The ITIL Foundation Exam Study Guide 3rd Edition

Questions? Comments? Feedback? Email scott@ITIL-Study-Guide.com

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What is ITIL?

ITIL is a set of best practices for IT service management that has been evolving since 1989. It began as a set of processes for use by the UK government to improve IT service management and is gaining worldwide acceptance throughout the IT industry as the basis for successful IT service management.

At the core of the library are two volumes on the service management discipline : Service Support and Service Delivery, which were rewritten in 2000-2001. Security is covered in the Security Management volume written in 1999. These publications are offered by by the UK's Office of Government Commerce - website www.ogc.gov.uk/

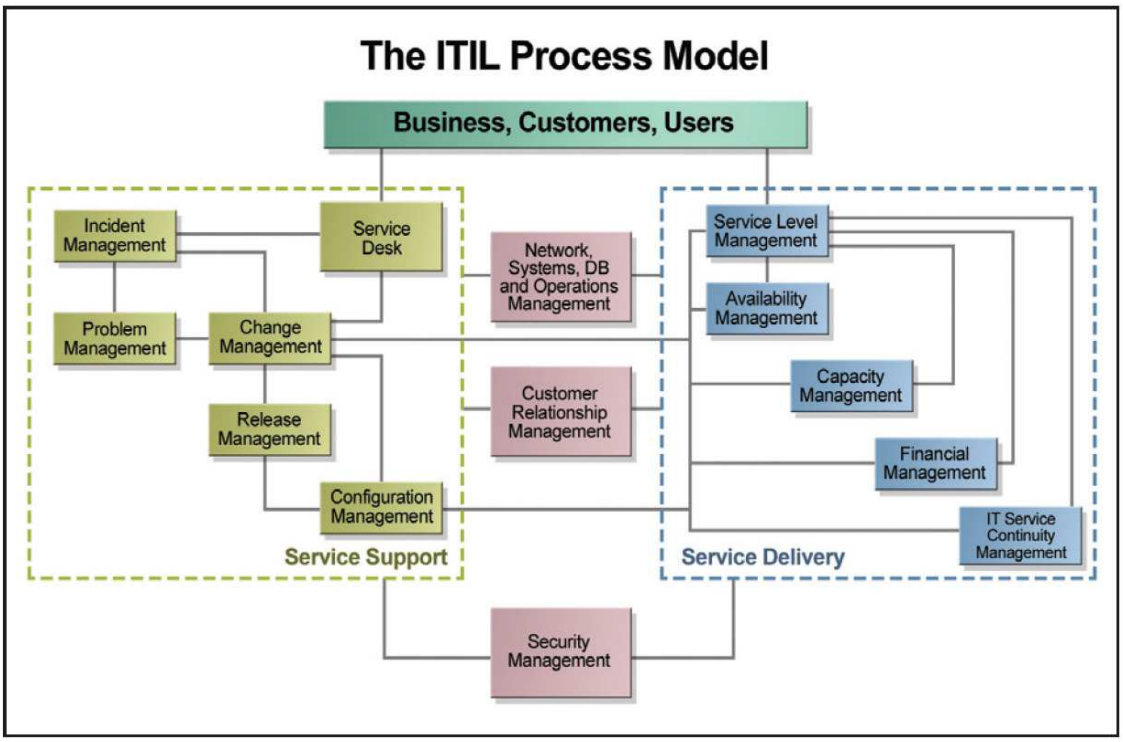
ITILService Support includes five disciplines that provide flexibility and stability for delivering IT services to the business. These disciplines are:

- Incident management
- Problem management
- Change management
- Release management
- Configuration management

ITILService Delivery includes five disciplines that support high-quality, cost-effective IT services for the business. These disciplines are:

- Service level management
- Availability management
- Capacity management
- Financial management for IT services
- IT service continuity management

The service support and service delivery disciplines together help develop the service management capability of an organization. There are complex interrelationships among all 10 of the service management disciplines as they interact to support the overall objective of making sure the IT infrastructure delivers high levels of service to the business.



This diagram illustrates the major interactions across the disciplines and includes the service desk function.

For example, change management is related to all of the service delivery disciplines. It might require input from financial management to understand the cost of the change being considered or input from capacity management to understand

the implications of the change on the infrastructure. Similarly, configuration management provides information to all of the service delivery disciplines about the structure of the enterprise.

All of the disciplines work together to deliver service management to the business and the users of the IT systems. Users can be employees of the organization or its partners or customers. Partners and customers are increasingly using the IT services directly, which is increasing the importance of effective service management.

This diagram also shows other key relationships. Both service support and service delivery interact with the networks, systems, applications and databases of the IT infrastructure as well as the operational management of those entities. The customer relationship management discipline manages the interaction among the service delivery and service support process and the users and customers of the organization to whom business services are being delivered.

The focus of ITIL in all its disciplines is on defining best practices for the processes and responsibilities that must be established to effectively manage the business‘ IT services, which in turn drive forward the business‘ objectives in service delivery and revenue generation.

All of these processes could, in theory, be implemented and supported without the use of IT tools. In practice, however, this is difficult, and electronic systems are essential to support these processes where appropriate.

Other Terms You'll Hear in Relation to ITIL:
Note : these won't be on the ITIL Foundation Exam ; I've included them for your general background knowledge.

BS15000
BS15000specifies a set of interrelated management processes based heavily on the ITIL framework and is intended to form the basis of an audit of the managed service. Customer relationship management is addressed in this standard and is aimed at businesses that require quality service. The BS15000 standard was launched at the IT Service Management Forum (it SMF) conference in Birmingham, England, on November 6,2000. It complements the established British Standards Institute (BSI) Code of Practice for IT Service Management, PD0005 and the PD0015 self-assessment workbook. Used together, BS15000 and PD0005 provide a framework for comprehensive best practices.

ISO 17799
Security is the most important issue that companies must address in order to realize the benefits of electronic business. They must make sure that the organization‘s valuable resources and intellectual property are protected and that customers feel

secure in doing business with the organization. ISO 17799 supports the implementation of security in several ways:
It defines a set of key objectives and identifies a set of security controls, which are measures that can be adopted to meet the objectives of the standard.
It specifies the security controls that can be used (based on the results of a risk management assessment) as the basis for formal certification of an IT enterprise under the BS7799 standard.

W hat is the relation between BS15000 and ISO20000 ?
ISO20000 will be the International Standard for IT Service Management. This will be taken from the British Standard BS15000, with minor alterations to correct errors and inconsistencies. It is expected that ISO20000 will be published late in 2005 or possibly early 2006. Once the international standard is published, the British Standard will be withdrawn. It is expected that companies that haveBS15000accreditation will be able to state they have ISO 20000

ITIL has defined the best practice processes for securing the managed IT infrastructure, which is itself closely tied to the use of ISO 17799 best practices.

Based on the security section of the service level agreement (SLA), the first step is the planning phase, which relies on a business risk assessment to identify threats and vulnerabilities. This process is strongly based on ISO 17799 and results in the selection of appropriate security measures, known as controls.

During the implementation phase, the controls are implemented using the appropriate tools and processes. The remainder of the process involves continually evaluating and reviewing the security policy and its relevance to changing business conditions; maintaining the policy at the appropriate level for consistent security for the business ; and providing reports to help ensure that SLAs are being met.

Study Guide Summary :

Areas covered by ITIL

Service Support Functions :

- ServiceDesk
- Incident Management
- Problem Management
- Change Management
- Configuration Management
- Release Management

Service Delivery Functions :

- Availability Management
- IT Services Continuity Management
- Capacity Management
- Financial Management
- Service Level Management

Deming Circle - Plan, Do, Check, Act

KPI – Key Performance Indicators - parameters used to measure the progress relative to the objectives or Critical Success Factors (CSF)

Capability Maturity Model (CMM) - CMM is usually the wrong answer. Concerned with improving the maturity of the software creation process.

Benefits of ITIL to customer/user

ñ provision of IT services becomes more customer focused and agreements about service quality improve the relationship
ñ Services are described better, in customer language, and in more appropriate detail
ñ quality, availability, reliability and cost of services are managed better
ñ communication improved by agreeing on points of contact

Benefits of ITIL to organization

ñ IT organization develops a clearer structure, becomes more efficient, and more focused on corp objectives
ñ IT org is more in control of the infrastructure and services it has responsibility for, and changes become easier to manage
ñ Effective process structure provides a framework for effective outsourcing of elements of IT services
ñ encourages a cultural change towards providing service and supports introduction of quality mgmt systems based on ISO 9000 series or BSI5000

ñ provides coherent frame of reference for internal communication and communication with suppliers, and for standardization and identification of procedures

Potential problems/mistakes w/using ITIL

Ñ introduction can take a long time, require significant effort, and may require a cultural change. Attempting to make the change too fast can lead to frustration because objectives are never met
Ñ Unnecessary and over-complicated procedures can impact service quality, they are seen as obstacles
Ñ No improvement is seen in IT services due to a lack of understanding of what the process should provide, kpi‘s, and how processes can be controlled
Ñ Improvements in service and cost reduction are not visible because no baseline data was available for comparison and/or the wrong targets were identified.
Ñ Successful implementation requires acceptance and participation by all departments. If a single department makes all the decisions, these decisions may not be acceptable to other departments.
Ñ Insufficient investment in training and support tools leads to minimalization of the processes and therefore little improvement in the process. A short term increase in staff may be required if the current staffing level is already maxed.

Service Delivery : SLM, Financial Mgmt, Capacity Mgmt, IT Service Continuity Mgmt (ITSCM), Availability mgmt
Service Support : Service Desk, Incident Mgmt, Problem Mgmt, Configuration Mgmt, Change Mgmt, Release Mgmt

Incident Management

- Ñ Incident is any deviation from the norm which is why a Service Request is considered an incident (that has occurred or might occur).
- Ñ Service Request : request from a user for support, delivery, information, advice, or documentation, notbeinga failurein theIT infrastructure. Handled under IM if a —standard service“.
- Ñ Goal is to get the user up and running as quickly as possible
- Ñ Priority=Impact& Urgency
- Ñ Functional vs Hierarchical escalation :
  - Hierarchical is usually limit driven
  - Functional (horizontal) : involving personnel with more specialist skills, time, or access privileges to solve the incident.
  - Hierarchical (vertical) : involving higher level of org authority when it appears that the current level of authority is insufficient to ensure that the incident will be resolved in time and/or satisfactorily

- ñ Benefits
  - More timely resolution of incidents resulting in reduced business impact
  - improved user productivity
  - independent, customer focused incident monitoring

- availability of SLA focused business management information
- improved monitoring, allowing performance of SLA‘s to be more accurately measured
- usefulmanagementand SLA reportingconcerned withservicequality
- be ue er and moreeIIc icientuseofpersonnel
- no lostor incorrectlyregistered incidents and servicerequests
- moreaccurateCMDB sinceitis beingaudited whileincidents are registered in relation to CI‘s

oImproved user and customer satisfactionñRelationships

- configuration mgmt,problem mgmt,changemgmt,SLM,availability mgmt,capacitymgmt
- Configmgmtdefines therelationshipbetween resources,services,users, and servicelevels. Configuration details arelinked to theincidentto providebe ue er information abouttheerror.
- Problem mgmtœ has requirements for thequalityoftheinformation in the incidentto facilitateidentification oftheunderlyingerror. Problem managementprovides information to IM aboutproblems,known errors, work arounds,and temporaryfixes
- Changemgmtœ incidents can beresolved byimplementingchanges. Changemgmtprovides information to IM aboutscheduled changes. Changes can causeincidents.
- SLM œ IM mustbefamiliar withtheSLMs so thatthis information can be used to communicatewithcustomers. Incidents can bereported on to determineifSLM‘s arebeingmet.
- Availabilitymgmtœ reportingon incidentrecords can beused to determineavailability. Requires time-stampingofincidents.
- Capacitymanagementœ concerned withincidents caused bya shortageof

capacity

ñActivities

- Incidentacceptanceand recordingœ theincidentis detected or reported and an incidentrecord is created
- Classification and initialsupportœ incidentcoded bytype,status,impact, urgency,priority,SLA,etc. User maybegiven suggestions to solveor work around theissue
- Ifservicerequest,relevantprocedureis initiated
- Matchingœ check is madeto determineiftheincidentis known,possibly related to an existingincident,problem or known error,and ifthereis a solution or workaround
- Investigation and diagnosis œ ifthereis no known solution then the incidentis investigated
- Resolution and recoveryœ oncethesolution has been found,theissuecan beresolved
- Closureœ theuser is asked iftheyaresatisfied withthesolution and then theincidentis closed
- Progress monitoringand trackingœ entirecycleis monitored,ifitappears thatitcannotberesolved in timeor withthecurrentlevelofexpertise, then escalated

