Aligning CMMI & ITIL

Where Am I and Which Way Do I Go?
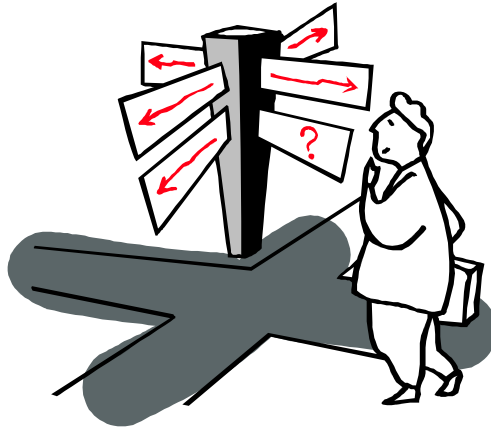
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- Where Am I?
  - Current Situation
  - Process Improvement Objectives
- How Do I Get There?
  - CMMI
  - ITIL
  - Mapping, Commonalities, Differences
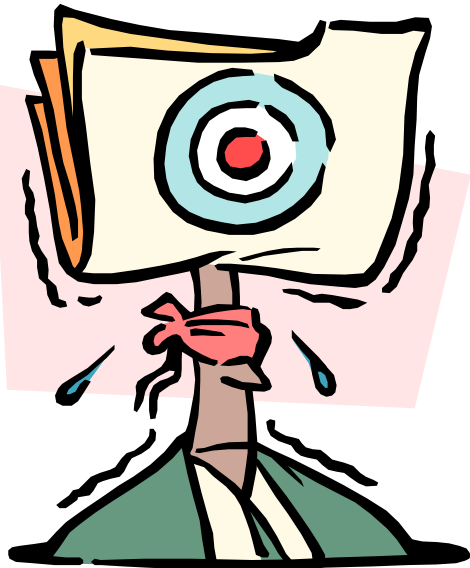- What Do I Do Now?
- Conclusions
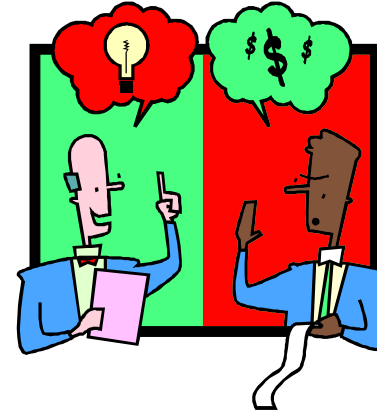
Where Am I?

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on

Satisfying market pressures:

Improve Customer Satisfaction

Increase quality of product and service delivery and support while reducing costs

on

Proliferation of "quality" groups

that

Focus on their own model, standard, regulatory mandate

ITIL
ISO
MIL-STD
CMMI
OPM3

Compete for limited corporate resources & budgets

Lacking communication & coordination with others

while

Ignoring linkage to business goals
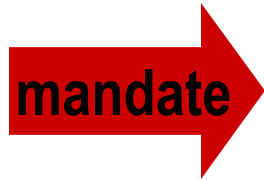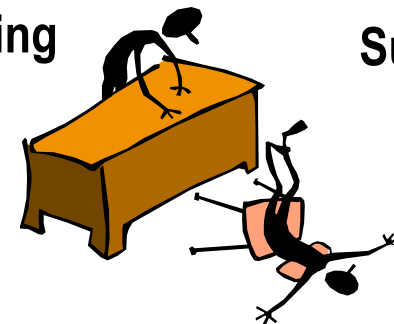
Creating unique process repositories, architectures, data stores

mandate

Training

Surveys

Assessment

Metrics Collection

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vement Objectives

- Standardized approach to process definition and implementation in a variety of environments (product and service development)

    – Alignment to business needs

    – Proven best practices that deliver measurable results

    – Organizational structure for development of processes and procedures

    – Common language both internally and externally

How Do I Get There?

