

Navigating through the Risks and Challenges of implementing Green IT Projects

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ITSM Project Manager and ITIL Trainer**

Abstract

- Implementing Green IT projects will have the same risks and challenges that are common to all projects. As a PMP and ITIL V3 Expert (and V2 Service Manager), I will identify how to integrate Green IT projects using the PMBoK and ITIL. This will include:
 - Brief overview of the PMBoK knowledge areas that must be integrated with the ITSM
 - Very brief overview of ITIL V2 and V3 Concepts pertaining to Project Management
 - Some differences between the two frameworks
 - Risks and challenges that these differences impose on projects and how they can negatively impact the desired business outcomes
 - Propose some recommendations for integrating the PMO and ITSM organization to achieve the business outcomes and deliver successful Green IT projects.

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Inspiration for Change

- "Change is the law of life and those who look only to the past or present are certain to miss the future." -- John F. Kennedy
- "For any student of history, change is the law of life. Any attempt to contain it guarantees an explosion down the road; the more rigid the adherence to the status quo, the more violent the ultimate outcome will be." -- Henry Kissinger, *Years of Renewal*

Green Computing

- Green computing is the environmentally responsible use of computers and related resources
- Such practices include the implementation of energy-efficient central processing units (CPUs), servers and peripherals as well as reduced resource consumption and proper disposal of electronic waste
- One of the earliest initiatives toward green computing in the United States was the voluntary labeling program known as Energy Star
 - Environmental Protection Agency (EPA) in 1992 to promote energy efficiency in hardware of all kinds

PMBok Overview

- Project Management Institute (PMI)
- Version 3: 2004
- Project Management Body of Knowledge
 - Process Groups(5)
 - Knowledge Areas(9)
 - Processes (44)
 - Tools & Techniques (186)
 - Input & Outputs (lots)
- Not a Lifecycle
- No reference to PRINCE2

Knowledge Area Processes	Project Management Process Groups				
	Initiating Process Group	Planning Process Group	Executing Process Group	Monitoring & Controlling Process Group	Closing Process Group
4. Project Management Integration	Develop Project Charter 3.2.1.1 (4.1) Develop Preliminary Project Scope Statement 3.2.1.2 (4.2)	Develop Project Management Plan 3.2.2.1 (4.3)	Direct and Manage Project Execution 3.2.3.1 (4.4)	Monitor and Control Project Work 3.2.4.1 (4.5) Integrated Change Control 3.2.4.2 (4.6)	Close Project 3.2.5.1 (4.7)
5. Project Scope Management		Scope Planning 3.2.2.2 (5.1) Scope Definition 3.2.2.3 (5.2) Create WBS 3.2.2.4 (5.3)		Scope Verification 3.2.4.3 (5.4) Scope Control 3.2.4.4 (5.5)	
6. Project Time Management		Activity Definition 3.2.2.5 (6.1) Activity Sequencing 3.2.2.6 (6.2) Activity Resource Estimating 3.2.2.7 (6.3) Activity Duration Estimating 3.2.2.8 (6.4) Schedule Development 3.2.2.9 (6.5)		Schedule Control 3.2.4.5 (6.6)	
7. Project Cost Management		Cost Estimating 3.2.2.10 (7.1) Cost Budgeting 3.2.2.11 (7.2)		Cost Control 3.2.4.6 (7.3)	
8. Project Quality Management		Quality Planning 3.2.2.12 (8.1)	Perform Quality Assurance 3.2.3.2 (8.2)	Perform Quality Control 3.2.4.7 (8.3)	
9. Project Human Resource Management		Human Resource Planning 3.2.2.13 (9.1)	Acquire Project Team 3.2.3.3 (9.2) Develop Project Team 3.2.3.4 (9.3)	Manage Project Team 3.2.4.8 (9.4)	
10. Project Communication Management		Communications Planning 3.2.2.14 (10.1)	Information Distribution 3.2.3.5 (10.2)	Performance Reporting 3.2.4.9 (10.3) Manage Stakeholders 3.2.4.10 (10.4)	
11. Project Risk Management		Risk Management Planning 3.2.2.15 (11.1) Risk Identification 3.2.2.16 (11.2) Qualitative Risk Analysis 3.2.2.17 (11.3) Quantitative Risk Analysis 3.2.2.18 (11.4) Risk Response Planning 3.2.2.19 (11.5)		Risk Monitoring and Control 3.2.4.11 (11.6)	
12. Project Procurement Management		Plan Purchases and Acquisitions 3.2.2.20 (12.1) Plan Contracting 3.2.2.21 (12.2)	Request Seller Responses 3.2.3.6 (12.3) Select Sellers 3.2.3.7 (12.4)	Contract Administration 3.2.4.12 (12.5)	Contract Closure 3.2.5.2 (12.6)

Outputs to ITSM

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IT Change Management

Scope Statement

Schedule Duration

Budget: Capital & Operational

Resources Support Skills

Communication Plan

Risk Plan

Contracts Warrantees

PMBok Project/Product Lifecycle

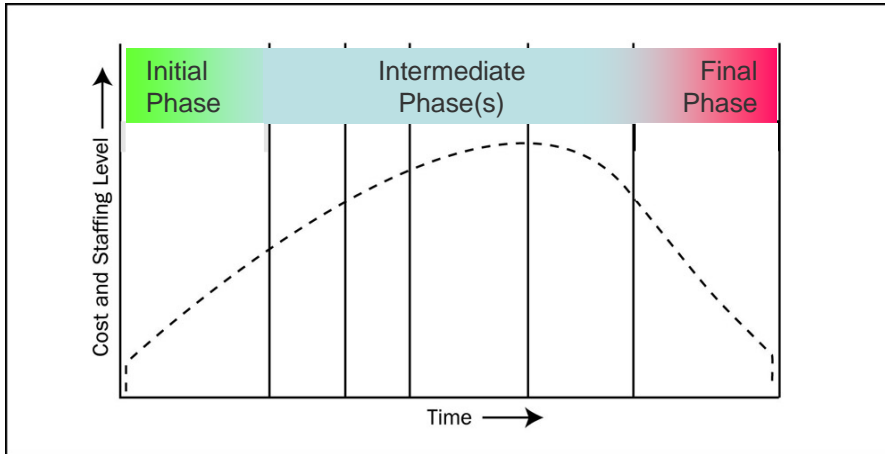


Figure 2-1. Typical Project Cost and Staffing Level Across the Project Life Cycle

