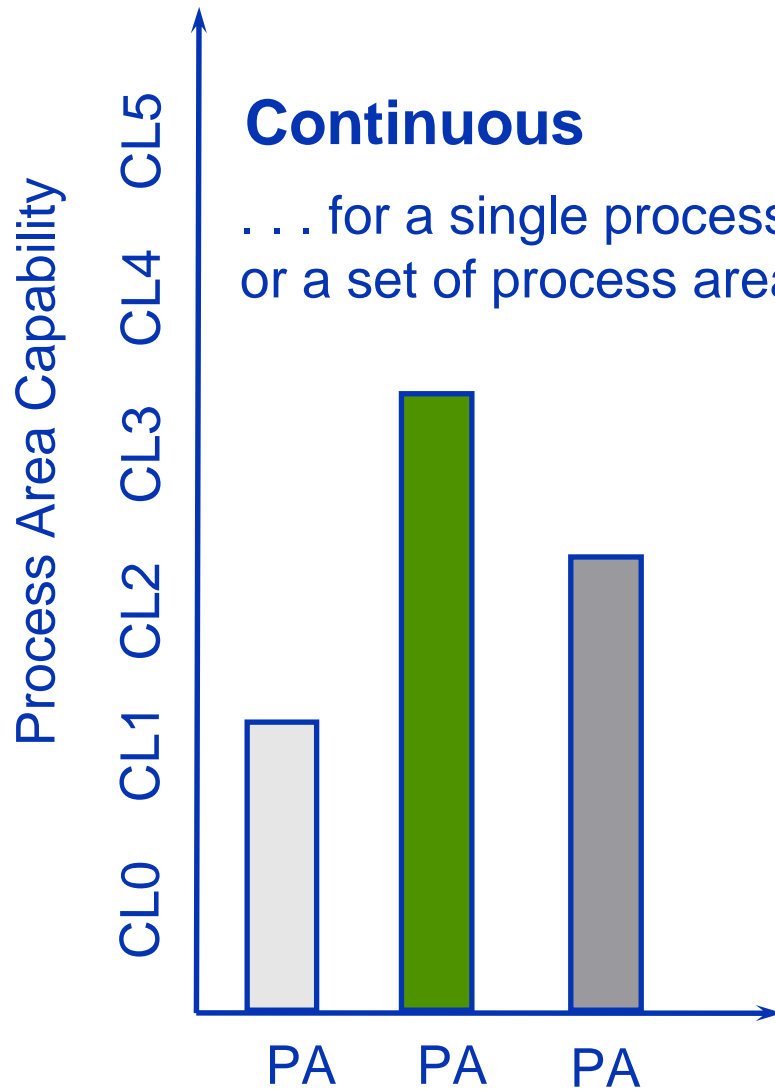
- **ITIL** – IT Infrastructure Library (Best Practice for IT Service Management)
 - ITIL 1 (1989-1996)
 - ITIL 2 (2000-2001)
 - ITIL 3 (2007) -> Service Lifecycle
- 2000-2005 - BS 15000 based on ITIL – for certification purpose
- 2005: BS 15000 fast tracked to ISO/IEC 20000
- 2006-today – Revision of ISO/IEC 20000
 - Traditional parts 1 and 2 (Requirements and Guidelines)
 - New parts 3,4 and 5 (Scoping guidelines, **Process Reference Model**, Incremental implementation)
- 2005-2007 - Privately developed ISO/IEC 15504 compliant PRMs/PAMs for IT service management based on BS 15000 and ISO/IEC 20000
- 2006 - CMMI Steering Group approved development of CMMI-SVC
- 2007 – Approval of NWIP for the development of PRM/PAM within ISO/IEC
- 2009 – Publication of CMMI-SVC (Rev. 1.2)
- 2009 – Publication of ISO/IEC 20000-3
- 2010 – Publication of ISO/IEC 20000-5 andhopefully....**ISO/IEC 20000-4**

CMMI Assessment & Improvement models



Source: Software Engineering Institute

Continuous vs Staged representation



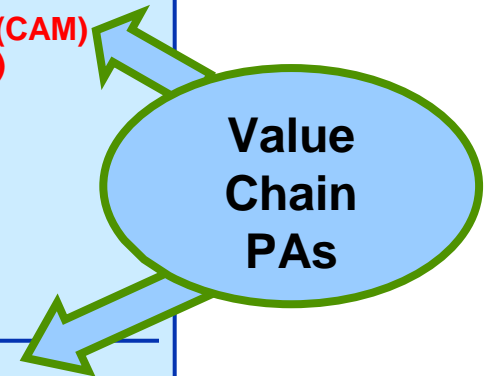
Source: Software Engineering Institute

CMMI-SVC: Process Areas by Category

Category	Process Area
Process Management	Organizational Innovation and Deployment (OID) Organizational Process Definition (OPD) Organizational Process Focus (OPF) Organizational Process Performance (OPP) Organizational Training (OT)
Project Management	<u><i>Capacity and Availability Management (CAM)</i></u> Integrated Project Management (IPM) Project Monitoring and Control (PMC) Project Planning (PP) Requirements Management (REQM) Risk Management (RSKM) Quantitative Project Management (QPM) <u><i>Service Continuity (SCON)</i></u> Supplier Agreement Management (SAM)
Service Establishment and Delivery	<u><i>Strategic Service Management (STSM)</i></u> <u><i>(+) Service System Development (SSD)</i></u> <u><i>Service System Transition (SST)</i></u> <u><i>Service Delivery (SD)</i></u> <u><i>Incident Resolution and Prevention (IRP)</i></u>
Support	Causal Analysis and Resolution (CAR) Configuration Management (CM) Decision Analysis and Resolution (DAR) Measurement and Analysis (MA) Process and Product Quality Assurance (PPQA)