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- A structured collection of practices that describes the characteristics of effective processes

- Integration of common elements and best features of multiple CMMs, providing

  - Common terminology

  - Training

  - An integrated appraisal method (SCAMPI*)

- CMMI enables a functional integration of all disciplines required to develop a product **or service**

- * SCAMPI^{SM} = **S**tandard **C**MMI **A**ppraisal **M**ethod for **P**rocess **I**mprovement

e – Maturity Levels

Continuously Improving Process

5: Optimizing

Predictable Process

4: Quantitatively Managed

We know quantitatively in advance when projects are going well or not, and we intelligently adjust and improve.

Standard, Consistent Process

3: Defined

All of our projects follow similar processes. We know what to do when.

Disciplined Process

2: Managed

1: Initial

Things are getting under control – our schedules and plans now include most of what we have to do.
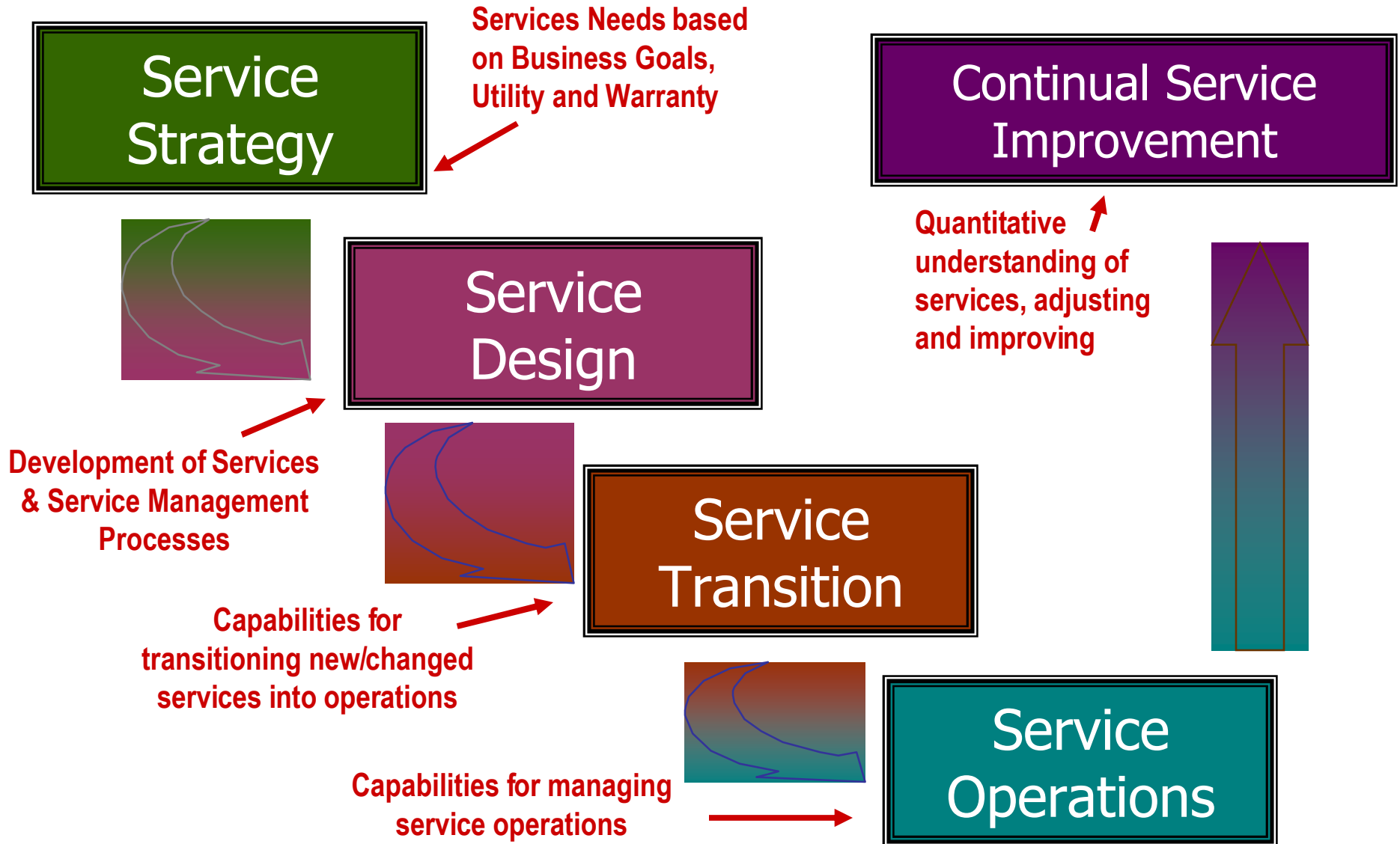
What Process??