ñ Criticalsuccess factors
- o up-to-dateCMDB
- o knowledgebase
- o adequateautomated system for recording,tracking,and monitoring incidents

- ocloseties withSLM ñKPI‘s
- o totalnumber ofincidents
- o averageresolution time
- o percentageofincidents resolved within SLA targets
- o percentageofincidents resolved byfirst-linesupportwithoutrouting
- o averagesupportcostper incident
- o resolved incidents per servicedesk workstation or per ServiceDesk staff member
- o incidents resolved withoutvisitingtheuser
- o number ofincidents or percentagewithinitialcorrectclassification
- onumber ofincidents or percentagerouted correctly ñRoles
- oIncidentManager °monitoringtheeffectiveness and efficiencyoftheprocess °controlling thework ofthesupportgroups °makingrecommendations for improvements °developingand maintainingtheincidentmanagementsystem
- oSupportgroup personnel °First-line-recording,classifying,matching,routing,resolving,and closingincidents

- °Other supportgroups œ investigation,diagnosis,and recovery ñBottlenecks
- o users and IT staff bypassingIM procedures
- o incidentoverload and backlog
- o escalations
- o lack ofclear definitions and agreements
- o lack ofcommitment

Service Desk

Objectives:
•To betheprimarypointofcall for all: :
- o Calls s
- o Questions
- o Requests
- o Complaints
- o Remarks

To restoretheserviceas quicklyas possible
To managetheincidentlife-cycle(coordinatingresolution)
To supportbusiness activities
To generatereports,to communicateand to promoteDifferentDesks

•Call Center:Handlinglargecall volumes oftelephone-based transactions.

HelpDesk:To manage,coordinate,and resolveIncidents as quicklyas possible.

•ServiceDesk:Allowingbusiness processes to beintegrated into theServiceManagementinfrastructure. Itnotonlyhandles Incidents,Problems and questions,butalso provides an interfacefor other activities.ServiceDesk Essentials:
Singlepointofcontact/RestoreserviceASAP

Tasks:Customer Interface,Business Support,IncidentControl& ManagementInformation
Concentrates on incidentlifecyclemanagement

Incident:Unexpected disruption to agreed service

Prioritydetermined bybusiness impactand urgency

Correctassessmentofpriorities enables thedeploymentofmanpower and otherresources to bein thebestinterests ofthecustomer
Escalation and referral

KeyConceptsto Study:
ñThis is a FUNCTION nota process ñSinglepointofcontactthatlogs calls œ period œ even iftheydo morethan that ñMaybeinvolved in IM,Releasemgmt,changemgmt,configmgmt,and SLM ñStructuraloptions
- o Centralized œ singlepointofcontactfor all users,possiblywitha separate ServiceDesk closeto theusers for business applications (splitfunction ServiceDesk)
- o Local(distributed)ServiceDesks -across a number ofsites,normally willbemoredifficulttto manage
- o Virtualœ thelocation is immaterialdueto theuser ofcommunication

technologyñActivities
- o respondingto calls
- o providinginformation
- o supplier liaison

- o operationalmanagementtasks
- oinfrastructuremonitoring ñKPI‘s
- o is thetelephoneanswered quickly
- o arecalls routed to second levelwithin xminutes
- o is theservicerestored within an acceptabletimeand in accordancewith theSLA
- oareusers advised in timeaboutcurrentand futurechanges and errors ñCriticalsuccess factors
- o easyto reachtheServiceDesk
- o users should nottryto contactspecialists directly
- o thereshould begood SLA‘s and OLA‘s and a servicecatalogin placeto

ensurethatthesupportprovidehas a clear focus

Problem Management

Objectives:
•StabilizingIT services through:
- o Minimizingtheconsequences ofincidents
- o Removaloftherootcauses ofincidents
- o Prevention ofincidents and problems
- o PreventrecurrenceofIncidents related to errors

ImprovingproductiveuseofresourcesTasks:
Problem Control

Error Control(includingraisingRfCs œ Requestfor Change)

ProactivePrevention

IdentifyingTrends

ManagementInformation

PositImplementation Review (PIR)Goalis to go from reactiveto proactive. Stopproblems from occurring/recurring.Inputs:
Incidentdetails

Configuration details

Defined work-aroundsOutputs:
Known Errors

Requests for Change

Updated Problem Records includingwork-arounds and/or solutions

Responseto IncidentManagementfrom MatchingManagementInformationProblem Control
Identification

Classification

Assign Resources

Investigation and Diagnosis

EstablishKnown ErrorError Control
Error Identification and Recording

Error Assessment

RecordingError /Resolution (Send outRfC)

Error ClosureKnown Error:An Incidentor Problem for whichtherootcauseis known and for whichatemporaryW ork-around or a permanentalternativehas been identified.ProactiveProblem Management:

Trend Analysis

TargetingSupportAction

ProvidingInformation to theOrganizationKnown Errors resultingfrom Developmentshould bemadeknown to theHelpdesk.Reportingis also keyfor Problem Management.

KeyConceptsto Study:

ñProblem =an undesirablesituation,indicatingtheunknown rootcauseofoneor moreexistingor potentialincidents
ñKnown error =a problem for whichtherootcauseis known and for whicha temporaryworkaround has been identified ñBo e lenecks

- Poor link between IM process and PM process
- Ine ective communication ofKnown Errors from devenvironmentto prod environment

oLack ofmanagementcommitmentñKPI's

- Number ofIncidents opened
- Timeneeded to resolveproblems

oCosts incurred duringresolution ofproblemñCriticalSuccess Factors

- W el defined process framework and setofprocess objectives,interfaces, and resources
- Setofcomprehensiveand wel -documented procedures
- E ective automated registration and classification ofIncidentrecords
- Se ing feasibleobjectives and makingthebestuseofexpertise
- E ective coordination between IM and PM processesñBenefits
- Improved IT Servicequality
- Increased user productivity
- Increased supportpersonnelproductivity
- Improved IT servicereputation
- Enhanced managementand operationalknowledgeand learning
- Improved incidentrecording

oHigher first-lineresolution rateñInputs

- Incidentdetails from IM
- W ork arounds defined byIM
- Configuration details from CMDB

- o Servicecatalogand servicelevelagreements
- o details abouttheinfrastructureand thewayitbehaves (capacity, performancemeasures,etc)ñOutputs
- o Known Errors
- o RFC‘s
- o Upto dateproblem records
- o Closed problem records for resolved problems

o managementinfo to helpmonitor e ıfe ectiveness ofPM processñActivities

oProblem Control °Identifyingand recordingproblems & pasttrends °Classifyingproblems accordingto category,impact,urgency, priority °Investigatingand diagnosingproblems (reproduced in test environment) °temporaryfixes

oError control °Error ID and recordingœ onceid‘d labeled as known error °Error assessmentœ compares possiblesolutions °Error resolution recordingand raisingRFC‘s °Error closureœ foıło ows postimplreview °Problem/error resolution monitoringœ occurs duringaıı ˢ stages

ñ Roles

oProblem Manager responsibilities œ °developand maintain problem controland error controlactivities °assess eıfe ectiveness ofProbControl& Error Controlactivities °provideproblem related info to management °Manageproblem supportstaıı ° aıło ocateresources for supportactivities °Evaluateeıfe ectiveness ofproactivePM process

oSupportGroupResponsibilities -Reactive°ID and record problem byanalyzingIncidentdetails°Investigateproblem based on priority°submitRFC‘s°Monitoringresolution ofKnown Errors°AdviseIM team aboutwork arounds and quick fixes

oSupportGroupResponsibilities œ Proactive°ID trends and potentialsources ofproblems°submitRFC‘s to preventreoccurrence°preventreplication across systems

ñ PM interacts withCImgmt,CM,IM,SLM,AvailabilityMgmt,CapacityMgmt

- o IM œ provides workarounds and temporaryfixes
- o CM œ provides information abouttheprogress and completion of correctivechanges. Evaluated in consultation withPM resultingin Post ImplReview ofchanges. Ifchangeis successful,aıı ˢ associated incidents and problems can beclosed.
- o AvailabilityMgmtœ provides information aboutagreed availabilitylevels. PM identifies thecauses ofunavailabilityand remedies them. Availability Mgmtaims to optimizeinfrastructuredesign reducingthenumber of incidents and problems.
- o Capacitymgmtœ provides information to PM used to defineproblems. PM supports capacitymgmtbyidentifyingthecauses ofcapacityrelated problems and

resolvingthem.

- SLM œ provides information to PM used to definetheproblem. PM procedures should supporttheagreed servicequalitylevels.

ConfigurationManagement

Objectives:

•Providinginformation on theIT infrastructure

- To all other processes
- IT Management

•Enablingcontroloftheinfrastructurebymonitoringand maintaininginformationon:

- All theresources needed to deliver services
- Configuration Item (CI)status and history
- Configuration Item relationshipsTasks:

Identification and naming

Managementinformation

Verification

Control

Status AccountingAsset:Componentofa business process likepeople,accommodation,computer systems,paper records,faxmachines,etc.Configuration ManagementDatabase:A database,whichcontains all relevantdetails ofeachConfiguration Item (CI)and details oftheimportantrelationships between CIs.A Configuration Item (CI):

Is needed to deliver a service

Is uniquelyidentifiable

Is subjectto change

Can bemanagedA Configuration Item (CI)has:

a Category

Relationships

•Attributes

a StatusVariant:A Configuration Item (CI)thathas thesamebasicfunctionalityas anotherConfiguration Item (CI)butis different somesmall way(ex:has morememory)Baseline:A snapshotofthestateofa Configuration Item and

anycomponentor relatedConfiguration Items,frozen in timefor a particular purpose(suchas theabilityto return aserviceto a trusted stateifa changegoes wrong)Configuration Managementsupports all other processes!Scopevs. DetailRelationships œ Common Types:

Is a componentof

Is a copyof

Relates to

Relates with

Is used by

KeyConceptsto Study:

- ñ HeartbeatofInfrastructureManagement
- ñ Configuration items (CIs)œ IT components and services provided
- ñ CMDB œ configuration managementdatabaseœ keeps track ofall IT components, their versions and status,relationships between them
- ñ Assetmanagementœ accountingprocess for monitoringassets whosepurchase priceexceeds a defined limit,whichkeeps records ofthepurchaseprice, depreciation,business unit,and location.
- ñ Configuration Managementœ keeps technicalinformation on CI‘s and details of therelationships between CI‘s and thestandardization and authorization ofCI‘s. Monitors feedback aboutcurrentinformation suchas thestatus ofIT components, their location,and thechanges thathavebeen madeto them
- ñ Benefits œ
  - o managingIT components
  - o highqualityIT services
  - o effective problem solving
  - o morerapid processingofchanges
  - o better controlofsoftwareand hardware
  - o improved security
  - o compliancewithlegalrequirements suchas licensing
  - o morepreciseexpenditureplanning
  - o better supportfor Availabilitymgmtand capacitymgmt
  - osolid foundation for IT ServiceContinuityManagement