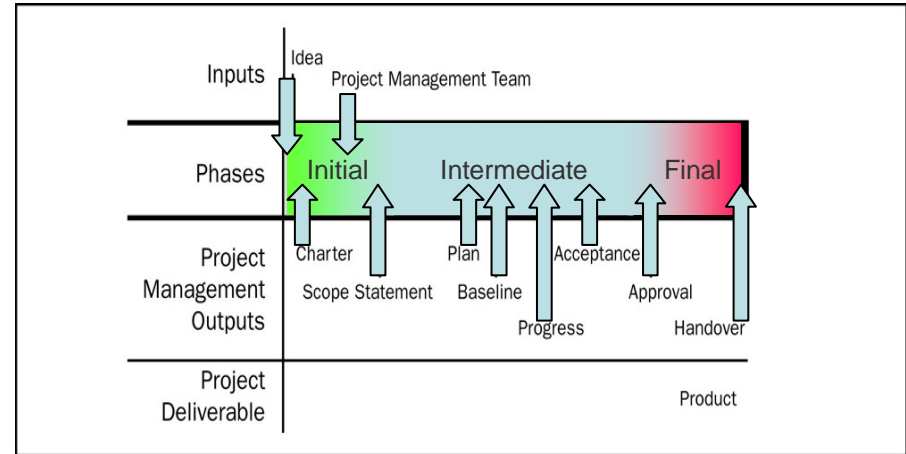


Figure 2-3. Typical Sequence of Phases in a Project Life Cycle

- Project Management is very broad in scope
 - Construction (Engineering firms)
 - Transportation (Concrete Contractors)
 - Software Development (Business Analysts, Programmers)
 - Information Technology (Network & Server administrators)
 - Etc.
- The principles of Project Management apply to all industries

Outputs to ITSM

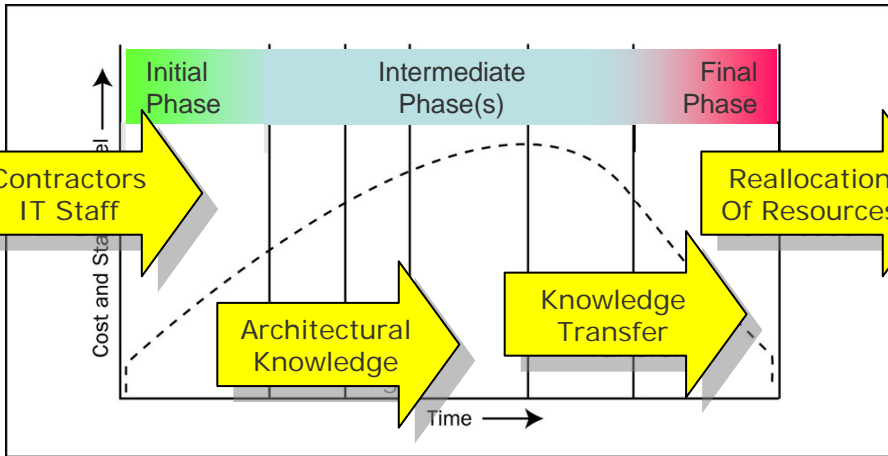


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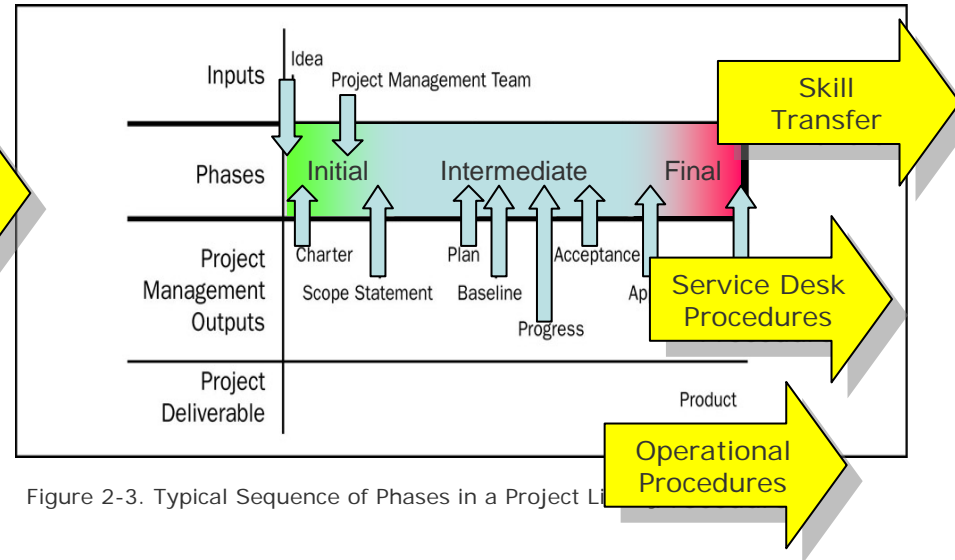


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Relationship Between Product & Project Lifecycle

