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Session II –

Business Continuity Risk Management… What do you do after the emergency?

Business Continuity for Colleges & Universities

www.marsh.com

Session Overview

Presenter:

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Marsh Risk Consulting-

Summary:

This session will provide a brief overview of the components of a Business Continuity Risk Management Plan. Starting with a Business Impact Analysis that coincides with the creation of campus security and crisis response programs, it will address some quick and effective methods for identifying the technology components, processes, facilities, and key people that can assure a stable revenue stream, and can manage costs effectively despite events that can suddenly change the educational environment. The session will include discussion of how to provide consistent education for students, even when they are restricted from full campus access due to disease outbreak, damage to buildings or facilities, or major weather interruptions. In addition to providing education, the BCRM process includes campus life concerns, faculty and staff management, continuation of research projects and grant proposals, and general community service obligations. Participants will understand the basics of Business Continuity Risk Management including how to assess key educational business components, the meaning of terms such as Recovery Time and Recovery Point Objectives, considerations for I/T Disaster Recovery and establishing various Event Response and Management teams.

Why Business Continuity Risk Management

- Recent events (Tulane University, Louisiana State, etc) and relevant threats (weather, terrorist, violence on campus, health pandemics) are forcing many schools to focus on business continuity. Overall higher education has done very little beyond emergency management planning. The possibility of a catastrophic event is now very real to them.
- In fact, most universities lag so far behind industry (financial services, manufacturing, healthcare, etc) that they are playing catch up to ensure that their institution survives a significant event.
- Many institutes of higher education could be severely impacted by a catastrophic event. Many universities (particularly private) run the risk of bankruptcy if they lose just one semester of tuition.
- Due to limited budgets, creative solutions are necessary to address new threats (partnering with other institutions, information technology, distance learning) and experienced outside consultants are sought after to address the risk.
- Limited budgets also drive the need to justify and prioritize alternate recovery strategies. Full redundancy for all functions and information technology is not an option.

What has Higher Education faced in the last few years?

- Storms, bombs, civil unrest, bad press, suicide, terrorism, crime, criminal use of technology, greek and athletic related incidents, foreign exchange problems, mismanagement, arson, conflicts of interest – just to name a few
- Each has the potential to be a major problem or disruption – with planning and exercising, many of these could also become minor incidents
- Being prepared is not just a nice-to-have – it is expected. Not being prepared for these foreseeable events is not an acceptable solution
- It's much more than evacuation of a building. Its keeping things running after that event (or in the terms of one university – its what to do once the fire truck leaves).

Are you Prepared to Respond?

What would be the impact on your Institution?

Key Concerns

- **"In the past we planned for the loss of a building, should we plan for a campus-wide outage?"**
- **"I was able to recover from the last disruption, but my response exceeded the maximum allowable downtime. How can I accelerate recovery?"**
- **"I'm worried. Our faculty, buildings, students and technology are concentrated in a small area. How can I provide greater resiliency?"**
- **"Our students and faculty assume and expect that we protect their personal data. How do we implement and enforce the necessary policies and controls with the least amount of disruption to the operations?"**
- **"All we need is a business continuity plan. Why would I want you to conduct an impact analysis?"**
- **"A catastrophe would put me out of business. How do I develop a plan?"**
- **Our plan addresses only information technology. How do we ensure resiliency for people, facilities and equipment?**

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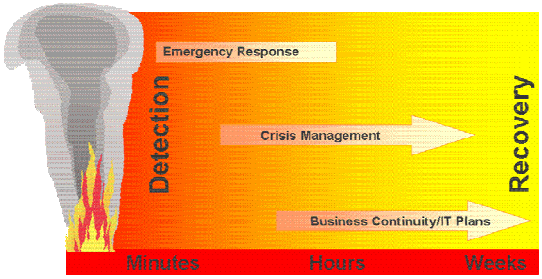
Business Continuity Program