ñActivities

- o Planningœ determinestrategy,policy,and objectives oftheprocess, analysis ofavailableinformation,identifyingtools and resources,creating interfaces withother processes,projects,suppliers,etc.
- o Identification œ sets upprocesses to keepdatabaseup-to-date
- o Controlœ authorized CI‘s onlyareentered
- o Status accountingœ stores currentand historicaldetails aboutthestatus of CI‘s duringtheir lifecycle.
- o Verification œ verifies CMDB byaudits ofIT infrastructureto check accuracyoftherecords

- Reportingœ provides information to other processes and reports about trends and developments in theuseofCI‘s ñBaselineœ snapshotofa groupofCI‘s (entireinfrastructure)ata pointin time ñRelationships
- IM,PM,CM,ReleaseMgmt,SLM,FinancialMgmt,AvailabilityMgmt, Continuitymgmt,capacitymgmt
- IM œ IM needs access to CIinformation across thewholeinfrastructure
- PM needs information aboutthecomplexityoftheinfrastructure. Verification oftheactualconfiguration oftheinfrastructureagainstthe authorized configuration in theCMDB can identifydeviations or defects in theinfrastructure
- CM uses theCMDB to id theimpactofchanges. Changemgmtprovides themajor inputfor updatingtheCMDB. Itis essentialto thesuccessful implementation ofConfigmgmt
- Releasemgmtœ provides information aboutreleaseplans withversions and status ofCI‘s and provides information aboutimplemented changes. Itneeds information aboutCI‘s suchas location and status.
- SLM needs information abouttheservices alongwiththerelationships between services and theunderlyinginfrastructureCI‘s. TheService Levelcan bestored in theCMDB recorded againsttheserviceCIor the componenthardwareor softwareCI.
- FM œ needs information abouttheuseofservices and CI‘s. This process also monitors IT components and investments (AssetManagement).
- Availabilitymgmtœ uses theCMDB to identifytheCI‘s,whichcontribute to a serviceand for ComponentFailureImpactAnalysis (CFIA). Configuration mgmtprovides information aboutthecomposition ofthe infrastructure,as weıı ε as abouteachoftheelements.
- ContinuityMgmtuses thebaselineto specifyrecoveryrequirements and checks thattheseconfigurations areavailableatthedisaster recoverysite.
- Capacitymgmtuses data from theCMDB to plan theoptimization ofthe IT infrastructure,to aıloc ocatetheworkload and to developa capacityplan.

ñCriticalSuccess Factors

- CMDB is up-to-date
- changemgmtand releasemgmtmustbestrictlyenforced

omustbea stakeholder for theinformation to berecord in theCMDB

ñKPI‘s

- number ofobserved diıre erences between therecords and thesituation found duringaudits
- number ofoccasions on whicha configuration was found to be unauthorized
- number ofoccasions on whicha recorded configuration could notbe located
- aıtrı ributeleveldiıre erences uncovered byaudits
- timeneeded to process a requestfor recordinginformation
- listofCI's wheremorethan a given number ofincidents or changes were recorded

ñRoles

oConfiguration Manager
°proposingchanges to thescopeand levelofdetailofconfiguration management
°ensuringthattheconfiguration managementprocess is communicated throughouttheorg °providingpersonneland trainingfor theprocess °developingtheidentification system and namingconventions °developinginterfaces to other processes °evaluatingexistingsystems and implementingnew systems °planningand implementingpopulation oftheCMDB °creatingreports on theeffectiveness,conformanceand value °organizingconfiguration audits

ñ Bottlenecks

o wrongCMDB scopeor CIlevelofdetail
o inadequatemanualsystems
o attractofurgentchanges ooverambitious schedules
o managementacceptance
o bypassingtheprocess

Change Management(CM)

Objective:To *implement approved*changes *efficiciently,cost-effectively*and with*minimalrisk*to theexistingand to thenew IT infrastructure. Onlyapproved changes made,riskand costminimized.ChangeManagementTasks:
FilteringChanges
ManagingChangeProcess
ManagingChanges
ChairingCAB and CAB/EC
Review and Closure
ManagementInformation Inputs:
Requests for Change(RfC)
CMDB
Forward ScheduleofChanges (FSC) Outputs:
Forward ScheduleofChanges (FSC)
Requests for Change(RFC)
CAB minutes and actions
Changemanagementreports Impactofchange:
Category1

o Little impacton currentservices. TheChangeManager is entitled to authorizethis RfC.
•Category2
o Clear impacton services. TheRfC mustbediscussed in theChange

AdvisoryBoard. TheChangeManager requests adviceon
authorization and planning.
•Category3
o Significantimpacton theservices and thebusiness. Considerable manpower and/or resources needed. TheRfC will have to besubmitted to theboard level(CAB/EC œ ChangeAdvisoryBoard /Emergency Committee) PrioritySetting:
•Urgent
o Changenecessarynow (otherwiseseverebusiness impact)
•High
o Changeneeded as soon as possible(potentially damaging)
•Medium
o Changewill solveirritatingerrors or missingfunctionality(can be
scheduled)
•Low
o Changeleads to minor improvements A
changebackoutplan mustalways bepossible.
Changemanagementalways ends witha review ofthechange.
Change:Theaddition,modification,or removalofapproved,supported or baselined hardware,network,software,application,environment,system,desktopbuild or associated documentation. Requestfor Change:Form or screen,used to record details ofa requestfor a changeto anyCIwithin an infrastructureor to procedures and items associated withthe infrastructure. Forward ScheduleofChanges (FSC):Schedulethatcontains details ofall theChanges approved for implementation and their proposed implementation dates.
ChangeManagementProcess
1 Requestfor a Change
2 Registration and Classification
3 Monitoringand Planning
4 Approve
5 Build & Test
6 AuthorizeImplementation
7 Implementation
8 Evaluate

KeyConceptsto Study:

- Definition ofchangeœ modification or addition to anypartoftheinfrastructure includinghardware,software,network,or related documents is a change. Anythingthatwould resultin themodification ofCMDB
- Definition ofCM process œ standard method for implementingchanges w/ minimum incidents in theinfrastructureand IT services
- Requestfor changeœ formalpartofthechangemanagementprocess,used to record details ofa requestfor a changeto anyCIwithin an infrastructure,or to services,procedures,and items associated withtheinfrastructure
- Standard changes œ areservicerequests œ fully defined and approved change
  models,individually recorded butnotindividually assessed.

Maderoutinely. ñNon-standard changes œ all other modifications ofthemanaged infrastructure ñRoles

- ChangeManager œ person responsiblefor filtering,accepting,and classifyingall RFC‘s. Maybesupported bychangecoordinators who representhim or her byliaisingwiththeother areas oftheorg. Responsiblefor obtainingrequired authorization. Responsiblefor planningand coordinatingtheimplementation ofchanges.
- CAB œ changeadvisoryboard œ meets regularlyto assess,prioritize,and

plan changes. Normally onlyreviews moresignificantchanges ñNoteverychangeis an improvementbuteveryimprovementis a change ñChangemanagementcontrols flexibility(changes putin thatcould causean incident)vs. stability(changes putin to fixan incident)ñRoles

- Changemanager
- CAB

ñ Routinemanagementtasks should notbeincluded,should beclearlydefined and covered byprocedures (mountingbackuptapes,etc),theywould beService Requests

ñObjectiveœ to ensurestandard methods & procedures areused withthelowest possibleimpacton servicequality,changes aretraceable ñBenefits

- reduced adverseimpactofchanges on thequalityofIT services
- better estimates ofthecosts ofproposed changes
- fewer changes arereversed,anybackouts thatareimplemented proceed moresmoothly
- enhanced managementinformation ins obtained aboutchanges,enablinga better diagnosis ofproblem areas
- improved user productivitythroughmorestableand better IT services
- improved IT personnelproductivity,as theyarenotdistracted from their planned work byurgentchanges or backoutprocedures
- increased abilityto accommodatefrequentchanges withoutcreatingan

unstableIT environment

ñInputs

- RFC‘s
- CMDBinformation
- Information from other processes (Capacity,budget,etc)

ochangeplanning(forward scheduleofchange) ñOutputs

- updated changeplanning
- triggers for configuration mgmtand releasemgmt
- CAB agenda,minutes,and action items

oChangemgmtreports ñActivities

- Submission (recording)œ responsiblefor ensuringthatall sources of changecan submitRFC‘s and thattheyareadequatelyrecorded
- Acceptanceœ filteringoftheRFC‘s and acceptingfor further

consideration

- Classification œ sortingRFC‘s bycategory(impactœ minor,substantial, major)and priority
- Planningand approvalœ consolidatingchanges,planningand approving their developmentand implementation;ensuringtherequired resources are available,involvingtheCAB wherenecessaryto achievetheabove
- Coordination œ coordinatingthebuilding,testing,and implementation of thechange
- Evaluation œ determiningifeachchangewas successfuland learning lessons to improvetheprocess

ñRelationships

- IM,Configuration mgmt,Probmgmt,Releasemgmt,SLM,Availability mgmt,capacitymgmt,continuitymgmt
  - IM œ two sided relationship. CM puts throughchanges requested byIM to resolvetheincident. Implementation ofCM can resultin incidents. IM personnelmustbeinformed oftheimplementation ofchanges,so thattheycan quicklyidentifyand resolved any related incidents
  - Configuration mgmtœ tightlycoupled,so muchso thatthetwo processes can beeffectivelyintegrated (whichis recommended by ITIL). Changes arerecorded under thecontrolofconfiguration mgmtand impactanalysis ofchanges is donebyconfiguration mgmt. Configuration mgmtidentifies therelationships between theCIbeingchanged and other CI‘s to show whatis being impacted.
  - Problem mgmtœ Changes often requested to correcterrors and solveproblems. Changes can introducenew errors and so problems
  - Releasemgmtœ changes often resultin thedevelopmentand distribution ofa new setofapplications or technicalinfrastructure subjectto Releasemgmtdisciplines. Changes areoften packaged together into a release. Rollout outofnew releases is controlled by changemanagement
  - SLM œ SLM is involved in determiningimpactofchanges on services and business processes. SLM mayberepresented on the CAB. CM reports to SLM usinga Projected ServiceAvailability report(PSA)thatlists thechanges to agreed SLA‘s and impactof theForward ScheduleofChangeon serviceavailability
  - Availabilitymgmtœ Availmgmtinitiates changes to improve serviceavailability. Verifies intended improvementis actually obtained. Often involved in estimatingpotentialimpactofchanges sincetheycould affectheavailabilityoftheservice
  - Capacitymgmtœ concerned withthecumulativeeffectofchanges over an extended period. Capacity mgmtwill propose enhancements and changes in theform ofRFC‘s to improveuseof existingcapacity.
  - Continuitymgmtœ work closelytogether to ensurethatITSCM is

awareofall changes thatcould affect recoveryplans and can take steps to ensurerecoverycan becompleted

- KPI's
  - number ofchanges completed per timeunit,bycategory
  - rateatwhichchanges areimplemented
  - number ofrejected changes
  - number ofincidents resultingfrom changes
  - number ofbacked outchanges
  - costoftheimplemented changes

onumber ofchanges within resourceand timeestimation

- Bottlenecks

  - paper based systems aretoo difficultto useand will presenttoo many problems
  - mayberesistanceagainstan umbrella a CM authoritythatmonitors all aspects oftheIT infrastructure
  - maybeattempts to implementchanges w/o goingthroughagreed procedures. ThereMUST bean organizationalreaction to suchattempts.