- PMBoK, Figure 2-4

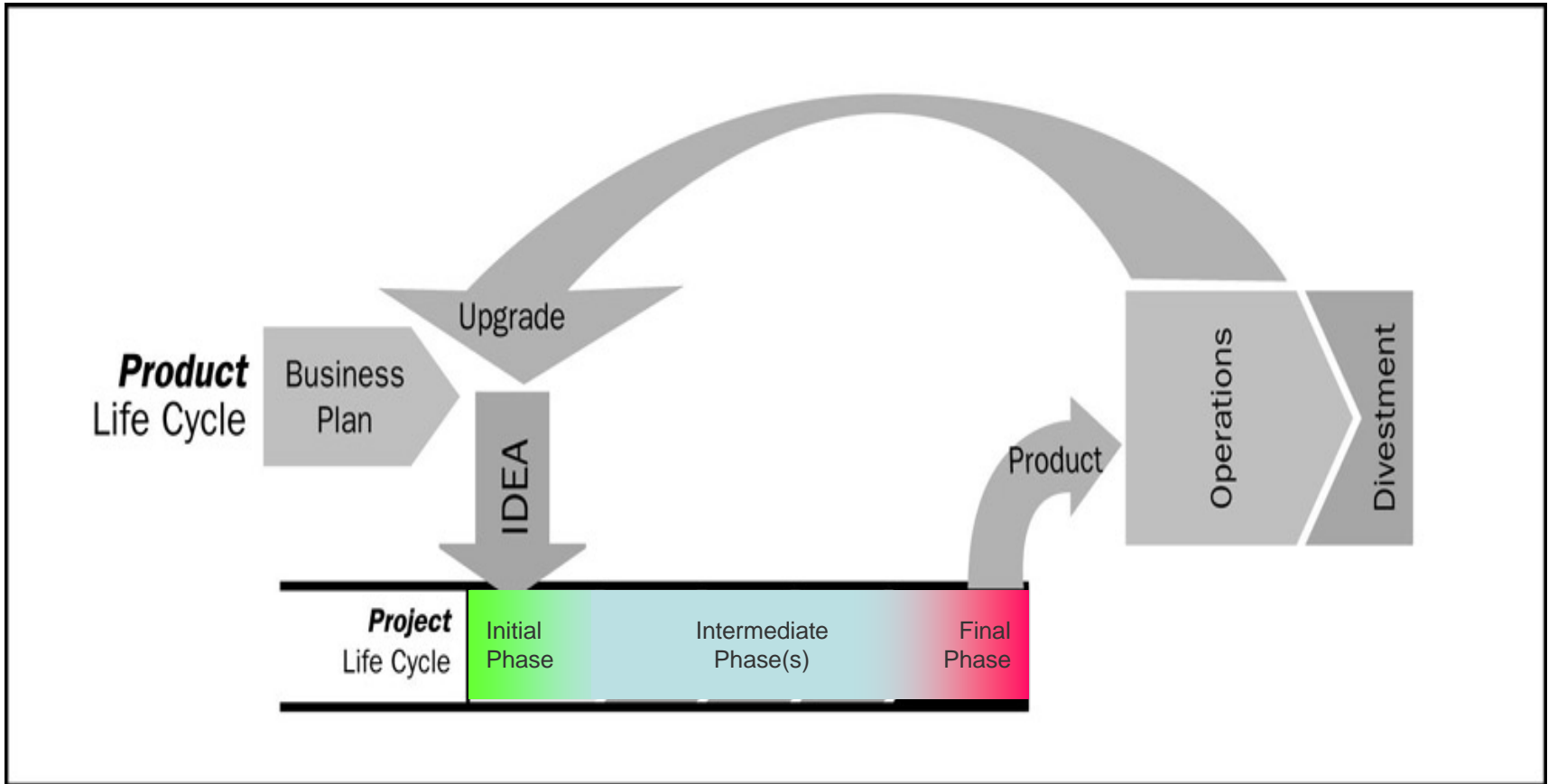


Figure 2-4. Relationship Between the Product and the Project Life Cycles

Was the Product just tossed over the wall to Ops?

- PMBoK, Figure 2-4

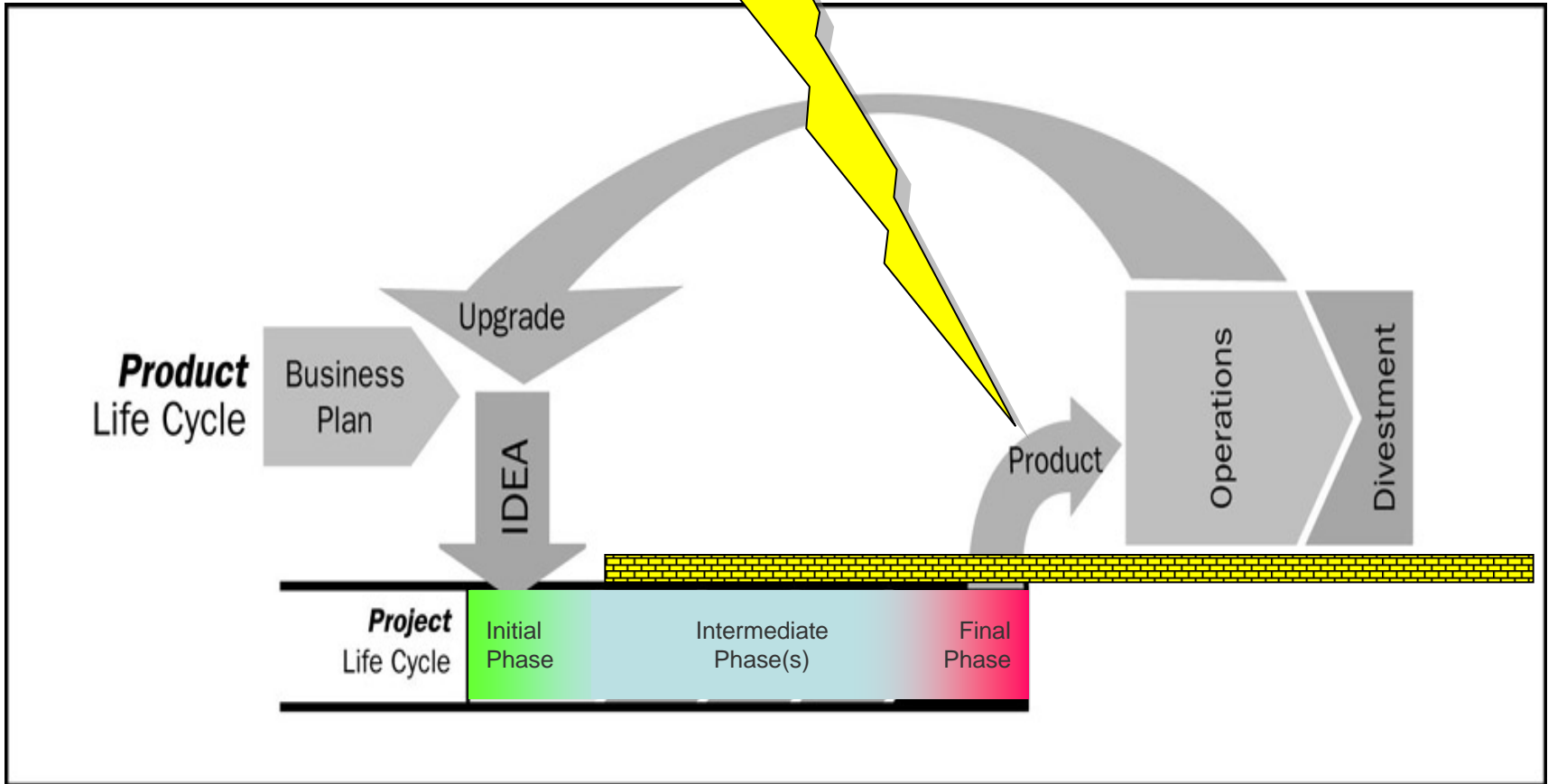


Figure 2-4. Relationship Between the Product and the Project Life Cycles

PMBok 4.3.2 : PMIS, CMS and CCS

- Project Management Information System
 - An automated system, used by the project management team to support generation of the project management plan, facilitate feedback as the document is developed, control changes to the project management plan, and release the approved document
- Configuration Management System
 - A subsystem of the overall project management information system
 - The system includes the process for submitting proposed changes, tracking systems for reviewing and approving proposed changes, defining approval levels for authorizing changes, and providing a method to validate approved changes
 - In most application areas, the configuration management system includes the change control system
 - The configuration management system is also a collection of formal documented procedures used to apply technical and administrative direction and surveillance to:
 - Identify and document the functional and physical characteristics of a product or component
 - Control any changes to such characteristics
 - Record and report each change and its implementation status
 - Support the audit of the products or components to verify conformance to requirements.
- Change Control System – 4.3.2.2
 - A collection of formal documented procedures that define how project deliverables and documentation are controlled, changed, and approved.
 - The change control system is a **subsystem** of the configuration management system.
 - For example, for information technology systems, **a change control system can include the specifications (scripts, source code, data definition language, etc.) for each software component.**

ITIL V2: Relationship Between Project and Change Management (SS8.1)