Three Important Components



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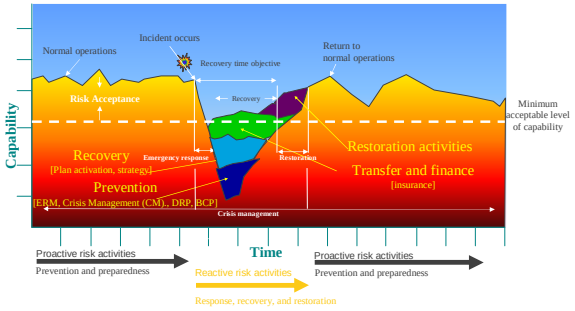
Graphical Representation of Emergency Response Elements



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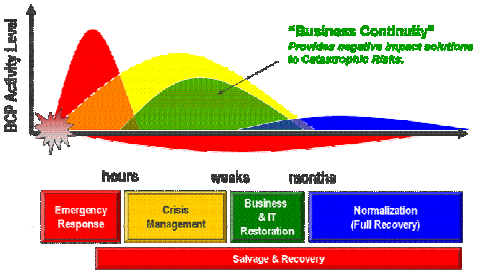
Putting Response Protocols in Perspective

The Intensity Levels of the Individual Response Protocols



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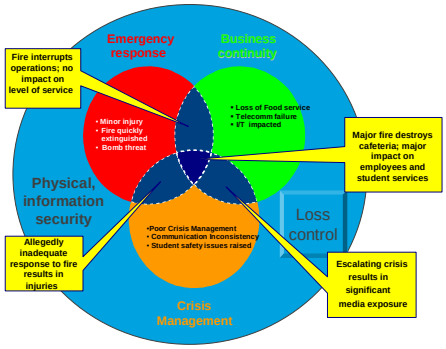
Purpose:
Why are we concerned about Business Continuity?

An Integrated Program



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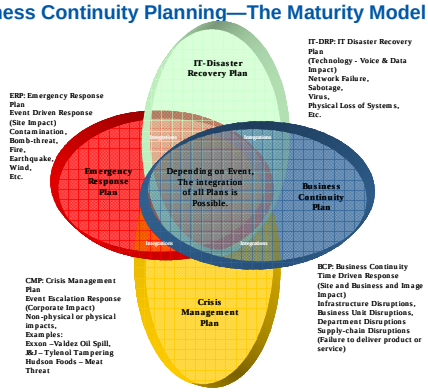
Business Continuity Planning—The Maturity Model



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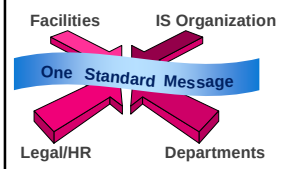
Incident Management Communications



- *Work with local authorities*
- *Work with local media*
- *Take care of your students, faculty, administrators*
- *Expand contact info. options*
- *Provide local access and recovery responsibilities*

Incident Mgmt. Coordinator

Crisis Wallet Card
- Toll-free number
- Assembly spot
- Recovery location
- Web site
- BCM coordinator

Web Site
- Recovery status
- Life/Safety issues
- Red Cross tips
- FEMA site

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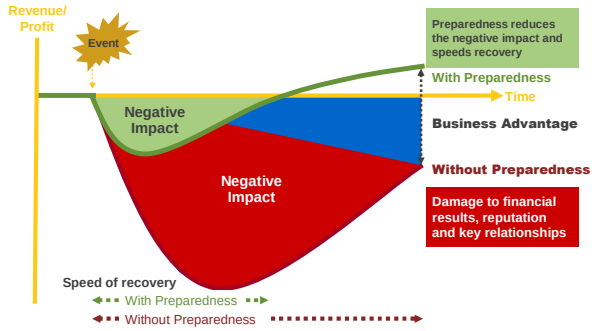
The Impact on Finances (Revenue Loss)



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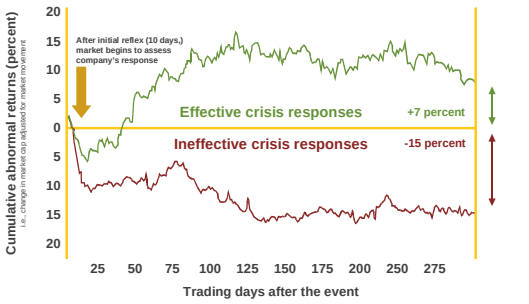
The Impact on Reputation (Shareholder Value)



Source: "The Impact of Catastrophes on Shareholder Value," Rory F. Knight & Deborah J. Pretty, Templeton College, University of Oxford, p. 3.