Release Management

Objectives:

•Safeguard all software and related items
Ensurethatonlytested /correctversion ofauthorized softwarearein use
Ensurethatonlytested /correctversion ofauthorized hardwarearein use
Rightsoftware,righttime,rightplace
Righthardware,righttime,rightplaceTasks:
Definethereleasepolicies

ControloftheDefinitiveSoftwareLibrary(DSL)

ControloftheDefinitiveHardwareStorage(DHS)

DistributeSoftwareand Associated CIs

CarryoutS/W audits (usingCMDB)

Managethesoftwarereleases

Overseebuild ofthesoftwarereleasesReleases aredoneunder thecontrolofChangeManagement.DSL:DefinitiveSoftwareLibrary.
Reliableversions ofsoftwarein a singlelogicallocation.
However,softwaremaybephysically stored atdifferentlocations.ReleasePolicy:

ReleaseUnit

•Fuıı / /Package/Delta Releases

Numbering

Frequency

EmergencyChangeVersion Control:
Development

Testing

Live

ArchiveProcess:
SoftwareControland Distribution (operational)

ChangeManagement(control)

Configuration Management(controland administration)Onlyprocess whichcreates its own policy.

KeyConceptsto Study:

- ñ Uniquecharacteristicœ onlyprocess thatcrosses environments oftest, development,and production
- ñ Releaseunitis aıı ıtıtheCI's thataregoinginto a release
- ñ Releases
  - o Major releases œ major roıı oıoutofnew hardwareor software,generaıı v y withsignificantlyincreased functionality
  - o Minor releases and hardwareupgrades œ includea number ofminor improvements and fixes ofknown errors.
  - o Emergencyfixes œ normaıı v yimplemented as a temporaryfixfor a problem or known error

ñReleaseTypes

- o Delta releaseœ partialrelease,onlyincludes changed hardwareand softwarecomponents. Notalways possibleto testaıı ı links.
- o Fuıı r releaseœ aıı c components ofthereleaseunitarebuilt,tested,and distributed in its entirety,includingcomponents notchanged.
- o Packagereleaseœ bundleoffuıı a and/or delta releases ofrelated applications and infrastructurethatarereleased atlonger timeintervals. Includes third partysoftwareupgrades

ñ DefinitiveSoftwareLibrary(DSL)œ securerepositorythatholds thedefinitive authorized versions (master copies)ofaıı s softwareCI's. Maybephysicaıı v yin manylocations.

ñ DefinitiveHardwareStore(DHS)œ contains spares and stocks ofhardware. Sparecomponents and assemblies aremaintained atthesamelevelas their counterparts

in theliveenvironment

ñ Objectives

- planning,coordination,and implementingofsoftwareand hardware
- designingand implementingefficientprocedures for thedistribution and installation ofchanges to IT systems
- ensuringthatthehardwareand softwarerelated to changes aretraceable, secure,and thatonlycorrect,authorized,and tested versions areinstalled.
- communicatingwithusers and consideringtheir expectations duringthe planningand rollout ofnew releases
- determiningthecomposition and planningofa rollout,together with changemanagement
- implementingnew softwarereleases and hardwarein theoperational infrastructure,under controlofchangemanagementand supported by configuration mgmt.
- ensuringthattheoriginalcopies ofsoftwarearesecurelystored in the

DSL,hardwarein theDHL,and theCMDB is updated ñBenefits

- softwareand hardwarein liveuseareofhighqualitybecausetheyare developed and tested under qualitycontrolbeforereleased
- risk oferrors in softwareand hardwarecombinations or releaseofan incorrectversion is minimized
- business carefully handles its softwareand hardwarecombinations or releaseofan incorrectversion is minimized
- business carefully handles its softwareinvestments
- fewer separateimplementations and eachimplementation is thoroughly tested
- risk ofincidents and known errors occurringis reduced bytestingand controlling implementation
- users aremoreinvolved in testingofa release
- releasecalendar is published in advanceso thatuser expectations aremore in-linewiththereleases
- business has a centralsoftwareand hardwaredesign and build,or procurementfacility,followed bythedistribution to thesite
- business can standardizesoftwareand hardwareversions between sites to facilitatesupport
- risk ofillegalsoftwareis reduced,alongwiththerisk ofincidents and problems dueto thewrongor infected softwareor hardwareversions beingintroduced into theliveenvironment

ounauthorized copies and incorrectversions aremoreeasilydetected ñActivities

- Releasepolicyand planning
- Releasedesign,buildingand configuration œ whilechangemanagementis responsiblefor makingsureback-outplans arecreated,release managementis responsiblefor makingsuretheyarepractical
- testingand releaseacceptance
- rollout planning
- communication,preparation,and training
- releasedistribution and installation ñRelationships
- Configuration mgmtœ softwareadded to theDSLand hardwareto the DHLarerecorded in theCMDBattheagreed levelofdetail. Status monitoringofCI's is provided byconfiguration mgmt
- Changemgmtœ mustarrangeformaltestingand signoff bytheusers, decides how manychanges maybecombined in a release.

oSLM œ ñBottlenecks

- resistanceto change
- bypassingreleasemanagement
- urgentfixes
- distribution
- testing

Service LevelManagement

Balancebetween theDemand for IT services and theSupplyofIT services byknowingtherequirements ofthebusiness and knowingthecapabilities ofIT.Objectives:

Business-likerelationshipbetween customer and supplier

Improved specification and understandingofservicerequirements

Greater flexibilityand responsiveness in serviceprovision

Balancecustomer demands and costofservices provision

Measurableservicelevels

Qualityimprovement(continuous review)

ObjectiveconflictresolutionTasks:
ServiceCatalog

ServiceLevelRequirements

ServiceLevelAgreement

OperationalLevelAgreements (OLA)and Contracts

ServiceSpecsheet

ServiceQualityPlan

Monitor,Review and Report

ServiceImprovementPrograms

Customer RelationshipManagementMinimum Requirements for an Agreement:

Period

ServiceDescription

Throughput

Availability

ResponseTimes

SignatureOther PossibleClauses:
Contingencyarrangements

Review procedures

Changeprocedures

Supportservices

Customer responsibilities

Housekeeping

Inputs and Outputs

ChangesIdeaIIv ycontracts arebased on targets in theSLASLAs mustbemonitored regularlyand reviewed regularly

Monitor to seeifserviceis beingdelivered to specification

•Review to seeifservicespecification is stiII a appropriate

KeyConceptsto Study:

- ñ ServiceLevelRequirements (SLR)œ detailed definitions ofcustomer needs,used to develop,modify,and initiateservices. Blueprintfor SLA's
- ñ ServiceSpecifications Sheets (Specsheets)œ describetherelationshipbetween functionalityand technologyand provideа detailed specification oftheservice. Translates SLR's into technicaldefinitions
- ñ ServiceLevelAgreement(SLA)œ agreementbetween theIT organd the customer whichdetails theserviceor services to beprovided. Describes services in non-technicalterms. Serves as thestandard for measuringand adjustingtheIT services.
- ñ ServiceQualityPlan (SQP)œ contains aII n managementinformation needed to managetheIT organization. Defines theprocess parameters oftheServicemgmt processes and operationalmgmt. Defines HOW services wiII b bedelivered while SLA defineW HAT wiII b bedelivered.
- ñ OperationalLevelAgreement(OLA)œ agreementbetween internalIT departments detailingprovisions ofcertain elements ofa service
- ñ UnderpinningContract(UC)œ contractwithan externalprovider definingthe provision ofcertain elements ofservice
- ñ Benefits
  - o IT services aredesigned to meettheexpectations as defined in theSLR
  - o Serviceperformancecan bemeasured,whichmeans thatitcan be managed and reported on
  - o IftheIT orgcharges customers for theuseofIT services,thecustomer can draw a balancebetween therequired qualityand thecost
  - o As theIT orgcan specifytheservices and components required,itcan takemorecontrolofresourcemanagementand costs could bereduced over thelongterm

- Improved customer relationships and customer satisfaction
- Boththecustomer and theIT orgareawareoftheir responsibilities and roles leadingto fewer misunderstandings

ñObjectives

- integratetheelements required for theprovision ofIT services
- createdocuments thatclearlydescribetheservices bythevarious elements
- describetheserviceprovided to thecustomer in a terminologythatthey understand
- align IT strategywithbusiness needs
- improveIT servicedeliveryin a controlled manner

ñActivities

- Identifyingœ customer‘s needs
- Definingœ services to beprovided
- Finalizingœ contract,i.e. negotiatingwiththecustomer aboutthe required servicelevel
- Monitoringœ servicelevels
- Reportingœ to thecustomer and theIT orgabouttheactualservicelevels
- Reviewingœ theservicewiththecustomer to determineopportunities for improvement

ñRelationships

- ServiceDesk,Availabilitymgmt,Capacitymgmt,IM,PM,CM,Release mgmt,continuitymgmt,securitymgmt,configuration mgmt,FM
- ServiceDesk œ Servicedesk is theinitialpointofcontactfor users and aims (throughIM)to recover theagreed servicelevels as soon as possible. Can often provideinfo aboutthequalityperception ofSLM bytheusers
- Availabilitymgmtœ responsiblefor realizingand optimizingthe availabilityoftheservices. SLM provides theinputabouttherequired availabilityoftheIT services. Availabilitymgmtprovides info aboutthe actualavailabilityto SLM
- Capacitymgmtœ provides information abouttheimpactofnew serviceor extension ofan existingserviceon theoverall capacity,indicates iftheuse madeofa serviceis within theagreed limits. SLM provides info to capacitymgmtaboutexpected currentand futureuseagreed upon with(or aboutto be)withthecustomer
- IM & PM œ good indicators ofeffected implementation ofSLA‘s. SLM uses information from reports provided bytheseprocesses when reporting to thecustomer
- CM œ SLA‘s can definethechanges thatcan berequested,timefor respondingto thesechanges,cost,etc. CM mayaffect theservicelevels thathavebeen agreed upon.
- Releasemgmtœ monitors theagreements madebySLM regardingthe provision ofhardwareand software. SLM reports on thequalityoftheIT serviceon

thebasis ofinfo from releasemgmtreports

- o ITSCM œ agreements aboutrecoverytimes in theeventofa disaster are madewiththecustomer throughtheSLM process. Themeasures and costs areincluded in theSLA. Changes to theserviceand SLA may requiremodification ofthedefined continuitymeasures and procedures.
- o Securitymgmtœ boththeIT organd thecustomer wiıı r havecertain securityrequirements. Thoseagreements aredefined in theSLA. Securitymgmtensures thattheagreed securitymeasures areimplemented, monitored,and reported to SLM.
- o Configuration mgmtœ responsiblefor enteringthedetails ofthe components and documentation related to a servicein theCMDB,and providinginformation from this database. Creation or modification ofa serviceor SLA wiıı ɛ aɪɪe ecttheCMDB. TheCMDB is used check the agreements abouttheresponseand solution times and is used to report aboutthequalityoftheCI‘s. This enables SLM to reportaboutthequality oftheserviceprovided.
- o FM -ifcustomer charged for services then this is included in theSLA. FM provides SLM withinfo aboutthecosts associated withprovidinga service.

ñ CriticalSuccess factors

- o capableServiceLevelManager withbothIT and business expertise,and a supportingorg
- o clear process mission and objectives
- o awareness campaign to providepeoplewithinfo abouttheprocess, developunderstanding,and gain support
- o clearlydefined tasks,authorities,and responsibilities within theprocess,

distinguishingbetween process controland operationaltasks

ñKPI‘s

- o serviceelements included in SLA‘s
- o elements ofSLA supported byOLA and UC‘s
- o elements ofSLA‘s whicharemonitored,whereshortcomings arereported
- o elements ofSLA‘s whichareregularlyreviewed
- o elements ofSLA‘s wheretheagreed servicelevels arefulfiııe ed
- o shortcomings,whichareidentified and covered byan improvementplan
- o actions,whicharetaken to eliminated theseshortcomings
- o trends identified withrespectto theactualservicelevels

o number oftimes SLA notfulfiııe ed

ñRoles

oServiceLevelManager °creatingand updatingtheservicecatalog

°definingand maintainingan eɪɪe ectiveSLM process for theIT organization includingSLA structure,OLA‘s withinternal providers,UC‘s withexternalproviders

° updatingtheexistingServiceImprovementProgram

° Negotiating,concluding,and maintainingSLA‘s,OLA‘s,and UC‘s.

