



Education

PART II – ITIL FOUNDATIONS FOR SNIA CERTIFICATION – SERVICE DELIVERY & STORAGE MANAGEMENT

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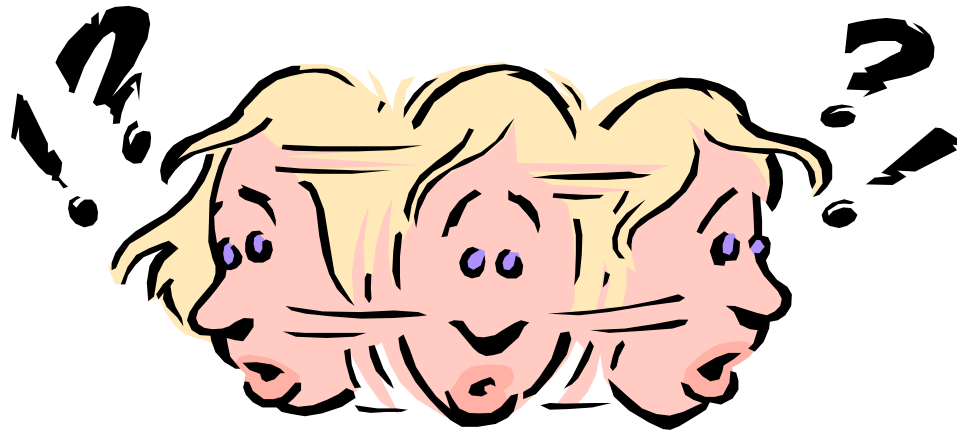
SR-2006-0363

Why ITIL?

- ◆ **FAR Part 46** Quality Assurance (*Replaced by ISO9001)
- ◆ **Mil-Std-109** Quality Assurance Terms & Definitions
- ◆ **Mil-Q-9858*** Quality Program Requirements
- ◆ **Handbook 50** Evaluation of a Contractor's Quality Program
- ◆ **Mil-Std-1520** Corrective Action & Disposition System for Nonconforming Material
- ◆ **Mil-I-45208*** Inspection System Requirements
- ◆ **Handbook 51** Evaluation of a Contractor's Inspection System
- ◆ **Mil-Std-45662*** Calibration Systems Requirements
- ◆ **Handbook 52** Evaluation of Contractor's Calibration System
- ◆ **Mil-Std-1535*** Supplier Quality Assurance Program Requirements
- ◆ **AR-92** Naval Air Systems Command Aeronautical Requirements, Quality Program Requirements
- ◆ **Mil-Std-1521** Technical Reviews for Systems, Equipment & Computer Software

Why ITIL?

- Total dependence on Information Technology
- Need to deal with complexity & change
- Need to align Business & IT Goals
- Best Practices for managing technology



United Kingdom

Office of Government Commerce (OGC)

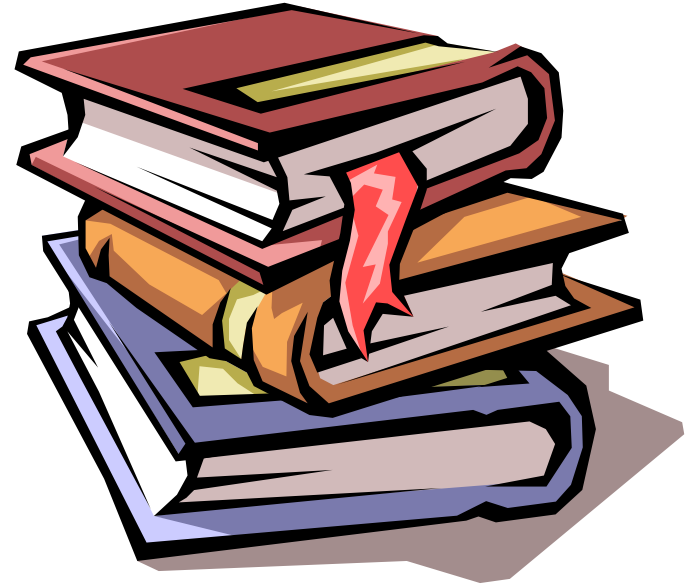
- ◆ Information **T**echnology **I**nfrastructure **L**ibrary
- ◆ Created by CCTA
- ◆ Promote Sound IT Management Practices