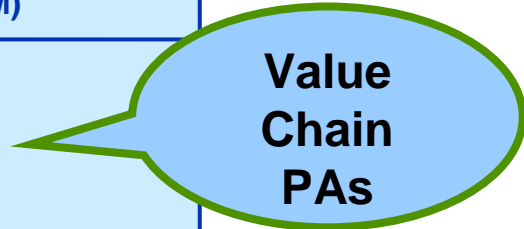
CMMI-SVC - Process Areas by Maturity Level

Level	Focus	Process Areas
5 Optimizing	<i>Continuous process improvement</i>	Organizational Innovation and Deployment (OID) Causal Analysis and Resolution (CAR)
4 Quantitatively Managed	<i>Quantitative management</i>	Organizational Process Performance (OPP) Quantitative Project Management (QPM)
3 Defined	<i>Process standardization</i>	Strategic Service Management (STSM) (+) Service System Development (SSD) Service System Transition (SST) Capability and Availability Management (CAM) Incident Resolution and Prevention (IRP) Service Continuity (SCON) Organizational Process Focus (OPF) Organizational Process Definition (OPD) Organizational Training (OT) Integrated Project Management (IPM) Risk Management (RSKM) Decision Analysis and Resolution (DAR)
2 Managed	<i>Basic project management</i>	Service Delivery (SD) Requirements Management (REQM) Project Planning (PP) Project Monitoring and Control (PMC) Supplier Agreement Management (SAM) Measurement and Analysis (MA) Process and Product Quality Assurance (PPQA) Configuration Management (CM)
1 Initial		

