

Transition to Operations - Operations Best Practices Workshop

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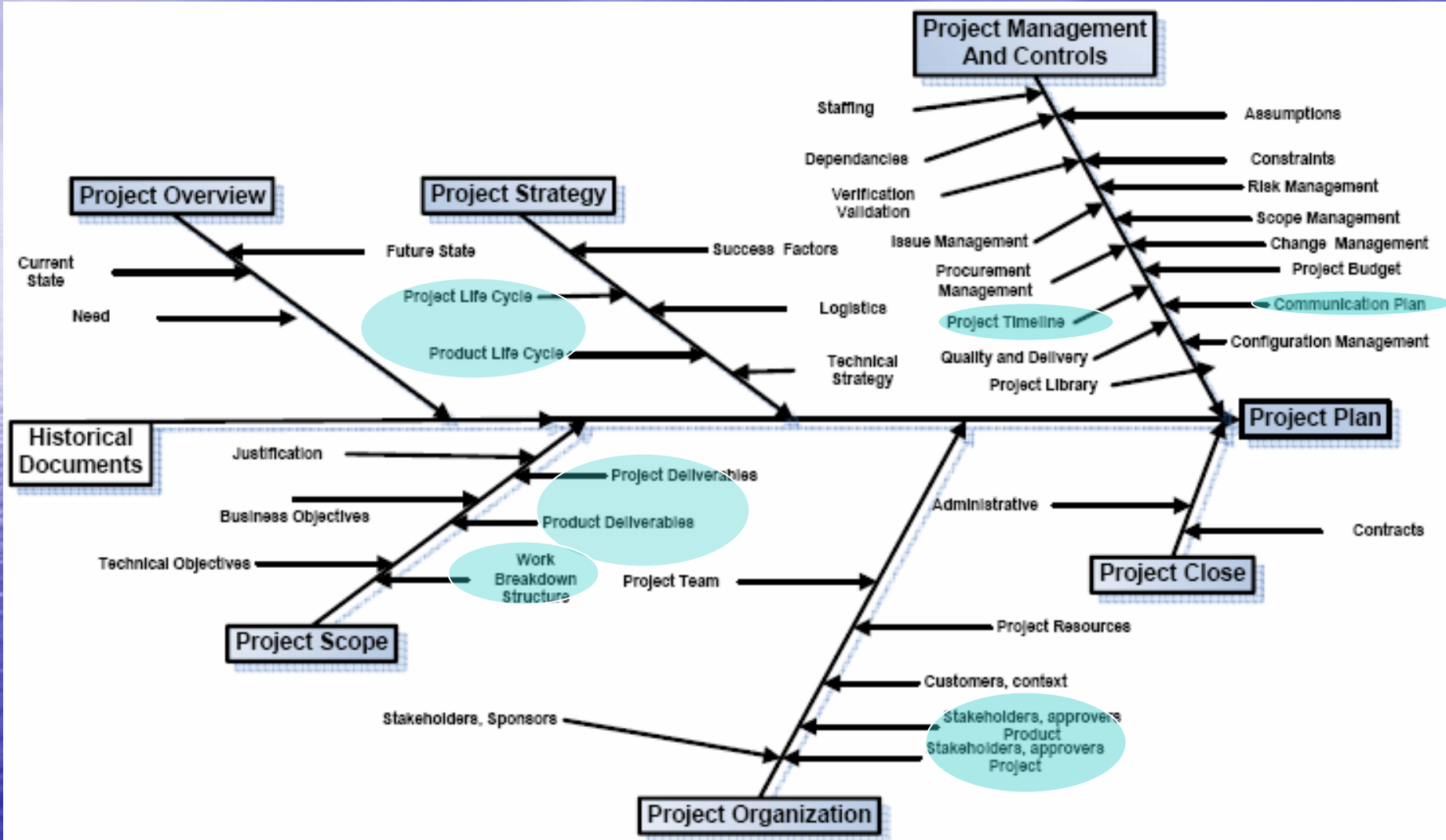
Disclaimer

- While the materials in this workshop reflect Project Management experience both within the State of New Mexico and in the corporate world, they do not necessarily represent official state practices.
- Official project templates and project processes must be obtained from the State of New Mexico OCIO.

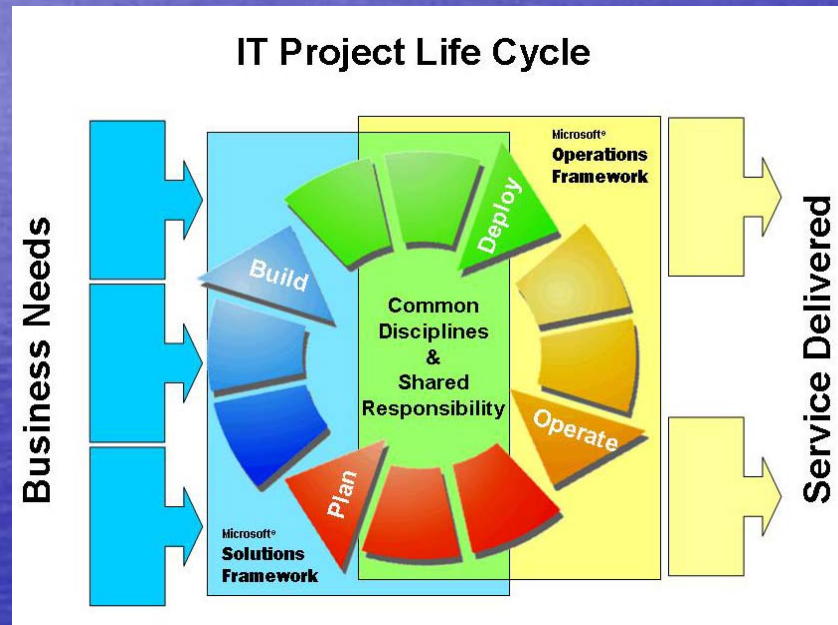
Project Vs. Operations

- Project Characteristics
 - “A project is a temporary endeavor undertaken to create a unique product, service or result” PMBOK©
- “Projects and operations differ primarily in that operations are ongoing and repetitive, while projects are temporary and unique.” PMBOK©
- “Projects are different because the project concludes when its specific objectives have been attained, while operations adopt a new set of objectives and the work continues.” PMBOK©

Project Management 101



Projects and Operations



Purposes of this workshop

- “Transition to Operations”
 - To provide guidelines to make “transition to operations” part of the project deliverables
- “Operations Best Practices”
 - “Transition to Operations” as project term is “release management” in operations terms.
 - To provide foundation for agency initiatives to establish operational frameworks.

Project Management Governance

- New Mexico State Office of the CIO
 - <http://cio.state.nm.us/>
- Project Management Institute
 - <http://www.pmi.org/info/default.asp>
- Capability Maturity Model® Integration (CMMI)
 - <http://www.sei.cmu.edu/cmmi/>

12.9 Project Certification Rule

1.12.9.12 PROJECT PLANS.

A. Plan required. An agency shall prepare, in accordance with the instructions contained in the project management guidelines and best practices document prepared by the office, a project plan for every IT project regardless of its scope or cost. The agency project manager shall document the plan and all revisions to the plan, and shall keep it on file until the system is removed from operation

B. Plan contents. The plan shall contain at a minimum:

- (1) a description of the project;
- (2) a description of the functions the system will provide;
- (3) a description of the development lifecycle methodology;
- (4) an initial risk assessment;
- (5) risk management strategies, including mitigation actions;
- (6) quality assurance strategies or plan;
- (7) human and financial resource requirements and allocations;
- (8) a project review schedule;
- (9) IV&V plan and reports;
- (10) project deliverables;
- (11) a project schedule; and
- (12) Appropriate security planning (data, disaster recovery, system back-up).

Project Certification 12.9 Rule Definitions

- **independent verification and validation**
 - means the process of evaluating a system to determine compliance with specified requirements and the process of determining whether the products of a given development phase fulfill the requirements established during the previous stage, both of which are performed by a organization independent of the development organization;
- **quality**
 - means the degree to which a system, system component, or process meets specified requirements, customer needs, and user expectations;
- **quality assurance**
 - means a planned and systematic pattern of all actions necessary to provide adequate confidence that an product or system component conforms to established requirements;

Project Management Institute

- “Project Scope Management includes the processes to ensure that the project includes all the work required, and only the work required, to complete the project successfully.” As quoted in PMBOK®
- Project Requirements
 - Describes the conditions or capabilities that must be met or possessed by the deliverables of the project to satisfy a contract, standard, specification or other formally imposed documents. Stakeholder analyses of all stakeholder needs, wants, and expectations are translated into prioritized requirements. PMBOK®

Project Success depends on getting everything and Everybody in place as needed!
Appropriate transition to operations means prioritized attention to end result lead time

“Transition to Operations” Workshop

- To provide the detail:
 - Provide a framework for thinking about the transition to operations
 - Define elements that should be part of the transition to operations for the project solution
 - Provide sample templates for these elements

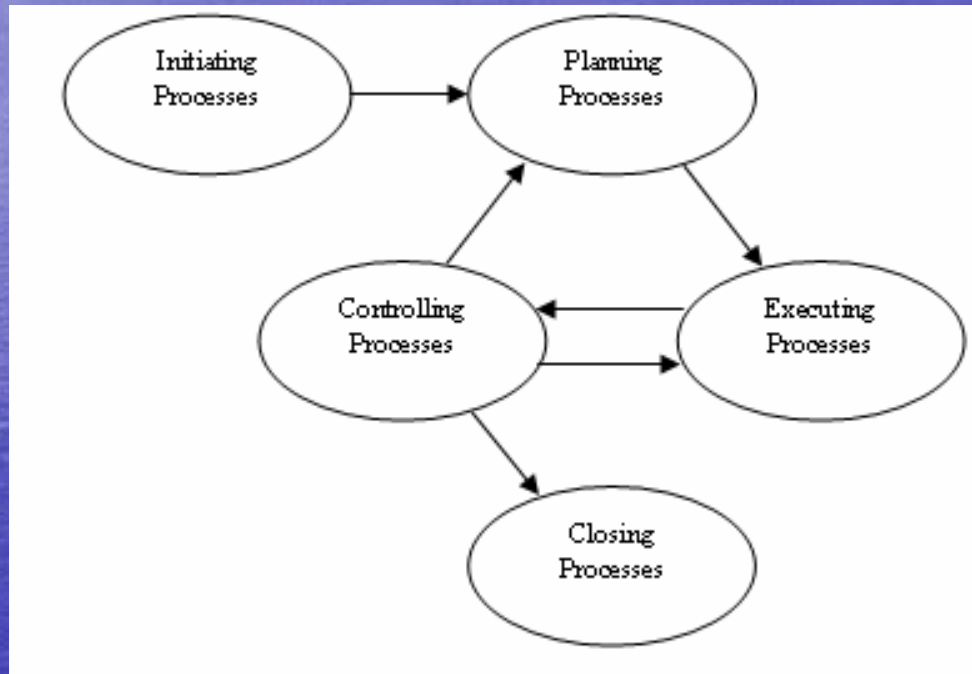
"Operations Best Practices" Workshop

- To introduce trends in the IT industry towards institutional IT best practices
- To provide information about organizations and resources available
- To provide resources for agencies to envision and initiate process improvement projects

Best practices organizations

- ITIL
 - Information Technology Infrastructure Library
 - <http://www.ogc.gov.uk>
- MOF
 - Microsoft Operations Framework
 - <http://microsoft.com/mof>
- The IT Service Capability Maturity Model®
 - <http://www.itservicecmm.org/nutshell.html>

PMI Project Life Cycle



Product or Solution Life Cycle

SDLC – Software Development Life Cycle

- Plan
- Define
- Design
- Build
- Deploy
- Close

As we move into transition to operations, there will be documents and document revisions. These documents should be considered as project deliverables!

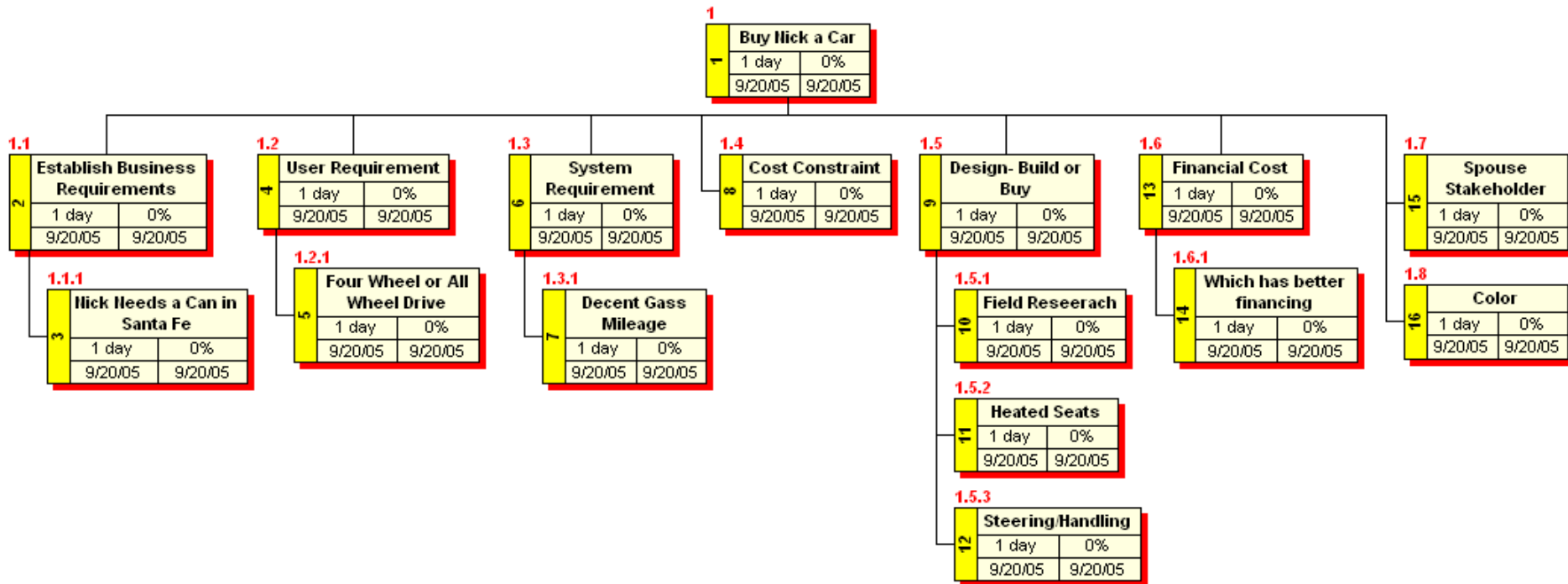
Toll Gates

- Stakeholder Approval to move from one phase of solution development to the next
- Stakeholder Approval for documents
- Stakeholders for Business Requirements
- Stakeholders for System Requirements
- Stakeholders for “Transition to Operations”