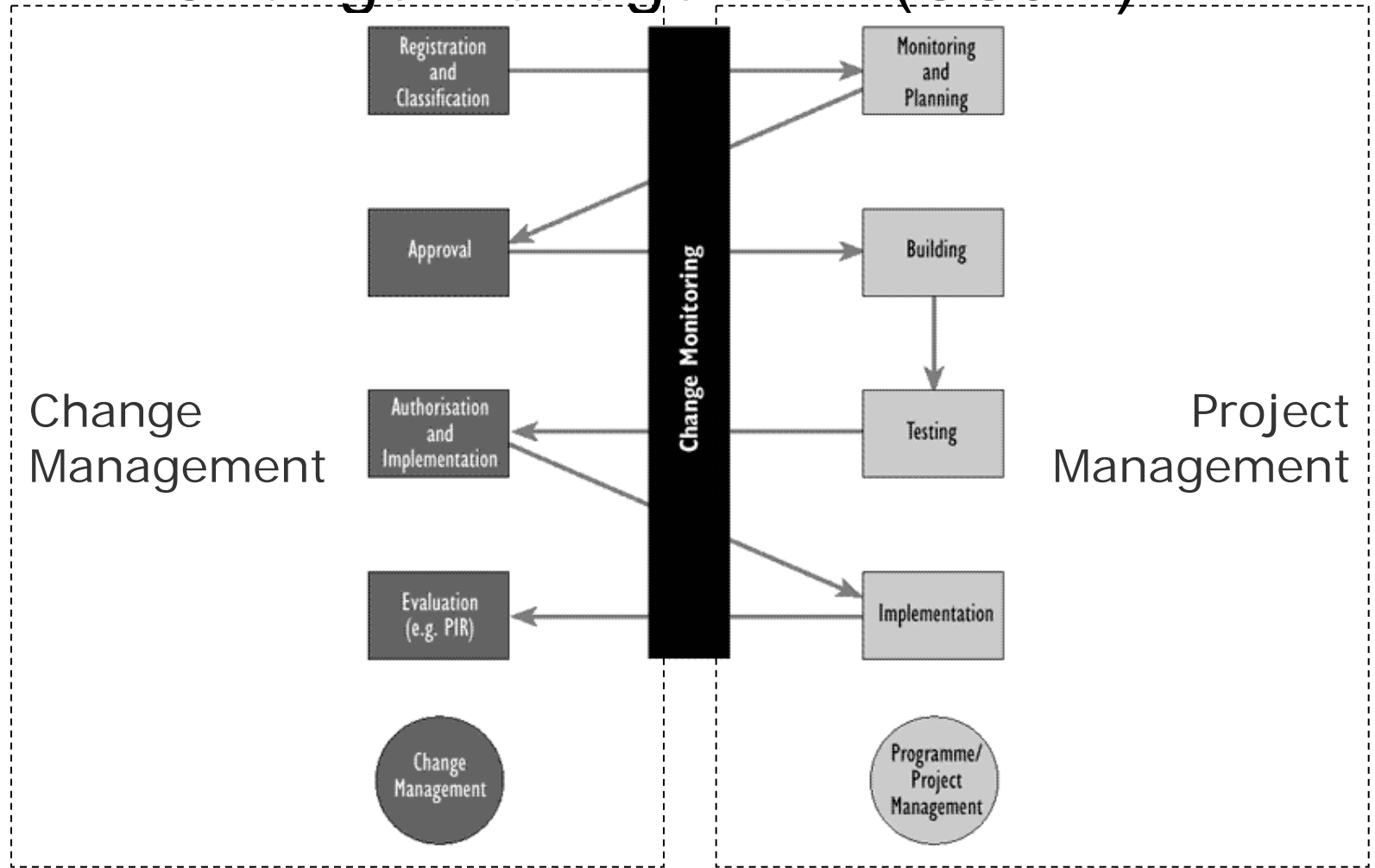


Figure 8.1 - Boundaries between Change Management and program management

ITIL V2 Change Models (SS8.3)

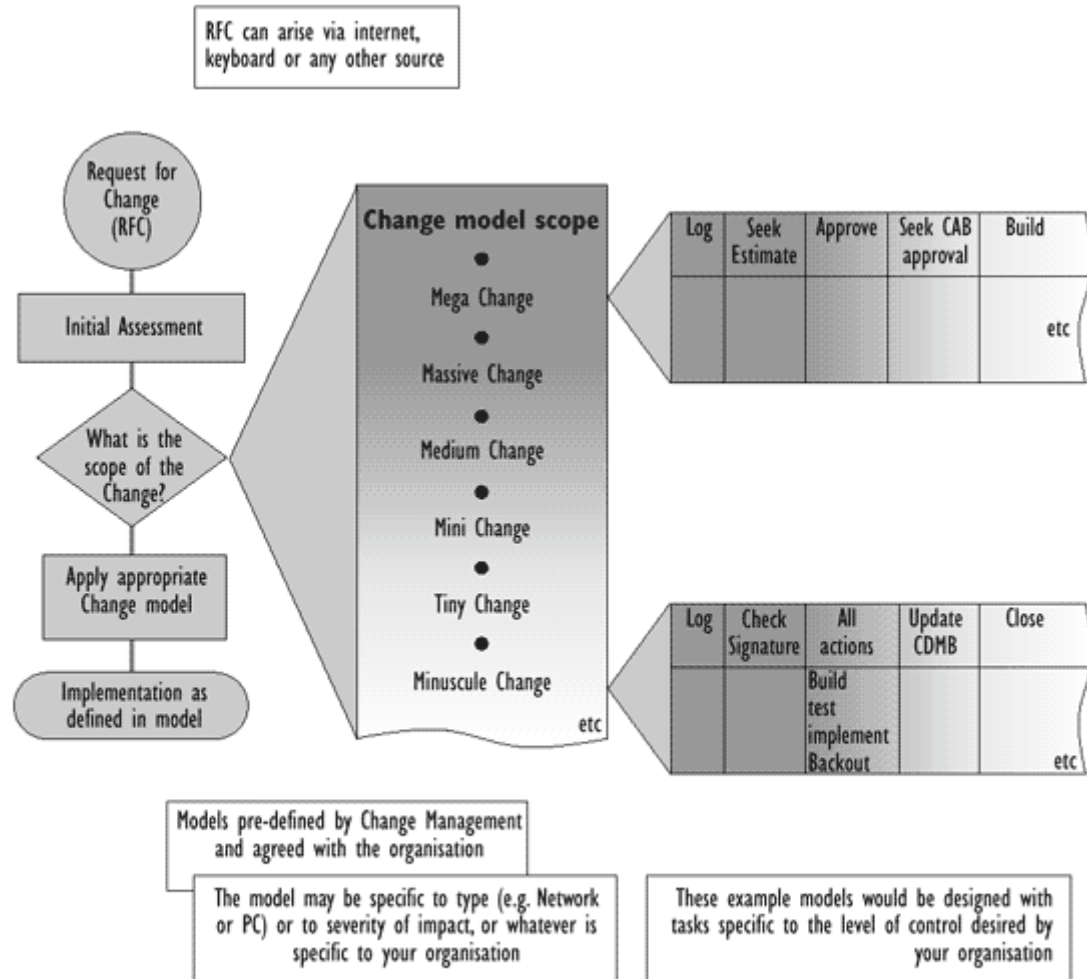


Figure 8.4 - An approach for standard Change Management procedures.

