

The Three Fold ITIL* Process Path to Disaster Recovery & Continuity of Storage Operations Enlightenment

Dr. D. Akira Robinson
Department of the Navy, Consulting Computer Scientist
akira.robinson@navy.mil



*Information Technology Infrastructure Library

The information contained and opinions expressed in this presentation are my own and are not representative of the Department of the Navy or the Department of Defense.

SR-2006-0363

Take Home Messages

- Disaster recovery planning for the continuation of business operations is a recursive process -- risk assessment, with follow-on planning, training, testing and reassessment.
- Without the reassessment of after-action recommendations for all operational processes, standard operating procedures, personnel duties and network configurations/settings, under strict change control, all residing in the configuration management data base (CMDB), chaotic recovery after a major network disaster or pandemic event is guaranteed
- Success, here, is founded on the interdependencies with configuration, change & availability management – a three fold path to business continuity management (BCM).

STORAGE **Storage Decisions**

Business Continuity Management Prerequisite



AMBITION
THE JOURNEY OF A THOUSAND MILES SOMETIMES ENDS VERY, VERY BADLY.

STORAGE **Storage Decisions**

Presentation Overview

- What is ITIL? Why ITIL?
- What does ITIL have to do with storage?
- What is business continuity management (BCM)?
- What other ITIL service mgmt. processes are essential for business continuity?
- In what way is BCM a dynamic & iterative process?
- What are the key essential aspects of BCM – is there an evaluative tool that can tell me how my BCM process compares to others in industry?
- What is "The Three Fold Path to BCM Enlightenment"?
- Where to find additional information?
- Questions?

STORAGE **Storage Decisions**

Presentation Overview

- What is ITIL? Why ITIL?
- What does ITIL have to do with storage?
- What is business continuity management (BCM)?
- What other ITIL service mgmt. processes are essential for business continuity?
- In what way is BCM a dynamic & iterative process?
- What are the key essential aspects of BCM – is there an evaluative tool that can tell me how my BCM process compares to others in industry?
- What is "The Three Fold Path to BCM Enlightenment"?
- Where to find additional information?
- Questions?

Presentation Overview

- What is ITIL? Why ITIL?
- What does ITIL have to do with storage?
- What is business continuity management (BCM)?
- What other ITIL service mgmt. processes are essential for business continuity?
- In what way is BCM a dynamic & iterative process?
- What are the key essential aspects of BCM – is there an evaluative tool that can tell me how my BCM process compares to others in industry?
- What is "The Three Fold Path to BCM Enlightenment"?
- Where to find additional information?
- Questions?

Presentation Overview

- What is ITIL? Why ITIL?
- What does ITIL have to do with storage?
- What is business continuity management (BCM)?
- What other ITIL service mgmt. processes are essential for business continuity?
- In what way is BCM a dynamic & iterative process?
- What are the key essential aspects of BCM – is there an evaluative tool that can tell me how my BCM process compares to others in industry?
- What is "The Three Fold Path to BCM Enlightenment"?
- Where to find additional information?
- Questions?

Presentation Overview

- What is ITIL? Why ITIL?
- What does ITIL have to do with storage?
- What is business continuity management (BCM)?
- What other ITIL service mgmt. processes are essential for business continuity?
- In what way is BCM a dynamic & iterative process?
- What are the key essential aspects of BCM – is there an evaluative tool that can tell me how my BCM process compares to others in industry?
- What is "The Three Fold Path to BCM Enlightenment"?
- Where to find additional information?
- Questions?

Presentation Overview

- What is ITIL? Why ITIL?
- What does ITIL have to do with storage?
- What is business continuity management (BCM)?
- What other ITIL service mgmt. processes are essential for business continuity?
- In what way is BCM a dynamic & iterative process?
- What are the key essential aspects of BCM – is there an evaluative tool that can tell me how my BCM process compares to others in industry?
- What is "The Three Fold Path to BCM Enlightenment"?
- Where to find additional information?
- Questions?