°ReviewingtheperformanceoftheIT
organd improvingitwhere needed
ñBo e lenecks

- o mayrequireculturechangein organization
- o customers mayneed helpspecifyingSLR‘s
- o can bedi ic ultto express expectations ofthecustomer in terms of measurablestandards and associated costs
- o SLmanager should bewaryofoverambitious agreements whilstthe planning,measuring,and monitoringtools,procedures,SQP,and theUC‘s havenotbeen developed.
- o Overhead costs associated withmonitoringand measuringservicelevels areeasilyunderestimated
- o Skippingtheanalysis oftherequirements ofthecustomer,thedesign stage,and thedevelopmentoftheSQPcan resultin a process whichis di ic ultto manageand whichdoes notprovideclear,measurable standards
- o SLM documents and process could end upbecomingends in themselves instead ofa means to be e er therelationshipbetween theIT service provider and thecustomer

ContinuityManagement

Whyplan?

Increases Business dependencyon IT
Reduced costand timeofrecovery
Costto customer relationship
SurvivalManybusinesses failwithin a year ofsu e eringa major IT disaster.Business ImpactAnalysis:Risk Analysis:
ValueofAssets

Threats

VulnerabilitiesRisk Management:
Countermeasures

Planningfor potentialdisasters

Managinga disasterRisk Analysis:Based on theCCTA Computer Risk Analysis and ManagementMethodology(CRAMM)Options:

1 Do nothing

2 Manualworkarounds

3 Reciprocalarrangements

4 GradualRecovery(cold standby)

5 IntermediateRecovery(warm standby)

6 ImmediateRecovery(hotstandby)Cold start=accommodation. Environmentalcontrols;power and communicationsHotstart=cold start+computingequipmentand software7 Sections ofthePlan:

1 Administration

2 TheIT Infrastructure

3 IT Infrastructuremanagement& Operatingprocedures

4 Personnel

5 Security

6 Contingencysite

7 Return to normalTestand Review:

•Initiallv ythen every6to 12 months and after eachdisaster

Testitunder realisticcircumstances

Move/protectanyliveservices first

Review and changetheplan

•All ‹ changes madevia theCAB œ ChangeAdvisoryBoardContingencyPlan:

•Assists in fast,controlle ed recovery

•Mustbegiven widebutcontrolle ed access

Contents (incl. Admin,Infrastructure,People,Return to normal)
Options (incl. Cold & HotStart)
Mustbetested regularlyœ withoutimpactingtheliveservice

KeyConceptsto Study:

ñ Disaster œ an eventthataffec ects a serviceor system suchthatsignificanteffoi ortis required to restoretheoriginalperformancelevel ñHelps organizations in restoringIT services ASAPafter a disaster & ensuring continuityofbusiness operations ñEnables organization to continueto providethepredetermined and agreed levelof IT Services even after a calamity ñBenefits

- Business continuityœ helps in reducingrisks to an acceptablelevelby developingplans for immediaterestoringbusiness activities ifinterrupted bya disaster
- Organizationalcredibilityœ helps developcontingencyfacilities to increasean organizations credibilityand reputation

oInfrastructurerecoveryœ eases faster recoveryñRecoveryPlans œ

- includeinfo likeminimum required production capacityand provision of services ataII t times to ensureuninterrupted business operations.
- Address risks whichcannotor havenotbeen eliminated.
- Provides recoveryoptions.
- Sections œ introduction,updating,routinglist,recoveryinitiation,

contingencyclassification,specialistsectionsñRisk analysis œ

- identifies therisks thatarelikelyto occur,
- includes details on assets,threats,and vulnerabilities to them,
- prevention measures,

orecoveryplansñIT ServiceContinuityStrategyœ process ofdealingwithdisastersñInputs

- SLA‘s
- Availability,Capacity,and Configuration mgmtspecification ofresources thatcan beused for ensuringservicecontinuity

oChangemanagementñResults œ recoveryplanñPhases

oInitiation °determinescopebydefiningorganizationalpolicy °ID relevantareas to applyITSCM °AIIo ocation ofresources °Serrrr ingurecoveryprojects w/i organization

- Requirements and Strategy

  - ID requirements for ITSCM process and strategyto beadopted
  - Includes business impactanalysis,risk assessment,and IT Service ContinuityStrategy
  - Business impactanalysis œ determined bycosts dueto additional resourcerequirements and cascadingeIIe(ectofrisks spreadingto services related to disaster-proneservice
  - Risk assessmentœ ID‘s IT components,threats & probabilities, vulnerabilityand counter measures
  - IT ServiceContinuityStrategyœ no prevention availablethen adoptrecoveryoption ñDo nothingœ do notneed IT Services ñReturn to Manualœ assumes personnelcan handlethis ñReciprocalagreements œ orgs agreeto useeachothers‘ facilities ñGradualrecoveryœ can operatew/o IT Services for fixed time(cold stand-by) ñImmediaterecoveryœ similar environmentcreated at diIIer

erentlocation,changeover (warm stand-by)

- ñ Intermediaterecoveryœ identicalproduction environment includingreplication ofdata and production process (hot start,hotstand-by)
- ñ Combination

oImplementation

°Organizationalplanning, preventativemeasures & recovery options,developingplans and procedures

- ° Organizational& Implplanningœ address issues suchas emergencyresponse,damageassessment,crisis management,& human resourceplans
- ° Preventativemeasures & recoveryoptions œ need to draftstand-by agreements bynegotiatingoff-site recoveryfacilities w/third party,maintenanceand equipmentrecoveryfacility,purchasing and installingstand-byhardware,managingdormantcontracts
- ° Developplans and procedures œ provideframework to draft procedures thatinvolveinstalling and testinghardwareand network components,restoringapplications,database,and data

oOperationalManagement°Trainingand awareness°Maintaining°Testing

ñ KeyRoles

- o Business ContingencyManager (BCM)œ aims atreducingrisks by developingrecoveryplans to restorebusiness activities
- o Board œ ChiefOpOfficers Directors,Chiefexecofficer°defineorgpolicies and strategies°managecrisis°maketimelydecisions
- oSenior Mgmtœ Business UnitMgrs,RegionalMgrs °managebusiness processes and setdepartmentalstrategies °coord execution ofrecoveryplan °managingpersonnel °involved in Recoveryplan °resolvingconflicts °providefunds,personnel,and resources
- oMgmtœ Projectmgrs & departmentheads °defineclientdeliverables °analyzerisks °preparecontracts w/customer,user,and suppliers °initiateactivities,leadingteams,reportingto Sr. mgmt
- oTeam Leaders & Team Members °keypeopledevelopingprojectdeliverables and implementing procedures°executingrecoveryplan°reportingissues°provide details for futureplans

ñ Relationships

- o SLM œ specifies time& resources required to recover. Uses this to build SLA‘s. ITSCM process mustthen ensureagreed turnaround time
- o AvailabilityMgmtœ specifies risk reduction measures & resilience,reduce vulnerability,ITSCM process id‘s resourcelevelneeded.

Ensures availability

- Configuration Mgmtœ defines minimum configuration and IT infrastructurecomponents needed for restoringservices. ITSCM defines resources thatunderlinecontinuity
- CapacityMgmtœ determines min capacityneeded to con‘tbusiness operations and for recoveryoptions. ITSCM provides info aboutcapacity requirements & servicelevelto bemaintained
- ChangeMgmtœ all changes mustbecommunicated to theITSCM process so theimpacton therecoveryplan can beassessed. ITSCM communicates changes to plan to CM
- SecurityMgmtœ provides info aboutmin securityprocess. ITSCM

includes requirements in plan and tests ñBottlenecks

- attitude/commitment
- insufficientresources and support
- unplanned implementation and infrequenttesting
- access to recoveryfacilities
- estimatingthedamage
- budgeting
- perpetualdelay
- Black boxingœ manager has abdicated responsibility(outsourced)
- familiaritywiththebusiness
- lack ofawareness

ñ KPI‘s

- #ofshortcomings id‘d in recoveryplan
- costto companybecauseofloss ifrecoveryplan notexecuted

ocostincurred in terms oftime,resources,and moneyto restoreIT services ñCriticalsuccess factors

- cooperation and commitmentw/i organization to create& execute recoveryplan
- effectiveinstallation and backuptools
- effectiveimplofconfigmgmtprocess
- training

ounexpected testingofrecoveryplan ñCold siteœ haveto setuphardwareafter disaster ñW arm siteœ hardwareis there,maybesoftware,no data ñHotsiteœ immediaterecovery,completemirroringofproduction process,high availability

FinancialManagement

Objectives:To provideinformation aboutand controlover thecosts ofdeliveringIT

services thatsupportcustomers business needs.

Costingis a must!

Inputcostunits recommended byITIL:

EquipmentCostUnits (ECU)

Organization CostUnits (OCU)

Transfer CostUnits (TCU)

Accommodation CostUnits (ACU)

SoftwareCostUnits (SCU)Equipment=hardwareOrganization =staff Transfer =costs whichIT incurs actingas an agentfor thecustomer,theydo notappearas a costagainsttheIT department's budgetAccommodation =buildingsSoftware=softwareDifferentCostTypes:

•Fixed -unaffected bythelevelofusage

Variable-varyingaccordingto thelevelofusage

Direct-usagespecificto oneservice

Indirector Overhead œ usagenotspecificto oneservice

Capitalœ notdiminished byusage

Revenueor runningœ diminishwithusageChargingObjectives:
•Recover from customers thefull costs oftheIT services provided

Ensurethatcustomers areawareofthecosts theyimposeon IT

Ensurethatproviders havean incentiveto deliver and agreed qualityand quantityofeconomicand effectiveservicesChargingand PricingOptions:Charging:
No Chargingœ IT treated as supportcenter

NotionalChargingœ IT treated as costcenter

ActualChargingPricing:
Recover ofCosts œ IT treated as a servicecenter

CostPricePlus œ IT treated as a profitcenter

MarketPrices œ IT treated as a profitcenterSupportand Costcenters used —softcharging"in whichno moneychanges hands;serviceand profitcenters use—hard

costing“in whichmoneyis transferred between bankaccountsProfitcenters focus on thevalueoftheIT serviceto thecustomer

Good FinancialManagementminimizes therisks in decision making 3 Main Processes: Budgeting:Theprocess ofpredictingand controlling thespendingofmoneywithin the enterpriseand consists ofperiodicnegotiation cycleto setbudgets (usually annual)and theday-to-daymonitoringofthecurrentbudgets. Keyinfluenceon strategicand tactical plans. IT Accounting:Thesetofprocesses thatenablestheIT organization to fully accountfor thewayits moneyis spent(particularlytheabilityto identifycosts bycustomer,by service,byactivity). Charging:Thesetofprocesses required to bill a a customer for theservices applied to them. To achievethis requires sound IT Accounting,to a levelofdetaildetermined by therequirements oftheanalysis,billing,and reportingprocedures.