➤ Best Practice Framework

- ◆ Over 15 years of Practice
- ◆ Recently Refined and Updated
- ◆ International User's Groups



- Managers Set
- Software Support Set
- Operations Set
- Security Management
- Application Management
- Infrastructure Management
- Planning to Implement
- Service Support
- Service Delivery



British Computer Society

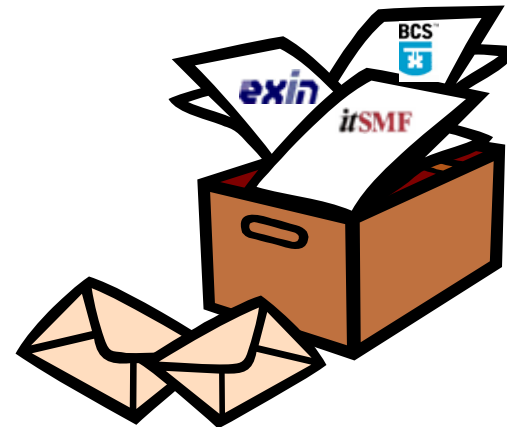
- ◆ ISEB – Information Systems Examination Board
- ◆ [Http://www.bcs.org/sever.php?show=nav.5732](http://www.bcs.org/sever.php?show=nav.5732)

Examination Institute for Information Science

- ◆ EXIN
- ◆ [Http://www.exin-exams.com](http://www.exin-exams.com)

itSMF

- ◆ User Groups
- ◆ [Http://www.itsmf.com](http://www.itsmf.com)



