Basics of Business Continuity Planning

For Manufacturing Companies

April 23, 2019

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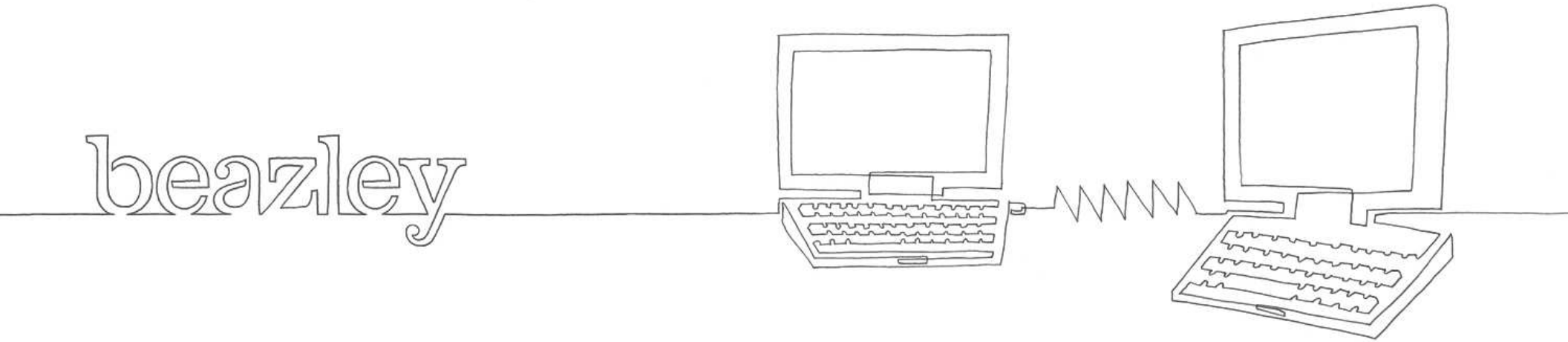

Beazley Breach Response (BBR) Services workshop program

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BUSINESS CONTINUITY PLANNING FOR MANUFACTURING COMPANIES

Troy Harris, Senior Director

RSM US LLP

April 23, 2019

Agenda

- Introduction
- BCP Overview
- RSM's 5-Phase BCP Methodology
  - Program Initiation and Management
  - Operations Analysis
  - Strategy Determination
  - Plan Development
  - Testing & Training
- Questions & Answers/Open Discussion
- Conclusions/Wrap-up

INTRODUCTION

Today's Presenter

Troy Harris

Senior Director, Risk Advisory Services

- Leads RSM's national Business Continuity Planning consulting practice
- Nearly 20 years of BCP experience
  - Experienced in both information technology (IT) disaster recovery planning and operations/business resumption planning
  - Served as both an internal recovery coordinator and an external BCP consultant
  - Experienced working with a wide variety of industries in both the public and private sectors
- Certified Business Continuity Professional (CBCP)
- Regular presenter at both local and national seminars and conferences

BCP OVERVIEW

Business Continuity Plan (BCP) Definition

- Documented and formal arrangements for resuming critical business operations in a timely manner following a disaster or other disruption
  - "Timely" may equal "Immediate"
  - Degraded operations may suffice temporarily
  - Focus is on sustaining the business
  - Business operations require essential resources
  - Recovery process must be efficient and organized

BCP vs. Broader Risk Management*

- Business Continuity Planning Elements:
  - Crisis Management Plans/Crisis Communication Plans
  - IT Disaster Recovery (DR) Plans
  - Business Resumption Plans
  - Pandemic Response Plans