Example of “Mega” Change is a Project

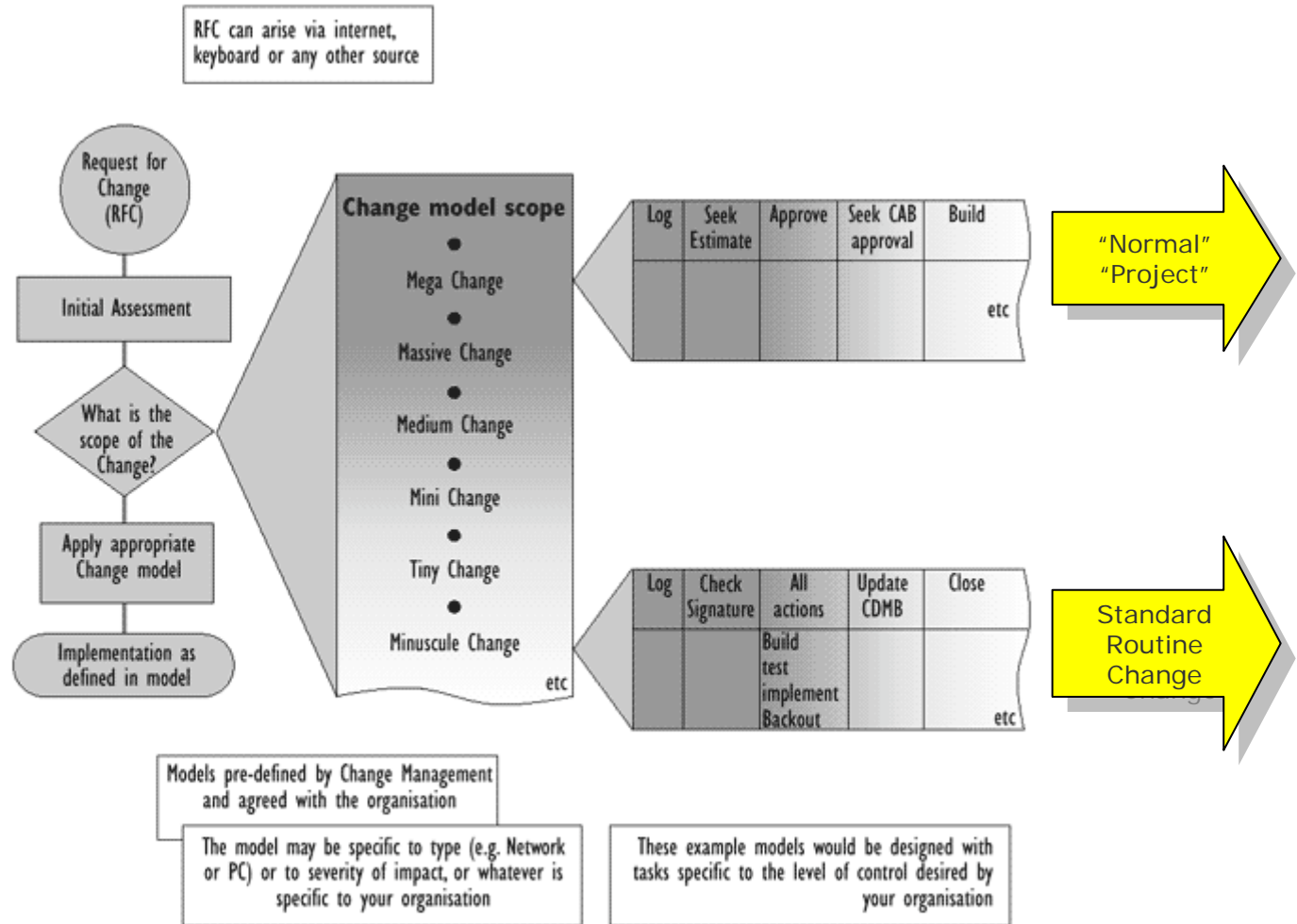
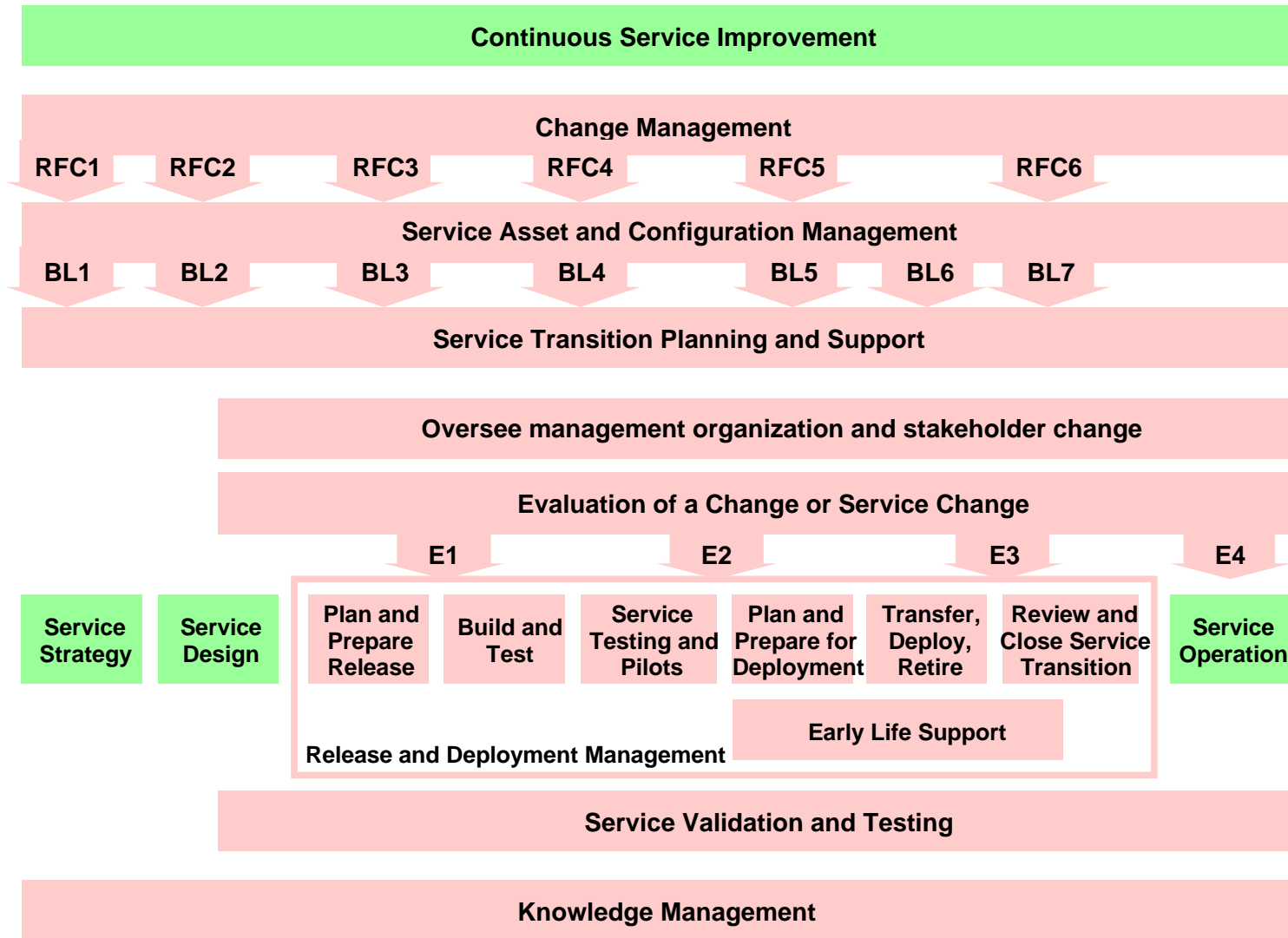