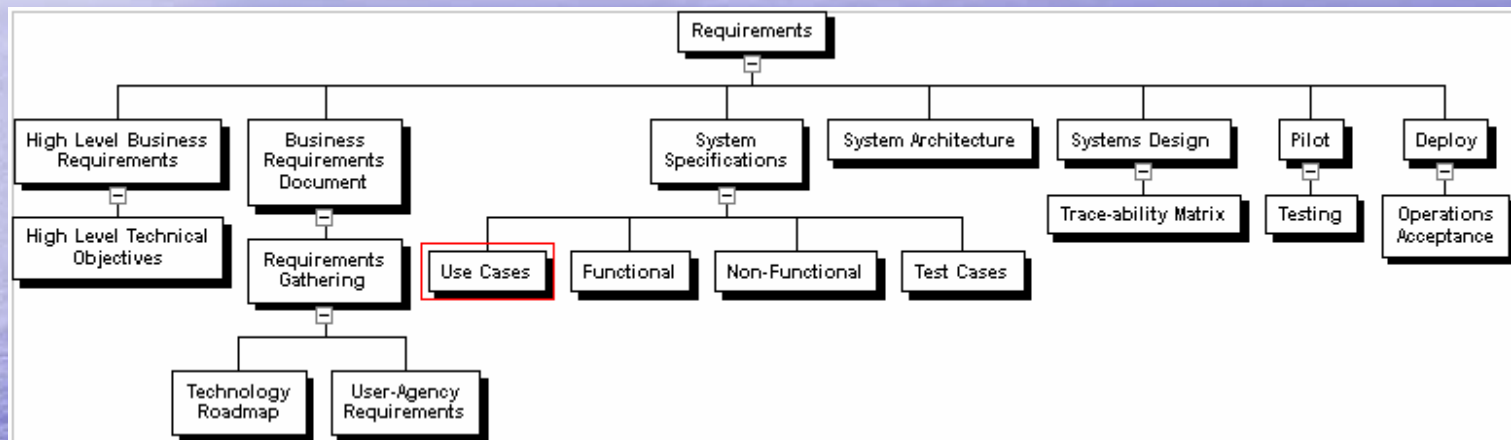
Work Break Down Structure

- Steps that need to be done to complete a project
 - Used to estimate time and costs for projects
 - Used to create project schedules
 - Used to explain how a project works

Buy Nick a Car - WBS



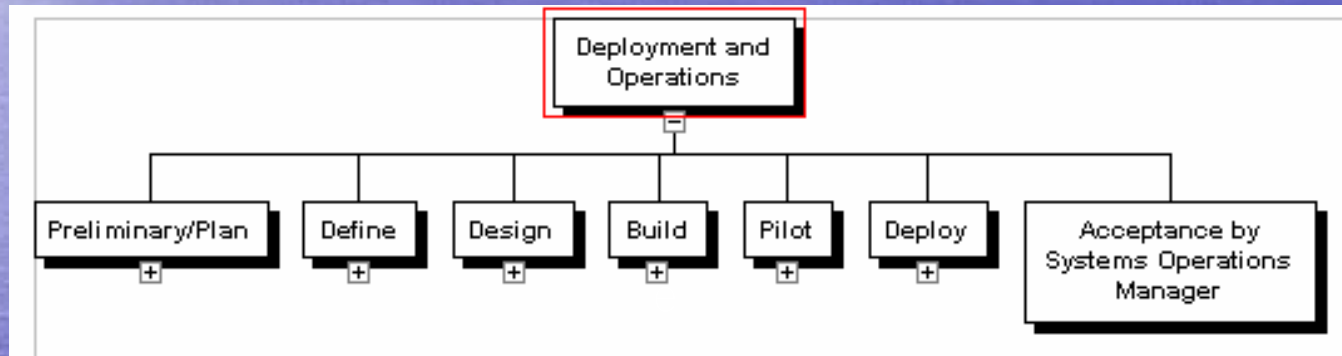
Requirements WBS- simplified



OCIO Project Plan "Product Life Cycle"
Industry variations on "Software Development Life Cycle"

Requirements are developed and refined as we move from left to right

“Transition to Operations” - Requirements avoid and anticipate problems!



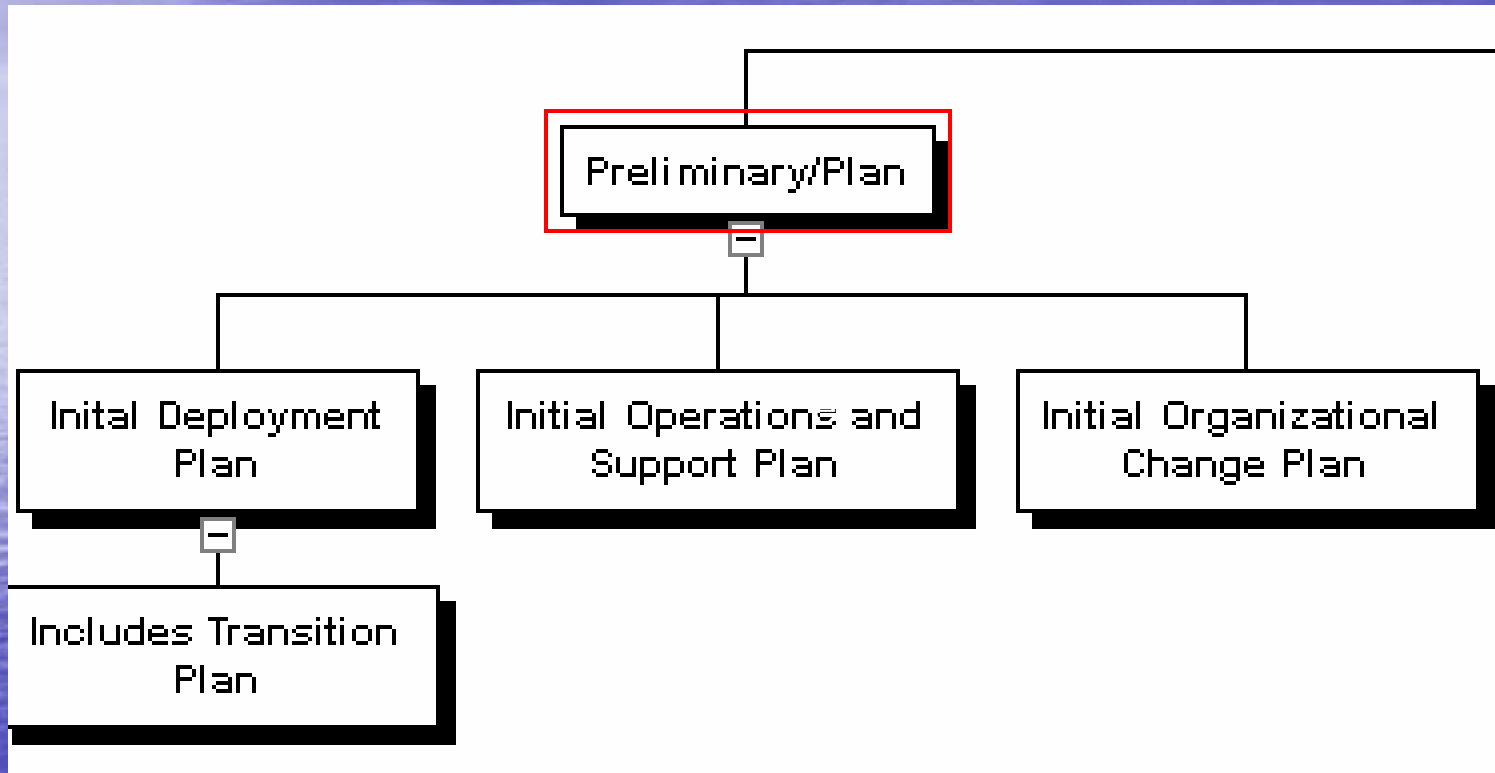
Requirements are anticipated from the right and refined as we move from left to right

Project Deliverables – “Transition to Operations”

- Transition to Operations and Support Plan
 - Creating environment for solution
- Organizational Change Management Plan
 - Impacts on people and process
 - Staffing Requirements
- Systems/Solution Deployment Plan
 - Implementing solution to organization
- Operations and Support Plan
 - System administration and end user support
 - System Administration documents and end user manuals
- Training Requirements Plan
 - Training for implementers, administrators and help desk and end users

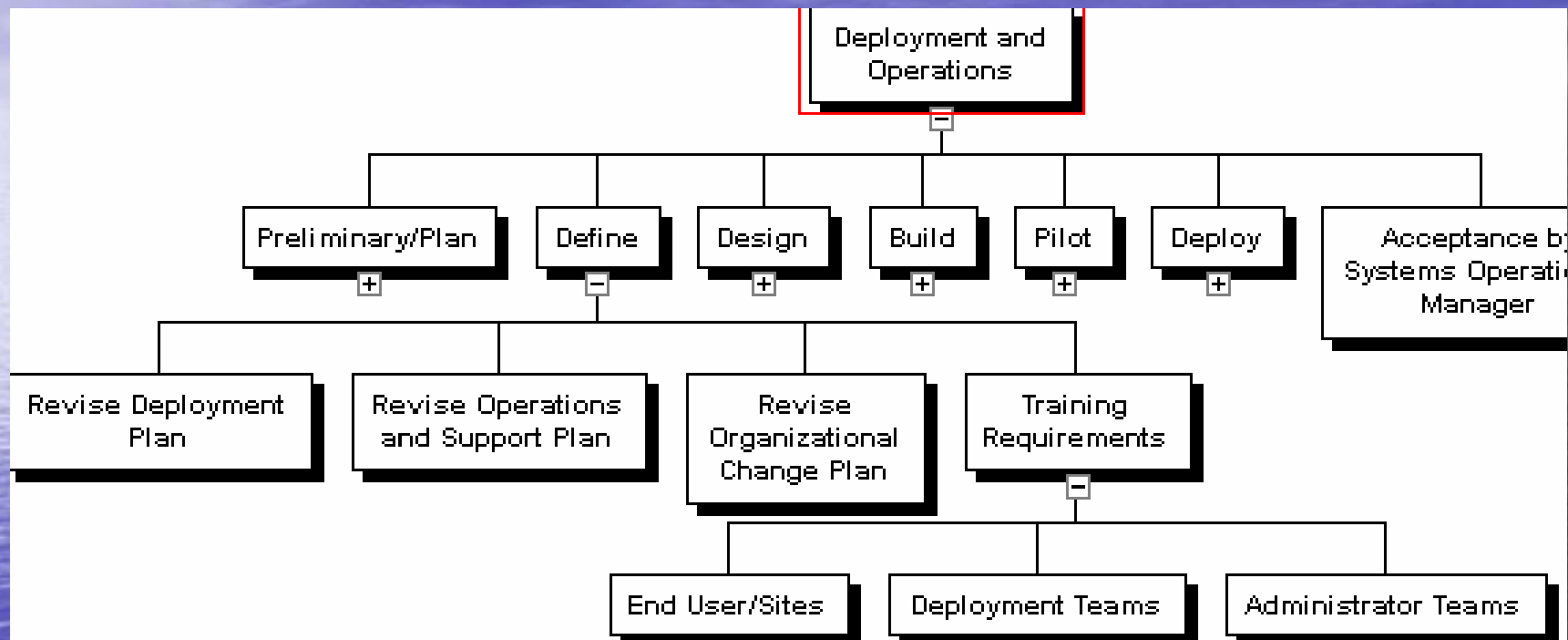
There is overlap between these different focused elements – “copy and paste”

Preliminary/Plan Phase



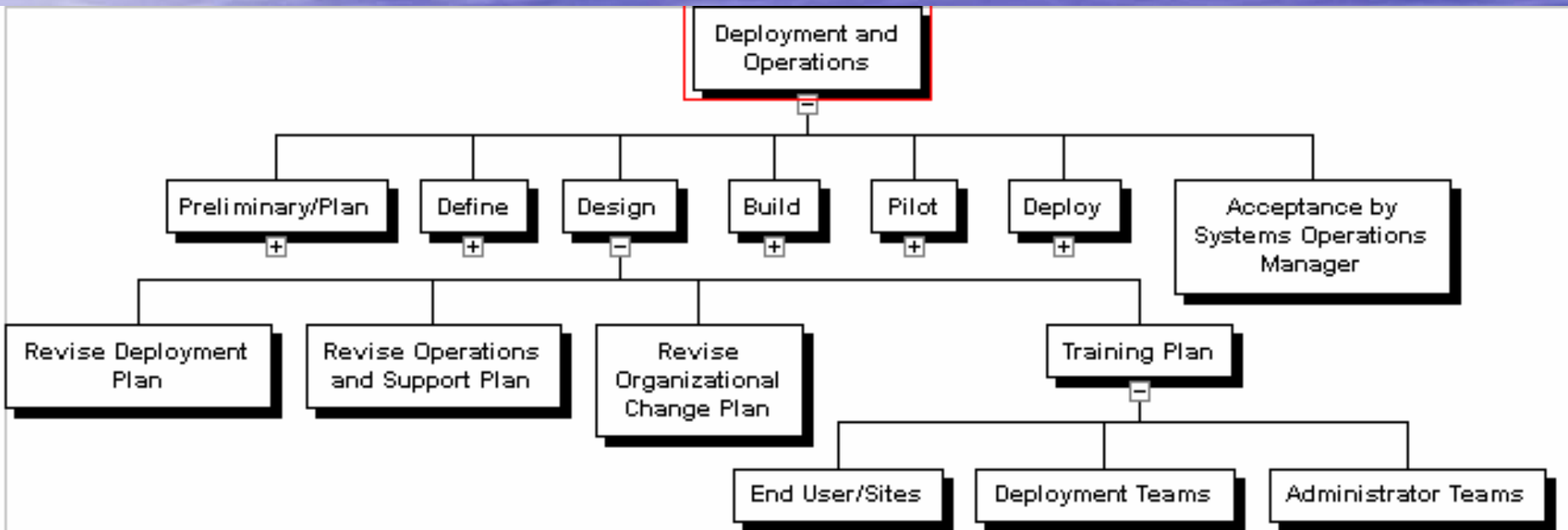
While we may not know very much about the solution, we can begin to anticipate Operational aspects. We can accumulate names of key stakeholders or groups Involved with training and implementation.