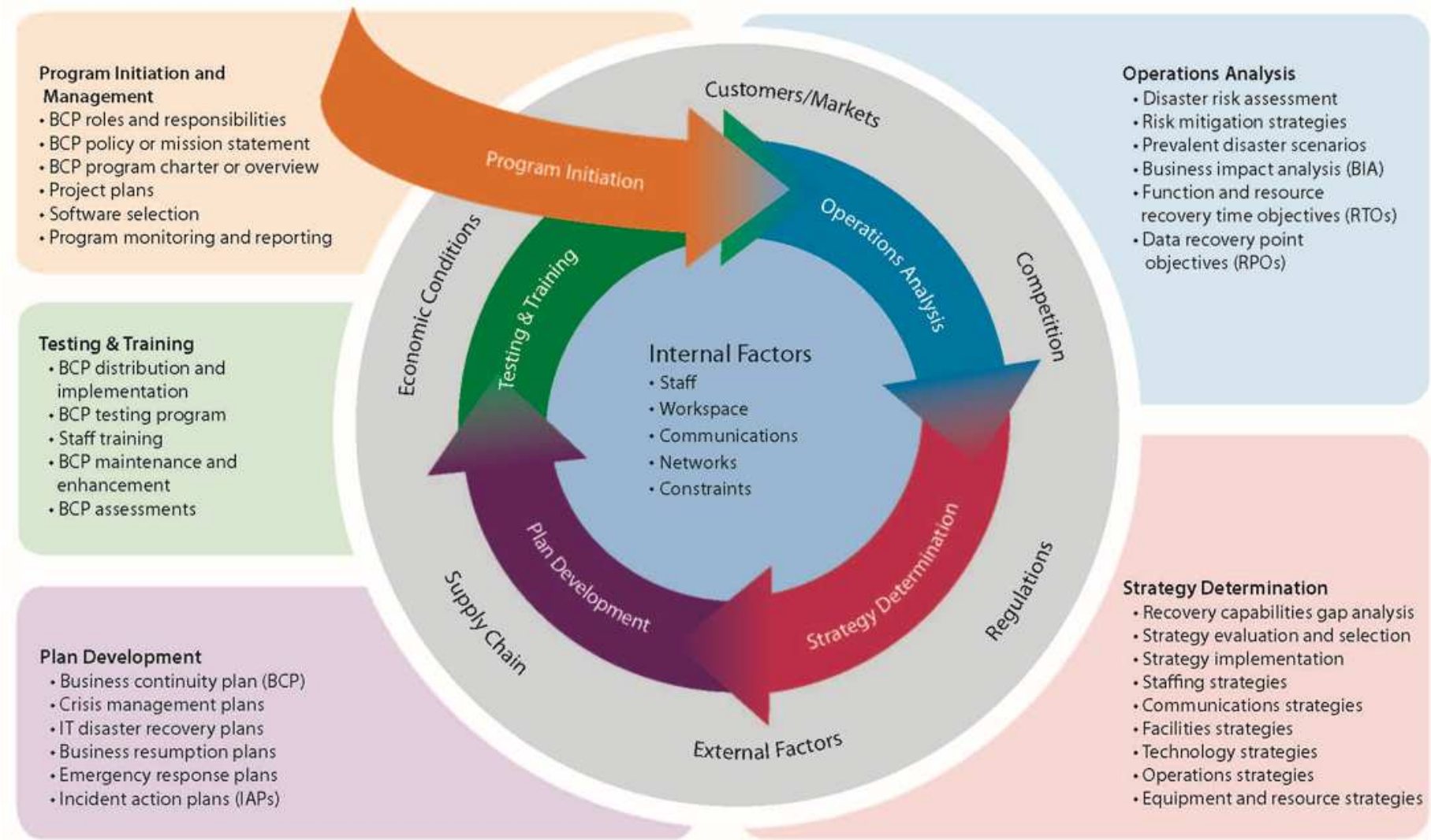
- Other Risk Management Initiatives:
  - Emergency Response Plans
  - Incident Response Plans/Incident Action Plans
  - Information Security Programs
  - Physical Security Programs
  - Compliance Programs
  - Insurance Programs
  - Staff Succession Plans

*Relative positioning may vary

Basic BCP Concepts

- Functions and systems must be inventoried and prioritized for recovery
- BCPs should primarily address your aggregate risks and scenarios
- Recovery processes should leverage pre-established strategies for key requirements
- The organization's BCP is a collection of multiple "recovery playbooks"
  - Individual teams (departments) have their own "recovery playbooks" for reference following a disaster
  - Designated teams for recovery coordination, IT restoration, etc.