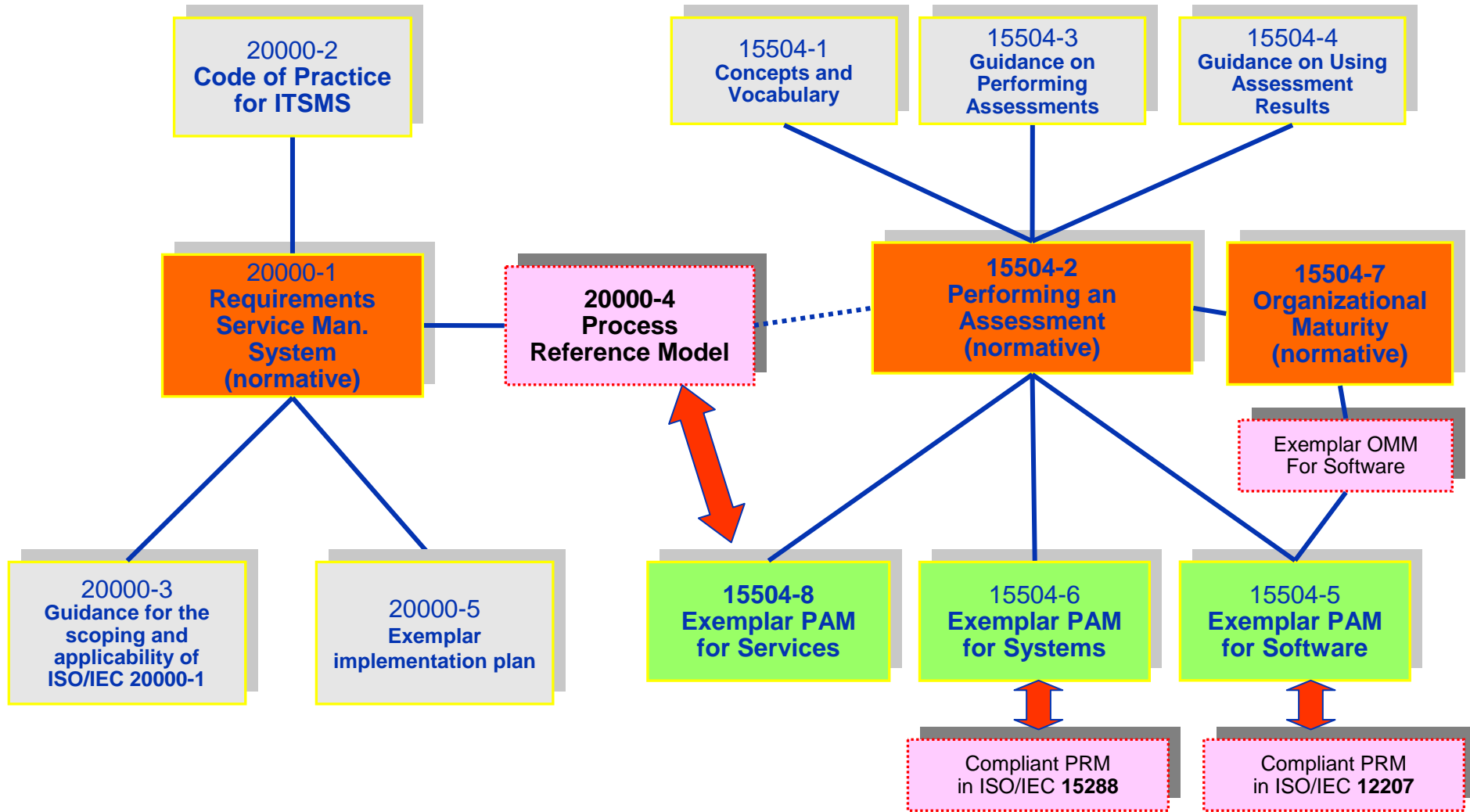


CMMI-DEV - Process Areas by Maturity Level

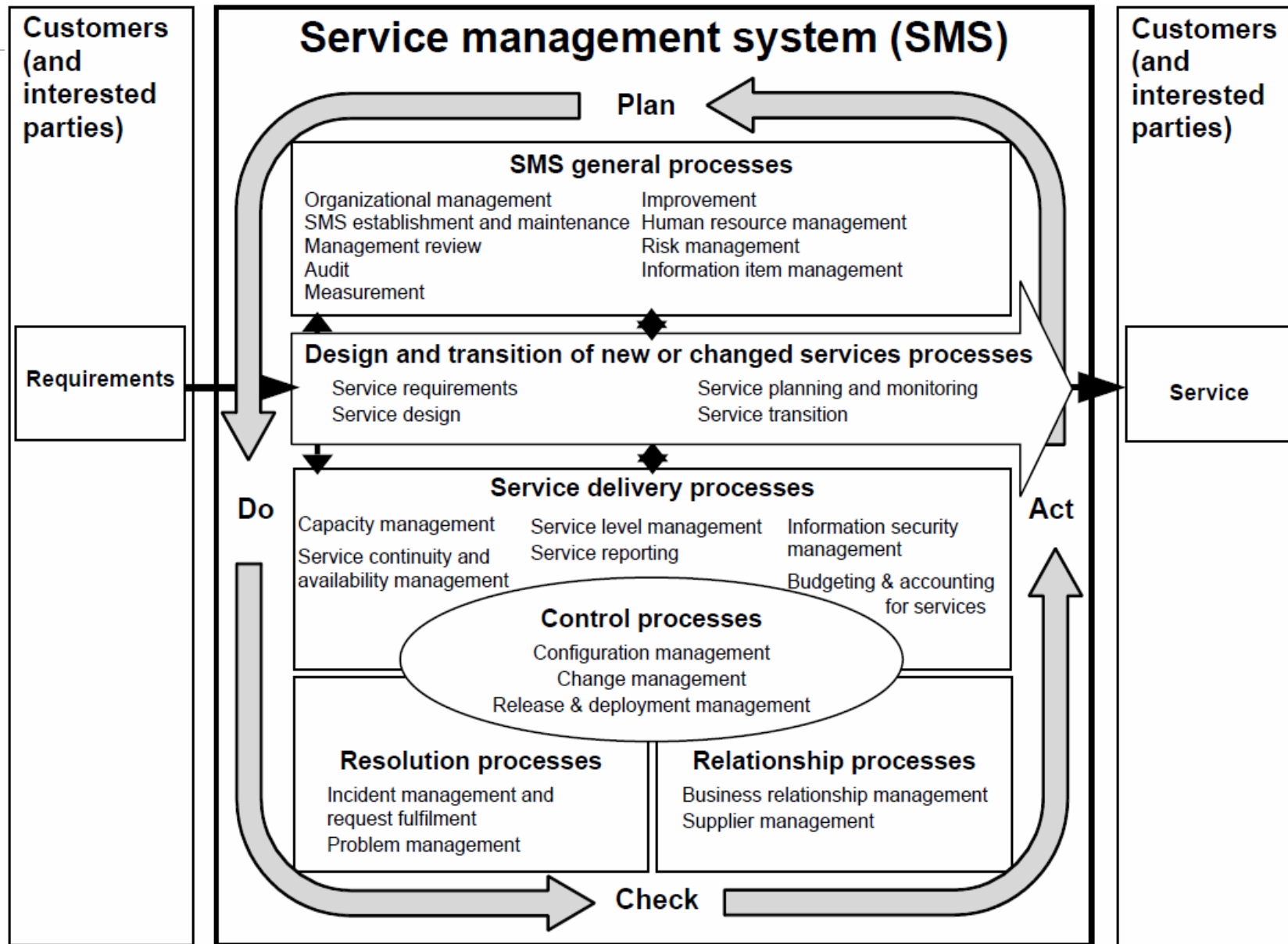
Livello	Focus	Process Area
5 Optimizing	<i>Continuous process improvement</i>	Organizational Innovation and Deployment (OID) Causal Analysis and Resolution (CAR)
4 Quantitatively Managed	<i>Quantitative management</i>	Organizational Process Performance (OPP) Quantitative Project Management (QPM)
3 Defined	<i>Process standardization</i>	Requirements Development (RD) Technical Solution (TS) Product Integration (PI) Verification (VER) Validation (VAL) Organizational Process Focus (OPF) Organizational Process Definition (OPD) Organizational Training (OT) Integrated Project Management (IPM) Risk Management (RSKM) Decision Analysis and Resolution (DAR)
2 Managed	<i>Basic project management</i>	Requirements Management (REQM) Project Planning (PP) Project Monitoring and Control (PMC) Supplier Agreement Management (SAM) Measurement and Analysis (MA) Process and Product Quality Assurance (PPQA) Configuration Management (CM)
1 Initial		