Define Phase



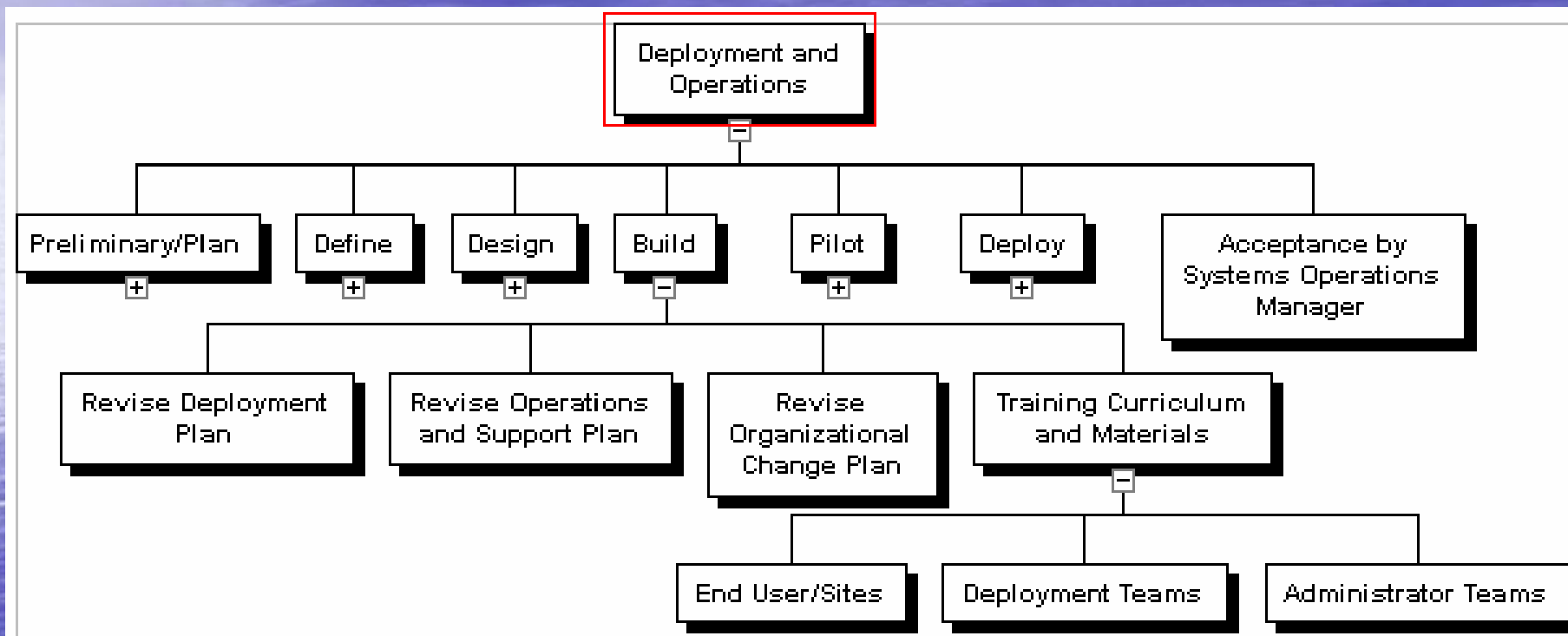
As we learn more we can revise plans. Based on the defined requirements, we can start mapping out the training needs for the various populations. We can begin to gather information about our deployment sites, examine our operational requirements, discuss how we will support a solution, and what we need to do to staff solution.

Design Phase



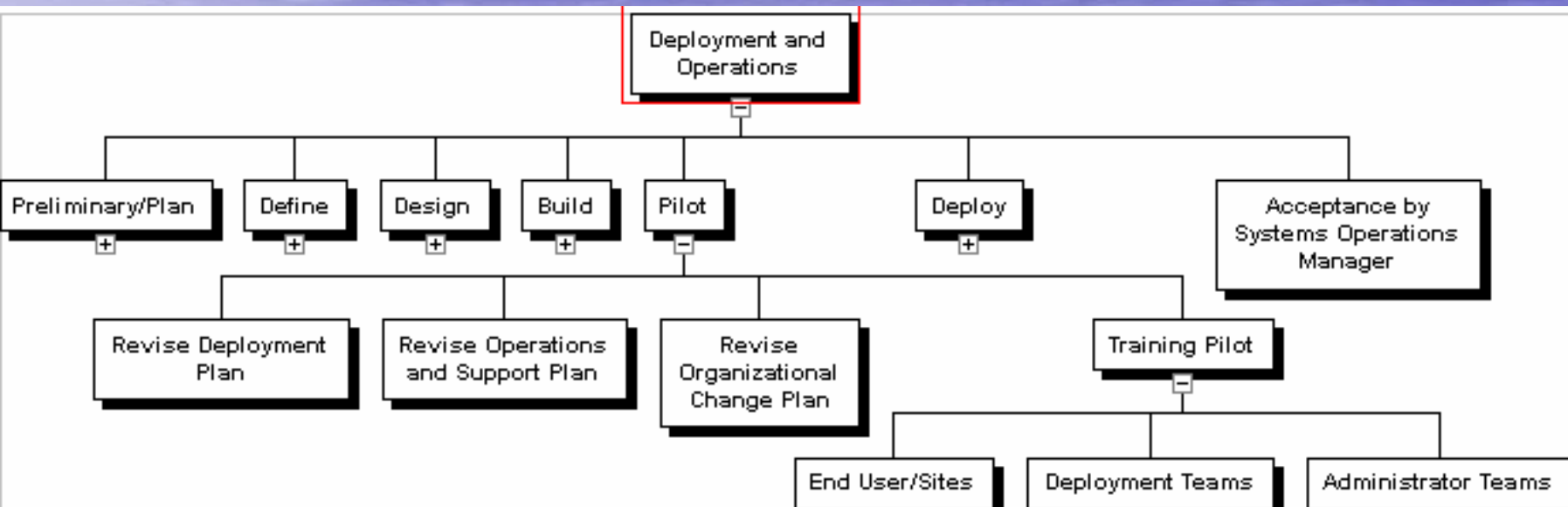
As we move through the solution design, our knowledge of transition to operations increases. The training plan is the training design. As we design platform, end user client access, deployment process we can further fill in the blanks. As we design the solution, we can design the over all training plan including specifics that the three populations will need to know. "Key strokes" come in the Build phase.

Build Phase



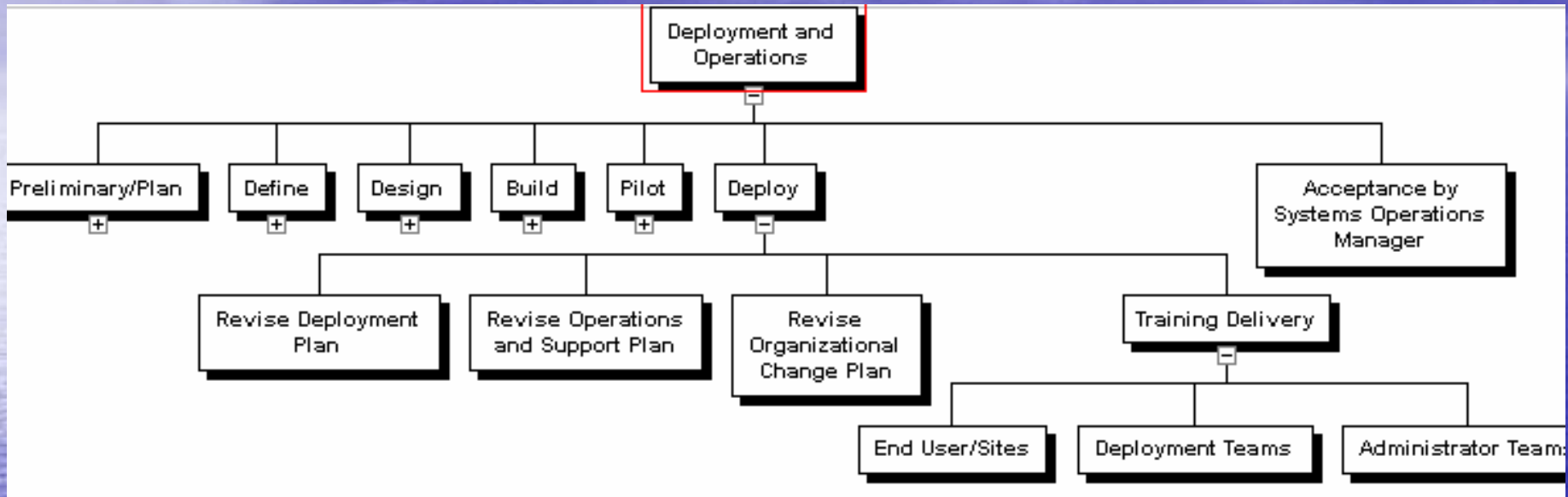
As we build solution, we build training materials including “key strokes”. The build phase should include UAT- User Acceptance Testing. The solution is not complete without fully developed deployment plans, operational and support plans, and organization change accounted for.

Pilot Phase



Pilots allow us to test our assumptions and field test our efforts, and our training materials. We should also have a pilot plan, including objectives, and Pilot User tasks. We need to know how to declare a pilot a success! How long should a pilot run? How much time should be built into schedule between pilot and deploy?

Deploy Phase



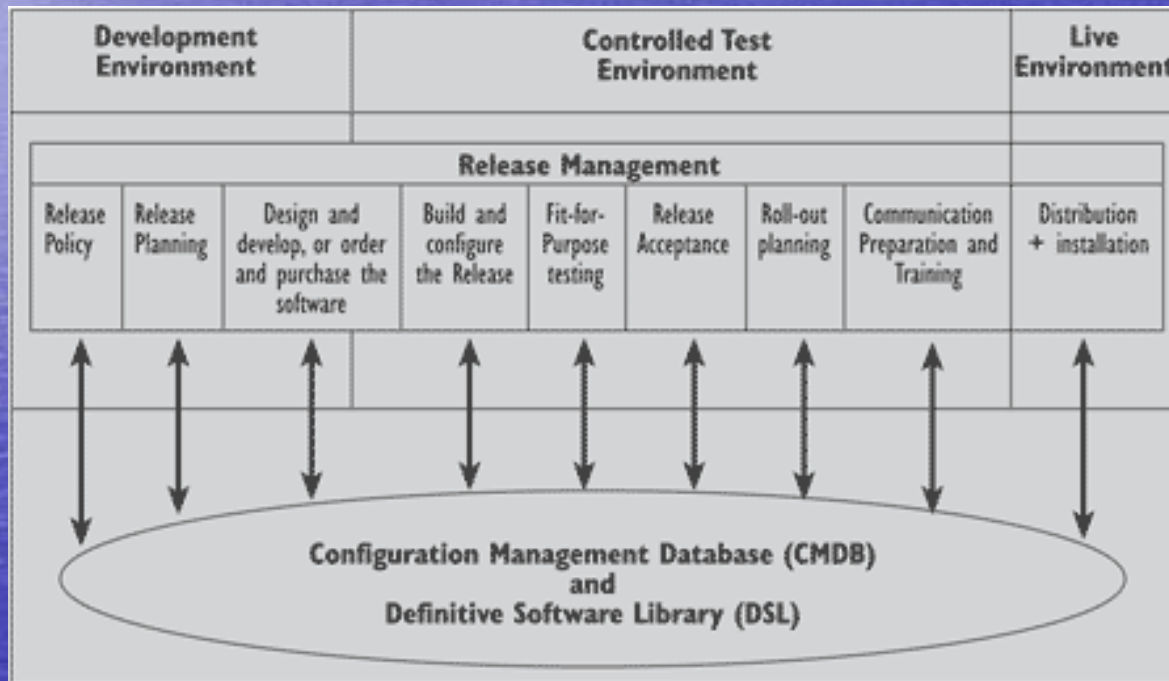
Following successful pilot(s), there should be a readiness checklist based on the various plans presented to stakeholders with go-no-go recommendations.

Care should be given to determine rate of deployment as not all issues come out of the woodwork during a pilot.