RSM's Business Continuity Planning Methodology



Ongoing BCP Program

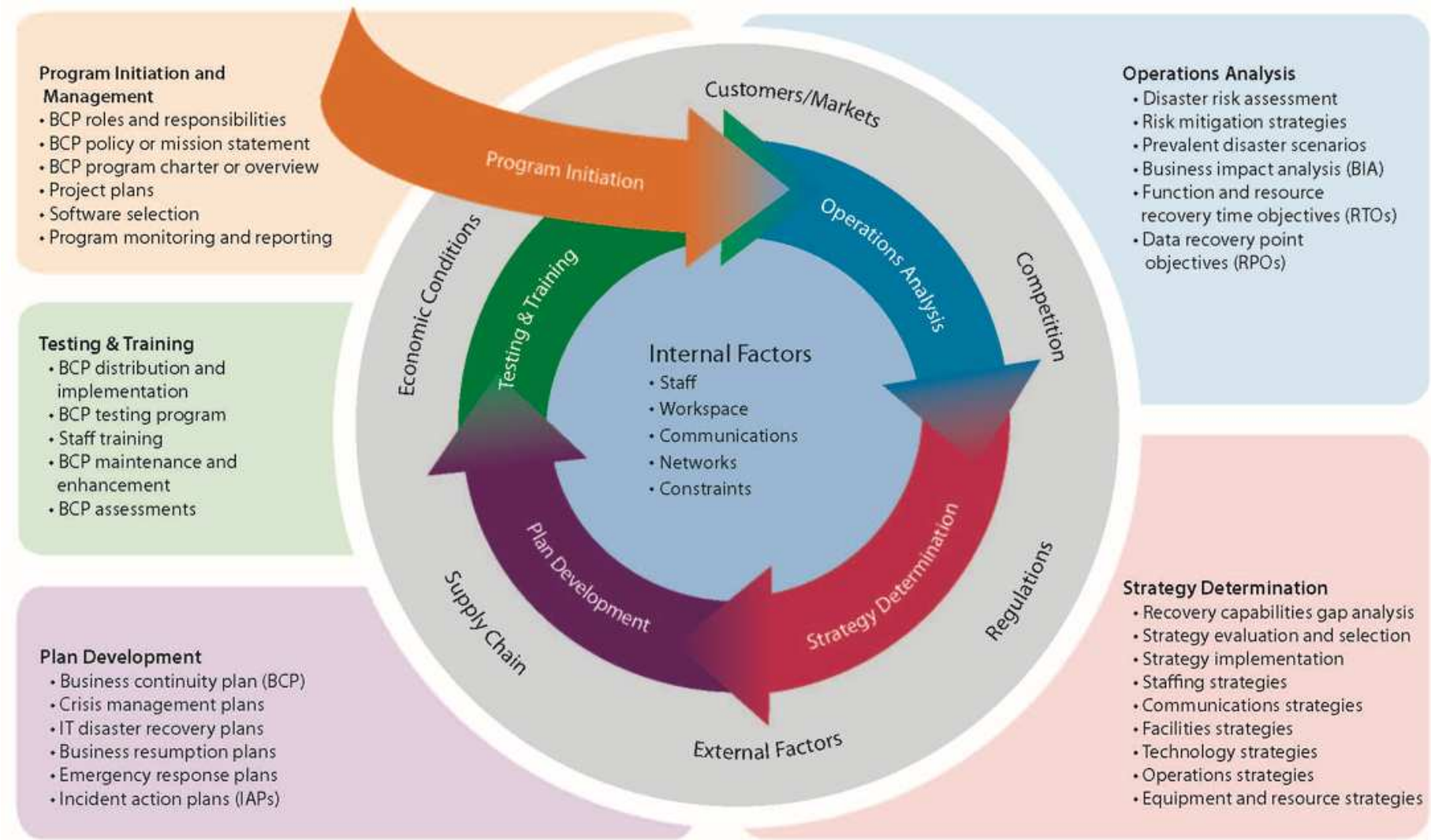
- Should encompass all facets of the BCP Program, including:
  - BCP Policy and Program Charter
  - Business Impact Analysis (BIA)
  - Disaster Risk Assessment (DRA)
  - Recovery strategies
  - BCP
  - Testing Schedule and Procedures
  - Training Schedule and Procedures

Ongoing BCP Program continued

- Activities should be performed according to an established schedule and in response to designated “triggering” events:
  - Log activities and report progress to Steering Committee, etc.
  - Respond to organizational changes, test results, audits, etc.
  - Adjust schedule and/or procedures as necessary/appropriate
- Key ongoing (scheduled) activities:
  - Exercises/Tests
  - Staff Training
  - Maintenance
  - Enhancement
  - Reviews/Audits