Presentation Overview

- What is ITIL? Why ITIL?
- What does ITIL have to do with storage?
- What is business continuity management (BCM)?
- What other ITIL service mgmt. processes are essential for business continuity?
- In what way is BCM a dynamic & iterative process?
- What are the key essential aspects of BCM – is there an evaluative tool that can tell me how my BCM process compares to others in industry?
- What is "The Three Fold Path to BCM Enlightenment"?
- Where to find additional information?
- Questions?

Presentation Overview

- What is ITIL? Why ITIL?
- What does ITIL have to do with storage?
- What is business continuity management (BCM)?
- What other ITIL service mgmt. processes are essential for business continuity?
- In what way is BCM a dynamic & iterative process?
- What are the key essential aspects of BCM – is there an evaluative tool that can tell me how my BCM process compares to others in industry?
- What is "The Three Fold Path to BCM Enlightenment"?
- Where to find additional information?
- Questions?

Presentation Overview

- What is ITIL? Why ITIL?
- What does ITIL have to do with storage?
- What is business continuity management (BCM)?
- What other ITIL service mgmt. processes are essential for business continuity?
- In what way is BCM a dynamic & iterative process?
- What are the key essential aspects of BCM – is there an evaluative tool that can tell me how my BCM process compares to others in industry?
- What is "The Three Fold Path to BCM Enlightenment"?
- Where to find additional information?
- Questions?

Presentation Overview

- What is ITIL? Why ITIL?



Origins Of ITIL

United Kingdom
Office of Government Commerce (OGC)

- **I**nformation **T**echnology **I**nfrastructure **L**ibrary
- Created by CCTA
- Promote sound IT management practices

William Shakespeare (1564-1616)
 True, I talk of dreams,
 Which are the children of an ITIL brain,
 Begot of nothing but vain fantasy.
 Romeo and Juliet. Act i. Sc. 4.

Benjamin Franklin (1706-1790)
 ITIL-ness & pride tax with a heavier hand than
 kings and parliaments. If we can get rid of the
 former, we may easily bear the latter.

Letter on the Stamp Act, July 1, 1765.

Origins Of ITIL

- Best practice framework
 - Over 20 years of practice
 - Recently refined and updated V3
 - International user's groups





The Library

- Managers set
- Software support set
- Operations set
- Security management
- Application management
- Infrastructure management
- Planning to implement
- Service support
- Service delivery



Why ITIL?

- Total dependence on information technology
- Need to deal with complexity & change
- Need to align the business & IT goals
- Best practices for managing technology