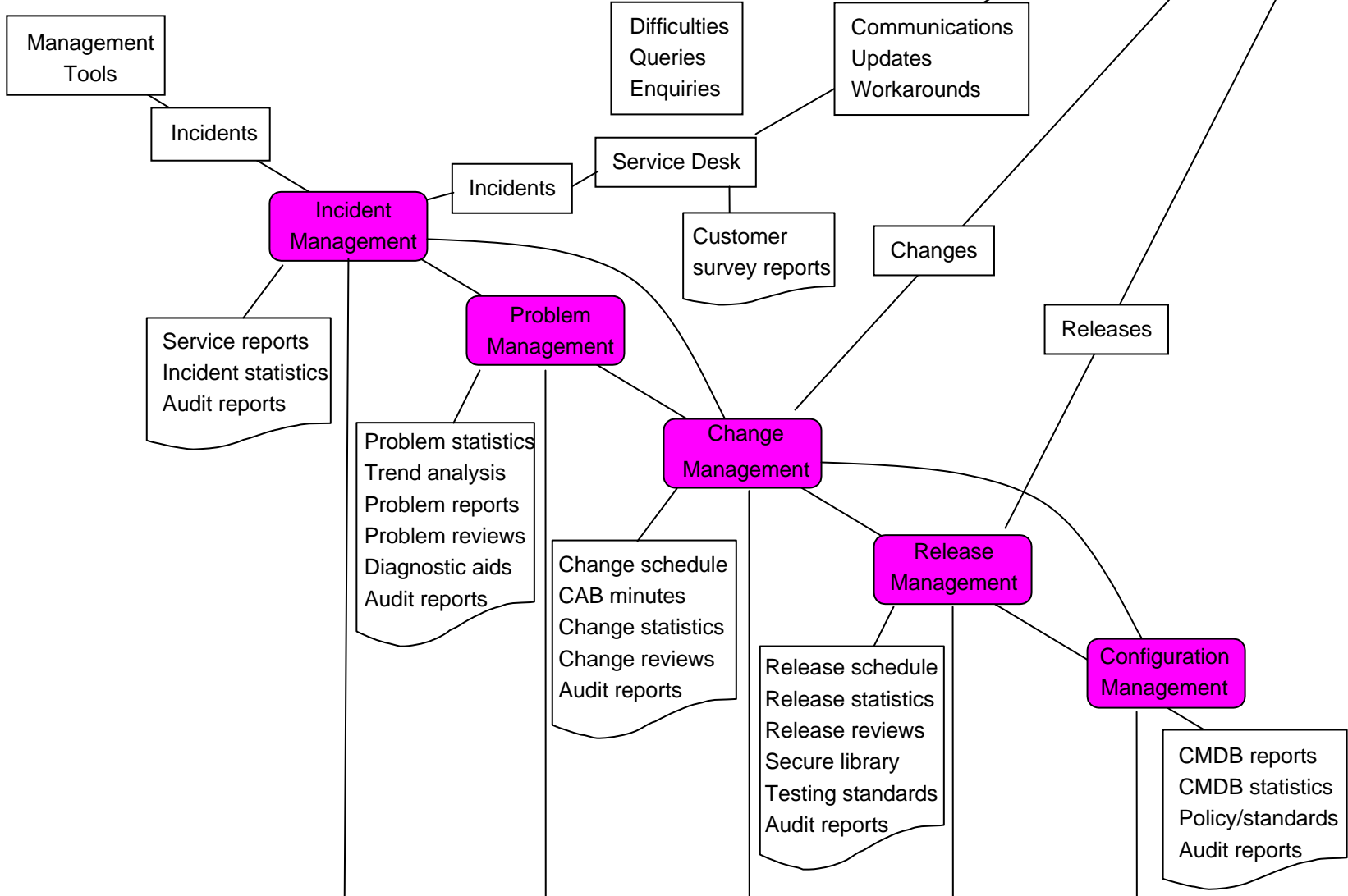
Service Support

- Configuration Management
- Change Management
- Service Desk (Function)
- Problem Management
- Incident Management
- Release Management

Service Delivery

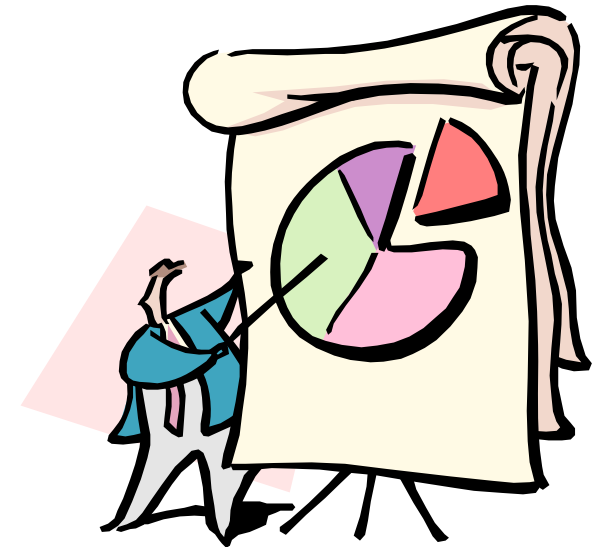
- Capacity Management
- IT Service Continuity Management
- Service Level Management
- Availability Management
- Financial Management

The Business, Customers or Users



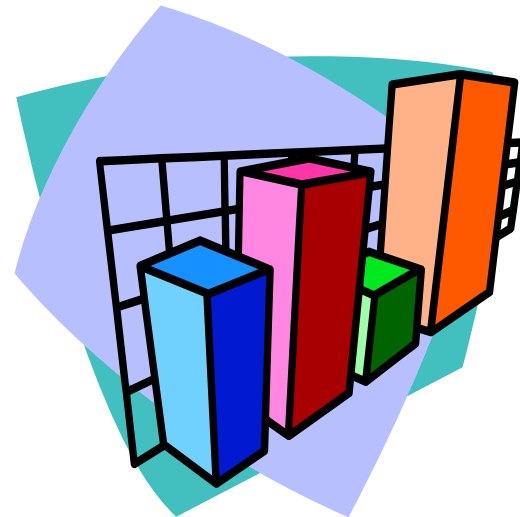
CMDB	Incidents	Problems Known errors	Changes	Releases	Configuration Items
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- Capacity Management
- IT Service Continuity Management
- Availability Management
- Service Level Management
- Financial Management