PROGRAM INITIATION AND MANAGEMENT

RSM's Business Continuity Planning Methodology



BCP Policy and/or Charter

- Concise, but clear and definitive
- Formally approved and properly adopted
- Regularly reviewed and updated
- Suggested topics:
  - Scope, objectives, and assumptions
  - Roles and responsibilities with clear accountability
  - General approach/methodology
  - Timeline and budget
  - Ongoing planning processes

BCP Roles

- Executive Sponsor
- Steering Committee
- Business Continuity Coordinator and/or Administrator(s)
- Recovery Teams
  - Team Leaders
  - Alternate Team Leaders
  - Team Members (and Alternates)
- Evaluators/Auditors
- Liaisons

BCP Software Tools

- Specialized tools for developing, maintaining and storing your BCP(s) and other related materials
- Support consistent and effective planning
- Relational databases to support data collection and maintenance
- Specialized user interfaces and output reporting
- User security, external interfaces, expanded features, etc.

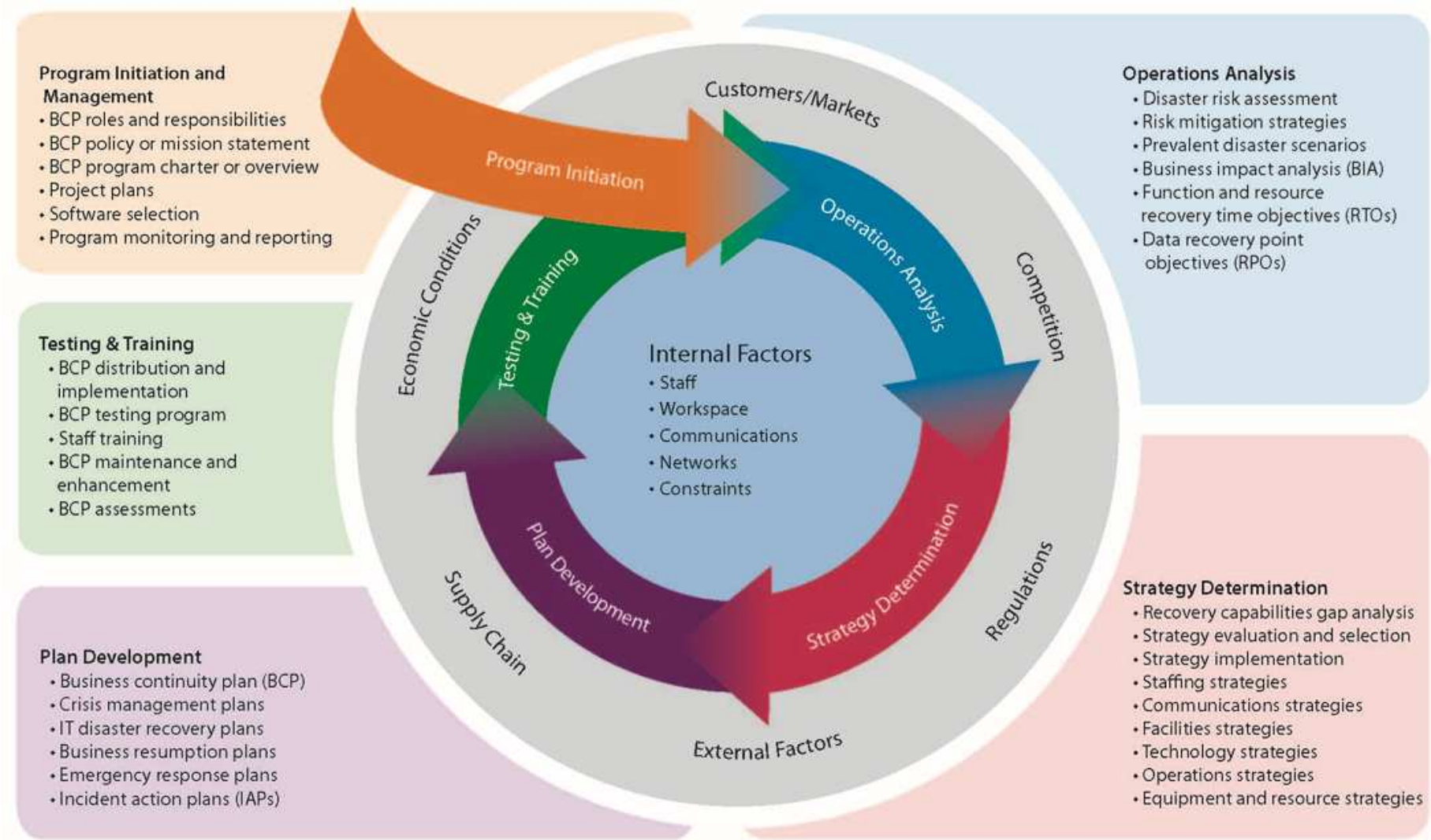
Facilitate, but do not replace, the plan development, maintenance and testing processes