Acceptance by Operations Manager

- Operations must be a key stakeholder in the project process
- Operations must be involved from the planning forward
- The project must seek operational requirements from the start as well
- Operations provides its own set of standards (Hopefully)

ITIL Release Management



If "Operational Framework" were in place, "Transition to Operations" would be part of Release Management

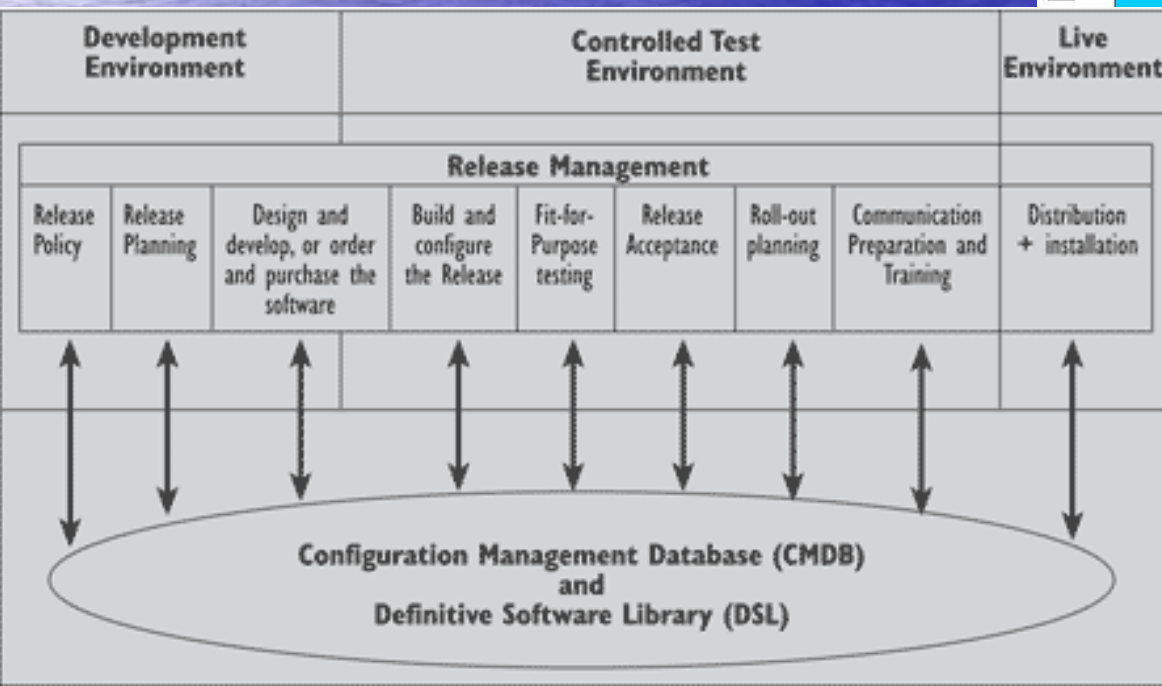
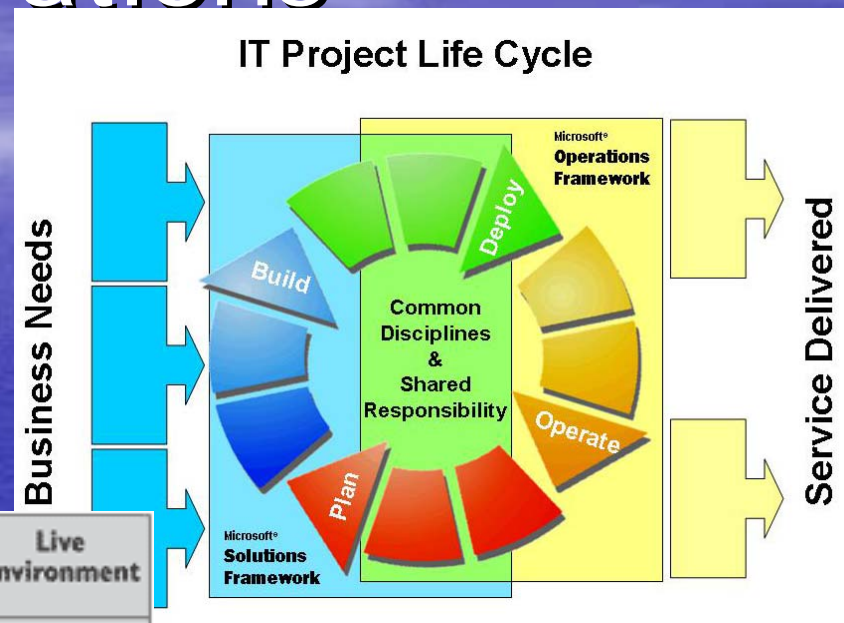
Transition to Operations

The success of a solution is not restricted to its ability to meet technical specifications!

The transition to operations and end user deployment is an opportunity:
To wrest defeat from the arms of Victory!

Projects and Operations

If "Operational Framework" were in place, "Transition to Operations" would be part of Release Management



Transition to Operations

- What is the strategy for transferring ownership to ongoing operations and support groups?
 - Does such a group exist?
 - What are its processes if any for accepting new solutions?
- Is there a back-out plan?
 - Transitions are always risky!

Transition to Operations

- Does the solution have a development, test and or pre-production environment?
 - Has it established processes and procedures for moving from these into production?
 - Does it have governing rules for making/applying changes to production?

Transition to Operations

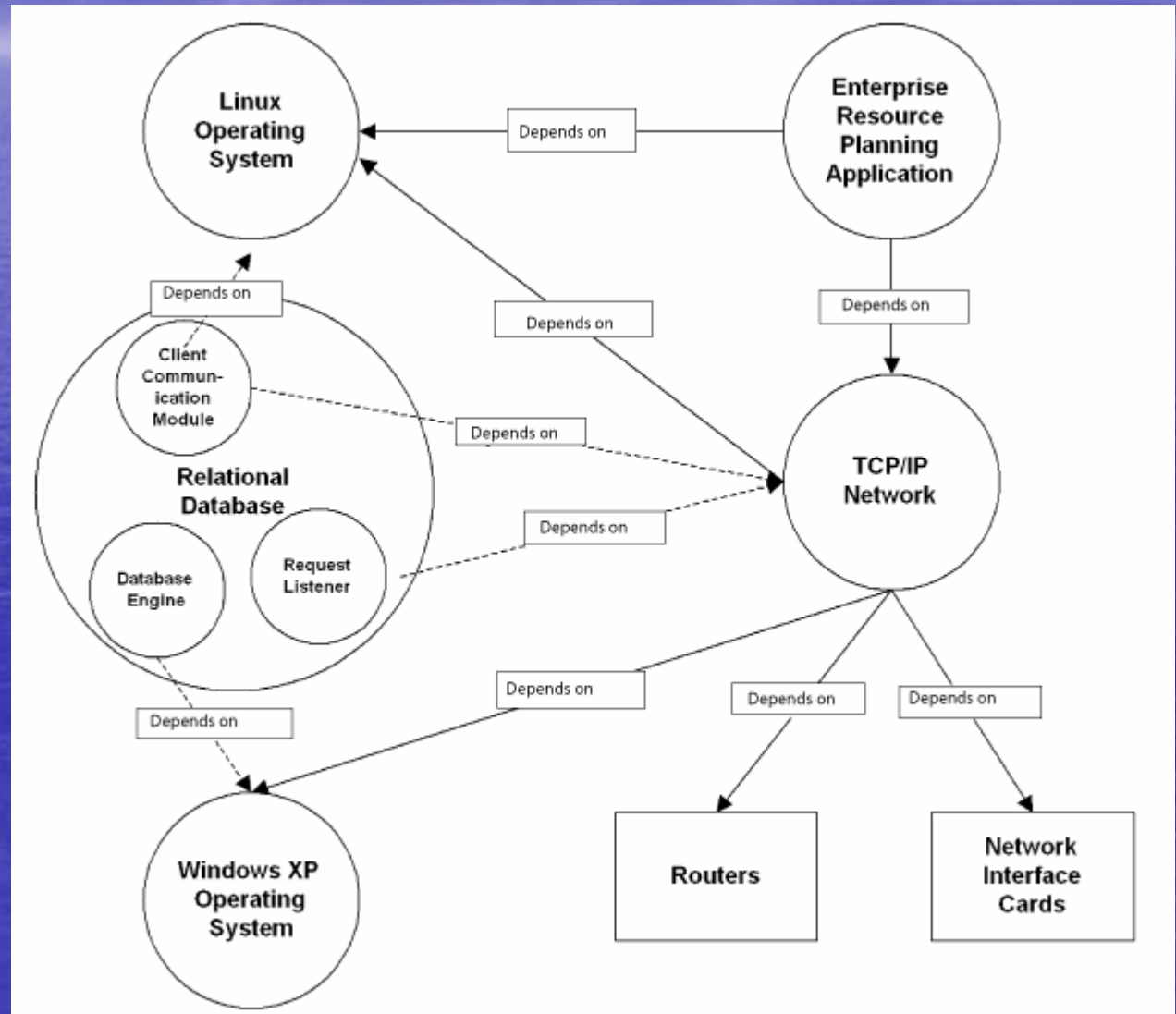
- Actualizing or fulfillment of requirements approach
 - Hardware and Software acquisition
 - Preparation of hosting location
 - Delivery and Installation of HW/Software
 - Establishing network connectivity
- Operations Staff and time to staff-up
- End User and Support Staff preparation
 - Training Materials
 - Communication Process

“Transition to Operations” means Ramp up to Requirements!

- **Hardware Requirements**
 - [Specify the computing platforms on which the system will run, and the expected usage of resources such as processor capacity, disk space, and memory. Describe the logical and physical characteristics of each interface between the software and hardware components of the system. This may include the supported device types, the nature of the data and control interactions between the software and the hardware, and communication protocols to be used. Include any constraints imposed on the system by the hardware environment. The detailed analysis and the implications of these environmental constraints may be included in the Software Architecture Document.]
- **Software Requirements**
 - [Specify the connections between this system and other specific software components (name and version), including databases, operating systems, middleware, tools, libraries, and integrated commercial components. Describe the services needed and the nature of communications. Include any constraints imposed on the system by the software environment. The detailed analysis and the implications of these environmental constraints may be included in the Software Architecture Document.]
- **Network Requirements**
 - [Specify the requirements associated with any communications functions required by this system, including e-mail, web browser, network server communications protocols, electronic forms, and so on. Specify the expected bandwidth requirements. Define any pertinent message formatting. Identify any communication standards that will be used, such as FTP or HTTP. Specify requirements for data transfer rates and message synchronization.]
- **Architectural Requirements**
 - [Specify the architectural requirements and constraints for the system, such as architecture design patterns, IT standards, and COTS applications. Requirements pertaining to the portability of the system to other environments and the reusability of system components should be captured here. Also consider maintainability requirements, specified in terms of complexity analysis metrics thresholds.]

What processes, procurement, site/facilities preparation need to be accomplished once a solution is chosen and designed?

“Transition to Operations” Accounts for Dependencies



Acceptance by Operations Manager

- Operations must be a key stakeholder in the project process
- Operations must be involved from the planning forward
- The project must seek operational requirements from the start as well
- Operations provides its own set of standards (Hopefully)

Project Deliverables

- Transition to Operations Plan
- * Organizational Change Management Plan
- Systems/Solution Deployment Plan
- Operations and Support Plan
- Training Requirements Plan

These are steps towards operational acceptance.

They should undergo changes depending on phase of the solution development.

They should have stakeholder approval.

* This had been discussed as a requirement under IT consolidation

Organizational Change Management Plan

- This focus of organizational change is on personal and professional productivity of the populations impacted by the changes being imposed by the project and its delivery of a product/solution.
 - This analysis starts by identification of the changes that the project will bring, not the specific technical solution itself that may not be fully understood until the design phase.

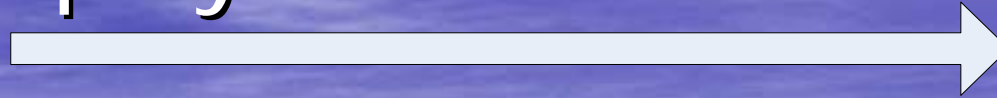
Organizational Change Management Plan

- Is the change a new version of software or a new application?
- Will the application be customized to the work patterns of the organizations or will the organizations need to establish new processes to accommodate a common platform?
- Will administrators need to learn new technology or adapt to larger populations being serviced?
- Is it anticipated that staff may be re-assigned to a central group? Will this reassignment mean the loss of expertise provided or assistance provided on a “by the way” or as a special interest of staff?
- Will a centralized entity have to become a different style organization to accommodate more staff and different focus or levels of service?

Moving through Solution Life Cycle

- As we move through the project from Plan to Define to Design to Build to Deploy:
 - We ask questions appropriate to the project phase.
 - We add or refine requirements
 - We might even reject requirements (but not delete them!)
 - We add depth to the requirements hierarchy
 - Trace-Ability becomes more crucial

From Plan to Define to Design to Build to Deploy:



- **BR1 -Business Requirement**
 - **USR1-User Requirements**
 - UCUSR! -Use cases
 - **SR1-System Requirements**
 - ❖ TCSR1-Test Cases
 - **DS1-Design Specifications**



Operational Requirements are included in the user and system requirements

System/Solution Deployment

- Deployment Scope – who, what, where?
- Range of operations – departments and locations
- Deployment Strategy
 - All at once or by location or function?
- What roadblocks or constraints exist for deployment?
 - Calendar, work loads, network, resistance, etc.
- Is there a back-out plan?

System/Solution Deployment

- Are there change control or maintenance windows that need to be factored in the schedule?
- What are the deployment dependencies?
 - Does a server need to be upgraded?
 - Do end user workstations need upgrading
 - Is there a network firewall change required?
 - Have the change control or maintenance windows for these dependences been factored into the schedule?
- Is there a training plan in place
 - end users and system administrators

System/Solution Deployment 2

- If multi-location
 - Has travel time and expense been factored in?
- Is there a generic location or function implementation plan?
- Do deployment plans need to be tailored to specific locations or functions?
- Are there special considerations such as needing a specific manager and her support staff deployed simultaneously?

Deployment Communications Plan

- Is there a communications plan for the project? Does it incorporate deployment communications?
- Is there some one outside of the project that needs to approve end user communication? What is the lead time?
- Communications could be bi-directional – letting users know of a change and getting information from them
- Ready, Set, Go?
 - If the users have to do something, simple step by step communications are in order
- Dates to be communicated?

Pilot Plan Considerations

- To test the known and discover the unknown!
(Not a proof of concept)
- Pilots are not to determine if a solution is ready for prime time – they should be done to confirm such readiness!
- Pilots should ask specific tasks of the participants!
 - Participants should be asked or their managers approve their participation if by function or location

Operations and Support Plan

- What are the staffing requirements?
- What processes and procedures need to be documented?
- What is the solution escalation process?
- What is the operational change management process?

Operations and Support Plan

- Is there an operational framework into which this solution will be introduced?
 - More on this to come!
- What are the operational requirements of the solution?
 - Have these been conveyed to “operations”?
- What are the Back-up and Restore requirements?
 - Do these include periodic testing of back-up and restore?

Performance Requirements with operational impact!