➤ Business Capacity Management

- ◆ Trending
- ◆ Forecasting
- ◆ Modeling
- ◆ Prototyping
- ◆ Size
- ◆ Documentation



- **Service Capacity Management**
 - ◆ Performance tuning
 - ◆ Workload profiling
 - ◆ Demand management
- **Resource Capacity Management**
 - ◆ Understanding component utilization
 - ◆ New technology
 - ◆ Effective component usage
- **Management Reporting**



Goal

TO ENSURE THAT COST JUSTIFIABLE IT CAPACITY ALWAYS EXISTS & THAT IT IS MATCHED TO THE CURRENT & FUTURE IDENTIFIED NEEDS OF THE BUSINESS" OR ORGANIZATION

Owner

CAPACITY MANAGER

Measures of Efficiency – KPI or Productivity

- ACCURATE FORECASTS
- KNOWLEDGE IT STRATEGY
- CURRENT/FUTURE TECH
- COST EFFECTIVE
- REDUCTION IN "PANIC BUYING" OF ASSETS

Measures of Effectiveness – Quality of Service

- REDUCTION IN INCIDENTS DUE TO POOR PERFORMANCE
- NO SIGNIFICANT OVER-CAPACITY THAT CAN'T BE JUSTIFIED IN BUSINESS TERMS

Activities / Scope

- BUSINESS CAPACITY MGMT SUB-PROCESS
- TREND, FORECAST, MODEL, PROTOTYPE
 - DOCUMENT FUTURE BUSINESS REQUIREMENTS
- SERVICE CAPACITY MGMT SUB-PROCESS
- SERVICES MONITOR, ANALYZE, TUNE, & REPORT
 - ESTABLISH BASELINES & PROFILES OF SERVICE
 - MANAGE DEMAND FOR SERVICE
- RESOURCE CAPACITY MGMT SUB-PROCESS
- COMPONENTS MONITOR, ANALYZE, RUN & REPORT
 - ESTABLISH BASELINES OF COMPONENT USE
 - ESTABLISH PROFILES OF COMPONENT USE

INPUTS

- SLAs & SERVICE CATALOGS
- BUSINESS REQUIREMENTS
- IS/IT PLANS & STRATEGIES
- OPERATIONAL SCHEDULES
- DEPLOYMENT & DEVELOPMENT PLANS
- SCHEDULE OF CHANGES
- INCIDENTS & PROBLEMS
- SLA BREACHES
- FINANCIAL PLANS
- BUDGETS

OUTPUTS

- CAPACITY PLAN
- CBD UPDATES
- ADJUST THRESHHOLDS
- ADJSUT ALARMS
- CAPACITY REPORTS
- SLA RECOMMENDATIONS
- COSTING & CHARGING ADJUST
- SERVICE IMPROVEMENT RECS
- REVISED OPS SCHEDULES
- AUDIT REPORTS
- EFFECTIVENESS REVIEWS

Interface

- CHANGE MGMT
- CONFIG MGMT
- RELEASE MGMT
- PROBLEM MGMT
- INCIDENT MGMT
- AVAILABILITY MGMT
- SERVICE LEVEL MGMT
- CONTINUITY MGMT
- FINANCIAL MGMT

Utility or Purpose

- INCREASED EFFICIENCY & COST SAVINGS
- DEFERRED EXPENDITURES
- ECONOMIC PROVISIONING
- PLANNED BUYING
- REDUCED RISK
- INCREASED CONFIDENT FORECASTS
- INFLUENCE APPLICATION LIFECYCLES
- APPLICATION SIZING