Figure 8.4 - An approach for standard Change Management procedures.

ITIL Perspective: A Project is a Change

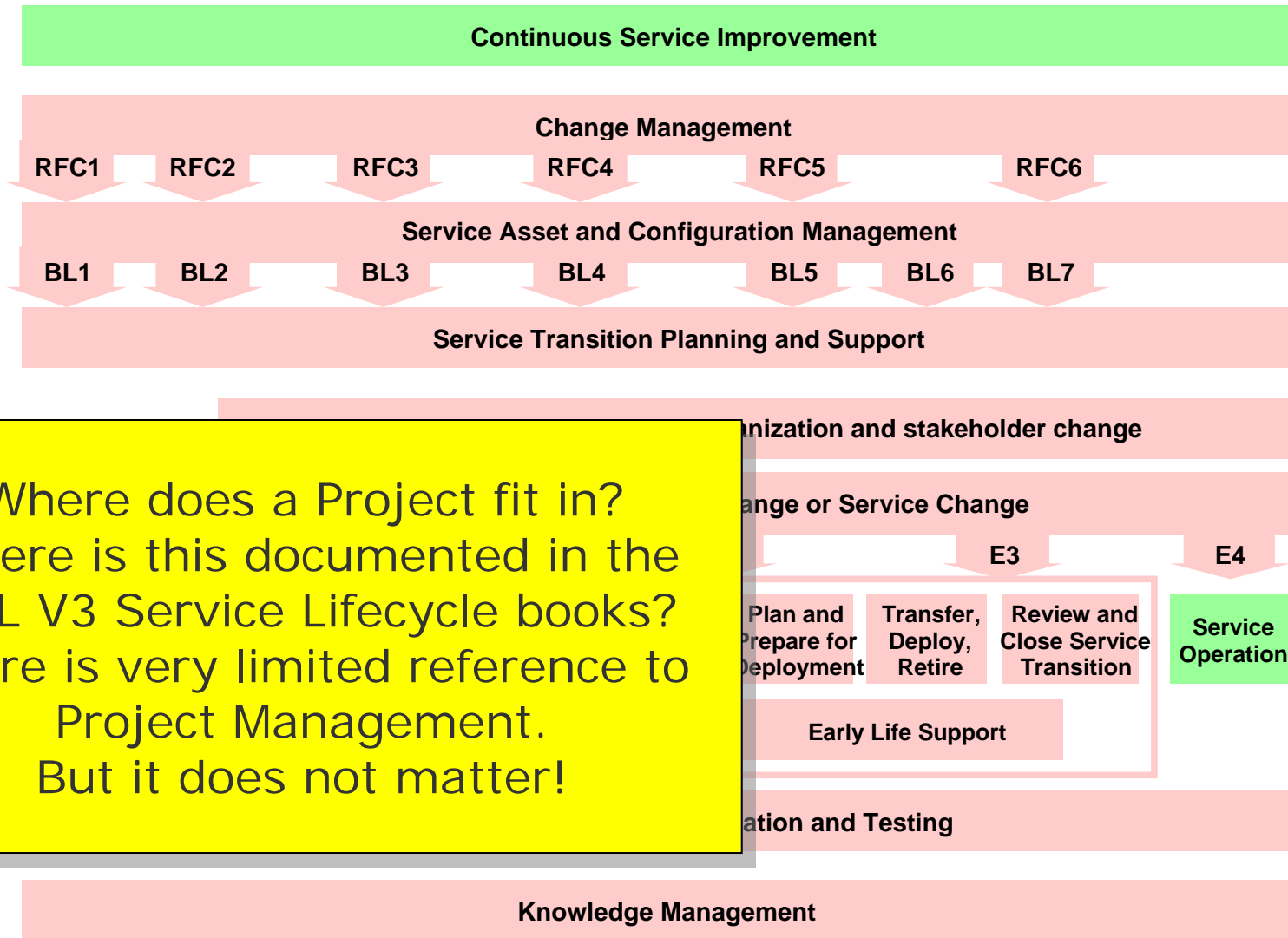
- has a beginning and an end like all Changes
 - requires more due diligence, resources, and controls if it has a large capital/operational cost
 - has a risk that must be assessed and planned
 - must be recorded in Change Management
-
- **DEFINITION PROJECT:** A temporary organization, with people and other assets required to achieve an objective or other outcome. Each Project has a Lifecycle that typically includes initiation, planning, execution, closure, etc. Projects are usually managed using a formal methodology such as PRINCE2. ITIL V3 Service Transition p. 241.