- **Availability Requirements**
 - [Document the required availability of the system, such as hours of operation and expected uptime requirements.]
- **Responsiveness Requirements**
 - [Document the required responsiveness of the system, such as online response times and report deadlines.]
- **Reliability Requirements**
 - [Document the required reliability of the system, such as mean time between failures.]
- **Capacity Requirements**
 - [Document the required capacity of the system, including CPU, memory, disk space, and network bandwidth.]
- **Scalability Requirements**
 - [Document the requirements for increasing the capacity of the system over time.]
- **Disaster Recovery & Business Continuity Requirements**
 - [Document the requirements for system behavior and operation in the event of a disaster.]
- **Availability Requirements**
 - [Document the required availability of the system, such as hours of operation and expected uptime requirements.]

Operations and Support Plan

- End user
 - Objectives
 - What are we promising our users?
 - Strategy
 - Are the objectives part of the solution or a local or departmental burden?
 - Development schedule
 - When will end user materials be ready?
 - Communications Plan
 - What will end user need to know (Other than training, but including training schedules)
 - Cost Estimates
- End user Support Manuals?
 - End user instructions
 - Help desk Q&A

Operations and Support Plan

- Operational Support –Help Desk and System Administrators
 - Objectives
 - Roles and responsibilities
 - Strategy
 - Central or local/departmental help desk?
 - Levels of help desk?
 - Does help desk have knowledge base of end user tips?
 - Is there back-up for staffing?
 - Development schedule
 - When will materials be required?
 - Communications Plan
 - What will Support staff need to know (Other than training, but including training schedules)
 - Cost Estimates
 - Training Materials
 - Additional tool sets
 - Staff hours
- Operational Support Manuals?
 - Are the vendor supplied manuals sufficient
 - Are specific agency required processes documented?

Operations and Support Plan

- Technical Support and Maintenance
 - Objectives
 - How do we keep system operational?
 - How do we deal with updates/patches?
 - Strategy
 - How do we test patches and updates?
 - Is there a knowledgebase available from the vendor?
 - Development schedule
 - Communications Plan
 - Are there established change control/maintenance windows and are they published for users?
 - Cost Estimates
 - Costs of maintenance/patch releases from vendors
 - Costs of support calls to vendors?
- SLA and Vendor Maintenance agreements
- Technical Support and Maintenance Manuals?

Training PLAN

- Basic training resource and timing requirements and performance objectives to be achieved.
- Training encompasses varied audiences
 - End Users
 - Installers and Operational Support
 - Help Desk staff

Phased Approach to Training Planning

- Training Requirements are established in the Define Phase as we define the solution requirements:
 - Description of model or functional requirements
 - Use cases capturing user scenarios and system behaviors
 - Descriptions of user interfaces

Phased Approach to Training Planning

- Training Plan and Curriculum are defined in the design phase
 - The training plan and curriculum are the design of the training required to get users ready for the system requirements.
 - This is necessary to frame the training, but not yet to provide the “key strokes” or solution specific set of instructions.

Phased Approach to Training Planning

- Training materials are developed during the build phase
 - The specific materials and “keystroke” or process steps are built and the training instructions can be specified.

Phased Approach to Training Planning

- User Acceptance Testing
 - Training materials should be used as part of the user acceptance testing for the solution
 - User acceptance testing should be part of the requirements for the development of the solution!
- Pilot use of training materials
 - Training materials development should include allowing for changes based on responses during the pilot process. (If appropriate effort has gone into the materials based on training requirements, pilot based changes should not be extensive!)

Training Audience

- Expected user Audience
- Expected Support Staff Audience
- Training Locations
- Estimated student load

Training Scope

- Scope of Changes in Business Process
- Training Time Span
- Training Levels- who needs to know what
- Constraints

Training Performance Objectives

- High Level User Performance Objectives
 - Reference changes in business practices and operating characteristics of the new system/solution
 - New tasks that may need to be performed
 - Additional Skills or knowledge required
 - More detail will be added as the solution gets developed.

Training Performance Objectives

- High Level Operations Support Staff Performance Objectives
 - Reference changes in characteristics of the new system/solution – new software, new OS or hardware, new availability requirements etc
 - New tasks that may need to be performed
 - i.e. new data recovery requirements
 - Additional Skills or knowledge required
 - More detail will be added as the solution gets developed.

Transition to Operations – Summary Points

- Anticipate, Anticipate, Anticipate.
- Team participation in walk through Transition to operations!
- Who or what are we forgetting?
- Who needs to know what?
- What needs to be written in documents?

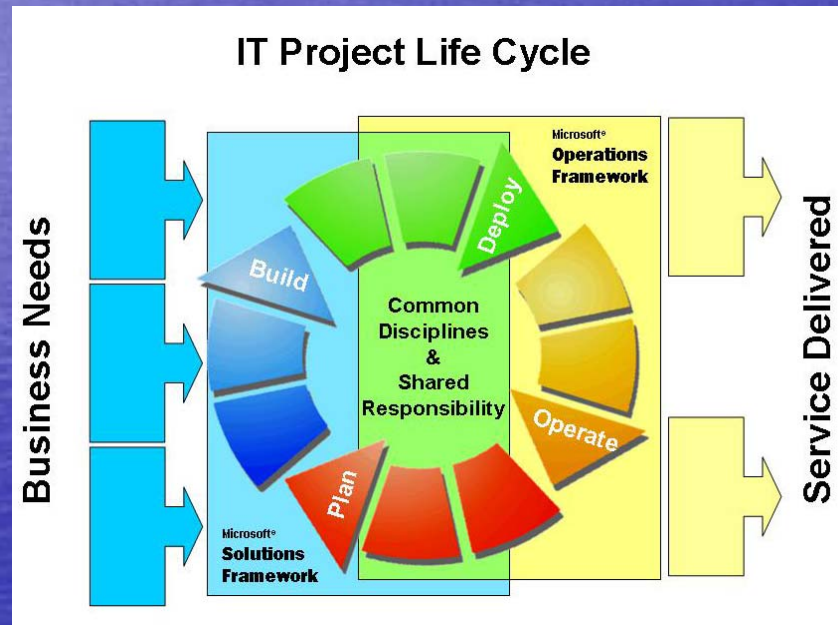
Time for a break



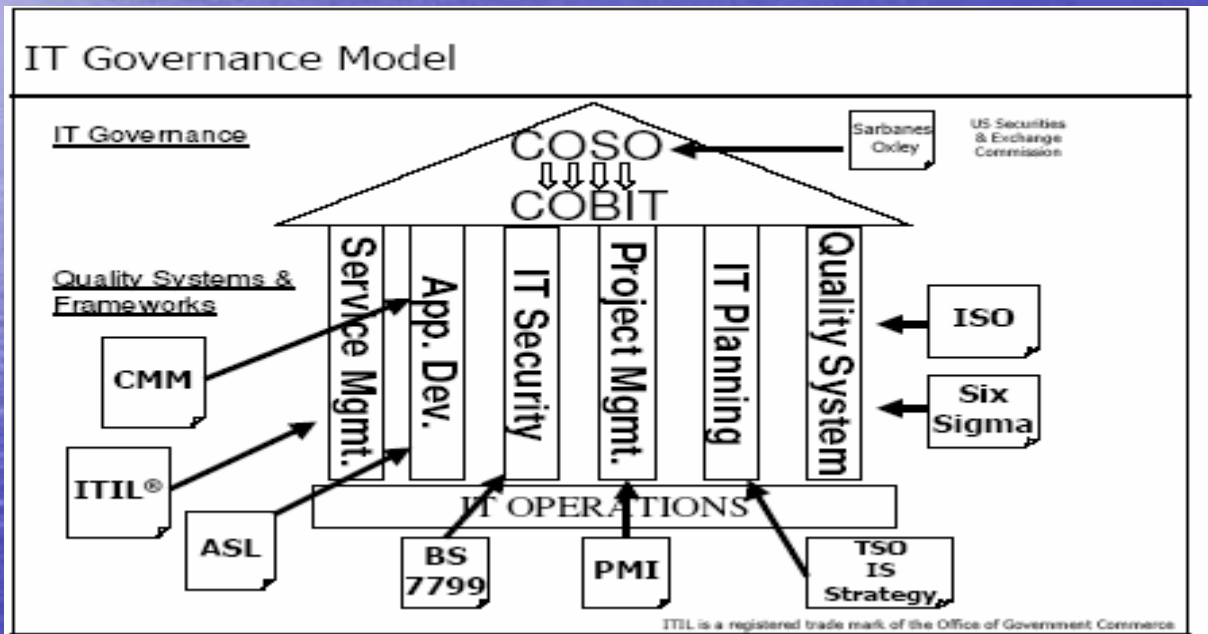
Operations Best Practices

IT Industry trends

Projects and Operations



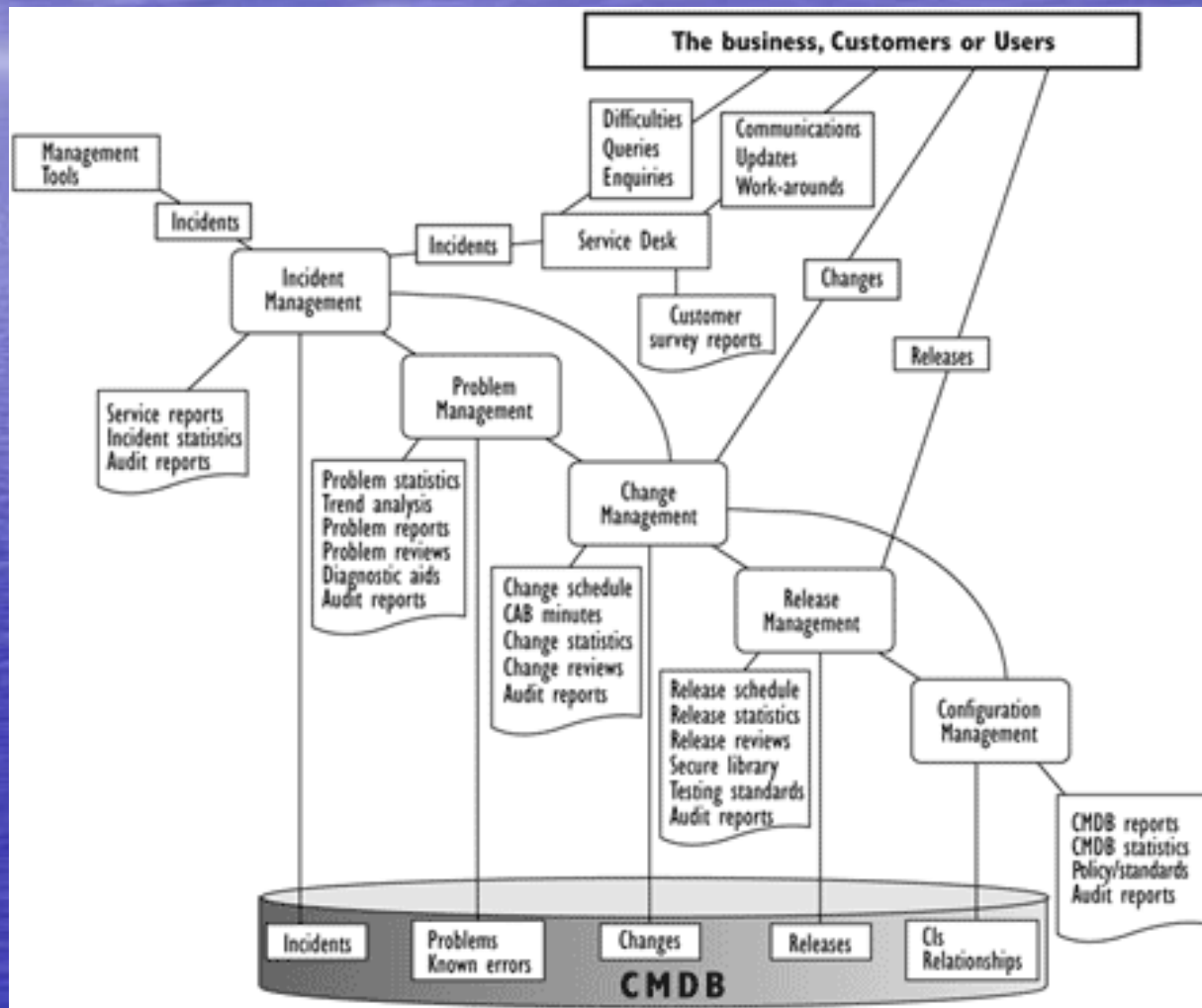
IT Industry Standards



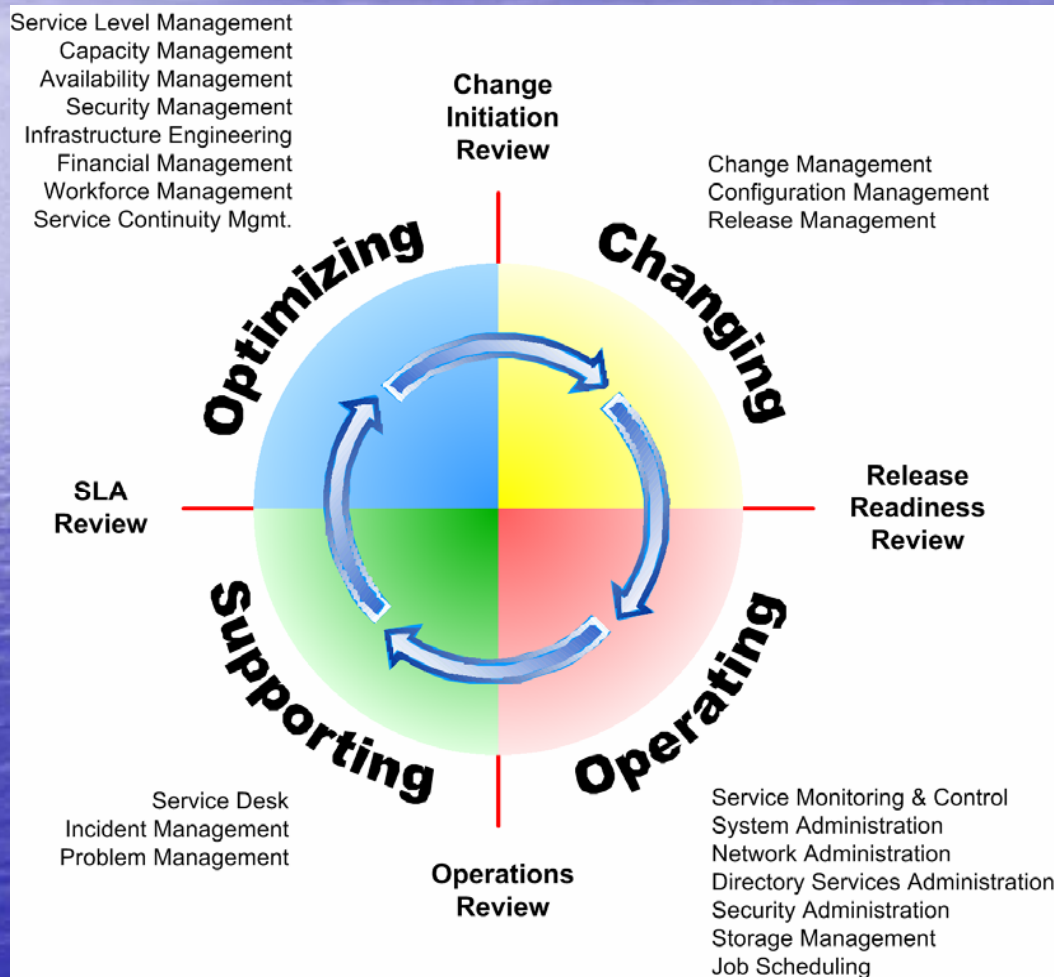
ITIL "Information Technology Infrastructure Library" Areas

- Service Support
 - Incident Management
 - Problem Management
 - Configuration Management
 - Change Management
 - Release Management
 - Service Desk
- Service Delivery
 - Service Level Management
 - Availability Management
 - Capacity Management
 - Financial Management
 - IT Service Continuity Management

ITIL Process Approach



Projects as Release Management or packaged Change Management!