- Initiate/Integrate w/Business Continuity Management
- Develop requirements & strategy
- Implementation of IT Service Continuity Plan
- Operational Management



Goal TO RECOVER IT SERVICES THAT SUPPORT CRITICAL BUSINESS IN CASE OF A DISASTROUS OUTAGE

Owner
CONTINUITY MANAGER

Measures of Efficiency - KPI or Productivity

- PERFORMANCE DURING DRILLS
- TIME TO RECOVER IT SERVICES OF A GIVEN SEVERITY LEVEL
- PLANNED DOLLARS VS. ACTUAL DOLLARS SPENT

Measures of Effectiveness - Quality of Service

- TIME TO RECOVER GIVEN LEVEL OF SECURITY PLAN COSTS VS. FORECASTED COSTS
- TRAINING OF THE BCM, TIME, RESOURCES, RECOVERY

Activities / Scope

- STAGE 1**
 - INITIATE BCM (BUSINESS CONTINUITY MGMT)
- STAGE 2**
 - BUSINESS IMPACT ANALYSIS
 - RISK ASSESSMENT, BC STRATEGY
- STAGE 3**
 - OPS IMPLEMENTATION STRATEGY
 - IMPLEMENT STANDBY ARRANGEMENT
 - DEVELOP RECOVERY PLAN AND PROCEDURES
 - IMPLEMENT RISK REDUCTION MEASURES
- STAGE 4**
 - EDUCATION
 - REVIEW & AUDIT
 - TESTING
 - CHANGE
 - TRAINING

OUTPUTS

- CAPACITY PLAN
- POLICY
- SALVAGE PLAN, VITAL RECORDS PLAN,
- EMERGENCY RECOVERY PLAN
- HOT STAND BY
- WARM STAND BY
- TEST PLAN
- RECIPROCAL ARRANGEMENTS
- VITAL PLANS
- BIA (BUSINESS IMPACT ANALYSIS)

INPUTS

- CAPACITY PLAN
- MANAGEMENT INTENTION & OBJECTIVES
- RISK ASSESSMENT
- COMMAND/CONTROL STRUCTURE
- SCOPE
- EDUCATION
- AVAILABILITY PLANS
- VBF (VITAL BUSINESS FUNCTION)
- RECOVERY OPTIONS

Interface

- CHANGE MGMT
- CONFIG MGMT
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- PROBLEM MGMT
- INCIDENT MGMT
- AVAILABILITY MGMT
- SERVICE LEVEL MGMT
- CONTINUITY MGMT
- FINANCIAL MGMT
- SERVICE DESK MGMT

Utility or Purpose

- LOWER INSURANCE PREMIUMS
- REGULATORY REQUIREMENTS
- POSITIVE MARKETING OF CONTINGENCY CAPABILITIES
- COMPETITIVE ADVANTAGE

➤ Planning

- ◆ Determine Availability requirements
- ◆ Design for Availability
- ◆ Vital Business Functions (VBF) impact analysis

➤ Establish Availability targets

- ◆ Agreed –Service Level Agreements (SLA)
- ◆ Supporting – Operating Level Agreements(OLA)



➤ Operational

- ◆ Data Collection & Maintenance
- ◆ Monitoring
- ◆ Management Reporting



Goal OPTIMIZE IT SERVICES AND SUPPORT THE ORGANIZATION ON DELIVERY, COST EFFECTIVE LEVEL OF AVAILABILITY TO SATISFY BUSINESS OBJECTIVE

Owner
AVAILABILITY MANAGER

Measures of Efficiency – KPI or Productivity

- ESTABLISHING MEASURES OF AVAILABILITY AND AGREEING AVAILABILITY TARGETS WITH THE BUSINESS
- MONITORING OF THE ACTUAL AVAILABILITY DELIVERED VERSUS AGREED TARGETS
- IDENTIFYING UNACCEPTABLE LEVELS OF AVAILABILITY THAT IMPACT THE BUSINESS AND USER
- REVIEWING AVAILABILITY WITH THE BUSINESS AND USER REPRESENTATIVES
- REVIEWING AVAILABILITY WITH THE IT SUPPORT ORGANISATION
- CONTINUOUS IMPROVEMENT ACTIVITIES TO OPTIMISE AVAILABILITY.