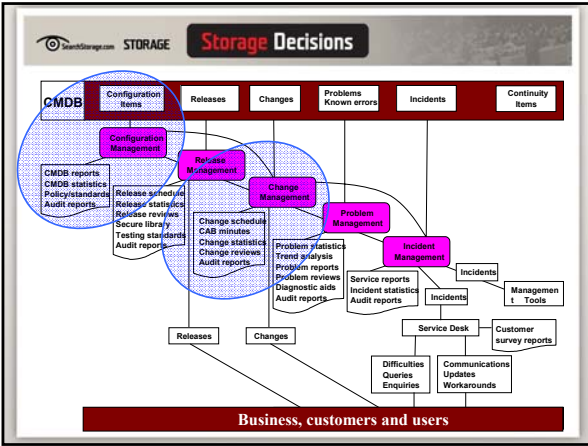
ITIL Fundamentals

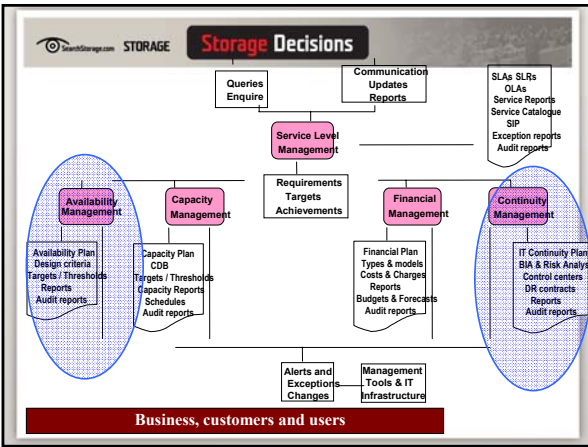
Service support

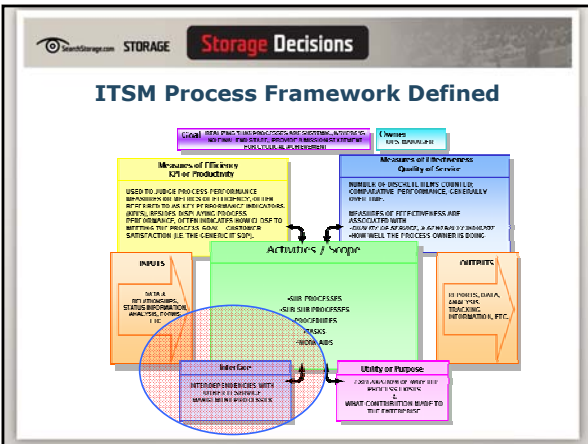
- Configuration management
- Change management
- Service desk (function)
- Problem management
- Incident management
- Release management

Service delivery

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

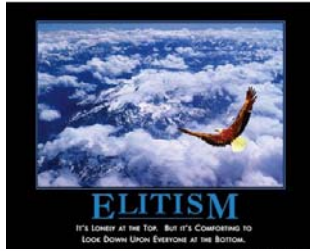






Presentation Overview

- What does ITIL have to do with Storage?



ITIL & SNIA – The SNIA Storage Networking Certification Program (SNCP)

SNIA Certified Architect (SCA) - This certification is a vendor neutral credential designed for storage architects and storage networking professionals who assess, plan, and design complex storage networking solutions. Successful completion of this program validates an individual's abilities and allows them to leverage industry standards in their programs.

SNIA Certified Storage Network Expert (SCSN-E) - This credential is a culmination of technical experiences, which validates an individual's overall storage knowledge in management, administration, assessment, planning and design.

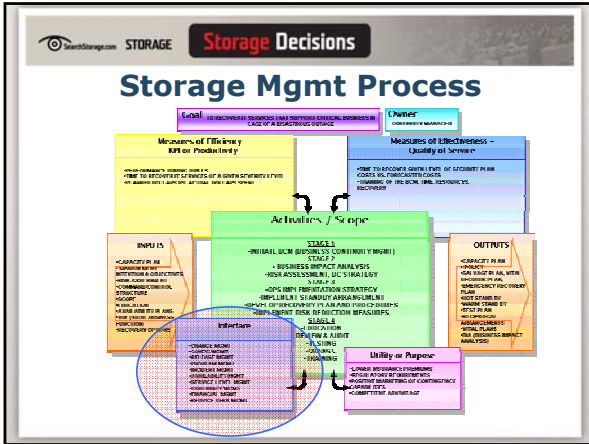
Exam Description: SNIA Architect – Assessment, Planning & Design exam (S10-300)
The SNIA Architect – Assessment, Planning & Design exam will certify that the candidate has the ability to assess, plan and design complex storage network solutions. This exam will validate the ability to understand capabilities and limitations of the architecture and associated devices of current storage networking technology and leverage industry standards for assessment and, planning and design, including ITIL and ITSM principles. This test is designed for storage architects and storage networking professionals who assess plan and design complex storage network solutions.

http://www.snia.org/collateral/SNIA_Edu_Cert_Prgm_Oct_2006_FINAL_wHeader.pdf

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





STORAGE **Storage Decisions**

Presentation Overview

- What is Business Continuity Management (BCM)?

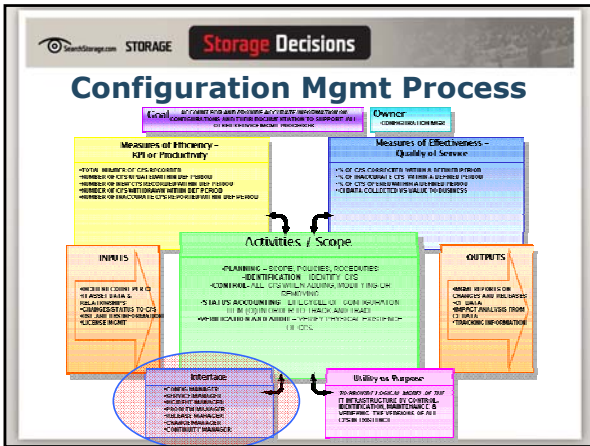
WISHES

When You Wish Upon a Falling Star, Your Dream Can Come True.
Unless It's Raining A Meteorite Hurling To The Earth Which Will Destroy All Life.
Then You're Pretty Much Pissed No Matter What You Wish For. Unless It's Dark By Meteor.