Phase 1 – Manufacturing Considerations

- Integration with Other Existing/Planned Risk Initiatives
- Roles of Various Participants
  - Local vs. Regional vs. Corporate
  - Operations vs. Back-office
  - Operations vs. Infrastructure Support vs. Third-Parties
- Logistics
- Varying Legal and/or Regulatory Requirements
  - Local laws and ordinances
  - Agreements with customers, suppliers, labor, etc.
- Available Toolsets

OPERATIONS ANALYSIS

RSM's Business Continuity Planning Methodology



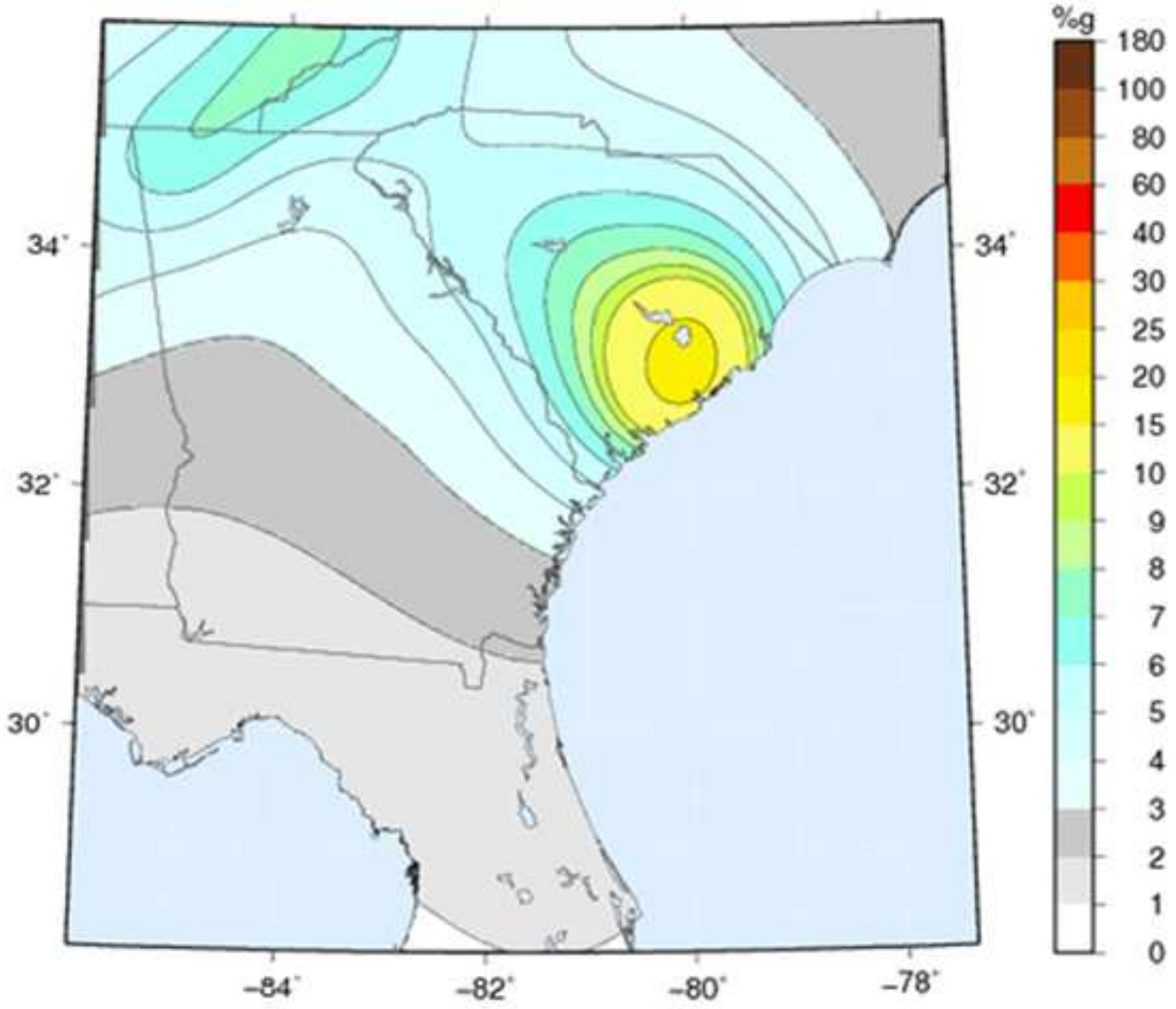
OPERATIONS ANALYSIS

Disaster Risk Assessment (DRA)