f CMMI

- ## System & Software Development

  - ### Entire lifecycle or part thereof

  - ### All types of lifecycle methods

  - ### Including sustainment aspects of system development

    - #### Logistics, training, etc

- ## System & Software Maintenance

- ## Providing services

  - ### Training

  - ### Delivery/transportation

  - ### Infrastructure and Operations

- The "Information Technology Infrastructure Library" guidelines

- The 'library' has evolved to it's current version, ITIL v3. The five volumes are:
    - ITIL Service Strategy;
    - ITIL Service Design;
    - ITIL Service Transition;
    - ITIL Service Operation;
    - ITIL Continual Service Improvement,
    - which can be obtained from the publishers, TSO Books (www.tsoshop.co.uk)

- The ITIL volumes make up a comprehensive, non-proprietary and publicly accessible process-related library in the IT field. It covers:

  – Descriptions and definitions of the various ITIL practices and disciplines

  – Organizational structure and skill requirements

  – Best practices and processes for planning, provision and support of IT services

- ITIL is a registered trademark of the UK Govemment's Office of Government Commerce (usually known as the OGC)

Life Cycle Phases

Service Strategy

Services Needs based on Business Goals, Utility and Warranty

Continual Service Improvement

Service Design

Quantitative understanding of services, adjusting and improving

Development of Services & Service Management Processes

Service Transition

Capabilities for transitioning new/changed services into operations

Service Operations

Capabilities for managing service operations

es in Each Life Cycle

| Service Strategy | Service Design | Service Transition | Service Operations | Continual Service Improvement |

ITIL Processes:

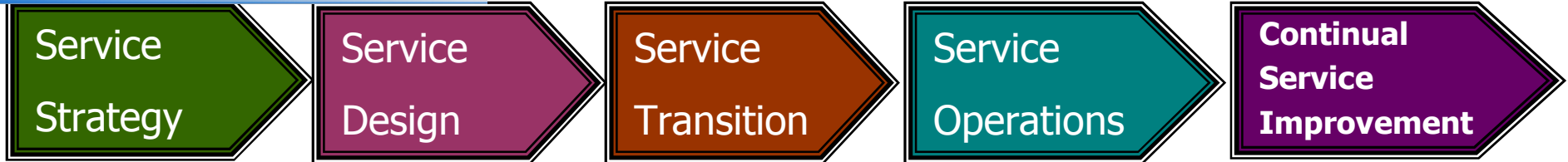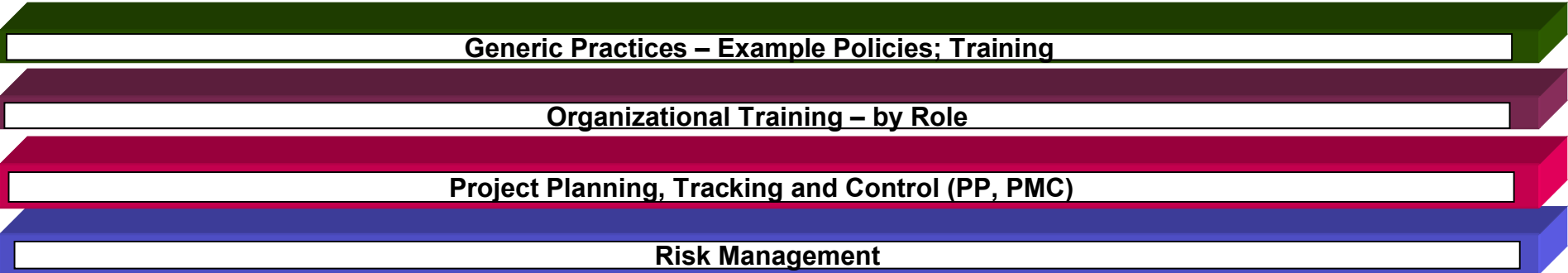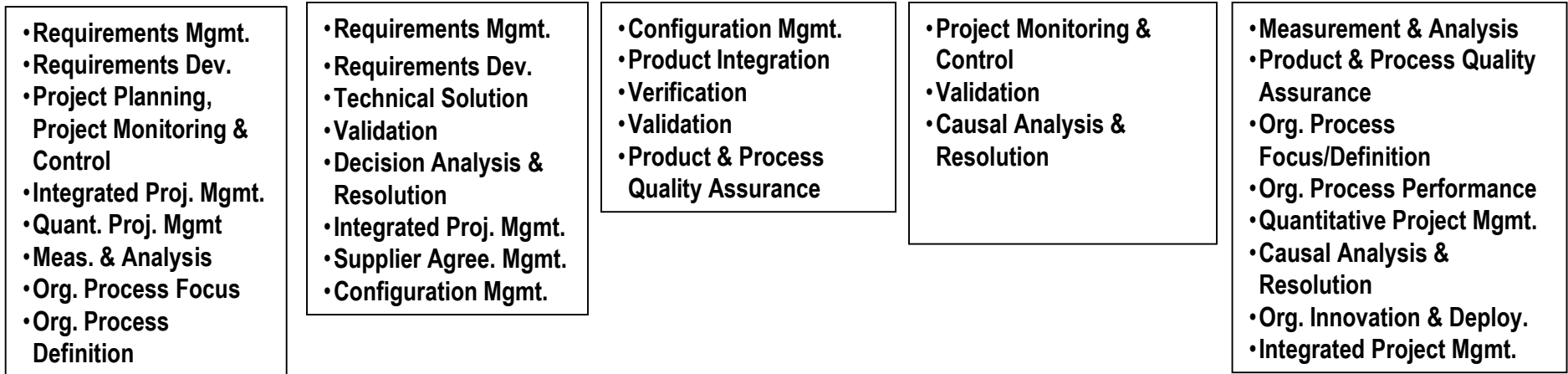| **Service Design**	**Service Transition**	**Service Operations**	**Continual Service Improvement**
• Service Level Mgmt. • Capacity Mgmt. • Availability Mgmt. • Continuity Mgmt • Service Catalogue Mgmt. • Information Security • Supplier Mgmt.	• Transition Planning & Support • Change Mgmt. • Asset & Config. Mgmt • Release & Deployment Mgmt. • Validation & Testing • Evaluation • Knowledge Mgmt.	• Incident Mgmt. • Problem Mgmt. • Event Mgmt. • Request Fulfillment • Access Mgmt. • Operational Activities Covered in other Phases	• 7 Step Improvement Process • Service Reporting • Service Measurement • ROI for CSI • Business Questions for CSI • Service Level Mgmt.

Policies

Principles for Each Phase

Technology Considerations

Organizational Considerations

Challenges, Critical Success Factors & Risks

• **Blue denotes new in ITIL v3**

...pping

| Service Strategy | Service Design | Service Transition | Service Operations | Continual Service Improvement |

CMMI Process Areas:

• Requirements Mgmt. • Requirements Dev. • Project Planning, Project Monitoring & Control • Integrated Proj. Mgmt. • Quant. Proj. Mgmt • Meas. & Analysis • Org. Process Focus • Org. Process Definition	• Requirements Mgmt. • Requirements Dev. • Technical Solution • Validation • Decision Analysis & Resolution • Integrated Proj. Mgmt. • Supplier Agree. Mgmt. • Configuration Mgmt.	• Configuration Mgmt. • Product Integration • Verification • Validation • Product & Process Quality Assurance	• Project Monitoring & Control • Validation • Causal Analysis & Resolution	• Measurement & Analysis • Product & Process Quality Assurance • Org. Process Focus/Definition • Org. Process Performance • Quantitative Project Mgmt. • Causal Analysis & Resolution • Org. Innovation & Deploy. • Integrated Project Mgmt.