STORAGE **Storage Decisions**

IT Business Continuity Management


- Initiate/integrate w/service continuity management
- Develop requirements & strategy
- Implementation of IT service continuity plan
- Operational management

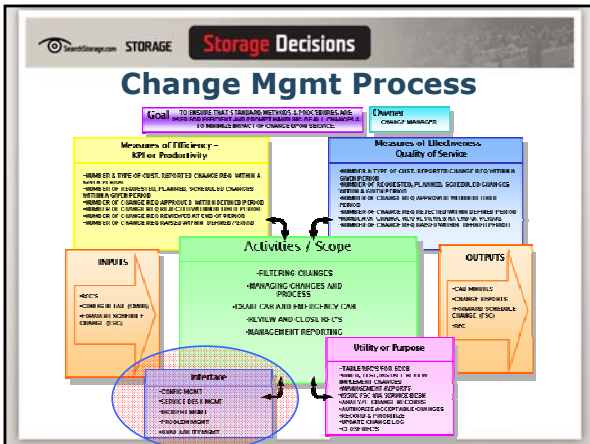


STORAGE **Storage Decisions**

Change Management

- Filtering changes
 - Accept & record change requests
- Manage changes & change process
 - Prioritize & categorize
 - Authorize & schedule
 - Coordinate change build & test
 - Authorize implementation
 - Review implementation
- Running CAB & CAB/EC
- Management reporting





Availability Management

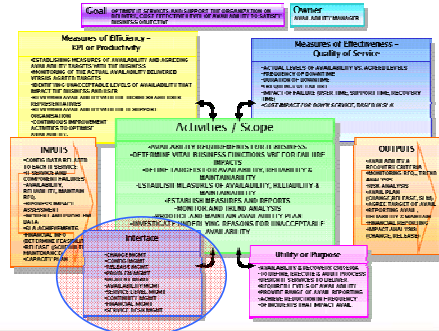
- Planning
 - Determine availability requirements
 - Design for availability
 - Vital business functions (VBF) impact analysis
- Establish availability targets
 - Agreed –Service Level Agreements (SLA)
 - Supporting – Operating Level Agreements(OLA)

Availability Management

- Operational
 - Data collection & maintenance
 - Monitoring
 - Management reporting

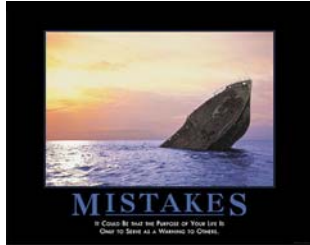


Availability Mgmt Process

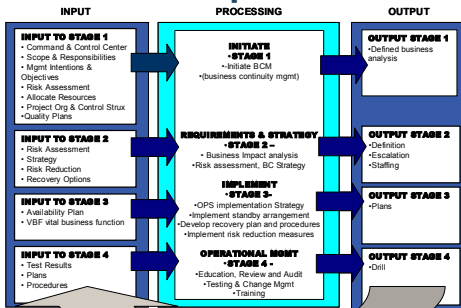


Presentation Overview

- In what way is BCM a dynamic & iterative process?

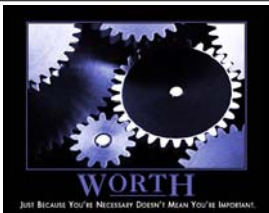



IPO Loop of BCM



Presentation Overview

- What are the key essential aspects of BCM
 - is there an evaluative tool that can tell me how my BCM process compares to others in industry (i.e. Gap Analysis)?