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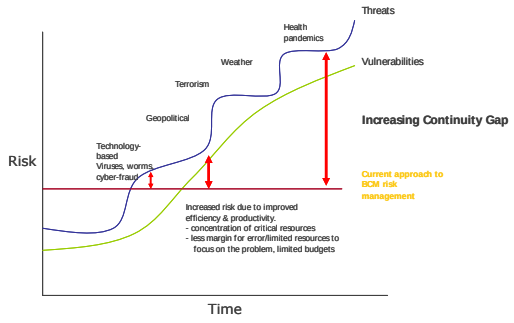
The Gap is Widening

Staying the same means going backwards



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Definition:
What is Business Continuity Risk Management?

Business Continuity Programs

- An organization's ability to foresee, prevent, respond, and manage adverse risk and events
- A seamless solution so employees can focus on delivering services
- An approach that is:
  - Risk-aligned with the organizational goals
  - Balanced with both corporate needs and service locations
  - Standards based and validated
  - Program planning for ongoing preparedness
  - Sustainable through a maturity-model
  - Potentially self-funding

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Business Continuity Solutions are designed to focus on existing plans…

Business Continuity Risk Management

Periodic Re-Assessment

- **Business Risk Assessment**
  - Business Partner Risk
  - Pandemic Risk
  - Environmental Risk
  - Technology Risk
  - Compliance Risk
  - Other
- **Business Continuity Plan**
  - Policies
  - Strategy
  - Governance
  - Budget
- **Event Response**
  - I/T DR Plan
  - Crisis Response
  - Facility failover plan
  - Compliance Mgt

Business Continuity Management Evolution

Disaster recovery
Recovery Time Objective (RTO) = Three days scenarios limited

Y2K
Contingency planning
RTO = <24 hours

Aftermath of Recent Incidents (9/11, VT, etc.)
+ Incident management
+ New scenarios

Business recovery
For critical work processes

Internet
Recovery Point Objective (RPO) ~ 0
+ New scenarios

Enterprise Risk Management (ERM)

1990 1995 1999 2000 2002 2004 2006

- Reduce and document incident costs
- Integrate across business units
- Scale from minor incidents to large events
- Work with emergency services
- Meet safety & regulatory requirements
- Integrate with enterprise risk management
- Maximize insurance returns
- Manage nondisaster Information Technology (IT) incidents

High availability and incident management

2008 - Business Continuity is all About Building a Dependable Revenue Stream

"E.coli outbreak hits United States."

"Americans fear not getting paid after disaster."

"41 percent of businesses impacted by a disaster in New York said it cost them more than $100,000 a day"

"It is not a question whether or not the next Pandemic will break out, it is just a question when."

Source: globalcontinuity.com

The Methodology is a Cycle of Continuous Improvement

A threat-based catastrophic planning approach has shown to be inefficient and difficult to achieve.