KeyConceptsto Study:

- ñ Definition œ process oftrackingservicecosts and implementingthemostcosteffective services to meetcustomer demands ñObjectives œ
  - o aid IT organization in implementingcost-effective strategyfor delivering IT services
  - o break down costs into servicespecificcomponents
  - o helpcategorically associatecosts w/eachindividualserviceand departmentñBenefits
  - o Determines costofIT services
  - o Id‘s coststructure
  - o Recoveringcosts from customers
  - o OperatingtheIT departmentas a business unit
  - oVerifyingthatchareges for IT services arerealisticñConcepts
  - oBudgetingœ °defines a wayto plan and controlexpenditures °lays down limits °prepared to ensureactualexpendituredoes notexceed planned °developed byunitheads °mustbekeptin linew/actualmonetaryresources
  - oAccountingœ °maintains a detailed accountofall incomingand outgoingfunds °includes detailed ledgers ofdailyexpenditures incurred during implementation ofIT services. °trackingdirection ofoutflow moreimportantthan trackingexact costs
  - oChargingfor IT services °helps orgrecover its expenditures from its customer °encourages business likerelationshipbetween organd customers
  - ° should aim to influencecustomer‘s demands,should notaim to meetall demands
  - o CostCategories
    - ° Directvs. Indirect
      - ñ Directœ areunambiguouslylinked to a specificservice
      - ñ Indirectœ arenotspecifically associated w/a specific

service °Fixed vs. Variable
ñFixed œ constantsuchas rentoffacilities,notrelated to volume
ñVariableœ related to IT servicebeingprovided,varies with volume
°Capitalvs. Operational ñCapitalœ generated bypurchaseofassets intended for long term use,calculated based on depreciated value ñOperationalœ generated bydayto daycosts notdirectly related to production resources i.e. insurancepremiums ñInputs
o from SLM describingservicerequirements submitted as requests for approvaloffunds. FM process scrutinizes theserequests

ñPhases
o ID IT needs oforg. Based on these,plan budgets and financialobjectives (budget)
o ID and setupcostcontrolmethods byanalyzingcostfor theservice (accounting)
o Chargeappropriateamountto customer (charging)

oRequestand receivefeedback from customer aboutcharges

ñActivities
oBudgeting °definelongterm objectiveoforgand createfinancialplans for specifictimeperiods
° Ensures services arecontinuouslyavailableatreasonablecosts
° Zero-based œ after a few years,does notuselastyears data as basis for currentyear. Eachserviceis justified
° Incrementalœ previous years data used. Factors for incor decare mentioned
° ID factors thatmighthinder thegrowthprospects
° Outlinesecondarybudgets (sales & marketing,prod,admin,cost& investment)°Determineperiod ofbudget
oAccounting °id‘s how costs aredefined and divided into different categories and recorded °generally calculated for a department,customer,or product °coststructurehelps id and track costs for hardware,software,and supportofa service
oCharging °chargingencourages theIT orgto operateas a business °chargingcustomer helps recover costs °chargeata reasonablerateor customer demand mydecrease °chargingshould notbelimited to IT service °should besynchronized withfinancialpolicies °helps organization to useservices to complimentbusiness needs throughdirectfunding(process ofchargingcustomer and collecting funds for services)
° Based on objectives offinancialmanagementprocess œ communicatinginfo,pricingflexibility,notionalcharges (costs

invoiced butneed notbepaid)

- oPricing °accuratecalculation ofcostofservicemustbecompletebefore pricing °decidingtheobjectives ofcharging °determiningdirectcosts,indirectcosts,and marketrates °analyzingdemand °analyzingnumber ofcustomers °CostPlus œ costincurred plus profitmargin °GoingRateœ for services wheretherearealreadypriceagreements °TargetReturn œ services whosepricewas determined in advance °Negotiated ContractPriceœ prices discussed withthecustomer

ñ Roles

- oIT FinanceManager °owner ofprocess °responsiblefor developingand implementingprocess °works withother departments and financialdepartments to develop guidelines for financialactivities °responsibilities maybedistributed between Mgr and Financialdept °ManageIT organization budget °Reportingto IT mgrs and customers aboutconformanceto budget °gatheringcostdata for aıı ır implementation services °implementingsuitableaccountingpolicies °providingjustifications for IT servicecharges °preparingregular biıls s

ñ Relationships

- o SLM,Capacity,and Configuration aredirectlylinked
- o Releasemgmt,IM,and AvailabilityMgmtareindirectlylinked
- oSLM œ °helps determinecosterre ectiveness and viabilityofproposed service. °needs details aboutcosts and proposed charges for servicebefore serviceis implemented°SLA agreements includecostdetails
  - ° To definecosts and charges theSLM process derives info from the FM process whichspecifies costs and servicechargingmethods and rates
- o CapacityMgmtœ capacitylevels depend on costconsiderations for each serviceprovided byFM
- o ConfigMgmtœ FM obtains info aboutinfrastructurecomponents used for services combined w/SLA‘s to determineprices and rates. FM provides details aboutcosts calculated for theinfrastructureto theconfigmgt process

ñ Boıre lenecks

- o non availabilityofwrirre en material
- o dirrı icultyin obtainingplanningdetails
- o improper documentation ofcorpstrategyand objectives
- o dirrı icultylocatingskiıre ed personnel
- o insurrı icientcooperation

olack ofmanagementcommitment ñKPI‘s

- o cost-benefitanalysis comparingtherelativebenefits ofservicew/costs
- o feed back from customers aboutimplemented services
- o financialtargets achieved byIT orgdefined bybudgets
- o changes in useofservices

otimelyreports sentto SLM process ñCriticalsuccess factors

- o createawareness amongusers aboutcostofimplementingservices

- implementa detailed costmonitoringsystem thatjustifies all expenditures
- provideeffective services atreasonablecosts
- createcompleteawareness aboutimpactand costofimplementingFM process
- provideaccess to relevantinfo from configuration mgmtprocess

SecurityManagement

KeyConceptsto Study:

ñEnsures data securitybypreventingunauthorized access to informationñObjectives

- Complywithsecurityrequirements for SLA's
- Meetw/externalrequirements notdefined in contracts,legislation,and policies
- Providebasiclevelofsecurityto information systems independentof externalrequirements
- Ensureeffective securitymeasures taken atstrategic,tactical,and operationallevelsñBenefits
- Providingcorrectand completeinformation
- maintainingstandards
- enhancevalueofIS
- ensurecontinuity(anyunplanned outage)

osecurityrelated objectives ñInformation Securityœ Safetyofinformation from known and unknown risks ñConfidentialityœ protectingorganizationalinformation from unauthorized access and use ñIntegrityœ ensures accuracy,completeness,and timeliness ofinformation ñAvailabilityœ ensures organizationalinformation accessible ñPrivacyœ maintains privacybyallowingowners to restrictunauthorized users ñVerifiabilityœ ensures correctusageofinformation and effective implementation ofsecuritymeasuresñInputs

- SLA's,policies,externalrequirements
- SLA's œ definecustomer securityspecifications
- Policies œ defineorganization securityrequirements
- Externalœ specifyissues to keepin mind when interactingw/external sourcesñPhysicalsecurityœ who can getinto secureareasñTechnicalsecurityœ firewalls, s,password control,antivirus softwareñPolicysecurityœ password changingpoliciesñSecurityis partofeachSLA notpartofoperationalagreement

CapacityManagement

Objective:To determinethe*right,cost justifiable,capacity*ofIT resources suchthattheServiceLevels agreed withthebusiness areachieved atthe*right time*.Objectives:
•Demand Management

o Business CapacityManagement

•W orkload Management

o ServiceCapacityManagement

•ResourceManagement

o ResourceCapacityManagementW hiledoingtheabove,also need to do:
•PerformanceManagement

o Internaland ExternalFinancialData

o UsageData

o SLM Data /ResponseTimesCDB œ CapacityData Baseœ Contains aıı ı Metrics,etc. Used to createa CapacityManagementPlan. PerformanceManagementData populates theCDB.Essentials:

From Customer Demands to Resources

Demand Management

W orkload Management

PerformanceManagement

CapacityPlanning

DefiningThresholds and MonitoringApplication Sizing:To estimatetheresourcerequirements to supporta proposedapplication changeto ensurethatitmeets its required servicelevels.Modeling:
Trend Analysis

AnalyticalModeling

Simulation Modeling

BaselineModels

Used to Answer the—W hatIf… —questions

Data for Modelingcomes from theCDB

KeyConceptsto Study:

- Performancemgmtœ measuring,monitoring,and tuningtheperformanceofIT infrastructurecomponents for optimum performance
- Application Sizingœ determiningthehardwareor network capacityneeded to supportnew or modified services and thepredicted futureworkload

- Modelingœ usinganalytical,simulation or trendingmodels to determinethe capacityrequirements ofservices and determiningthebestcapacitysolutions. Allows various scenarios to beanalyzed and the—what-if"questions addressed
- W orkload mgmtœ dealingwithunderstandingwhatthevarious business drivers aredoing,and whatresources theyrequireœ a foundationalcomponentof modeling,butalso stands alone.
- Capacityplanningœ developinga CapacityPlan,based on a Capacitymgmt database,analyzingthecurrentsituation and predictingthefutureuseoftheIT infrastructureand theresources needed to meetexpected demand for theIT services (preferablyusingscenarios)
- Aims to consistentlyprovidetherequired IT resources attherighttime,and atthe rightcost,aligned withthecurrentand futurerequirements ofthebusiness.
- Benefits
  - reduced risks associated withexistingservices as theresources are effectivelymanage,and theperformanceoftheequipmentis monitored continuously
  - reduced risks associated withnew or modified services as Application Sizingmeans thattheimpactofnew or modified services on existing systems in known
  - reduced costs as investments aremadeattheappropriatetime
  - reduced business disruption throughcloseinvolvementwithCM when determiningtheimpacton IT capacity. Preventingurgentchanges resultingfrom inadequateor incorrectcapacityestimates
  - morereliableforecasts providingquicker and moreaccurateresponseto customer requests
  - greater efficiencyas demand and supplyarebalanced atan earlystage
  - manageor even reduced capacity-related expenditureas capacityis used moreefficiently
- Inputs
  - technology
  - servicelevels
  - business plans,strategy,requirements,volumesoperationalschedules
  - deploymentprograms
  - projectplans
  - forward scheduleofchange
  - incidents and problems
  - financialplans
  - budges
- Activities
  - Business Capacitymanagementœ trend,forecast,model,protype,sizeand

documentfuturebusiness requirements

- o ServiceCapacitymgmtœ monitor,analyze,tune,and reporton service performance,establishbaselines and profiles for useofservices,manage demand for services
- o Resourcecapacitymgmtœ monitor,analyze,run,and reporton the utilization ofcomponent,establishbaselines and profiles ofuseof components
- o DevelopingtheCapacityPlan
- o Modeling
- o Application sizing
- o monitoring
- o analysis
- o tuning
- o implementation
- o demand management

opopulatingthecapacitydatabase ñOutputs

- o capacityplan
- o capacitydatabase
- o baselines and profiles
- o thresholds and alarms
- o capacityreports
- o servicelevelrecommendations
- o costingand chargingrecommendations
- o proactivechanges
- o serviceimprovements
- o revised operationalschedules
- o eIIe ectiveness reviews

oauditreports ñRelationships

- o IM,PM,CM,Releasemgmt,Configmgmt,SLM,FM,ITSCM, Availabilitymgmt
- o IM informs capacitymgmtaboutincidents logged dueto capacityor performanceissues. Capacitymgmtcan providescripts for IM to assist withdiagnosis or resolution ofcapacityproblems
- o PM œ Capacitymgmttools,information,knowledge,and expertisecan be used to assistPM withvarious activities
- o CM œ capacityshould bepartoftheCAB. Capacitymgmtprovides information aboutthe need for capacityand thepotentialimpactofa changeon theprovision ofservice. Info aboutthechanges provides valuableinputto theCapacityplan. Capacitymgmtcan also submit RFC‘s duringimplementation oftheplan
- o RM œ Capacityensurethatsuffi cientcapacityis availablein all r required areas ofdistribution planningwhen thenetwork and distribution servers areused for automaticor manualdistribution
- o Configmgmtœ information provided bytheCMDB is essentialfor developingand eIIe ected CDB
- o SLM œ advises SLM aboutthefeasibilityofservicelevels. Capacity mgmtmeasures and monitors performancelevels and provides info for checkingand changingtheagreed servicelevels when needed
- o FM œ capacitysupports investmentbudgeting,cost/benefitanalysis,and investmentdecisions. Capacityalso provides essentialinfo for charging capacity-related services. EssentialthattheCapacityPlan is consistent withall aspects offinancialplanningand plans

oITSCM œ capacitymgmtspecifies themin capacityneeded to continueor recover serviceprovision in theeventofa disaster. Capacityneeds of ITSCM should beconstantlyreviewed to ensurethattheyreflectday-to-daychanges in theoperatingenvironment