SPICE-SVC (ISO/IEC 15504 + ISO/IEC 20000)



SPICE-SVC processes (from ISO/IEC 20000-4)



Features of Service PRM (ISO/IEC 20000-4)

- Aligned with the revised ISO/IEC 20000-1 (currently in CD Stage)
- Traceability to both currently published and future version of part 1
- Enhancements of ISO/IEC 20000:2005 with (hopefully) no contradiction

Name	Configuration management	
Context	This process is concerned with establishing and maintaining the integrity of the services and their configuration information to enable effective control of the services.	
Purpose	The purpose of the configuration management process is to establish and maintain the integrity of all identified service components.	
Outcomes	As a result of successful implementation of this process: <ol style="list-style-type: none"> 1. items requiring configuration management are identified; 2. the status of configuration items and modifications are recorded and reported; 3. changes to items under configuration management are controlled; 4. the integrity of systems, services and service components is assured; 5. the configuration of released items is controlled. 	
Requirements traceability	20000 1ED IS 06.1	Service level management [1]
	20000 1ED IS 07.3	Supplier management [1]
	20000 1ED IS 08.2	Incident management [2]
	20000 1ED IS 09.1	Configuration management [1,2,3,4,5]
	20000 2ED FCD 5.1	Service delivery processes: Service level management [1]
	20000 2ED FCD 6.2	Relationship processes: Supplier management [1]
	20000 2ED FCD 8.1	Control processes: Configuration management [1,2,3,4,5]
	20000 2ED FCD 8.2	Control processes: Change management [3]

Features of Service PRM (ISO/IEC 20000-4)

- Aligned with the revised ISO/IEC 20000-1 (currently in CD Stage)
- Traceability to both currently published and future version of part 1
- Richer than ISO/IEC 20000:2005 with (hopefully) no contradiction
- Closer alignment with ISO 9001 (Quality Management)
- Explicit and better coverage of Service Design & Development and Service Transition