Disaster Risk Assessment (DRA) Process

- Assemble a comprehensive library of risk factors
- Collect and analyze data from multiple sources
  - Perceptions
  - Government and industry authorities
  - Historical experiences
  - Observation
  - Other research
- Assign ratings for Probability and appropriate Impact categories
- Calculate inherent risk
- Appropriately integrate mitigation considerations
- Document conclusions *and* rationale

Custom Hazard Map



Peak Ground Acceleration

http://www.usgs.gov/

DRA Ratings Values and Calculations

- Example: Staff Impact
  - High = 3
    An incident would severely impact both on-site and off-site (i.e., regional) staff.
  - Medium = 2
    An incident would severely impact only on-site or off-site staff.
  - Low = 1
    An incident would have only minor impacts on on-site and/or off-site staff.
  - None = 0
    No significant impact is expected from a related incident.

- Calculation Formulas
  - Inherent Risk = Probability x Impact
  - Residual Risk = Inherent Risk x Mitigation Factor

DRA Sample

Threat Factor	Probability (High, Medium, Low, or None)	Speed of Onset R = Rapid G = Gradual	Impact Ratings (High, Medium, Low, or None)				Risk Rating (>60: High risk 41-60: Moderate risk; 21-40: Low risk; 0-20: None or Minimal risk)	Current Mitigation / Preparedness (High, Medium, Low, or None)	Residual Risk Rating (>60: High concern 41-60: Moderate concern; 21-40: Low concern; 0-20: None or Minimal concern)	Threat Rank	Comments
			Staff	Facilities	Systems	Overall / Business					
Human and Proximity Threats											
Transportation Accident (Aircraft, Train, Motor Vehicle, etc.)	L	R	L	M	L	M	30	M	18	31	**Risk Factors:** The headquarters is located at a major intersection and surrounded by heavy vehicle traffic; However, this does not pose a serious threat of severe physical damage (excluding spills), as traffic speeds are slow. Very few flight paths within the region and the closest railway is over 3 miles from the site. **Mitigating Factors:** Some staff have the ability to temporarily work from other sites or home in the event of such incidents. **Reference:** https://skyvector.com/

Risk Mitigation

- Establish formal risk mitigation plans
  - Priorities correlated to risk assessment results
  - Objectives and tasks
  - Responsibilities
  - Timelines
- Monitor progress and publish status reports
- Periodically reevaluate both risks and mitigation

OPERATIONS ANALYSIS

Business Impact Analysis (BIA)

BIA Process

- Establish the BIA “framework”
  - Impact categories
  - Impact rating criteria and thresholds
- Assemble a comprehensive inventory of business functions
- Assess each function using the established framework
- Identify and evaluate technical requirements

Identifying Business Functions

- Departments – Too Broad
  - Vague Recovery Requirements and Steps
  - Aggregated Recovery Priorities
- Tasks – Too Detailed
  - Unmanageable BIA and BCP
  - Excessive and Duplicative Effort
- Proper Characteristics
  - Comparable Recovery Priorities and Requirements
  - Collective Recovery Process
  - Defined Inputs and Outputs

Examples

- Payroll Processing
- Accounts Payable (A/P)
- Recruiting and Onboarding
- Product Assembly
- Materials Planning

Business Impact Analysis—
Recovery Time Objective (RTO)

Technical Requirements

- Identify the key technical applications or services that are required to perform each function
- Individually evaluate the criticality of each system
- Determine the RTO of each system *requirement*
- Validate the data loss tolerance or Recovery Point Objective (RPO) of each system