 STORAGE **Storage Decisions**

Level 1: Pre-requisites **BCM Gap Analysis (ITIL)**

1. Are at least some IT service continuity activities established within the organization, e.g. business impact assessment, development of recovery plans? (2)

2. Have the minimum operational requirements been determined by the business?

3. Has the organization developed a business continuity strategy?

Level 1.5: Management intent - establishes whether there are organizational policy statements, business objectives (or similar evidence of intent) providing both purpose and guidance in the transformation or use of the prerequisite items.

4. Has the purpose and benefits of IT service continuity planning been disseminated within the organization? (3)


5. Is there senior management commitment for the implementation of IT service continuity measures? (3)

6. Has the scope of IT service continuity activity been determined – i.e. identifying, prioritizing and documenting all business critical processes?

7. Has a business impact analysis been carried out?

8. Is there regular testing of the IT service continuity management procedures?

9. Are the necessary resources being made available for the complete business continuity life-cycle stages through a strategic directive?

 STORAGE **Storage Decisions**

Level 2: Process capability - examines the activities being carried out. The questions are aimed at identifying whether a minimum set of activities are being performed.

10. Have responsibilities for IT service continuity activities been assigned? (6)

11. Have the minimum business critical requirements been determined through business impact analysis?

12. Has a risk assessment been conducted?

13. Is there an overall co-ordination plan for implementation, including emergency response, damage assessment, salvage, identification of vital records etc?

14. Have the ITSCM components for business continuity been identified?

15. Is there a check-list covering the specific actions required during all stages of recovery of the system?


16. Is there a formal procedure for testing and reviewing contingency plans?

17. Is there an IT risk reduction or mitigation program to implement mechanisms in order to deliver the continuity requirements?

18. Is there a formal procedure for invoking recovery?

19. Is guidance on the invocation process readily available, including details of associated action and decision points?

20. Has a crisis management team been established?

 STORAGE **Storage Decisions**

BCM Gap Analysis (ITIL)

Level 2.5: Internal integration - seeks to ascertain whether the activities are integrated sufficiently in order to fulfill the process intent

21. Is ITSC management responsible for the completeness of the IT contingency plans? (3)

22. Do business continuity planners inform ITSC management of the required service criticality / priority?

23. Are ITSCM plans regularly reviewed, and the procedures and processes tested and updated where necessary?

24. Is there an established planning structure clearly identifying responsibility for overall co-ordination of the recovery?

25. Are the technical activities necessary in order to invoke the contingency measures fully documented, so that IT personnel can undertake recovery actions?

BCM Gap Analysis (ITIL)

Level 3: Products - examines the actual output of the process to enquire whether all the relevant products are being produced

- 26. Are reports concerning risk assessments and risk mitigation measures produced regularly?
- 27. Does ITSC management produce reports on alternative IT contingency planning options that would provide potentially acceptable service levels for cost consideration?
- 28. Are formal Requests for Change issued in order to amend ITSCM arrangements?

Level 3.5: Quality control - concerned with the review and verification of the process output to ensure that it is in keeping with the quality intent.

- 29. Are the standards and other quality criteria for ITSCM made explicit and applied? (2)
- 30. Are the personnel responsible for ITSCM activities suitably trained? (2)
- 31. Does the organization set and review either targets or objectives for ITSCM?
- 32. Does the organization use any tools or proprietary methods for conducting risk assessments and/or keeping the IT contingency plans up-to-date?

BCM Gap Analysis (ITIL)

Level 4: Management information - concerned with the governance of the process and ensuring that there is adequate and timely information produced from the process in order to support necessary management decisions.

- 33. Does ITSC management provide information concerning areas and nature of vulnerability to the continuation of business operations?
- 34. Does ITSC management provide information concerning IT contingency planning options?
- 35. Does ITSC mgmt provide information concerning the IT contingency plans? (3)
- 36. Does ITSC management provide information concerning changes to the IT contingency plans?
- 37. Does ITSC management provide information concerning verification tests of recovery plans?
- 38. Does ITSC management provide information concerning risk mitigation (source and nature of risk, proportion avoided / reduced)?
- 39. Does ITSC management provide information concerning effectiveness of business continuity strategy?