Economic	International	People	Psychopathic, Criminal, & Terrorist	Weather	Environmental & Man-made	Political and Social	Reputational
Economic collapse & devaluation	Loss of proprietary & confidential information	(health pandemic (e.g., SARS, bird flu))	Product tampering	Hurricane/ typhoon (tropical cyclone)	Chemical, biological, radioactive release	Gov't police and/or attitude change	Rumors and gossip
Labor disputes, strikes, or unrest	Information-integrity issues	Executive misconduct, illness, deaths, and security violations	Terrorist acts (suicide org's products used as a weapon)	Earthquake	Wildfires	Confinement/ imprisonment of employees/ families	Community harmed as a result of org's products, technology, people
Labor shortage	Technology failure	Executive defections and resignations	Fire or explosion	Tornado	Water contamination	Lawlessness & hostile demonstrations	Product liability, failure, recall
Major decline in stock price or significant fluctuations	Loss of key customer, supplier, financial information	Corporate governance & whistleblowers	Sabotage of facility	Flood (eg tsunami, tidal wave, rising water)	Fire and/or explosion	Regulatory change	Product obsolescence
Major market fluctuations	Technology misuse	Work slowdowns or walkouts	Kidnap for ransom	Wildfires	Building collapse or condemned	Civil unrest	Government investigation
Major decline in earnings		Sexual harassment, workplace discrimination, wrongful dismissal	Extortion	Mudslide	Mold		Special interest group protest or inquiry
Cash Flow/liquidity crunch Hostile takeovers		Transportation accidents Oversight, accidents, errors	Workplace violence	Extreme heat	Public utility failures		Class-action lawsuit
Bankruptcy		Loss/defection of key employees	Suspicious mail/package	Extreme cold	Asbestos		Libel/slander
					Water leaks & floods		

Source: Marsh

Best Practice: an "IMPACT"- (versus a threat) - based approach

Assume the resource is either unavailable for >30 days and/or, worst case, destroyed.

Resources Impacted

Assumption	People (students, faculty, administrators contractors, support functions)	Technology & Processing (data processing networks)	Physical (facilities, libraries, materials, equipment)	Relationships & Interdependencies
Unavailable and/or inaccessible for an extended period of time	Pandemic – 40% of internal and 40% of external work force Three orders of succession	Inability to gain access to service/ install software.	Building quarantined, civil unrest damage to facility and vital records Inability to gain access to equipment for service	Sole source, critical infrastructure, supplier severely affected
Destroyed or perished	Pandemic – 10% to 15% perish Three orders of succession	Wide-scale civil unrest and looting, destroy facilities Key electronic records destroyed.	Wide-scale civil unrest and looting destroys facilities Key documentation destroyed	Prospective students, granting agencies, alumni loose confidence, withdraw support

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Get Started by Focusing on Impacts

Identify where key elements of your revenue are "At Ris

- **STOP** chasing threats – you could exhaust your resources looking for ways to mitigate or preventing each one
- **START** thinking about impacts –when they happen, they all have some impact on your organization
- **PROTECT** your organization by focusing on where the impacts would be most severe - you need to determine what parts of your organization are most critical and "at-risk", then figure out ways to protect them

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Impact Based Approach

Major Steps	Preparedness Review	Resiliency Development	Business Impact Analysis	Strategy Selection	Plan Preparation	Testing Maintenance
Actions	• Identify existing recovery strategies, risks, business issues, and gaps	• Analyze supply chain • Purchase policies	• Identify critical process • Recovery times • Financial impact from outage	• Define recovery strategy options • Select strategy	• Document recovery steps for business units	• Train employees

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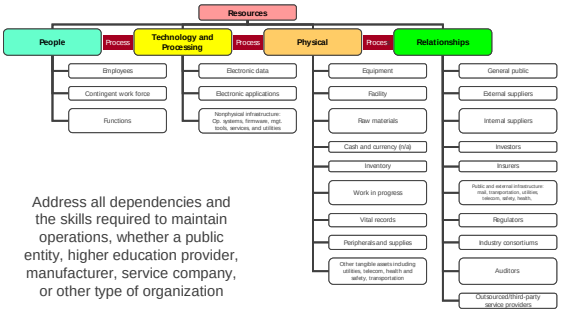
Resources should be mapped to critical processes



Address all dependencies and the skills required to maintain operations, whether a public entity, higher education provider, manufacturer, service company, or other type of organization

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Execution:
How do we go About Developing a BCRM Program?