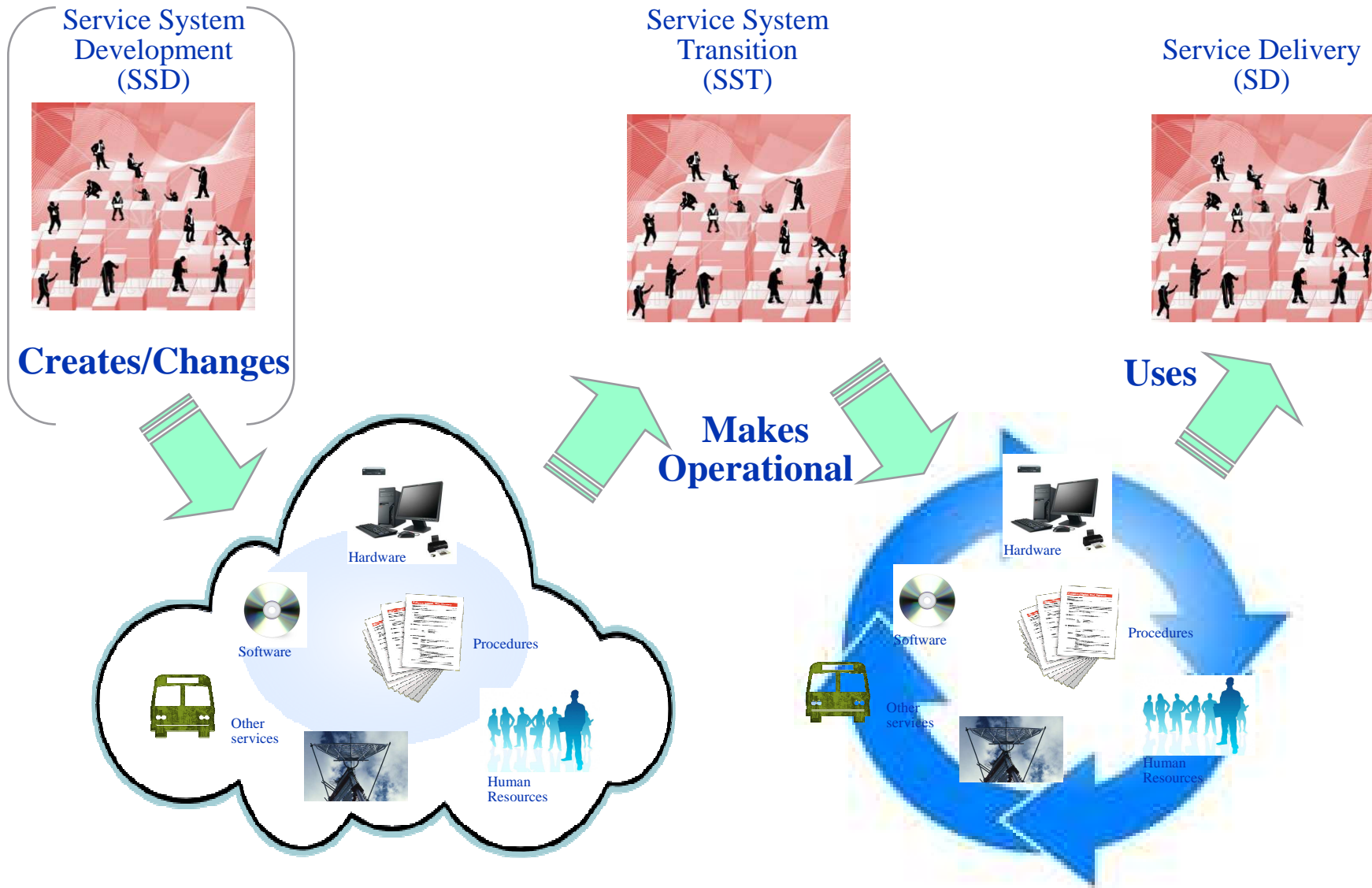
CMMI-SVC - Service System



CMMI-SVC Service System Lifecycle

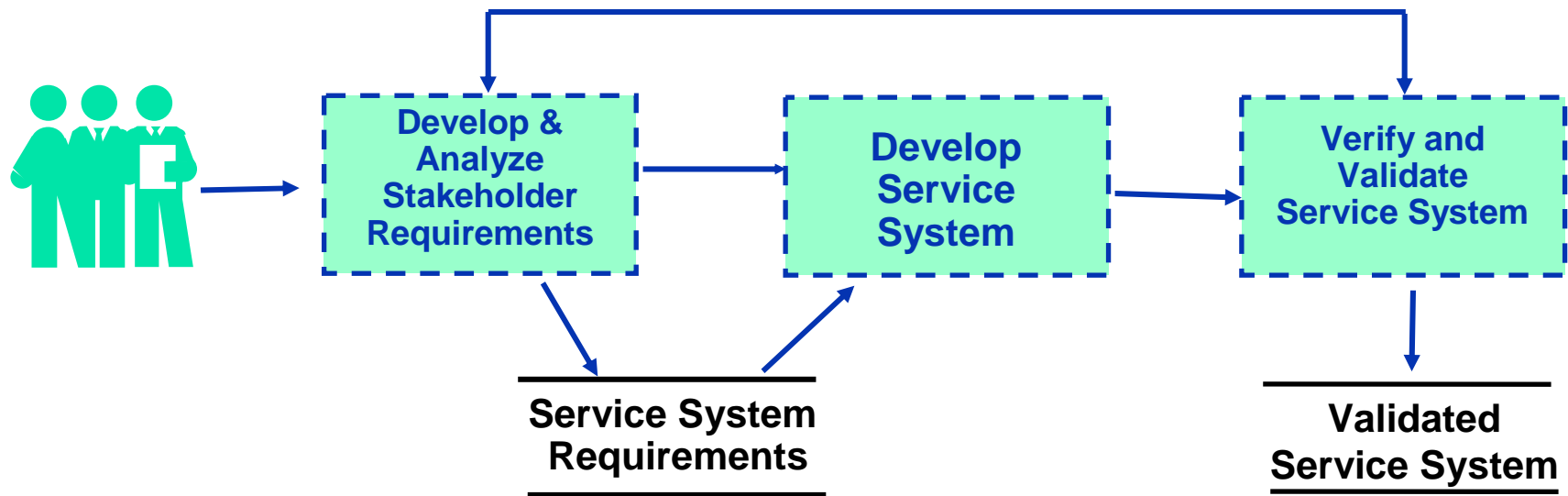


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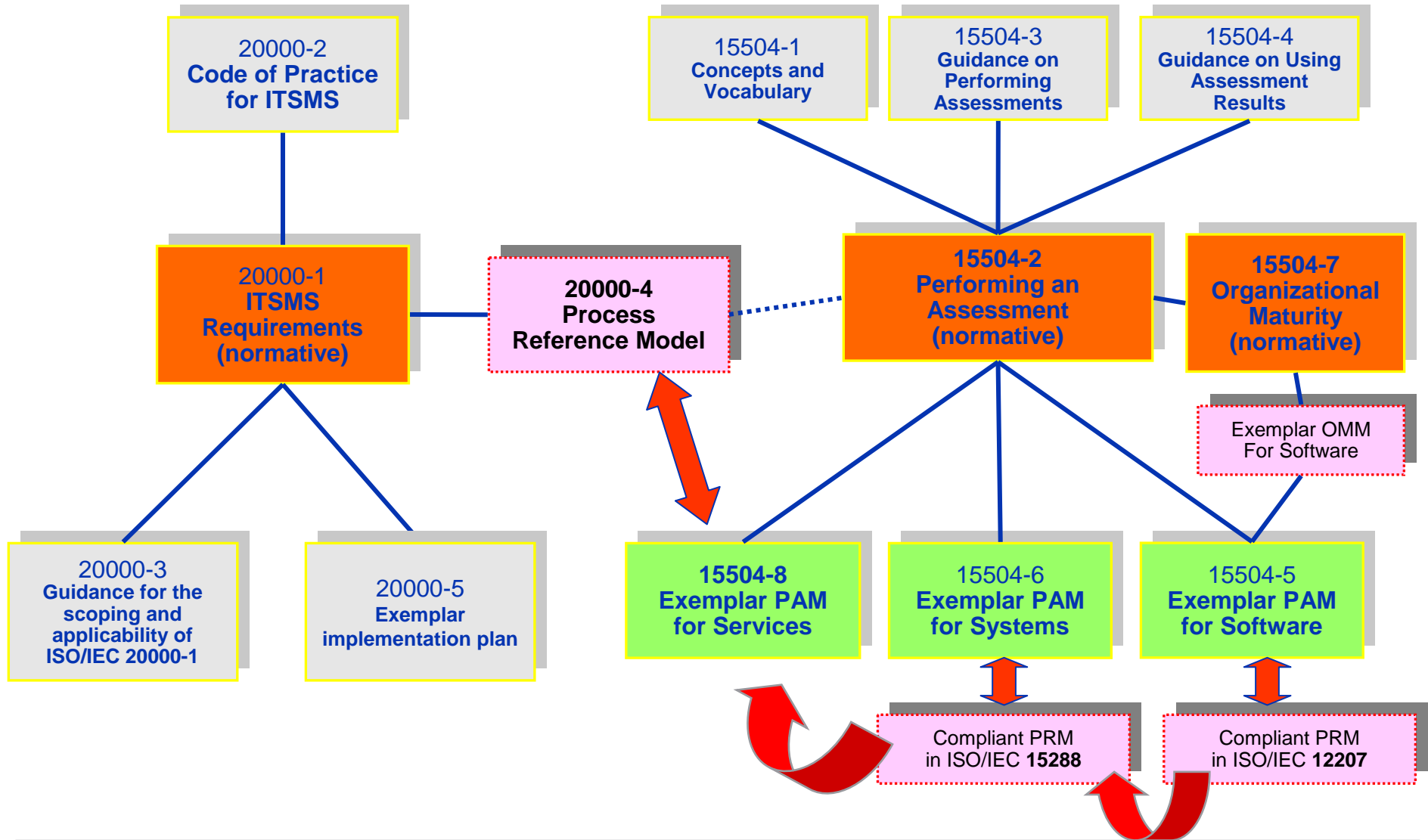