BIA Sample

Business Function (Name/Description)	Functional RTO (Days)	Disruption Duration	Impact Ratings					System Dependencies		Comments/Rationale
			Customer Service (H/M/L)	Operations (H/M/L)	Financial (H/M/L)	Legal/ Regulatory (H/M/L)	Human Well-Being (H/M/L)	System Requirements	System RTO (Days)	
Accounts Payable Managing payments made to vendors for products and services rendered to the Company.	14	1 Day or Less	L	L	L	L	L	G/L System	21	The Company stays current with outstanding payments and vendors would likely provide extensions as needed. However, after 2 weeks, the Company would be at risk of losing access to critical products and services. Manual (check) payments could be made temporarily without access to required systems.
		2-3 Days	L	L	L	L	L	Internet – Bank Website	21	
		4-7 Days	L	L	L	L	L			
		8-14 Days	L	M	L	L	L			
		14+ Days	L	H	M	M	L			
Payroll Processing Calculating and remitting salary payments to the Company's employees. Includes retaining and distributing funds for benefits and other payments.	3	1 Day or Less	L	L	L	L	L	HRIS	14	If the Company was more than 3 days late distributing payroll, employees may encounter significant hardships and potentially may cease their activities. For a single pay cycle, temporary (estimated) payments could be distributed in the absence of automated systems. Manual checks could be issued for two pay cycles.
		2-3 Days	L	M	M	L	M	Internet – Bank Website	28	
		4-7 Days	M	M	M	M	H	G/L System	28	
		8-14 Days	M	H	H	M	H			
		14+ Days	H	H	H	H	H			