Process Overview

Step 1: Business Impact Analysis (BIA)

1. Develop BIA questionnaire using senior management's recovery objectives
2. Conduct BIA workshop with business representatives
3. Distribute BIAs and receive completed forms from business representatives
4. Review BIA questionnaires
5. Conduct follow-up interviews with business unit representatives

Step 2: Strategy development

1. Identify and document resource requirements based on BIAs
2. Conduct gap analysis to determine gaps in recovery requirements and current capabilities
3. Explore facility options
4. Define strategy options
5. Select strategy

Step 3: Planning and response preparation

1. Link/update plan model throughout BCP process with gathered information
2. Develop relocation plans
3. Validate complete plan

Step 4: Testing and maintenance

1. Develop testing and maintenance requirements
2. Train associates to create awareness of the BCP model and individual roles
3. Plan for walk through testing
4. Conduct tests and document test results
5. Update BCP plan to incorporate lessons learned from testing

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Identifying Key Assets

People
- Students, Faculty, Visitors
- Specialized operations experts
- Families and Media
- Executives
- Administrators and At-large employees
- Consultants and specialists

Plant
- Administrative offices, Bookstores
- Classrooms, Gyms, Labs
- Dormitories, Cafeterias, Health Centers
- Libraries, Private housing, Social centers
- Transportation

Process
- Standard operating procedures
- Computer programs and data
- Validation and quality controls
- Automated processes
- Outsourced functions

Technology
- Central/departmental computers
- Desktop/laptop computers
- Networks
- Voice communications
- Scanners/Point Of Sales (POS) devices
- Radio Frequency Identification (RFID) / Global Positioning System (GPS) / Wireless Devices (cell phones, PDA's)
- Electronic ID and Financial cards

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Identifying Risks

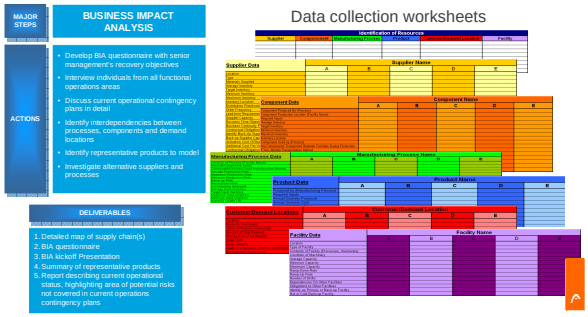
Effects:

- Claims
- Negative impact on reputation
- Direct loss of revenue
- Increase of insurance premiums
- Loss of assets and employees
- Regulatory sanctions
- Inability to meet educational demands

External drivers:

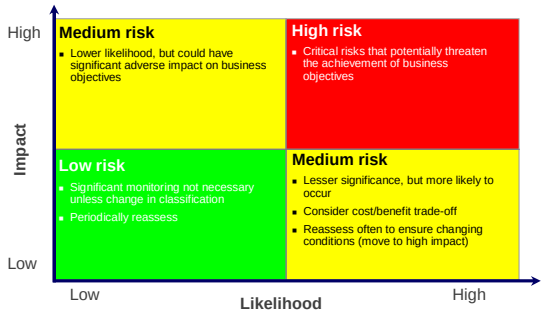
- Increased regulatory requirements
- Audit committees, Trustees, Board of Directors
- Business Partners and insurers
- Reliance on third parties (IT service providers)
- New threats and risks (violence, pandemic)
- Increased natural disasters

Business Impact Analysis solicits responses from many areas

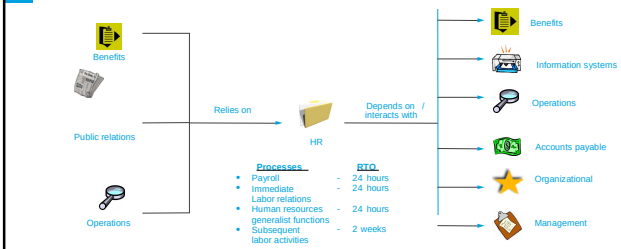


To identify areas that represent the most substantial loss.