Measures of Effectiveness – Quality of Service

- ACTUAL LEVELS OF AVAILABILITY VS. AGREED LEVELS
- FREQUENCY OF DOWNTIME
- DURATION OF DOWNTIME
- FREQUENCY OF FAILURE
- IMPACT OF FAILURE (USER TIME, SUPPORT TIME, RECOVERY TIME)
- COST IMPACT FOR DOWN SERVICE, BASED IN SLA

Activities / Scope

- AVAILABILITY REQUIREMENTS FOR IT BUSINESS
- DETERMINE VITAL BUSINESS FUNCTIONS VBF FOR FAILURE IMPACTS
- DEFINE TARGETS FOR AVAILABILITY, RELIABILITY & MAINTAINABILITY
- ESTABLISH MEASURES OF AVAILABILITY, RELIABILITY & MAINTAINABILITY
- ESTABLISH MEASURES AND REPORTS
- MONITOR AND TREND ANALYSIS
- PRODUCE AND MAINTAIN AVAILABILITY PLAN
- INVESTIGATE UNDERLYING REASONS FOR UNACCEPTABLE AVAILABILITY

INPUTS

- CONFIG DATA RELATED TO EACH IT SERVICE
- IT SERVICE AND COMPONENT FAILURES
- AVAILABILITY, RELIABILITY, MAINTAIN REQ.
- BUSINESS IMPACT ASSESSMENT
- INCIDENT AND PROBLEM DATA
- SLA ACHIEVEMENTS
- FINANCIAL INFO (DETERMINE FEASIBILITY)
- RELEASE (SCHEDULE MAINTENANCE)
- CAPACITY PLAN

OUTPUTS

- AVAILABILITY & RECOVERY CRITERIA
- MONITORING REQ., TREND ANALYSIS
- RISK ANALYSIS
- AVAIL PLAN (CHANGE,RELEASE, SLM)
- AGREE TARGET OF AVAIL
- REPORTING AVAIL, RELIABILITY & MAINTAIN
- FINANCIAL REPORTING
- IMPACT ANALYSIS (CHANGE, RELEASE)

Interface

- CHANGE MGMT
- CONFIG MGMT
- RELEASE MGMT
- PROBLEM MGMT
- INCIDENT MGMT
- AVAILABILITY MGMT
- SERVICE LEVEL MGMT
- CONTINUITY MGMT
- FINANCIAL MGMT
- SERVICE DESK MGMT

Utility or Purpose

- AVAILABILITY & RECOVERY CRITERIA
- TO DEFINE, EXECUTE & AUDIT PROCESS
- DESIGN IT SERVICES TO DELIVER
- REQUIRED LEVELS OF AVAILABILITY
- PROVIDE RANGE OF AVAIL REPORTING
- ACHIEVE REDUCTION IN FREQUENCY
- OF INCIDENTS THAT IMPACT AVAIL

- Planning the process
- Implementing the process
- Executing the process
- Periodic reviews
- Service Improvement Plan
- Management Reporting



- Budgeting
- Accounting
- Charging
- Management Reporting



Business, Customers and Users

Queries
Enquire

Communication
Updates
Reports

Service Level
Management

SLAs, SLRs,
OLAs
Service Reports
Service Catalogue
SIP
Exception reports
Audit reports

Requirements
Targets
Achievements

Availability
Management

Availability Plan
Design criteria
Targets / Thresholds
Reports
Audit reports

Capacity
Management

Capacity Plan
CDB
Targets / Thresholds
Capacity Reports
Schedules
Audit reports

Financial
Management

Financial Plan
Types & models
Costs & Charges
Reports
Budgets & Forecasts
Audit reports