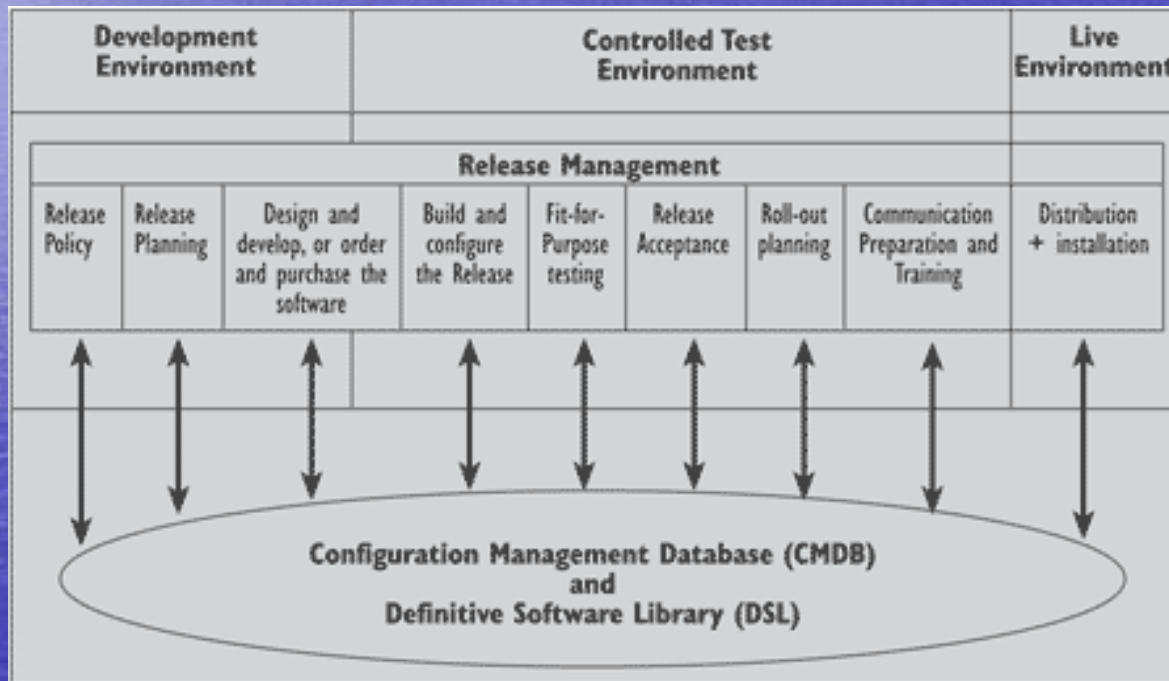
Projects add to or modify established configurations!

Microsoft
Operational
Framework

Release Management:

- Best practices for the release of hardware and software. These practices ensure that only tested and correct versions of authorized software and hardware are provided to IT customers.
 - **Project Management Solutions ready for Deployment**
 - **Vendor releases and processing within current Versions?**
 - Bios upgrades
 - System, and software patches
 - Security releases
 - Recommended configuration changes provided by vendor
 - **Vendor Major releases?**

ITIL Release Management



Configuration Management

- Best practices for controlling production configurations (for example, standardization, status monitoring, asset identification). By identifying, controlling, maintaining and verifying the items that make up an organization's IT infrastructure, these practices ensure that there is a logical model of the infrastructure.
 - ITIL calls for Configuration Items to be catalogued in database
 - documented elements such as equipment and key component parts, software packages, manuals, standard configurations etc.
 - Concept here is database approach vs. spreadsheet
 - Asset management principles would apply – in service dates, maintenance dates, etc.

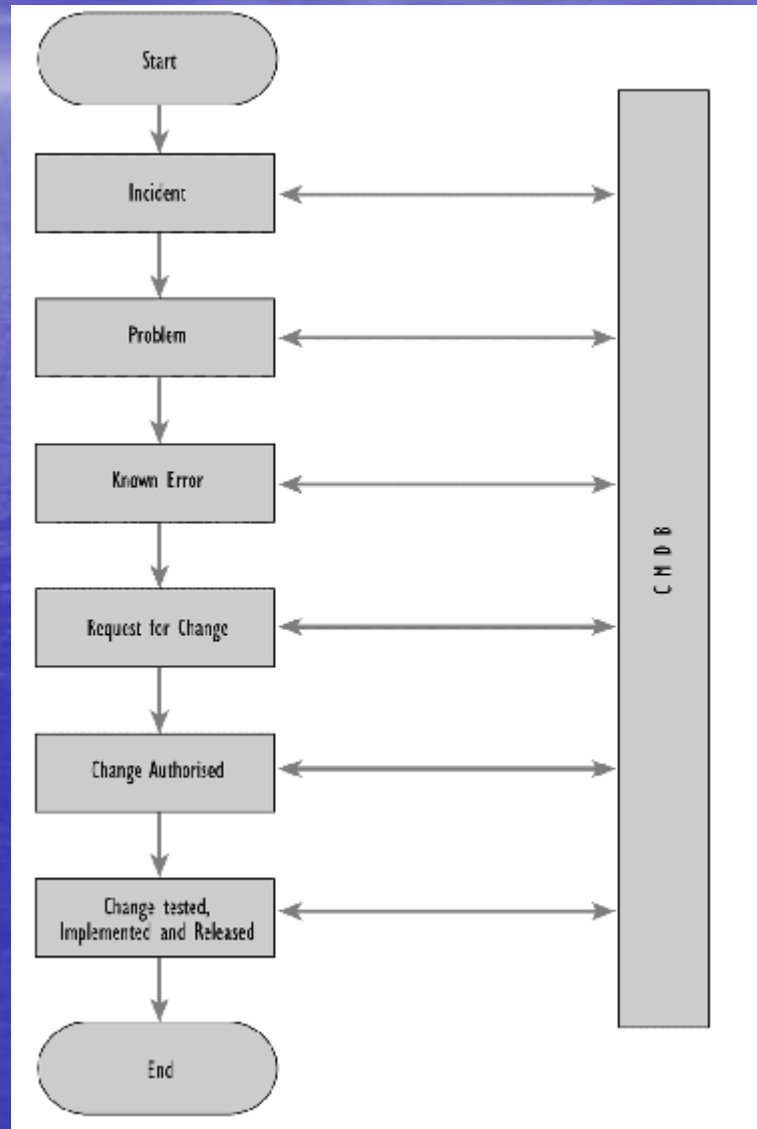
Configuration Management DB

- Hardware
 - Critical Components
- Network components
 - Systems supported by
- Software, including OS
- Business systems – custom built applications
- Commercial Off the Shelf packages
- Physical Databases
- Feeds between databases and applications
- Licensees
- System and interface specifications
- Change documents
- SLA, maintenance agreements.
- Warranty dates
- Vendor/supplier

Sample CMDB

General	Contacts	IP	Disaster Recovery/Reboot/Install	Billing	License		
General		Warranty		Location		Resources	
Physical Host	WS2	Manufacturer	COMPAQ	Row	26	Ram	512
Group:	Windows	Product Number	PROLIANT DL360	Rack Location	RACK 3	MHz	933
Product Type:	Server	Purchase Date	2/6/2001	Building	Simms	# Processors	1
Primary Function	W2K TEST IIS 5.0 SERVE	Installed Date	1/1/2001	Room	Data Center		
OS	W2K	Warranty Exp	2/6/2004				
status:	Test	Support Agreement	3 YEARS				
Network Name	Workgroup	Serial Number	6J0BFXS1N0HS				
Comments							
VirtualServer							
General	Contacts	Disaster Recovery	Reboot	Install			
Virtual Server	Group:	OS	Product Type:	status:	Comments	Primary Function	Network Name

CMDB and Other Processes

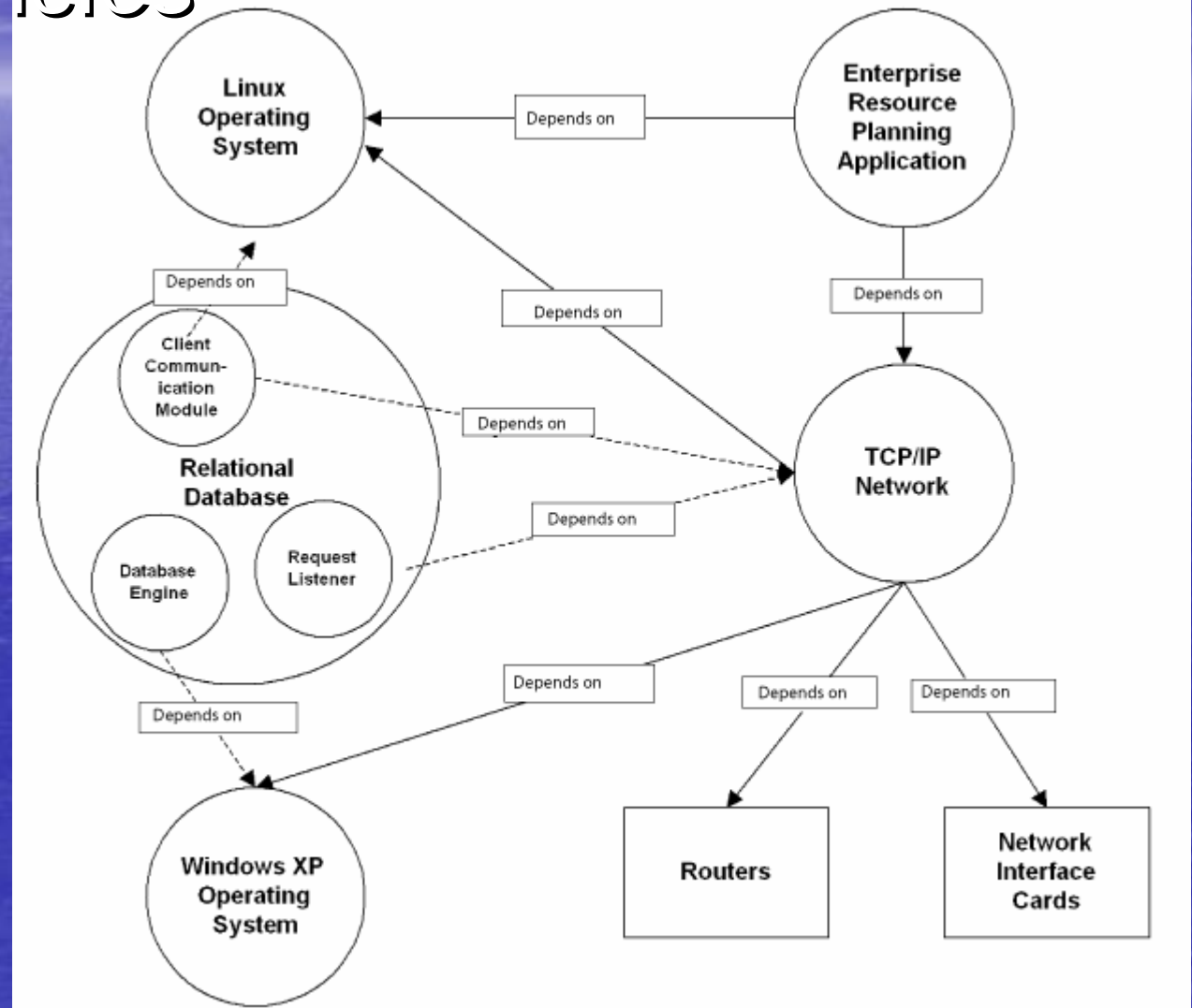


Change Management

- Best practices for standardizing and authorizing the controlled implementation of IT changes. These practices ensure that changes are implemented with minimum adverse impact on IT services, and that they are traceable.
 - Sources for change requests?
 - Authorization process for technical design
 - Authorization process for implementation schedule?
 - Customer authorization, approval, notification process?
 - Process for Enterprise Change?
 - Established Change Control/Maintenance Window?
 - Test and or pre-production environment?
 - Change Control and Change Implementation rules?
 - What is allowance for emergency changes?
- Changes should be documented!
- Changes should be written into Configuration Management DB

Change Management Looks for Dependencies

Examine the risks involved, and what is being done to mitigate them !