Service System Development (optional addition)

Basically a condensed version of the Value Chain PA's in CMMI-DEV



SPICE-SVC (ISO/IEC 15504 + ISO/IEC 20000)



Scope of CMMI-SVC vs SPICE-SVC



Source of pictures : Software Engineering Institute

Scope - Strength or Weakness ?

- IT Service organizations may prefer a model specifically targeted to their business
- Constraint - JTC1 SC7 standards cannot go out of scope (Information Technology)
- CMMI-SVC – weak coverage of Information Security

Financial Management ?

- CMMI-SVC has no specific PA for Budgeting and Accounting – embedded in the Project management processes (PP &PMC)
- Does it fit in a technical standard ?
- Do auditors know what to look for ?



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Mapping of processes by category



Process Management process areas

CMMI-SVC 1.2	SPICE-SVC (ISO/IEC 20000-4 & 15504-8)
Organizational Innovation & Deployment (OID)	<ul style="list-style-type: none"> - Management Review - Improvement
Organizational Process Performance (OPP)	<ul style="list-style-type: none"> - Management Review - Measurement
Organizational Process Definition (OPD)	<ul style="list-style-type: none"> - Organizational Management - <u>SMS Establishment</u> and maintenance
Organizational Process Focus (OPF)	<ul style="list-style-type: none"> - Improvement - SMS Establishment and <u>maintenance</u>
Organizational Training (OT)	<ul style="list-style-type: none"> - Human Resource Management

Focused on Higher Levels of Maturity

Focused on alignment with ISO Management Systems Standards

Project Management process areas

CMMI-SVC 1.2	SPICE-SVC (ISO/IEC 20000-4 & 15504-8)
Requirements Management (REQM)	<ul style="list-style-type: none"> - Service Requirements - Service Level Management - Business Relationship Management - Change Management
Project Planning (PP) + Project Monitoring and Control (PMC)	Service Planning and Monitoring + Budgeting and accounting for IT services
Risk Management (RSKM)	- Risk Management
Supplier Agreement Management (SAM)	- Supplier Management
Capacity and Availability Management (CAM)	<ul style="list-style-type: none"> - Capacity Management - (Service Continuity and) <u>Availability Management</u>
Service Continuity (SCON)	- <u>Service Continuity</u> (and Availability Management)
Integrated Project Management (IPM)	
Quantitative Project Management (QPM)	

Service Establishment and Delivery PAs

CMMI-SVC 1.2	SPICE-SVC (ISO/IEC 20000-4 & 15504-8)
Strategic Service Management (STSM)	<ul style="list-style-type: none"> - Organizational Management - Service Requirements - Service Level Management - Business Relationship Management
(Addition) Service System Development (SSD) or CMMI-DEV	<ul style="list-style-type: none"> - Service Design
Service System Transition (SST)	<ul style="list-style-type: none"> - Service Transition - Release and Deployment Management
Service Delivery (SD)	<ul style="list-style-type: none"> - (Incident Management and) <u>Request Fulfillment</u> - Service Reporting - Change Management - Information Security Management
Incident Resolution and Prevention (IRP)	<ul style="list-style-type: none"> - <u>Incident Management</u> (and Request Fulfillment) - Problem Management - Information Security Management

Support process areas

CMMI-SVC 1.2	SPICE-SVC (ISO/IEC 20000-4 & 15504-8)
Configuration Management (CM)	Configuration Management Change Management Information Item Management
Process and Product Quality Assurance (PPQA)	Audit
Measurement and Analysis (MA)	Measurement
Causal Analysis and Resolution (CAR)	Problem Management
Decision Analysis and Resolution (DAR)	