ITIL V3 Service Transition Processes



Source: ITIL V3 Service Transition
Figure 2.3 The scope of Service Transition

ITIL V3 Service Transition Processes

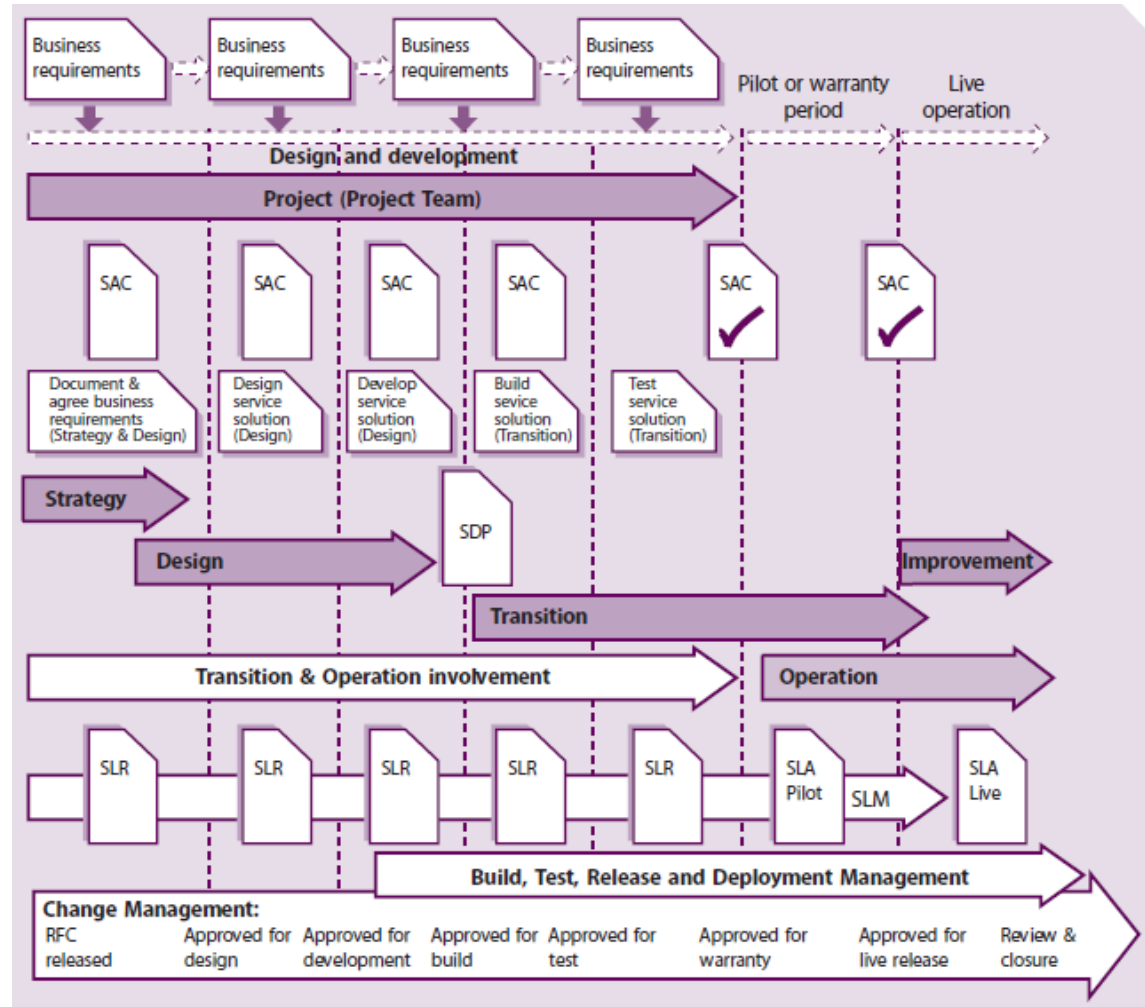


Where does a Project fit in?
 Where is this documented in the ITIL V3 Service Lifecycle books?
 There is very limited reference to Project Management.
 But it does not matter!

Source: ITIL V3 Service Transition
 Figure 2.3 The scope of Service Transition

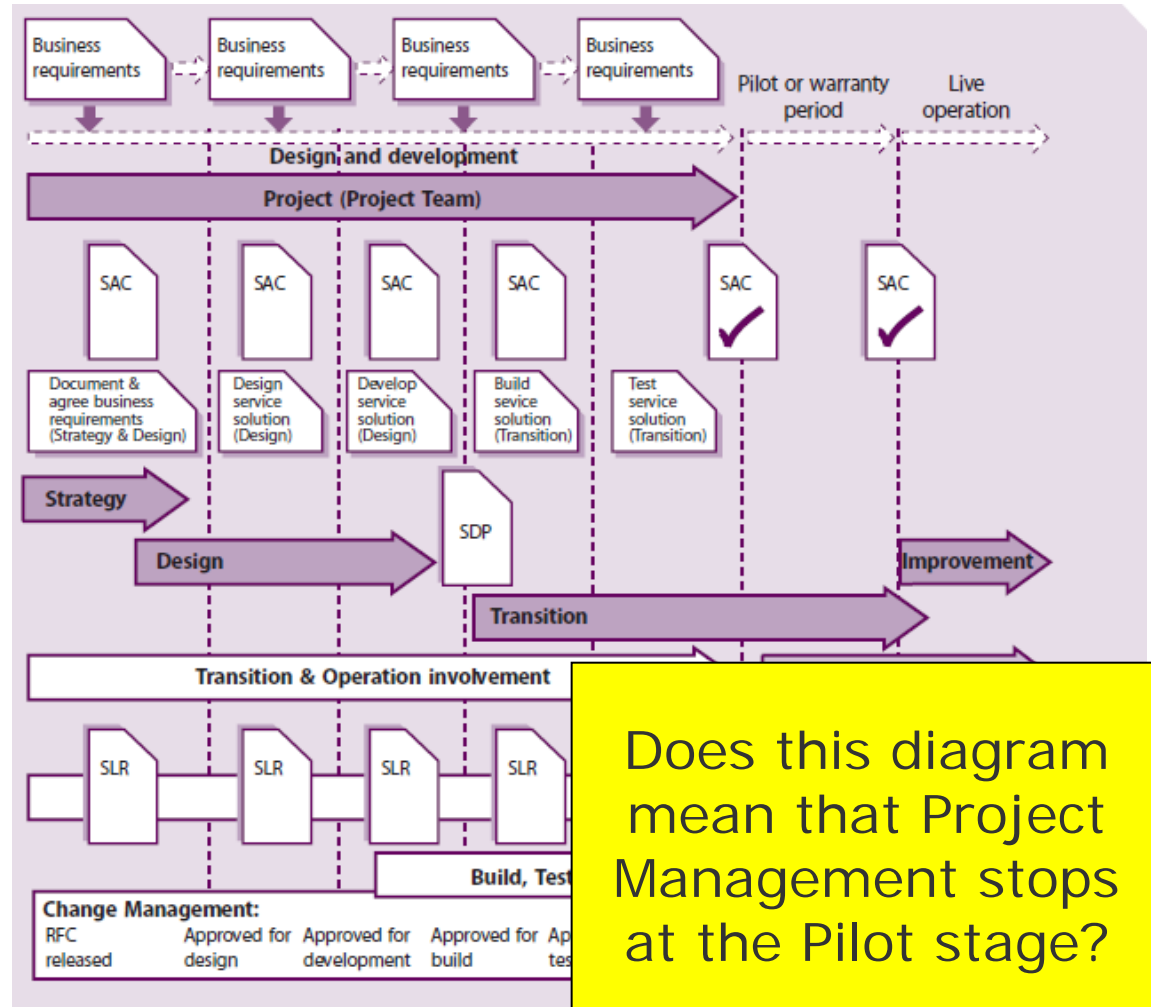
Mentioned in ITIL V3 SD Figure 3.5

- The lifecycle of a service from the initial or changed business requirement through the design, transition and operation stages
- Effective transfer of knowledge is required at all stages between the operational staff and the project staff to ensure smooth progression



Mentioned in SD Figure 3.5

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- Effective transfer of knowledge is required at all stages between the operational staff and the project staff to ensure smooth progression



Does this diagram mean that Project Management stops at the Pilot stage?