Change Management Criteria

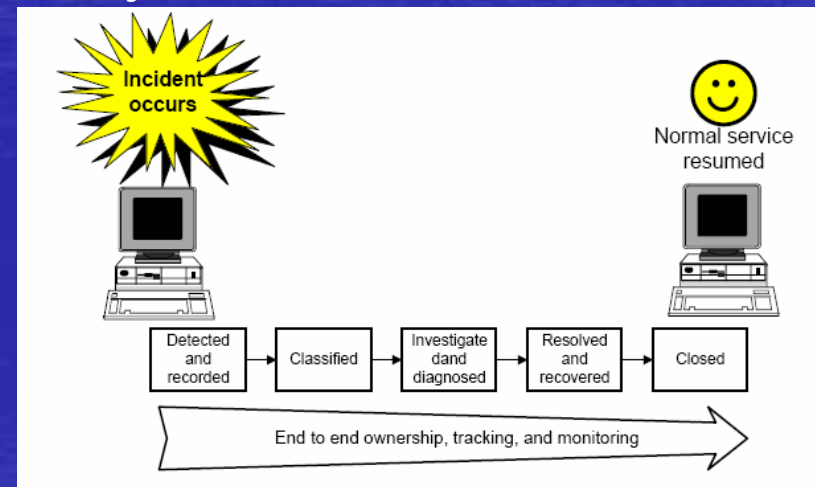
Element	“Go” Indicators	“No-Go” Indicators
Change	<ul style="list-style-type: none"> • Change is business-critical. • Change is a legal requirement. • Change will enable improved service. • Change is suitably timed. 	<ul style="list-style-type: none"> • Change is not in line with strategy. • No business case. • Cost/benefits not adequately prepared. • Change is not suitably timed.
Infrastructure environment	<ul style="list-style-type: none"> • Change aligns with established standards and policies. • Change aligns with current infrastructure strategy. • Staff members are skilled in the solution technology. 	<ul style="list-style-type: none"> • Established standards and policies not considered. • Software suggested for the solution is unsupported (too new, too old) in the current environment. • No support-staff training plan.
CMDB	<ul style="list-style-type: none"> • Impact analysis indicates manageable change deployment. • Critical services affected are managed for risk. 	<p>Inadequate impact analysis. Change will affect too many critical systems.</p>

Other Considerations

- The impact that the change will have upon the business operation.
- The effect upon the infrastructure and customer service, as defined in the service level agreement (SLA), and upon capacity and performance, reliability and resilience, resources, contingency plans, and security.
- The standards and policies in place for the affected infrastructure.
- The business need and cost justification of the change.
- Any budgetary signoff requirements.
- The impact on other services that run on the same infrastructure (or on software development projects).
- The impact on non-IT infrastructures within the organization—for example, security, office services, transport, and help desks that serve business customers.
- The consequences of not implementing the change.
- The IT business resources and other resources required to implement the change, including the likely costs, the number and availability of people required, the elapsed time, and any new infrastructure components required.
- Additional ongoing resources required if the change is implemented.

Incident Management

- Best practices for resolving incidents (any event that causes an interruption to, or a reduction in, the quality of an IT service) and quickly restoring IT services. These practices ensure that normal service is restored as quickly as possible after an incident occurs.
 - Service desk call from customers – how handled?
 - System, network management tool alerts?
 - Service Provider notifications?
 - Incident Tracking, lessons learned, trend analysis
 - Escalation Process?
 - Customer Notification?



Incident Tracking

Calls by Category – month by month

Volumes include GMOL & OL2K-
E agreements

20

	A	M	J	J	A	S	O	N	D	J
iNotes	14	16	20	13	12	7	8	10	3	19
LN Add/Delete Icon	257	271	193	152	227	241	208	168	114	111
LN Address Book	271	340	162	149	142	174	191	121	96	93
LN Archive	618	560	543	376	408	430	534	378	278	408
LN Calendar	103	111	117	58	59	87	70	58	61	97
LN Configuration	1218	1049	1087	804	990	826	896	817	944	673
LN Connection Doc	229	231	216	198	204	201	189	146	106	125
LN Connectivity	381	184	172	148	484	408	435	294	281	98
LN Create/Delete Messages	50	48	42	33	51	41	48	21	21	26
LN DB AST	30	51	51	33	37	87	76	37	37	75
LN DB DAD		5	1	3		5	2	5	1	1
LN DB GM White Pages	6	9	8	3	6	6	4	6	3	1
LN DB Other	82	86	84	48	77	103	99	63	50	79
LN DB PRTS	10	15	13	22	26	15	11	16	11	16
LN ID file	233	216	259	229	217	234	259	162	136	162
LN Location Document	96	77	48	59	68	74	78	60	51	52
LN Mail Message Restore	20	30	28	15	33	30	32	24	26	17
LN Mailbox Maintenance	157	223	206	161	175	201	195	176	95	126
LN Mailbox Question	717	633	586	359	543	533	638	490	313	610
LN Mailbox Restore	108	91	84	68	102	103	99	81	60	39
LN Mailfile Design Replaced	140	140	127	73	91	88	97	93	42	79
LN Notes.ini	46	22	31	29	26	33	29	23	18	36


Incidents provide feedback!

- Proper tracking of incidents or end user calls:
 - Can point to patterns. Singular incidents can have any number of non-recurring causes.
 - Can add to help-desk knowledge base
 - Can point to training needs

Problem Management

- Best practices for identifying the underlying cause(s) of IT incidents in order to prevent future recurrences. These practices seek to proactively prevent incidents and problems.
 - Escalation from incident management
 - Crisis management team formation
 - Escalation Call list?
 - Involvement of equipment, software, service vendors?
 - Customer notification/involvement?

Escalation from help desk call

Address  <http://irdb.opr.eds.com/bresults.asp?IU=&IS=&RL=&TP=&SV=&PD=17&ST=&DM=&DD=&DY=&btn=Search>

Issues/Recommendations Database

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[**040826AA - How the current aggregation issue \[relative to GMOther address book\] impacts Global Mobile Directory \(and subsequently locally-replicated Global Mobile Directory\).**](#)

-----Original Message----- From: Boarman, Denise B Sent: Thursday, August 26, 2004 1:21 PM
To: Kiernicki, Denise A; Robinson, Robert G Cc: Messina, Michael J; Lasko, Debra; GM Notes Server Ops; Hanoudi, Ron Subject: RE: GM Other /replication re-enabled after aggregation Can we get someone on the Ops side to ...

Status: Lotus Notes Engineering - In Development
Created By: Denise Kiernicki (denise.kiernicki@eds.com) on 8/26/2004 at 4:39:03 PM (0 Responses)

[**040816AA - Both AUMELMA01 & AUMELMA02 failed to see the D:\ drive after maintenance - If possible we need to know what can cause this and how to correct the situation. A similar IR was open 04/05/04, 040405AA, but was closed.**](#)

Both AUMELMA01 and AUMELMA02 could not see the EMC drive (D:) after the Servers Notes Maintenance ran. Rebooting the server corrected the problem, but that this happened at all is a concern. Austrailia would like to know what could have caused this. This is not occurring on AUMELMA03. A similar IR was open 04/05/04, 0...

Status: Lotus Notes Engineering - Requires Assignment
Created By: Dennis Barill (dennis.barill@eds.com) on 8/16/2004 at 2:23:49 PM (0 Responses)

Escalation to Vendor Support

36573 999 616	OPEN	3	Roger <u>Scutt</u>	Router- <u>mail box</u> : dbase properties not being inherited	08/13/04	08/16/04	6
<p>Issue: Property changes to <u>mail box</u> template are not honored when server automatically recreates a <u>mail box</u>.</p> <p>Current Status: 8/13 – Support duplicated the issue and escalated for review. Customer <u>Questions</u>: Why when Domino recreate the <u>Mail box</u> when restarted, the <u>Mailbox.nsf</u> does not inherit the properties setting as per set upon. How can the <u>mailbox.ntf</u> be modified so that the properties can be inherited from the template? 8/15 – Support escalated questions to Level 3</p> <p>Next Action: Update from support</p>							
62439 999 000	OPEN	1	Tim Harris	Database Corruption in MIS Application	08/11/04	08/19/04	8
<p>Issue: Db Corruption</p> <p>Current Status: IBM reviewed data and provided recommendations to customer. The detailed status and action items are being tracked in separate meetings lead by Mark Mick, Scott Dawson, and Paul Steepe of EDS.</p> <p>Next Action:</p>							

Service Level Management

- Best practices for ensuring that agreements between IT and IT customers are specified and fulfilled. These practices ensure that IT services are maintained and improved through a cycle of agreeing, monitoring, reporting, and reviewing IT services.
 - Agency Customer – SLA
 - System – SLA
 - Standardized and published Maintenance Windows
 - Vendor service and equipment SLA

Availability Management

- Best practices for maintaining the availability of IT services guaranteed to a customer (for example, optimizing maintenance and design measures to minimize the number of incidents). These practices ensure that an IT infrastructure is reliable, resilient, and recoverable.
 - Capacity Management
 - Security Management
 - System Risk Management
 - Power availability and management
 - Business continuity
 - Disaster Recovery Plans
 - Equipment – back-up, hot swappable items, on-site storage or X hours to deliver?

Financial Management

- Best practices for understanding and managing the cost of providing IT services (for example, budgeting, IT accounting, charging). These practices ensure that IT services are provided efficiently, economically, and cost-effectively.
 - Provisions within costing structure for system upgrades; for system/equipment/software refresh cycles?
 - Even if not in contractual agreements with customer agencies are there any SLA provision for equipment, software, circuit upgrades that might be required to meet the SLA?

Microsoft Operational Framework

Quadrant Links



[The MOF Optimizing Quadrant](#)

Very capable organizations may have solved their day-to-day operations headaches, and now strive to better align their IT services with their business processes. For them, optimization practices found in MOF help guide more effective service-level management, capacity planning, and other longer-range planning efforts. Practices outlined in the associated Change Initiation Review help organizations put recommendations into actionable tasks or projects, and facilitate coordination with development teams using the Microsoft Solutions Framework.



[The MOF Changing Quadrant](#)

MOF was developed in direct response to a universal business need: managing your IT services to the same high level of quality you expect from the rest of your business processes. Through MOF, you can improve your IT service management processes at all stages of their lifecycles. MOF integrates with the Microsoft Solutions Framework (MSF), IT Infrastructure Library (ITIL), COBIT, Six Sigma, and other leading frameworks and methodologies.



[The MOF Supporting Quadrant](#)

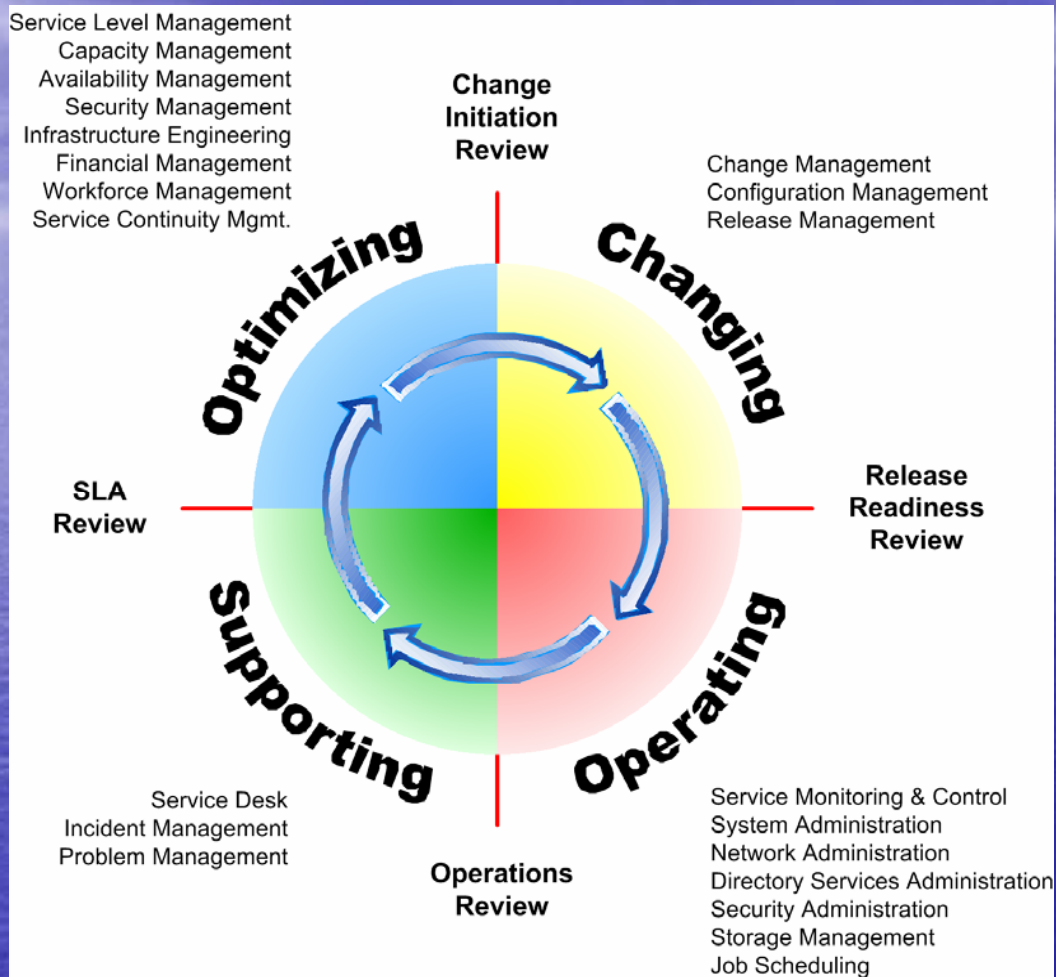
For most organizations, support is the nexus of operations—this is where IT interacts with the business, opportunities for improvement and change are identified, and deficiencies in meeting demand arise. The MOF Supporting Quadrant describes processes and practices required to fully support the efficient usage of an IT infrastructure. Team roles defined in this quadrant focus on solving customer issues and identifying, analyzing, and resolving broader IT problems.



[The MOF Operating Quadrant](#)

Improving operational efficiency can greatly enhance the value of IT to the business. Becoming more efficient frees IT resources to go beyond the most basic tasks of infrastructure maintenance. It frees resources to expand services and align with the business, and it makes the infrastructure more robust—able to meet demands for availability and security. Regular operations reviews promote continuous improvement in operations processes.