Qualifying Risks

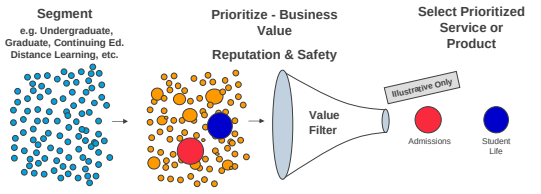


Understanding the Internal Dependencies



* Sample Marsh Metrics from a Business Impact Analysis

The result of this approach is to focus on the key products or services that provide value

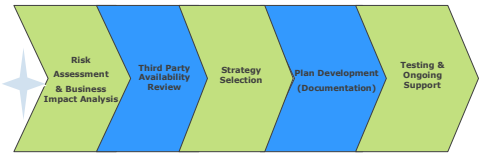


All products and services contributing value to the organization and stakeholders (and all associated internal & external support resources)

Value Filter
Representative factors:
- Reputation
- Revenue
- Asset
- Cash
- Community Presence
- Compliance
- Strategy

Based on the value assessment, Management establishes priorities based upon which to allocate time, management attention, resources, and capital

Tactical Program Development Process



- Identify single points of failure
- Identify business processes/non-compliance
- Quantify impacts and recovery times
- Identify inflows & outflows
- Identify interdependencies
- Review their retention and back-up policies
- Develop recovery alternatives
- Investigate vendor solutions
- Investigate vendor solutions
- Document manual workarounds
- Develop data restore procedures
- List Vital Records and offsite locations
- Test solutions
- Integrate into Corporate Governance Program
- Update processes

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Each department has to document their tolerance for disruption of their critical business processes, interdependencies, and recovery procedures *

< 6 hrs	1 day	3 days	1 week	2 wks	> 2 wks
President's Office	Risk Mgt	A/P	Student Loans	Accounting	Credit Collections
CFO Office	Advancements	Financial Aid	Admissions	Enrollment Services	Resource Allocation
Provost Offices		HR		Dean of Students	
AVP Office		Career Development		Distance Learning	
Treasury					
Public Safety					
Communications & Marketing					

SAMPLE

* We ask departments to create manual workarounds since there might be an adequate pre-staged/pre-arranged IT disaster recovery capability today

Department = no critical dependency on technology

Department = critical dependency on technology

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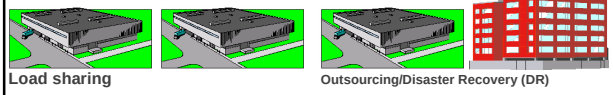
Data Center Strategies: No Single, "Right" Answer

Worldwide or per geography? Trade-off costs, performance, application integration issues

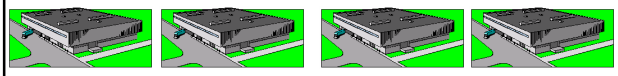
One or many? Trade-off costs, risks, continuity/recovery

Common strategies



Load sharing

Outsourcing/Disaster Recovery (DR)



Development and test

Production and standby

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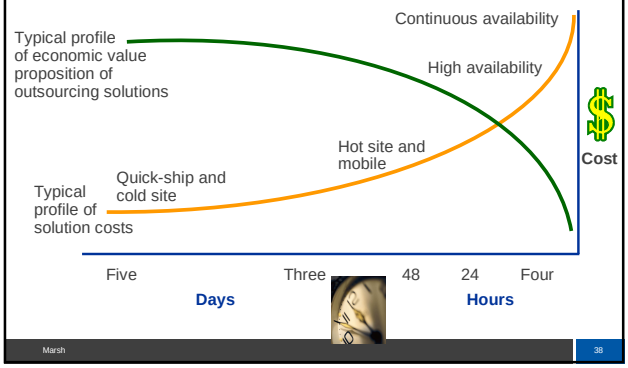
Less Expensive to Insource or Outsource?