- o Availabilitymgmtœ Performanceand capacityproblems can resultin poor

qualityIT services whichcan beequated withserviceUnavailability

ñCriticalsuccess factors

- o accuratebusiness forecasts and expectations
- o understandingoftheIT strategyand planningand its accuracy
- o knowledgeofcurrentand futuretechnologies
- o cooperation withother processes

- o an abilityto demonstratecostEffectiveness ñKPI's
- o predictabilityofthecustomer demand
- o technologyœ abilityto continually achievetheagreements laid down in theSLA even when usingolder technology
- o costœ reduction in number ofrushed purchases,reduction in unneeded overcapacity,drawingupinvestmentplans earlyon
- o operations œ reduction in number ofincidents dueto performanceor capacityissues,abilityto meetcustomer demand all thetime,extentto whichcapacitymgmtis taken seriously
- o reduced discrepancies aboutactualand planned capacity
- oreduced impacton servicelevels ñRoles
- o Capacitymanager œ managetheprocess,ensurethatthecapacityplan is developed and maintained,ensurethattheCDB is keptupto date.
- o System,Network,and Application mgrs œ assistingwiththeoptimization ofresources within their own areas,required to provideadviceand assistanceon technicalissues within their area ofspecialized knowledge

ñ Bottlenecks
- o Unrealisticexpectations
- o lack ofappropriateinformation
- o supplier inputor benchmarks
- o implementation in complexenvironments
- o determiningtheappropriatelevelofmonitoring
- o lack ofmanagementsupport

AvailabilityManagement

Objectives:
•To predict,plan for and managetheavailabilityofservices byensuringthat:
- o All services areunderpinned bysufficient,reliableand properlymaintained CIs
- o W hereCIs arenotsupported internally theareappropriatecontractualagreements withthird partysuppliers
- o Changes areproposed to preventfutureloss ofserviceavailability

Onlythen can IT organizations becertain ofdeliveringthelevels ofavailabilityagreed withcustomers in SLAs.Aspects ofAvailability:
Reliability

Maintainability:Maintenanceyoudo yourself,as a company

Resilience:Redundancy

Serviceability:MaintenancedonebysomeoneelseAvailabilityInformation is stored in an AvailabilityDatabase(ADB). This information isused to createtheAvailabilityPlan. SLAs providean inputto this process.UnavailabilityLifecycleMTTR:Mean Timeto Repair (Downtime)œ Timeperiod thatelapses between thedetection ofan Incidentand it's Restoration. Includes:Incident,Detection,Diagnosis,Repair,Recovery,Restoration.MTBF:Mean

TimeBetween Failures (Uptime)œ Timeperiod thatelapses betweenRestoration and a new Incident.MTBSI:Mean TimeBetween System Incidents œ Timeperiod thatelapses between twoincidents. MTTR +MTBF.

—An IT serviceis *not available* to a customer ifthefunctions thatcustomer requires at thatparticular *location* cannotbeused althoughthe*agreedconditions*under whichtheIT serviceis supplied arebeingmet“

KeyConceptsto Study:

- Availabilityœ IT serviceis continuallv yavailableto thecustomer,limiteledowntime, rapid servicerecovery
- Reliabilityœ theserviceis availablefor an agreed period withoutinterruptions, increases ifdowntimeprevented
- Maintainabilityand recoverabilityœ activities needed to keeptheservicein operation and restoreitwhen itfails,includes preventativemaintenanceand scheduled inspections
- Serviceabilityœ contractualobligations ofexternalserviceproviders. Definethe supportto beprovided for theoutsourced services
- Objectives œ
  - providecosteffectiveand defined levelofavailabilityoftheIT service thatenables thebusiness to reachits objectives
  - alignmentofthecustomer demands withwhattheIT infrastructureand IT orgis ableto offer
  - ensurethattheachieved availabilitylevels aremeasured and improved continuously ñBenefits
  - IT services thataredesigned,implemented and managed fulfill theagreed availabilityrequirements
  - singlecontactand person responsiblefor availabilityofproducts and services
  - new products and services fulfill therequirements and availability standard agreed withthecustomer
  - associated costs areacceptable
  - availabilitystandards aremonitored continuouslyand improved
  - oAppropriatecorrectiveaction is undertaken when a serviceis unavailable ooccurrenceand duration ofunavailabilityarereduced
  - emphasis is shifted from remedyingfaults to improvingservice
  - oeasier for theIT orgto proveits added value ñActivities
  - oPlanning°Determiningtheavailabilityrequirements°designingfor availability°designingfor recoverability°securityissues°maintenancemanagement°developingtheavailabilityplan
  - oMonitoring°Measuringand reporting

- Mean timeto repair œ averagetimebetween theoccurrence ofa faultand servicerecovery(downtime). Sum ofthe detection timeand resolution time. Relates to recoverabilityand serviceability
- Mean timebetween failures œ mean timebetween the recoveryfrom

oneincidentand theoccurrenceofthenext, uptime. Relates to reliability

- ñ Mean timebetween system incidents œ meanttimebetween theoccurrences oftwo consecutiveincidents. sum of MTTR and MTBF

oMethods and techniques

°ComponentFailureImpactAnalysis ñuses availabilitymatrixwiththestrategiccompo nents and their roles in eachservice.

°FaultTreeAnalysis ñtechniqueused to identifythechain ofevents leadingto failureofan IT service.

ñSeparatetreedrawn for everyservice °CCTA risk analysis and managementmethod

- ñ means ofidentifyingjustifiablecountermeasures to protect confidentiality,integrity,and availabilityofIT infrastructure

° availabilitycalculations

° ServiceOutageAnalysis œ used to identifycauses offaults, investigateeffec ectiveness ofIT organization,presentand implement proposals for improvement

°TechnicalObservation Postœ dedicated team ofspecialists focuses on a singleaspectofavailability ñInputs

- o business availabilityrequirements
- o impactassessmentfor albusiness processes supported byIT
- o availability,reliability,and maintainabilityrequirements for theIT components in theinfrastructure
- o data aboutfaults affecting services or components,generally in theform ofincidentand problem records and reports
- o configuration and monitoringdata abouttheservices and components
- o achieved servicelevels,compared withtheagreed servicelevels for all services covered under theSLA ñOutputs
- o availabilityand recoverydesign criteria for new and improved IT services
- o technologyneeded to obtain therequired infrastructureresilienceto reduceor eliminatetheimpactoffaultyinfrastructurecomponents
- o availability,reliability,and maintainabilityguarantees ofinfrastructure components required for theIT service
- o reports abouttheachieved availability,reliability,and maintainability
- o availability,reliability,and maintainabilitymonitoryrequirements

oavailabilityplan for theproactiveimprovementoftheIT infrastructure ñRelationships

- o SLM,Configmgmt,capacitymgmt,ITSCM,PM,IM,Securitymgmt, CM
- o SLM œ availabilityis oneofthemostimportantelements in SLA's
- o Configmgmtœ provides info abouttheinfrastructure
- o Capacitymgmtœ Changes in capacityoften affect theavailabilityofa serviceand changes to theavailabilitywithaffect thecapacity. Capacity provides information abouttheinfrastructure. Thetwo processes often exchangeinformation aboutscenarios for upgradingor phasingoutIT components and aboutavailabilitytrends thatmaynecessitatechanges to thecapacityrequirements
- o ITSCM œ provides information aboutcriticalbusiness process. Many measures taken to improveavailabilityalso enhanceITSCM and vice versa
- o PM œ directlyinvolved in identifyingand resolvingthecauses ofactualor potentialavailabilityproblems
- o IM œ provides reports to determinetheachieved availability
- o Securitymgmtœ securitycriteria haveto beconsidered when determining

availabilityrequirements. Availabilitymgmtcan provides info to Security mgmtaboutnew services.
- CM œ availabilitymgmtinforms Changemgmtaboutmaintenanceissues related to new services and elements thereof. Initiates changemgmt process to implementchanges necessitated byavailabilitymeasures. CM informs AM aboutscheduled changes

ñ Criticalsuccess factors œ
- business musthaveclearlydefined availabilityobjectives and wishes
- SLM musthavebeen setupto formalizeagreements
- bothparties mustusethesamedefinitions ofavailabilityand downtime
- boththebusiness and IT orgmustbeawareofthebenefits ofavailability

mgmt ñKPI's
- percentageavailability(uptime)per serviceor groupofusers
- downtimeduration

odowntimefrequency ñRoles
oAvailabilitymgr °definingand developingtheprocess in theorg °ensuringthatIT services aredesigned suchthattheachieved servicelevels in terms ofavailability,reliability,serviceability, maintainability,and recoverabilitycorrespond withtheagreed servicelevels
°reporting °optimizingtheavailabilityoftheIT infrastructureto providea cost-effective improvements oftheserviceprovided to thebusiness ñBottlenecks
- senior managementdivides responsibilityfor availabilitybetween several disciplines
- eachmanager feels responsiblefor his or her own area,no overall coordination
- IT mgmtfails to understand theadded valueprovided to theIM,PM,and CM processes
- currentavailabilitylevelis consider sufficient
- no supportfor appointinga singleprocess manager
- process manager does nothaverequired authority
- underestimatingresources
- lack ofeffective measurementand reportingtools
- lack ofother processes suchas SLM,Configmgmt,and PM

Aboutthe ITILExams

W ho Administersthe Exams?
EXIN is an independentorganization establishingeducationalrequirements,and developingand organizingexaminations in thefield ofInformation Technology, includingITILas well as other subjectareas. EXIN exams areavailablein eleven languages.

Together withOGC and itSMF,EXIN is a foundingmember oftheinternationalITIL certification board. In thepastEXIN successfully launched theITILFoundation and ITIL Practitioner certificates and played a leadingrolein modernizingtheexaminations for the ITILManager's Certificatein IT ServiceManagement.

EXIN certifies ITIL-professionals for ITILFoundation,ITILServiceManager and ITIL Practitioner,all over theworld.

FoundationCertificate inIT Service M anagement (the topic ofthisStudyGuide)
This certifies thattheholder has a basicunderstandingoftheITILprinciples:the

terminology,theServiceDesk function,the10coreprocesses and their relationships and interfaces withother processes and thebusiness.

This certificateis awarded after exam participants achievea passinggradeof65% on a multiple-choiceexamination.

Practitioner Certificate inIT Service M anagement
A practitioner certificateis availablefor mostprocesses. Itidentifies thattheholder has in depthknowledgeoftheapplicableITILprocess and is capableofmanagingand implementingthatprocess in an organisation. Theprerequisiteis threeto four years of linemanagementexperiencein IT plus theFoundation Certificatein IT Service Management. This certificateis awarded after exam participants achievea passinggrade of60% on a multiple-choiceexamination.

TheExams cost£110+VAT,or partresitat£55+VAT

For overseas costs pleasecontactJulieKi ue lebyemailjk@ksl.orgor ca l + +44 (0)1270 611600

M anager'sCertificate inIT Service M anagement
This certifies thattheholder has an overa l n managementview oftheServiceDesk,the10 corediscipline sofIT ServiceManagementand their interrelationships and interfaces. It also identifies thattheholder is capableofoverseeingand managingan entireIT Service Managementdepartmenteither in theimplementation stages or in a standing organisation.

Theprerequisiteis threeto four years ofmanagementand/or consultingexperienceplus theFoundation Certificatein IT ServiceManagement.