ITIL V3 Change Models

- Standard (Routine) Change
 - Pre-approved
 - Implementation Plan is useable and repeatable
 - Risk is known and within tolerances
 - Back-out/remediation plan is tested
 - “Operational Change Request”
- Normal Change
 - Scope needs to be established
 - Develop a implementation plan, design, test plan, back-out plan
 - Resources need to be defined
 - Approvals needs to gotten – financial, technical, business
 - Risk needs to be determined and planned for
 - Cost, time duration needs to be determined and scheduled
 - Review the Change – check quality
 - etc.
- Emergency Change

ITIL V3 Change Models

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 - Review the Change – check quality
 - etc.
- Emergency Change



This sounds like all the sections of a Project Management Plan

A Green IT (any) Project is a Change

- ITIL Definition of Change: The addition, modification or removal of anything that could have an effect on IT Services
- A Green IT Project could have an effect of IT Services therefore be under the control Change Management
- An RfC should be created for a Green IT Project
- Categorized, Prioritized (Impact, Urgency, other)
- A Green IT Risk Assessment should be performed to establish the impact to Operations

A Standard Change Example

Change Record: 123

Category

Status

Select the Category

Change Record: 123

Category	<input type="text" value="Select from list"/> Standard (Routine) Change Normal Change Emergency Change
Status	<input type="text" value="In progress"/>

Select the Domain

Change Record: 123

Category	Standard (Routine) Change
Domain	Select from below Network Management Output Management Data Management
Status	In progress

Select the Activity

Change Record: 123

Category	Standard (Routine) Change	▼
Domain	Output Management	▼
Activity	Select from list	▼
	Replace Print Cartridge	
	Add new Printer	
	Replace Drum	
Status	In progress	▼

Select the CI

Change Record: 123

Category	Standard (Routine) Change	▼
Domain	Output Management	▼
Activity	Replace Print Cartridge	▼
CI	Select from list	▼
	Printer-1	
	Printer-2	
	Printer-3	
Status	In progress	▼

CMDB: Cartridge and Location

Change Record: 123

Category

Standard (Routine) Change

Domain

Output Management

Activity

Replace Print Cartridge

CI

Printer-1

Component

Printer Cartridge: 51649A

Inventory

1

Location: L2-B103


[Click to order](#)

Status

In progress

Replace Cartridge – Update – New SR

Change Record: 123

Category	Standard (Routine) Change	▼
Domain	Output Management	▼
Activity	Replace Print Cartridge	▼
CI	Printer-1	▼
Component	Printer Cartridge: 51649A	▼
Inventory	0	Location: L2-B103
	Click to order 	
NOTICE: Ensure the all print cartridges are "Green Approved"		
Status	Closed	▼

A Project Change Example

Change Record: 124

Category

Status

Select the Category

Change Record: 124

Category	<input type="text" value="Select from list"/> Standard (Routine) Change Normal Change Emergency Change Project
Status	<input type="text" value="In progress"/>

Select the Project Type

Change Record: 124

Category	Project
Type	Select from below Administrative Construction Computer Software Development Design of Plans Equipment or System Installation Event or Relocation Maintenance of Process Industries New Product Development Research ...or any other type of Project
Status	In progress

Define the Attributes

Change Record: 124

Category	Project	▼
Domain	Computer Software Development	▼
Attributes	Details	▼
Status	In progress	▼

IT Related Details

Change Record: 124

Category	Project	
Domain	Computer Software Development	
Attributes	Details	
	Operational Scope	High
	Risk to IT	Med
	Green IT	Yes
	Duration	Short
	Type of development	Oracle
	New technology	Yes
	Link to IT Projects	Yes
	IT Impact	High
	IT Approval	Required
Status	in progress	

Controls Beyond Just the Project Scope

Change Record: 124

Category	Project		▼
Domain	Computer Software Development		▼
Attributes	Details		▼
Approval	Scope Statement	Pending	▼
Approval	Schedule	Pending	▼
Approval	Cost/Budget	Pending	▼
Approval	Qualfity Plan	Pending	▼
Approval	Risk Plan	Pending	▼
. . .			
Status	In progress		▼

Green IT Risk Assessment

- Materials recycling
 - Is the product environmentally friendly?
 - Will we be charged/fined for disposal of (toxic) waste?
- Power management
 - Does power supply meet 80 PLUS industry standard?
 - Does the device have ACPI or under-volting based on workload?
- Virtualization
 - What is the energy consumption?
 - Blade technology instead of the Project's standalone server?
- Telecommuting
 - Will it increase or reduce environmental and facilities energy costs?
 - Is the outsourced project meeting Green Computing standards?
- Regulatory Compliance
 - Does the international manufacturer comply with our regulations?

Recommendations

- Investigate your corporation's Green IT requirements and determine if there are any gaps/overlaps
- Pick a common language! What exactly is a Change Control System?
- Leverage Project Management methods for IT Release and Deployment Management and Service Transition as a practice – train ITSM Managers on Project Management
- Integrate the PMO and ITSMO
 - Define formal policies
 - Do the PMO templates have Green IT requirements specified?
 - The integration effort will be a Project! Or is it a Change? Both?
- Establish a “Governance Control/Advisory Board” chaired by a senior executive to resolve “framework” related conflicts

About the presenter

- Jerry Kopan
 - ITSM Project Manager and ITIL Trainer
- jerry@mountainview.ca
- Biography
 - Over 25 years public and private sector consulting in IM/IT
 - Over 15 years implementing ITIL best practices
 - ITIL V3 Accredited Trainer
 - F, FB, MB, SOA, OSA, RCV, ST, SO and ISO20000
 - ISO20000 EXIN exam review board
 - ITIL V2/V3 accredited courseware developer
 - ITIL V3 Expert, V2 SM, PISM, ISO20KProf, PMP, CMC, B.Sc.

Questions?

Click on the questions tab on your screen, type in your question (and name if you wish) and hit submit.



The screenshot shows a web interface with a navigation bar at the top containing four tabs: "Slides", "Questions", "Download", and "Support". The "Questions" tab is selected. Below the navigation bar, the word "Questions" is displayed. A prompt reads "Please submit your question below." followed by a large text area with the placeholder text "Type your question here." and a vertical scrollbar on the right. Below the text area, another prompt reads "Please type your Name" followed by a text input field with the placeholder text "Type your name here". At the bottom left of the form is a "Submit" button with a right-pointing arrow icon.