Generic Practices – Example Policies; Training

Organizational Training – by Role

Project Planning, Tracking and Control (PP, PMC)

Risk Management

Note: Mapping is not comprehensive – only major items

CMMI vs. ITIL

ITIL	CMMI	
✓	✓	Embodies 20+ years of product or service development
✓	✓	Contains tried, tested and enhanced practices
✓	✓	Establishes process & process improvement policy
✓	✓	Deals with roles and responsibilities
✓	✓	Ensures training and skills of resources
✓	✓	Provides guidance to measure performance
✓	✓	Helps to set process improvement objectives & priorities
✓	✓	Helps to ensure stable, capable, and mature processes
✓	✓	Guides improving project & organizational processes
✓	✓	With an appraisal/audit method to determine maturity/compliance for registration – both indicators of ability to deliver products and services

MMI vs. ITIL

ITIL	CMMI	
✓	✓	**Strategize a business service definition and catalog to drive process design, transition, operations and improvement**
✓	✓	**Establish and define process improvement infrastructure**
✓	✓	**Provide descriptive tools, technologies, techniques & standards**
✓	✓	**Defined roles and responsibilities with skill descriptions and training requirements**
✓	✓	**Plan and develop products/services**
✓	✓	**Integrate, deploy and transition product/services**
✓	✓	**Measure and improve product/service delivery**
	✓	**Benchmark via maturity or capability level**
✓	✓	**Provide industry recognition through registration**

CMMI Process Areas (Project Management)	Related Business Objectives of Services Organizations	ITIL Life-Cycle Phase
Project Planning	Maintain detailed service plans that include the budget and schedule needed to support the customer	Service Strategy
Project Monitoring & Control	Manage the costs and schedule associated with the service	Service Strategy
Supplier Agreement Management	Effectively manage suppliers of tools or resources vital to the success of the service	Service Design
Integrated Project Management	Integrate the delivery of the service with other projects and stakeholders	Service Strategy; Service Design
Risk Management	Plan for current and future risks to the service project	All
Quantitative Project Management	Establish predictability in their services	Service Strategy; CSI

Adapted from CMU/SEI-2003-TN-005

CMMI Process Areas (Support)	Related Business Objectives of Services Organizations	ITIL Life-Cycle Phase
Configuration Management	Control technical and management work products	Service Transition
Process & Product Quality Assurance	Ensure their services meet quality objectives and customer requirements	CSI; Service Transition
Measurement and Analysis	Understand measures of cost, profitability, & cost of quality	Service Strategy; CSI
Decision Analysis and Resolution	Make informed and justifiable selections of products or techniques for their customers	Service Design
Causal Analysis and Resolution	Track service issues to root causes and eliminate them	Service Operation; CSI

Adapted from CMU/SEI-2003-TN-005

CMMI Process Areas (Engineering)	Related Business Objectives of Services Organizations	ITIL Life-Cycle Phase
Requirements Management Requirements Development	Develop and manage their service requirements	Service Strategy; Service Design; (Service. Operations)
Technical Solution	Provide services that provide technical stability and support all aspects of product development and fielding	Service Design; (Service Operations)
Product Integration	Ensure that interfaces are compatible prior to their integration	Service Transition; Service Operation
Verification	Confirm that performed services satisfy their service requirements	Service Transition; (Service Operation)
Validation	Evaluate the suitability of acquired products & services	Service Design; (Service Transition & Operation)

Adapted from CMU/SEI-2003-TN-005

CMMI Process Areas (Process Management)	Related Business Objectives of Services Organizations	ITIL Life-Cycle Phase
Organizational Process Focus	Build and maintain a service culture	Service Strategy; CSI
Organizational Process Definition	Implement and improve processes to support predictable successful execution	Service Strategy; Service Design; CSI
Organizational Training	Train staff members to perform service functions	All
Organizational Process Performance	Measure effectiveness & performance of processes	Service Strategy; CSI
Organizational Innovation & Deployment	Introduce new service methods, technologies, & functions	Service Strategy; CSI

Adapted from CMU/SEI-2003-TN-005

What Does It All Mean?
What Do I Do Now?