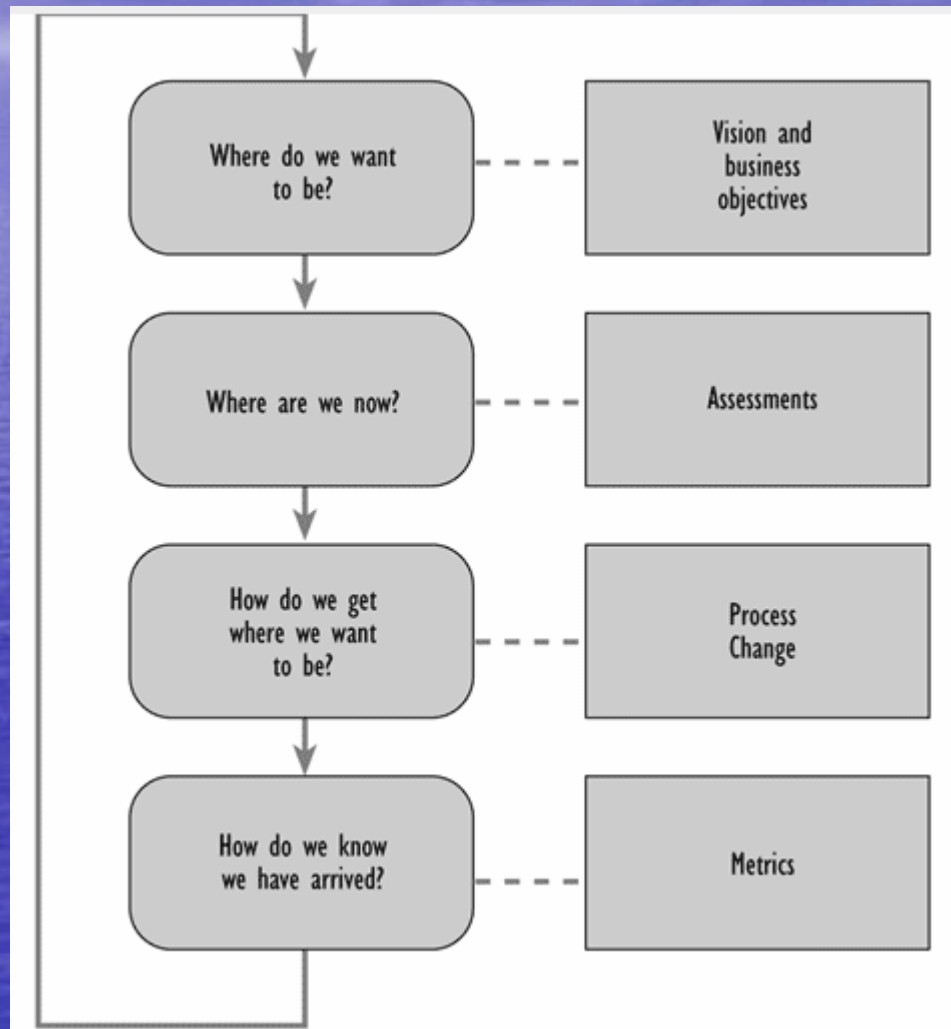
Microsoft Operational Framework



Steps Towards Best Practices

IT Operations Maturity

ITIL Process Improvement



Capability Maturity

- CMM describes five evolutionary stages (levels) in which an organization manages its processes through maturity.
 - 1 Initial __Processes are ad-hoc, chaotic, or actually few processes are defined
 - 2. Repeatable __Basic processes are established and there is a level of discipline to stick to these processes
 - 3 Defined __All processes are defined, documented, standardized and integrated into each other
 - 4 Managed_-Processes are measured by collecting detailed data on the processes and their quality
 - 5 Optimizing_-_Continuous process improvement is adopted and in place by quantitative feedback and from piloting new ideas and technologies

Pink Elephant's Approach

<http://www.pinkelephant.com/en-US/>

Level	Maturity	Description
0	Absence	"there is absolutely no evidence of any activities supporting the process"
1	Initiation	There are ad-hoc activities present, but we are unaware of how they relate to each other within a single process
2	Awareness	Aware of the processes but there is no over all measuring or control
3	Control	The process is well defined, understood and implemented
4	Integration	Tied into other well controlled processes
5	Optimization	Process drives quality improvements in other areas

Self Evaluation- Scale 0 - 5

Area	Assessment
Service-help Desk	
Configuration management	
Incident management	
Problem Management	
Change Management	
Release Management	
Service Level Management	
Availability Management	
Capacity Management	
Service Continuity Management	
Training Management	

Easy Improvements

Area	What can be easily improved?
Service-help Desk	
Configuration management	
Incident management	
Problem Management	
Change Management	
Release Management	
Service Level Management	
Availability Management	
Capacity Management	
Service Continuity Management	
Training Management	

"Quick Wins" by area

- Change Management
 - Establish a standard request for change form
- Release Management
 - Establish an Operations Acceptance Test/form
- Configuration Management
 - Pull together a note book of systems and their configurations. File change management forms in the notebook.
- Incident Management
 - Establish notebook of incidents
 - Establish incident types based on application
- Problem Management
 - Establish simple process of finding root causes and document them
 - Draw a dependency diagram similar to the one used in this presentation for each application

Help Desk Considerations

- Are there lists of known errors and solutions?
- Are there means of turning incident calls into end user training tips?
- Is there an established classification system for calls?
- Is there a follow-up request for customer feedback after the call?
- Are system outages or slow downs reported to the help desk?
- Does the help desk have a way of knowing about outages or slow downs?
- Are incidents recorded and classified?
- Are there metrics established, # calls, Time spent?
- Is there an established escalation process?
- Do help desk staff have access to product/application manuals?
- Is there a vendor or agency knowledge base on line?
- Is there any cross training between administrators, trainers and help desk staff?
- Is there a standard process established for handling calls?

Configuration Management

- Is there a single Agency repository for IT inventory?
- Is this repository on line or on paper?
- Is there an assigned person(s) responsible for its upkeep?
- Are software licenses recorded?
- How does the agency handle software patches?
- Are serial numbers and vendor Phone # kept on-line
- Is warranty data kept on line?
- Are key application contacts kept on-line?
- Is there a standard server configuration?

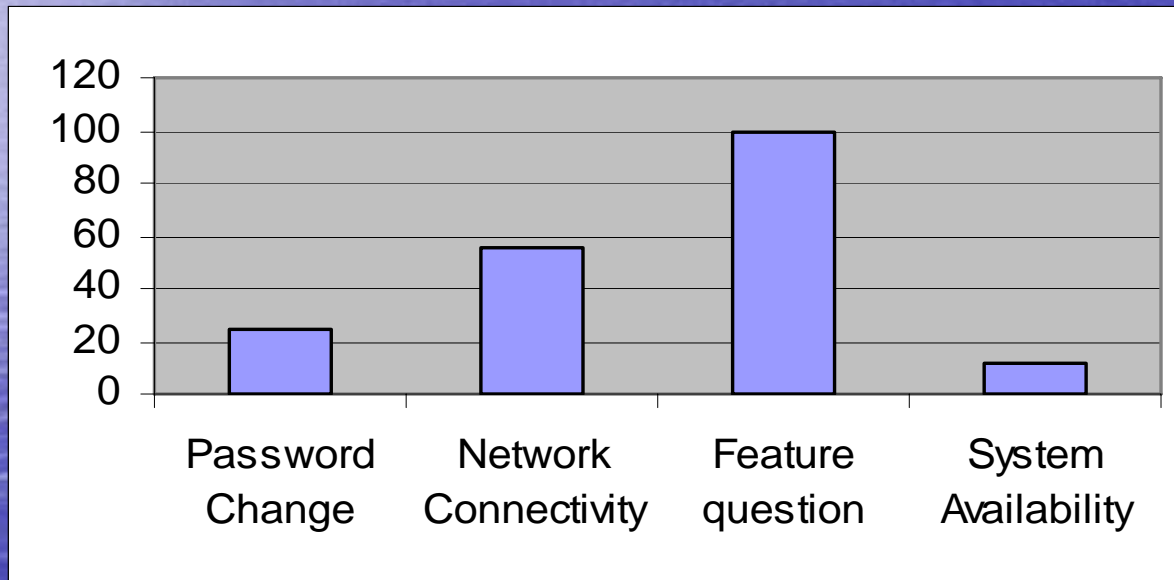
Incident Management

- Does the application/agency have a method of recording incidents, whether reported by end user or system administrator?
- Does the application/agency have a classification list of incident types?
- How are user requests for new features handled by application/agency?
- Is resolution recorded per incident?
- Are incidents tabulated by classification and periodically reviewed?
- Are incidents tied back to Configuration Items in a CMDB?
- Are incident takers familiar with application or agency offerings?
- Do incident takers have reference material, knowledgebase etc. available to provide quick resolution if possible?
- Are all incidents recorded? (trend analysis, training tips?)
- Are incident response metrics kept and reviewed periodically?
- Are there diagnostic scripts available to incident takers?
- Are there set patterns for how incident takers are to work with callers?
- Is there a set escalation process?

Problem Management

- Is there a communication channel established to receive problem notices from vendors?
- Is there an on-call list for escalation as required?
- What is the escalation process from Incident Management?
- Are the power users known – key source of constructive data?
- Are the key sensitive users known and identified – i.e. executive secretaries?
- Are log files periodically examined for clues or suspicious items?
- Are incident records periodically reviewed for trends?
- Is there a problem recording process?
- Can problem records be searched?
- Is there a Pareto Analysis process established?
- What is the vendor escalation process?
- Is there a technical knowledgebase available from vendor?

Pareto Analysis



Change Management

- Does application have a test/preproduction environment for testing changes?
- Is there a formal change review and approval process?
- Is there an application/agency Request for Change Form?
- Are written change records required and kept for applications/Servers, etc?
- Are change steps documented and reviewed before being implemented or are changes done on the fly?
- Is there a process for watching over system to check for negative impacts, or are they made as the implementer leaves for a camping trip and being unavailable by phone?
- Is there a notification process to users impacted by change?
- Is there a set and publicized change/maintenance window?
- Is there a formal change review board?
- Is there an emergency change approval process?
- How many emergency changes are made on a weekly-monthly basis?
- Is there a patch application process?

Suggested Change Request Fields

Information Requested	Response
Change Initiator	
Change Owner	
Description of Change	
Priority (Emergency, High, Medium, Low)	
Category (Major, Significant, Minor, Standard)	
Problem or Incident identification underlying change	
Description and identity of items to be changed	
Reason for Change	
Implications of not making change	
Location of Change	
Change Window Required	
Proposed date/time frame for change	
Impact to users during change	
Back out Plan including triggers and decision maker contacts	
Risk involved in making the change	

Release Management – in addition to “Transition to Operations”

- Is there a formal process for bringing new applications into the agency?
- Is there a set process for bringing new servers or network equipment on-line?
- How are Operating System security patches dealt with?
- Are all workstations and servers kept at the same OS and driver levels?
- Is testing required before application patches are applied?

Service Level Management

- Are all the Service Level Agreements for the agency and its vendors centrally kept?
- Are formal records kept by SLA of the vendor's performance?
- Is there a periodic review of SLA performance?
- Are all licenses recorded
- Are all licenses up-to-date?
- Is there a central list of all vendors with support phone numbers and key contacts?

Availability and Capacity Management

- Are there application and system monitoring tools available for support staff?
- Are these tools available for remote use by support staff?
- Are built in system tools reviewed by support staff?
- Are there periodic reviews with management?
- Are there established thresholds within the agency for acceptance system performance?

Service Continuity Management

- Are there Federal or other mandates for business continuity or disaster recovery thresholds?
- What are the SLA agreements for hardware part replacements?
- Are there funds to pay for..
- Diagram the paths and pieces from where ever users will be to the applications! Servers and Storage are not the only pieces.
- By the way – when was the last time back-up and restore facilities have been tested?

Training Management

- See the training slides in the “Transition to Operations” section.

IT Service CMM Questionnaire

www.itservicecmm.org/

- Are the IT service needs of the customer identified?
- Are service commitments documented?
- Are service delivery activities to be performed identified and planned according to a documented procedure?
- Are the risks associated with cost, resource, schedule and technical aspects of the service identified, assessed and documented?

IT Service CMM Questionnaire

www.itservicecmm.org/

- Is a documented service delivery plan used for tracking the service delivery activities and communicating status?
- Are actual service levels tracked against the specified service levels and are corrective actions take as necessary?

IT Service CMM Questionnaire

www.itservicecmm.org/

- Configuration management – Documented inventory of HW/SW and current configuration settings with history of previous settings
- Is there a configuration management plan in place
 - Application
 - Organization
- Is there a documented plan used as the basis for performing configuration changes and recording them?
- Is there an organization wide configuration library in place?
- Are action items for all configuration items initiated, recorded, reviewed, approved and tracked according to a document change control process?

IT Service CMM Questionnaire

www.itservicecmm.org/

- Event or Incident Management
- Is there an event/incident management plan for:
 - Application by application?
 - Organization wide?
- Are events/incidents identified, recorded, analyzed, reviewed and resolved according to a documented procedure?

A Brief Exercise

Pick one of the operational areas – fill in the blanks

Problem Statement	
Root Causes	
Recommendations	
Benefits	

Exercise – Part 2

Identify the steps toward solution!

Plan: Actions to Implement*	Owners	

Now Translate the problem recommendation into a Requirement

Description	<Enter concise description of requirement>							
Rationale	<Provide a brief rationale, and or business value for the requirement>							
Source	<Name of Requirement. Provider>				Source Document		<Idenams>	
Acceptance/Fit Criteria	<Provide a target that makes it possible to test if requirement was satisfied>							
Dependencies								

Purposes of this workshop

- "Transition to Operations"
 - Should be part of the project deliverables
- "Operations Best Practices"
 - Most IT organizations should initiate projects to analyze current practices and work towards IT industry best practices for operations

Transition to Operations Workshop

- To provide the detail:
 - Provide a framework for thinking about the transition to operations
 - Define elements that should be part of the transition to operations for the project solution
 - Provide sample templates for these elements

Operations Best Practices Workshop

- To introduce trends in the IT industry towards institutional IT best practices
- To provide information about organizations and resources available
- To provide resources for agencies to envision and initiate process improvement projects