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Comparison of Measurement frameworks for Capability/Maturity



Process Capability Levels

	CMMI	SPICE (15504)
5	Optimizing	Optimizing
4	Quant. Managed	Predictable
3	Defined	Established
2	Managed	Managed
1	Performed	Performed
0	Incomplete	Incomplete

Organizational Maturity Levels

	CMMI	SPICE (15504)
5	Optimizing	Innovating
4	Quant. Managed	Predictable
3	Defined	Established
2	Managed	Managed
1	Initial	Basic
0	N.A.	Immature

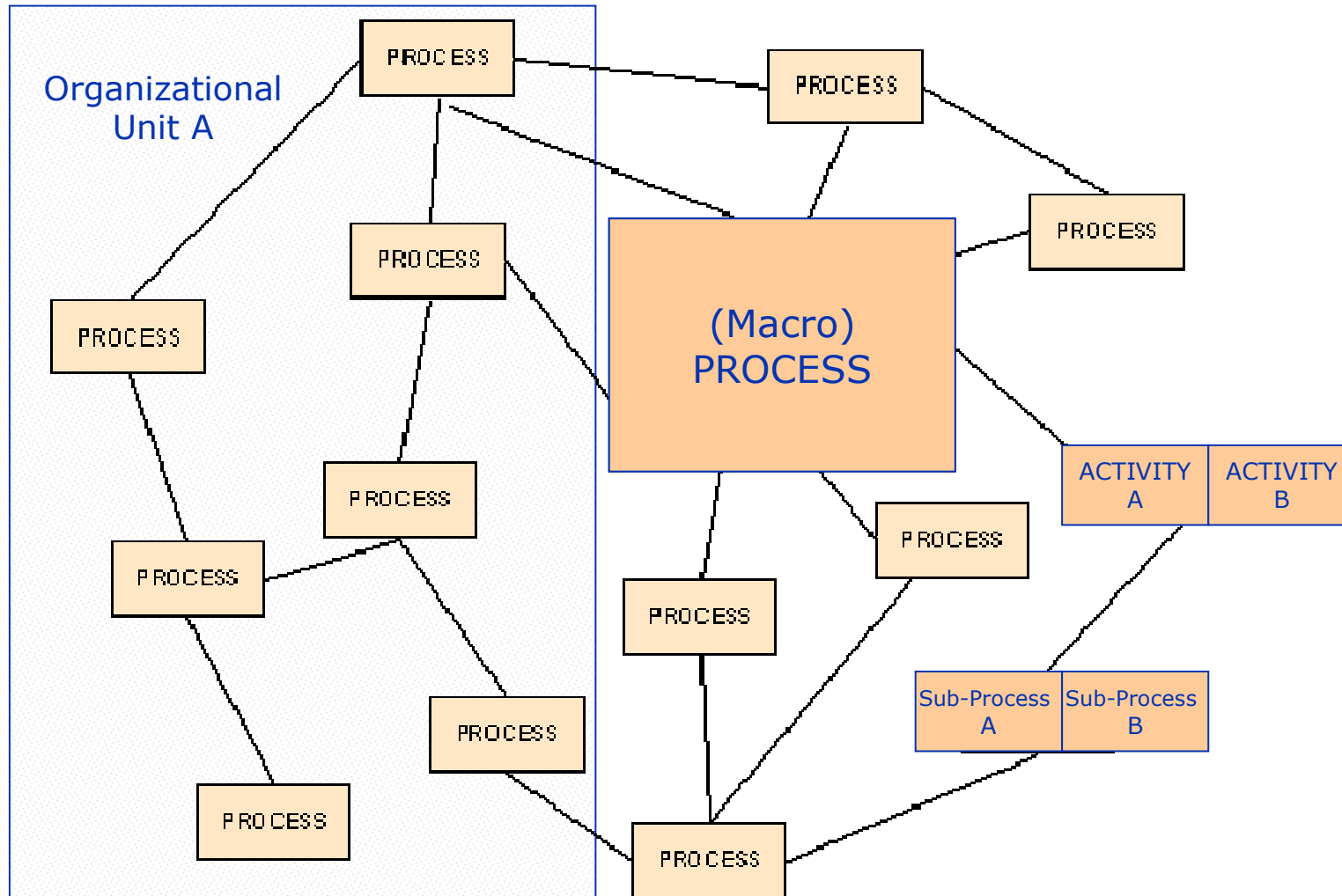
Capability and Maturity in 15504

	Capability Levels	Maturity levels
5	Optimizing	Innovating
4	Predictable	Predictable
3	Established	Established
2	Managed	Managed
1	Performed	Basic
0	Incomplete	Immature

Capability and Maturity in CMMI

	Capability Levels	Maturity levels
5	Optimizing	Optimizing
4	Quant. Managed	Quant. Managed
3	Defined	Defined
2	Managed	Managed
1	Performed	Initial
0	Incomplete	<i>N.A.</i>

Maturity vs Capability – a granularity issue



An example of a huge process !!