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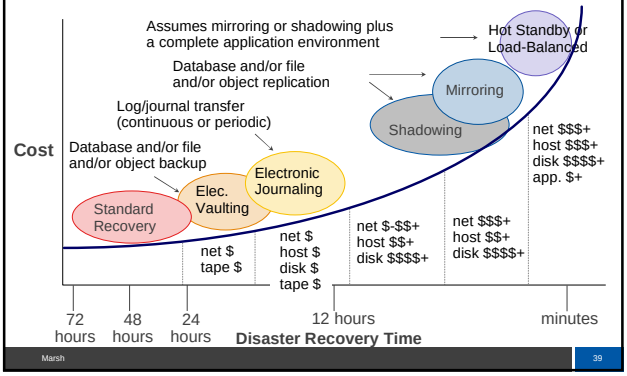
Technologies to Reduce RTO/RPO



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Measuring Success

Area under review	Score
1. Organization and structure	.8759
2. Business impact analysis	.2801
3. Strategy selection	.1000
4. Plan documentation	.6708
5. Awareness and testing	.8472
6. Maintenance	.8571

1. Organization and structure	87.59	**4. Plan documentation**	67.08
Senior management commitment	75.00	Plan format	100.00
BCP objectives	83.33	Plan access	60.00
BCP program resources	83.33	Plan content	58.33
Recovery organization / teams	71.43	Plan references and integration	50.00
Documentation protocol	100.00		
Escalation and execution	100.00	**5. Awareness and testing**	84.72
BCP program awareness	100.00	Awareness programs	100.00
		Test criteria and objectives	55.56
2. Business impact analysis	23.01	Test scripts	100.00
Process mapping	0.00	Test execution and follow-up	83.33
Business impact analysis process	37.50		
Recovery time objectives	0.00	**6. Maintenance**	85.71
Resource requirements	54.55	Plan maintenance	71.43
		Senior management review	100.00
3. Strategy selection	100.00		
Business process recovery	100.00	**Overall evaluation:**	74.69

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Execution:
Testing and Exercising the Plan Without Causing a Disaster

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Training, Drills & Excercises: Keys to Success

Training:
- All employees
- Members of ERT, CMT, BCP
- Management

Drills:
- Practice specific skills
- Use systems & equipment

Exercises:
- Familiarization
- Validation
- Identify deficiencies

Types:
- Walkthrough
- Mobilization
- Execution

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Options Available for Testing:
The Structured Walk-Through

Structured walk-through ("role-play"):
- Paper evaluation of a portion of a BC plan without the expenses or personnel resources associated with a full test
- Scope can vary from a review of a portion of the BCP to a review of the entire plan.
- Objectives:
  - Verify the contents of the plan;
  - Prepare for simulation testing;
  - Train new members and create employee awareness;
  - Maintain preparedness while limiting use of resources;
  - Affirm that the strategy documented in the plan is viable;
  - Educate critical personnel on their responsibilities in a disaster;
  - Confirm that the information in the plan is current and accurate; and
  - Identify areas of the plan that need revision or updates.
- Benefit is that it is cost-effective and non-invasive

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Options Available for Testing:
Component Testing

- (Usually) an off-hours exercise to test a particular segment of the recovery plan
- Differs from the structured walk-through in that it involves actual recovery activities
- Types of component tests include:
  - Emergency notification test (call tree tests);
  - Evacuation tests;
  - Data center or application recovery test;
  - Remote or dial-in access test; and
  - Critical business function recovery test.
- Objectives:
  - Demonstrate accuracy of the execution of the plan;
  - Verify the appropriate operating and incident escalation procedures;
  - Train and increase awareness of personnel; and
  - Validate previous modifications of the plan including the DRP.
- Benefit is that it is non-disruptive and focused

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Options Available for Testing
The Fully Mobilized "Drill"

Integrated simulation/full operations test:
- Performed at the actual recovery sites
- Utilizes the backup resources (i.e., AS 400 systems and workspace)
- Structured walk-through and/or a component test should precede
- Test transactions or replicated "live" transactions are processed
- Reports produced (actual results) should be reconciled against expected results
- Objectives:
  - Test entire plan or a portion of the plan under emergency scenarios;
  - Validate operational effectiveness and business unit interdependencies; and
  - Provide technical and administrative measurable results.
  - An exercise of this proportion is normally scheduled to take place after hours or during a weekend
- Benefit is that it requires inter-department coordination and is the best true test of the BCP