This certificateis awarded after participants meetthefo l o ingcriteria:

ñ Receivea passinggradeof50% on a managementski l s assessment

ñ Receivea passinggradeof50% on theServiceSupportexamination and a passinggradeof50% on theServiceDeliveryexamination

Typica l y ytheManagers courseis 2 x1weeks trainingand costs for theManagers exam are£130per paper,and thereare2 papers to take. Managers exams can onlybetaken at certain times,and usua l y yonlybyan accredited trainingorganisation. Emailjk@ksl.org for further information.

A l e examinations aredesigned to betaken fo l o ingan approved trainingcourse. The examinations areheld regularly,in severalcountries and languages around theworld.

ITILPins

Ithas been a wеll-k -known tradition for years thatpassingan ITIL-exam does notonly resultin a certificate,butis also accompanied bythepresentation ofthis pin. This distinguishingbadgein theform oftheinternationallу ywеll-k -known ITIL-logo,exists in 3 colors:

ñgreen,for theFoundation Certificateñblue,for thePractitioner's Certificateñred,for withtheManager's Certificate

M ore information:
hцn:p://Wwww.exin-exams.com

Arethereanypre-requisites for takingtheITILExam?

Therearеno formalentryrequirements for thecourseor examination,butitis assumed thataц d delegates wiц n havea basiclevelofIT literacy. Thecoursewiц b besuitablefor... Staff e enteringan IT environmentwho mighthaveday-to-dayresponsibilities within one or moreoftheservicemanagementdisciplines

Staff v workingin an IT servicemanagementdisciplinewho wishto broaden their understandingofhow their rolefits into thewider servicemanagementframework

Other staff v whoseeffec ectiveness would beenhanced bya greater awareness and understandingofbestpractices in IT servicemanagement

Whatdoes having"ITILCertification"mean? Theholder oftheFoundation Certificatein IT ServiceManagementshould beawareof thetechniques involved across therangeofservicedeliveryand servicesupport activities. Heor Sheshould beableto relatetheseactivities to eachother and to wider IT issues,and should becompetentto participatein servicedelivery/supportfunctions,or to applythis knowledgeto their own work environment.

How muchdoes theITILexam cost?
TheCostoftheFoundation exam is £100.00+VAT.

How do IgetRecognised In ITIL? Itdepends on whether youarean individualor a company. To getrecognised in ITILas an individualyouneed to achievecertification atFoundation,Manager or Practitioner level. As a veryroughguidelineifyouareinvolved in IT in a supportingrole(youmay bein a marketing,administration or technicaljob),Foundation levelmaybesuffic ice. If generallу yyouareleadingIT projects then Practitioner is thelevelyoushould beaiming at. For companies wishingto adoptITIL,theroutetends to beslightlydiffer erent. Thebiggest decision is

decidingifITILis rightfor you,and thatrequires an investmentoftime, collecting and reviewinginformation from themarketplace.

Whydo Ineed an ITILQualification? Individual Themajorityofpeoplethatconsider ITILas a qualification do so for career and personal developmentreasons. Often this is driven bya changeofjobor career,whereyounotice thatto getto thetopoftheCV pile,youneed to havean extra qualification likeITIL (even ifyouhavebeen involved in servicemanagementsuccessfully for manyyears withoutit). In manyadvertised positions ITILhas becomea prerequisite. Company Themajorityofcompanies thatimplementITILalso encouragetheir employees to take theexams. Ifyour staff have accredited ITILqualifications,then youcan presentyour companyas usingITIL. This works particularlywell where youtender for or supplyto anylargeIT organisations or outsourcingcompanies.

WhatIanguages aretheITILexaminations availablein? TheFoundation examinations areavailablein English,French,Spanish,German, Portugese,Chinese,Japaneseand Russian. ThePractitioner examinations areavailablein Englishonly. TheServiceManager examinations areavailablein English,German and Russian.

IfItakea an ITILFoundation coursein Spanish,French,German etc. Do Istill have to learn theITILterms in English?

Yes,youdo. In theexaminations youwill find boththeEnglishas well as theSpanish terms. TheITILterms can befound in theexam requirements.

How manyquestions can Iexpecton myexam? Theexamination will consistofa one-hour —closed book“multiple-choicepaper, containing40questions.

How muchtimedoes theexam take?
TheFoundation Exam takes 1Hour.

Can ItaketheITILFoundation exam on-line? Youcan taketheEnglishexam ITILFoundation on-lineatoneofthePrometrictest centres.
Seehttp://securereg3.prometric.com/for moredetails

How longdo Ihaveto waitfor theresults ofmymultiplechoiceexaminations? For eachmultiplechoiceexam,everycandidatereceives theresultpaper and certificate within four weeks after theexamination session.

How does a candidatereceivetheresultand thecertificateofan EXIN or ISEBexamination? TheAuthorised Examination Centres (AEC)thatorganized your EXIN examination will also provideyouwitha resultpaper and,ifyoupassed,a certificate. TheAEC will receivetheresults and certificates from EXIN. After a computer based (Prometric)or webbased multiple-choiceexamination youwill receivetheresultimmediatelyafter finalizingtheexamination. Thecertificates will then

besentto youvia theAEC or byEXIN directly.

How can Ichangethenames printed on thecertificate? Atthestartoftheexamination session onefills in thePersonalData Form. On this form thereis an item whereyoucan specifyexactlyhow your nameshould beprinted on the certificate.

How can Iretaketheexam ifIfail?And how manytimes? In theunfortunatecaseyoufailed an examination,youcan takepartin another examination session. This does notnecessarilyhaveto beatthesameAEC. For the retakeofa Foundation examination youcould for exampleturn to oneofthePrometric TestingCenters. Thereis no limitto thenumber oftimes youcan retaketheexamination.

W hatis thepass rateoftheEXIN examinations? Obviously,thepass rates fluctuate. EXIN does notchangethepass mark automatically if a groupofcandidates'scores below thecurrentpass rate. DroppingPass rates may indicatea problem in either thepreparation ofthecandidates or in thequalityofthe examination paper. EXIN monitors theexam results and investigates deviations to take appropriatemeasures.

Over thelastyear thepass rateoftheITILexaminations wereapproximately...ITILFoundation 85%ITILPractitioner 65%ITILServiceSupport55%ITILServiceDelivery65%

Ilearned myFoundation Certificatea few years ago. Will Ihaveto updatethis certification withthereleaseofthenew exams? No. Your Foundation Certificateis still valid and can beused in thefutureto fulfill a part oftheprerequisites for Practitioner and/or ServiceManager exams.

Ipassed myServiceDeliveryexam a few years ago and would liketo take theServiceSupportexam. Will Ineed to re-sitthenew ServiceDelivery exam to qualifyfor theManager's Certificatein IT ServiceManagement? No. Passinga mixoftheold and new exams will still qualify towards therequirements to obtain your Manager's Certificatein IT ServiceManagement.

W hatis Prometricand whatis its role? Thomson Prometricis a worldwideprovider ofcomputer based examinations. TheEXIN ITILFoundation examination is oneoftheexaminations availablein thePrometric Authorized TestingCenters.

W hatis thedifferencebetween EXIN and ISEB? "W ewereasked byoneofour major clients iftherewas a difference-wetook theshort routeand had thecontrolling bodyofficially clear theissue,Seala said. "Accordingto Richard W ills of theOGC,theonlydifferencebetween thetwo is thattheir respective services areoffered in different parts oftheworld."

W hatis ISEB? TheInformation Systems Examinations Board (ISEB)is a division oftheBritish Computer Society. ISEB was created in 1990from theSystems Analysis Examinations Board (whichwas setupin 1967). ISEB administrates examinations and issues certificates in a varietyofsubjects in thefield ofinformation systems engineering. A list ofqualifications can beobtained from ISEB.

ITILExam FAQ andTest-TakingAdvice

As well as learn theessentials ofeachindividualprocess,youwill need to understand the linkages and synergies ofeachprocess. Youwill gain extra marks -whererelevant!-for simplydescribingthis. Somegeneraltips -UseITILterminologythroughout-butcorrectly! -Answer thequestion that's asked. NOT theonethatyouthink is beingasked. Just becauseyouseethephrases "Problem Management"and "benefits"doesn'talways mean that's themain thrustoftheanswer.

Next,read thecontextofeachquestion threetimes and ensurethatyougetto answering itstraightaway. ISEB examiners reports always makereferenceto thefactthata large number ofstudents do notread thequestion properly. -Avoid explainingwhathasn'tasked to beexplained. Justbecauseyouknow all there is to know about,sayChangeManagement,is irrelevantwhen youhavebeen asked to explain how Changeis linked to config. Answer what's really beingasked. ISEB examiners regularlyhighlightpoor writingstyleand 'waffle'as beingdistracting. So my advicewould beto keepitclear,conciseand simple. Go for themarks! -Ifyouhavepre-startreadingtime-usethis wisely. Immediatelyeliminateanyquestions thatyouwill find trulystrugglewith. Selectyour strongest3/4 questions firstand think throughthestructureofyour answer carefully. Save1/2 questions thatyoucan getaway withlistingthings for,saythebenefits ofIncidentManagement. Savinglisttype questions will help you'bag'somelatemarks when time's runningout.

MoreITILSpecifictips:--Answer your questions in theITILway-notthewayyounecessarilydo itin reallife. Theexaminer does notknow your organisation but(s)heDOESknow thesyllabus for the ISEBexaminations. -Learn thebenefits and advantages ofeachprocess -Learn thedisadvantages/challenges ofeachprocess -Learn how to implementall oftheprocesses -Learn thosegenericitems thatarepretty muchstandard whichever process you implement,thereis a pattern -Learn theinterfacepoints,theoutputs ofoneprocess to theinputs ofanother. Learn how -when implemented together -theygeneratefurther benefits for theorganisation -Learn the"desired results"thatorganisations/managementarelookingto achievewith ITILprocesses -Leaveyourselfsometimebeforetheend oftheexam to re-read your answers -butdo it from an ITILexaminers perspective -Know theboundaries ofITIL,whereITILeffectively ends and another (e.g. COBIT, SixSigma)begins. Youdon'tneed to know theother process in ANY detail,butsimply understandinghow far youcan takeITILbeforeyouneed to employthemethodologies ofanother process is beneficial.

RunningoutofTime?

Ifyoufind yourselfrunningoutoftime,don'tpanic:--Selecttheanswers thatscorethemostpoints! -Usebuıleted lists for maximum coveragewithminimum words -Hand your roughnotes in withyour answers papers -butwritesome"labels"on them -highlightingto theexaminer thatyouwereplanningto includethesepoints for specific answers. Youmaytipthebalanceiftheexaminers is thinkingaboutgivingyouthe benefitofthedoubtfor an answer

Bonus:ITILFoundationExam WeekendCram Plan:

Ifyouarea —crammer“likeme,(also known as a —procrastinator“)then this strategy mightwork for youlikeitdid for me: 1) W hen youscheduleyour Exam (Iused Sylvan Prometric),look for an exam location thatis availableon weekends.

2) Scheduleyour exam for Sundayafternoon. Yes,Iknow this is a major interruption to your personallife. Ifyoudon‘tlikeit,youcan studytherightway and avoid all the stress oflast-minutecramming. Itook myexam at1pm on a Sunday.
3) Saturdaymorning,wakeup,shower,makecoffee,whatever your usual—go to work“habitis.
4) Instead ofgoingto work,sitdown atyour desk or chair and read this guide, straightthru,onetime. Makenotes on another sheetofpaper. (Sciencehas shown thatsimplytakingnotes will improveyour memoryoffacts,even withoutlooking atthenotes later).
5) Enjoytherestofyour Saturdayas usual.
6) Sundaymorning,wakeup,shower,makecoffee,whatever your usual—go to work“habitis.7) Repeatstep48) Go takethetest.

Good luck!You‘ll do fine!

And when youpass your exam,pleasesend mean emailwithyour score,and any feedback youhaveaboutthis studyguide.

Thanks, Scott Braden scott@itil-study-guide.com