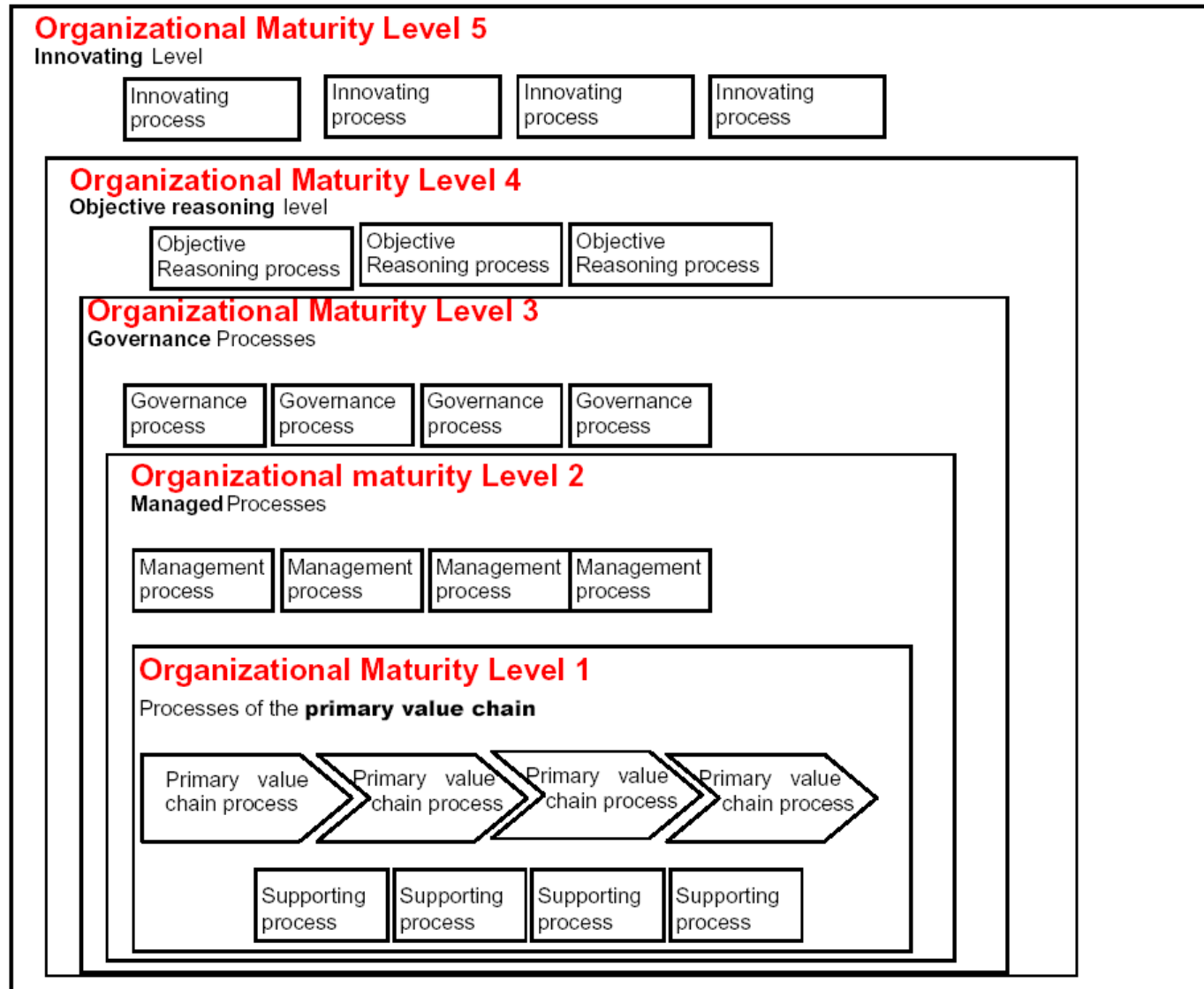
Process Name: *Product/service fulfillment*

Process Purpose: *The purpose of the product/service fulfillment process is to render to the customer the product(s)/service(s) associated with the business goals of the organization*

Process Outcomes:

1. product/service request(s) received from the customer are confirmed;
2. product/service request(s) are evaluated in terms of mandated service delivery criteria;
3. a response to a customer's product/service request is produced;
4. an agreement is established between the customer and the supplier for providing the product/service;
5. a product/service that meets the agreed requirements is developed by the supplier;
6. the product/service is rendered/supplied to the customer in accordance with the agreed requirements;
7. compliance to applicable statutory and regulatory requirements by internal processes and/or service provided is verified;
8. conformity to applicable stated and implied customer and supplier requirements by internal processes and/or product/service provided is verified;
9. the customer meets the obligations identified in the established product/service agreement.

Proposed OM Levels in 33xxx series



Source: WD ISO/IEC 33021

Summary of Strengths & Weaknesses

CMMI-SVC	SPICE-SVC	Strengths
<ul style="list-style-type: none"> • General model (not only IT) • Strong integration with the very popular CMMI-DEV. • Very clear model for service lifecycle (notion of Service System) • Clear separation of incident management and service request management 	<ul style="list-style-type: none"> • Close alignment with the very popular ITIL best practices • Harmonized with other ISO Management System standards • Clear plug-in within the open SPICE architecture • Addresses some specific IT issues (Info security) • Non-empty ML1 	
<ul style="list-style-type: none"> • Empty Maturity Level 1 • Weak coverage of Information Security management 	<ul style="list-style-type: none"> • PAM still under development • No plan for Organizational Maturity Model • Weak integration with other PRM/PAM useful for service system design (15288) • Unclear relationships between some apparently overlapping processes • Incident management and request fulfillment – two unrelated processes into one 	Weaknesses

Thank you