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...ojects" at Several Levels

To use CMMI and ITIL together,

- Define an "Project" at three levels

  1. Creation of Service Offering – treat your service catalogue and service portfolio as its own project (ITIL & CMMI)

  2. Definition of a development project (CMMI)

  3. Manage service operations – identifying the service catalogue item(s) as project

     - ITIL to define
     - CMMI to appraise

cture for Implementing "Projects"

Minimum Deliverables Table

Lifecycle Phases and Associated Core Processes	Work Products		
	Large Projects > 1000 hours - New Engagement | Service Catalog Entry	Medium Projects (200 - 999 hours, App Enhancement, Incident | IM/AM Combined | Contract Amendment	Small Projects (< 200 hours), Service Requests | IM Projects | IM/AM Combined
Initiating Phase • Change Management Procedure • Project Planning Procedure • Product Engineering Procedure • Risk Management Procedure • Measurement & Analysis Procedure	✓ High level estimate (with rationale) ✓ High level Requirements/Design ✓ Risk log, Meeting minutes ✓ Project contract (e.g., SOW, SOS) ✓ Peer review (estimate, rqts, designs, risks) ✓ CQ or Change ticket	✓ High level estimate (with rationale) ✓ High level Requirements/Design ✓ Risk log, Meeting minutes ✓ Project contract (SOW, SOS, pool hours) ✓ Peer review (estimate, reqts, design, risks) ✓ CQ or Change ticket	✓ CQ ticket or Change ticket ✓ Meeting minutes
Planning Phase • Project Planning Procedure • Integrated Teaming Procedure • Requirements Mgmt Procedure • Risk Management Procedure • Configuration Mgmt Procedure • Knowledge Management Procedure • Supplier Management Procedure • Environment Mgmt Procedure • Project Monitoring Procedure • Quality Assurance Procedure • Measurement & Analysis Procedure • Change Management Procedure	✓ Project Mgmt Plan (PMP) (with project glossary, lifecycle, tools, project schedule, WBS, risk plans) ✓ Project Monitoring and Control Plan (could be incorporated into the PGP) ✓ Configuration Management Plan ✓ Detailed project estimate (effort, schedule, cost, size) ✓ Peer review records for PGP, Configuration Management Plan, and Detailed estimate ✓ Project budget ✓ Meeting minutes, Issues Log, Risk Log	✓ Project Mgmt Plan (PMP) (with project glossary, lifecycle, tools, project schedule, WBS, risk plans) ✓ Project Monitoring Plan and Control Plan (could be incorporated into the PGP) ✓ Configuration Management Plan ✓ Detailed project estimate (effort, schedule, cost, size) ✓ Peer review records for PGP, Configuration Management Plan, and Detailed estimate ✓ Project budget ✓ Meeting minutes, Issues Log, Risk Log	✓ Project Mgmt Plan (PMP) (e.g., annual plan, service line) ✓ Configuration Management Plan (e.g., annual plan, service line) ✓ Peer review records for PGP, Configuration Management Plan, and estimate ✓ CQ ticket or Change ticket ✓ Meeting minutes

- Think of commonalities of CMMI and ITIL instead of the differences – great synergy

- Think of the CMMI as the "what" and ITIL as the "how"

  - ITIL - where it provides detailed processes, techniques, templates and tools

- Keep "Maturity" as the goal (or Capability)

  - Utilize CMMI process improvement infrastructure (e.g., Executive Steering Committee, Process Engineering Group, etc.) to facilitate continual service improvement – as defined in CSI volume

  - Use CMMI to assess what is being done

ITIL Pages

- ITIL Online; the official ITIL Page http://www.itil.co.uk

- OGC Office of Government Commerce http://www.ogc.gov.uk

- The ITIL and ITSM Directory http://www.itil-itsm-world.com/

- IT SMF Forum http://www.itsmf.com/

- ITIL Portal http://www.interpromusa.com/

- Service Management Institute http://www.itsmi.com

- EXIN ITIL Examination Institute http://www.exin-exams.com/

- Where you can get the ITIL books http://www.itilbooks.com/

- ITIL Community www.itilcommunity.com

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