Continuity
Management

IT Continuity Plans
BIA & Risk Analysis
Control centers
DR contracts
Reports
Audit reports

Alerts and
Exceptions
Changes

Management
Tools & IT
Infrastructure

ITIL Storage Management



- **Managing Storage**
 - ◆ Allocation (i.e. design, implement & operate)
 - ◆ Staging (i.e. load balancing)
 - ◆ Scratching (i.e. removal of obsolete)
 - ◆ Reorganize (i.e. de-fragmentation)
- **Safeguarding Data**
- **Reparation of Data**
- **Destruction of Data**
- **Management Reporting**



Goal TO ENSURE ALL ASPECTS OF THE STORED PHYSICAL DATA TO BE RELIABLE & AVAILABLE FOR ITS INTENDED USE WITHIN PRESCRIBED SERVICE LEVELS, MEETING DESIRED OPERATIONAL NEEDS.

Owner
STORAGE MANAGER

Measures of Efficiency - KPI or Productivity

- CONTINUOUS IMPROVEMENT ACTIVITIES TO OPTIMISE STORAGE
- MONITORING OF THE ACTUAL STORAGE DELIVERED VERSUS AGREED TARGETS
- IDENTIFYING UNACCEPTABLE LEVELS OF STORAGE THAT IMPACT THE USER
- REVIEWING STORAGE WITH THE BUSINESS AND USER REPRESENTATIVES
- REVIEWING STORAGE WITH THE IT SUPPORT ORGANIZATION

Measures of Effectiveness - Quality of Service

- DATA RELIABILITY
- STORAGE SCALABILITY (APPS)
- RECORDS RETENTION TIME
- ACCESS TIME
- REPARABILITY
- STORAGE CAPACITY
- STORAGE AVAILABILITY
- STORAGE COST PER UNIT
- DATA TRANSFER RATE
- SECURITY

Activities / Scope

- MANAGING STORAGE
 - ALLOCATION (I.E. DESIGN, IMPLEMENT & OPERATE)
 - STAGING (I.E. LOAD BALANCING)
 - SCRATCHING (I.E. REMOVAL OF OBSOLETE)
 - REORGANIZE (I.E. DE-FRAGMENTATION)
- SAFEGUARDING DATA
- REPARATION OF DATA
- DESTRUCTION OF DATA
- MANAGEMENT REPORTING

INPUTS

- IT SERVICE REQUESTS
- BUSINESS REQUIREMENTS
- CAPACITY PLAN
- RELEASE SCHEDULE
- UTILIZATION REPORTS
- OVERAGES ANALYSIS
- UPGRADE PLANS
- DISASTER (PLANNED/UNPLANNED)
- UNAVAILABILITY
- OPERATIONAL SCHEDULES
- DEPLOYMENT PLANS
- STORAGE INVENTORY
- STAFFING
- INFRASTRUCTURE RFC

OUTPUTS

- IT SERVICE REQUESTS
- REQUESTS FOR CHANGE
- SERVICE IMPROVEMENT REPORTS
- DISASTER PLANS
- REALLOCATION PLANS
- REVISED OPS SCHEDULES
- SLA RECOMMENDATIONS
- QUOTA THRESHOLDS ADJUSTMENTS
- AUDIT REPORTS
- EFFECTIVENESS REVIEW
- UPGRADE PLANS
- BUSINESS REQUIREMENTS

Interface

- CHANGE MGMT
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Utility or Purpose

•IN REALITY, THERE IS OFTEN A VERY LOOSE CONNECTION BETWEEN THE TRENDS, CHANGES AND DECISIONS ABOUT THE USAGE OF THE INFRASTRUCTURE AND THE MANAGEMENT OF STORAGE MEDIA. THIS IS OFTEN CAUSED BY COMPLEX (OR PERCEIVED COMPLEX) RELATIONS BETWEEN DATA CHARACTERISTICS ON ONE SIDE AND THE SERVICES ON THE OTHER SIDE.

Discussion



Backup Slides

IT Service Management Processes