BCM Gap Analysis (ITIL)

Level 4.5: External integration - examines whether all the external interfaces and relationships between the discrete process and other processes have been established within the organization. At this level, for IT service management, use of full ITIL terminology may be expected.

- 40. Are regular meetings held with business continuity planners (BCM)? (4)
- 41. Does ITSC management exchange information with availability management for risk mitigation? (4)
- 42. Does ITSC management exchange information with availability management for testing availability management components of the plan, including operating level agreements / support contracts? (4)
- 43. Does ITSC management exchange information with change management for consideration of changes which may affect the currency and accuracy of IT continuity plans? (4)
- 44. Does ITSC management exchange information with change management for assessment of proposed changes and actions necessary to avoid / reduce risks? (4)
- 45. Does ITSC management exchange information with capacity management for consideration of capacity / storage risks and implications?

BCM Gap Analysis (ITIL)

Level 4.5: External integration – con't

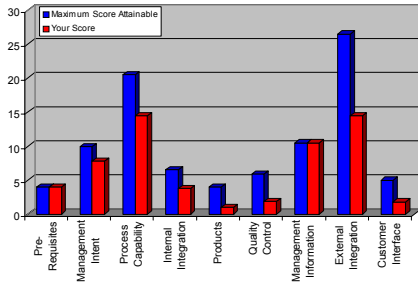
- 46. Does ITSC management exchange information with capacity management for specific capacity / storage requirements for recovery plan tests?
- 47. Does ITSC exchange information with service level management for cross-references between SLAs and IT contingency plans, and specific service levels during contingency or recovery situations?
- 48. Does ITSC management exchange information with configuration management for contingency requirements and final configuration details, ensuring currency of configuration details used?
- 49. Does ITSC management exchange information with configuration management for full relationship between components and services?
- 50. Does ITSC management exchange information with problem management and incident management for reviewing major incidents?
- 51. Does ITSC management exchange information with problem management and incident management for discussion of problems where cause / resolution is possibly within the domain of ITSC management?

BCM Gap Analysis (ITIL)

Level 5: Customer interface - primarily concerned with the on-going external review and validation of the process to ensure that it remains optimized towards meeting the needs of the customer.

- 52. Do you check with the customer if the activities performed by ITSC management adequately support their business needs?
- 53. Are you actively monitoring trends in customer satisfaction?
- 54. Are you feeding customer survey information into the service improvement agenda?
- 55. Are you monitoring the customers value perception of the services provided to them?

IT Service Continuity Results

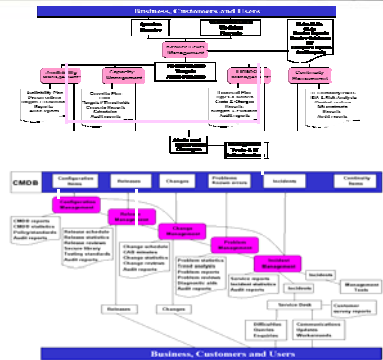


Presentation Overview

- What is "The Three Fold Path to BCM Enlightenment"?




THE THREE FOLD PATH...



Presentation Overview

- Where to find additional information?



 STORAGE **Storage Decisions**

Organizations

British Computer Society

- ISEB – Information Systems Examination Board
- http://www.bcs.org/server.php?show=nav_5732

Examination Institute for Information Science

- EXIN
- <http://www.exin-exams.com>

itSMF

- User Groups
- <http://www.itsmf.com>

 STORAGE **Storage Decisions**


ITIL & SNIA

“An **ITIL** Perspective for Storage Resource Management”, BJ Klingenberg IBM & Greg Van Hise IBM. Providing an **ITIL** perspective to storage resource management supports the consistent integration of storage information and storage processes into the overall management of an IT environment

<http://www.snia.org/education/tutorials/2007/spring/storage-management/>

“The Storage Capacity Design Dilemma: An ITIL Approach”
 LeRoy Budnik KNOWLEDGE TRANSFER.

(Same URL)

 STORAGE **Storage Decisions**

Presentation Overview

- Questions?