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Case Study:

The *Collaborative Approach* to Business Continuity Plan Development

Collaborative Program Description

- Cooperative approach - allows for a single comprehensive approach based upon a model school template (which is developed during the pilot project of two or three institutions). The participating members will develop a unified program structure and approach, consistent strategies among the member locations and maximize internal (to the association) sharing of resources.
- Two Pilot Programs – Urban & Rural Campuses
- Utilize "Model School" based on information gained from the pilot programs for the remainder of the participating members
- Conducted one week event at each Phase 2 school which included a training session for the campus business continuity leader, several group workshops with the departments/colleges, and concluded with a walk-through exercise based on a scenario that Marsh presents.
- Sliding scale pricing model based upon the number of participants

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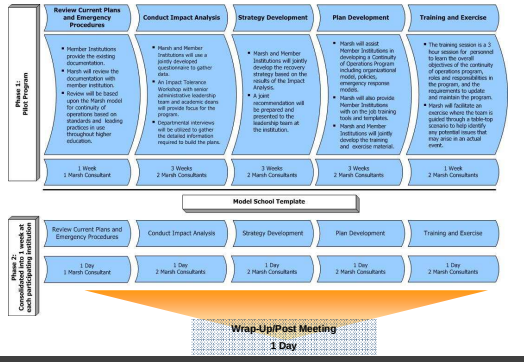
The Collaborative Method



Work with academic and non-academic organizational units to understand their business requirements and liaise with IT to baseline their current capabilities

Business process and tolerance levels

- Engage representatives from:
  - -Student Life
  - -Academics
  - -Administration

via introduction memo and preparation instructions

- 6 workshop session @ 2 hrs
- Participants to collect information on:
  - -Critical processes
  - -Business tolerance for downtime (RTO)
  - -Application requirements
  - -Technology requirements

Current ITDR Capabilities

- 3 -5 working sessions with data center management and Marsh
- Identify core infrastructure, core dependencies, and applications in the data center
- Develop "high-level" gap analysis
- Develop current capability recovery timeline
- Verify recovery sequence and timeline with data center management
- Socialize observations with IT management
- Research commercially available recovery options

Next Steps

- Present gap analysis
- Decide on short-term recovery options
- Decide on long-term recovery options
- Deliverables:
  - Risk assessment
  - BIA
  - Continuity strategies recommendations
  - Continuity implementation plan
  - Documented assessment report

Model School Template

Accessing and Completing the Department Business Continuity Plan

Business Impact Analysis (BIA) column is used to collect business requirements and capabilities.
Estimated Time to Complete: 1 to 2 hours

Strategy column is used to document recovery strategies for your business requirements documented in the BIA.
Estimated Time to Complete: 1 to 2 hours

Business Impact Analysis	Strategy
Department Information	Recovery Strategies
Business Process	Process Recovery Procedures
Recovery Time Objectives & Applications	Manual Workaround Procedures
Vital Records	Data Restoration Procedures
Dependencies	Department Contact List
Resource Requirements	

How Long Will It Take Your Organization to Improve its Preparedness?

Area	Action	Q2/2008	Q3/2008	Q4/2008	Q1/2009	Q2/2009
Strategy Development	Discuss current state and identify potential solutions.					
	Research costing and identify which solution best fits Company's needs.					
	Develop timeline for completion of strategy deployment.					
BCP Plan Development	Begin plan development for key functional areas identified.					
	Validate and test plans.					
	Deploy plan development program for other essential business functions.					
BCP Policy & Awareness Program	Develop policy statements.					
	Establish BCP Maintenance Program.					
	Develop and deploy awareness training.					
	Conduct Annual BCP Preparedness Review.					
Crisis Management Integration	Develop escalation procedures, communications, roles and responsibilities, action steps.					

* Sample Marsh timeline for improvement

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