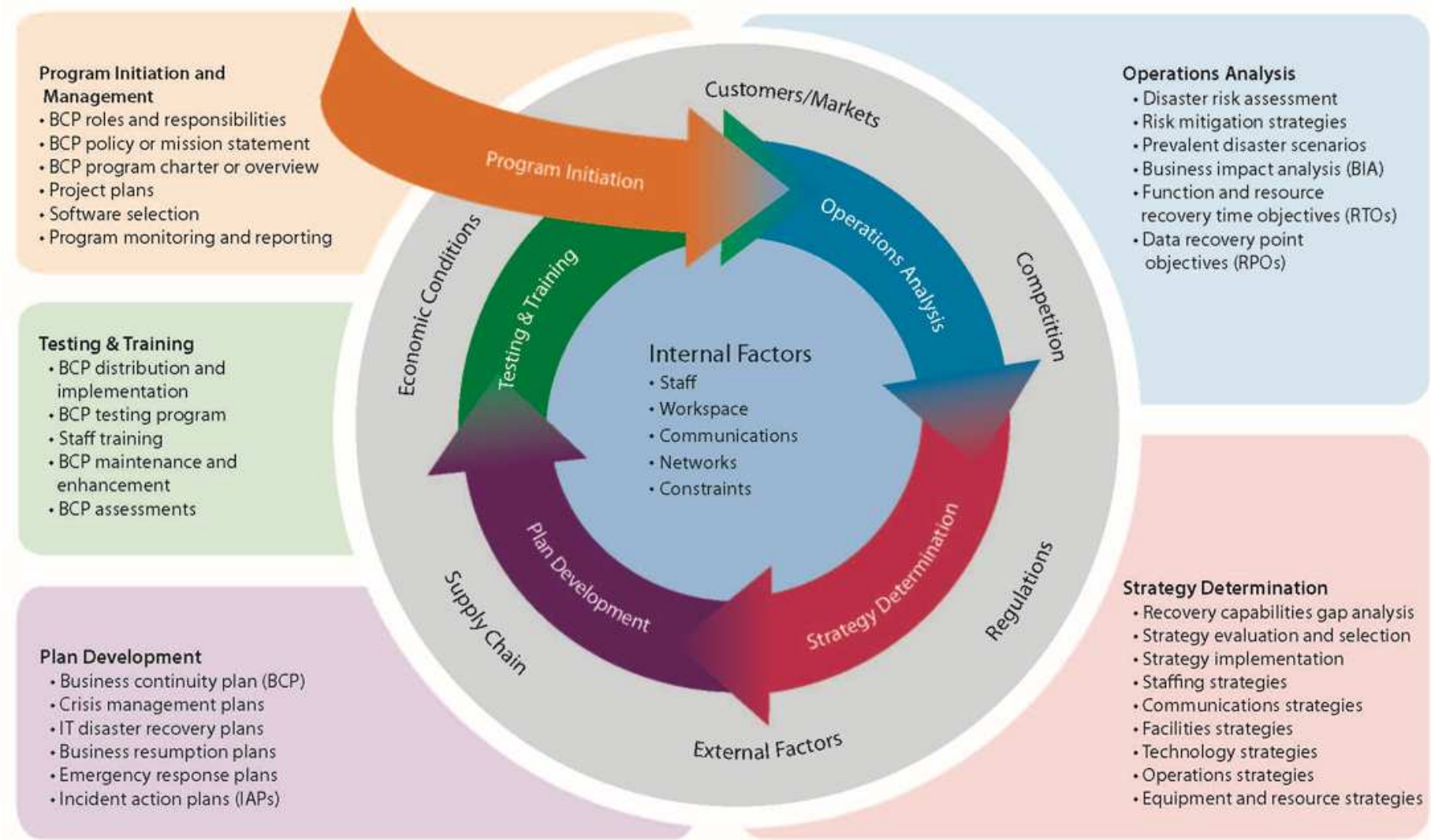
See Handout 1 – BIA Matrix Template

Phase 2 – Manufacturing Considerations

- Risks Inherent to Unique Environments, Operations, etc.
- Operational Resilience vs. Disaster Preparedness
- Tangible vs. Intangible Impacts of Business Disruptions
- Partial vs. “Full” Recovery
  - Capacity
  - Variety
  - Quality
  - Efficiency
- Demand Fluctuations
- Unique Requirements – Resources, Certifications, Skills, etc.

STRATEGY DETERMINATION

RSM's Business Continuity Planning Methodology



Recovery Strategy Coverage Areas

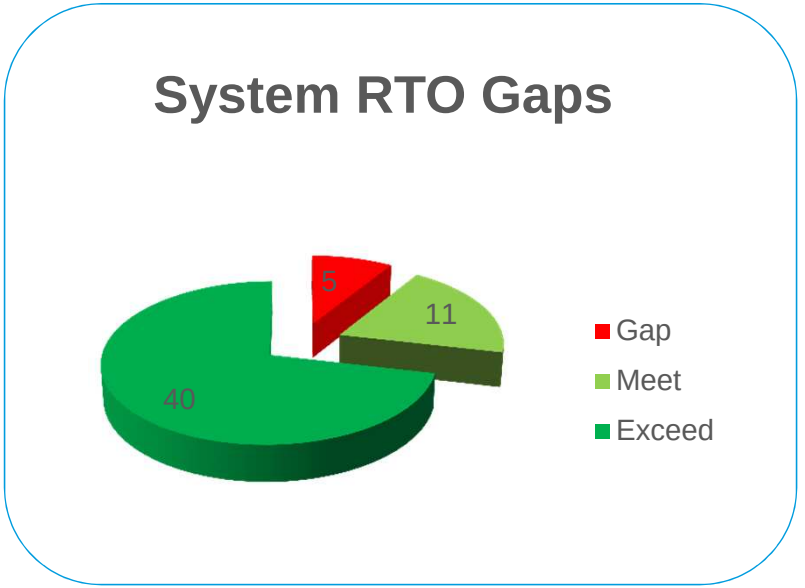
- Technology
  - Hardware, software, and data
  - Voice and data communication
  - Third-party systems and interfaces
- Facilities
  - Workspace
  - Data center(s)
  - Specialized sites (secure areas, manufacturing, etc.)
- Specialized equipment and other resources
- Operational workarounds and transfers
- Technical assistance and general staffing
- Crisis communication

Recovery Strategy Gap Analysis

- Map BIA Requirements to Current/Planned Strategies
- Determine Current/Planned Capabilities
  - Realistic/Valid Timelines
    - Timing From Initial Disruption
    - Foundation for Estimates
  - Interdependency Considerations
    - Predecessors
    - Restoration Capacity
- Include a Formal Gap Analysis
- Identify Enhancement Requirements

Recovery Strategy Gap Analysis continued

- Continuous monitoring for RTO and RPO compliance
- “Requirements” derived from reliable/current BIA and relevant mapping exercise
- “Capabilities” analysis considers capacity/scaling, predecessors, dependencies, constraints, etc.
- Exceeding requirements is not necessarily ideal



Basic Recovery Strategy Options

- Internal Resources
- Specialized Vendors/Services
- Business Partners
- Public Resources
- Acquire/Address As Needed

Vendor Continuity Management Program

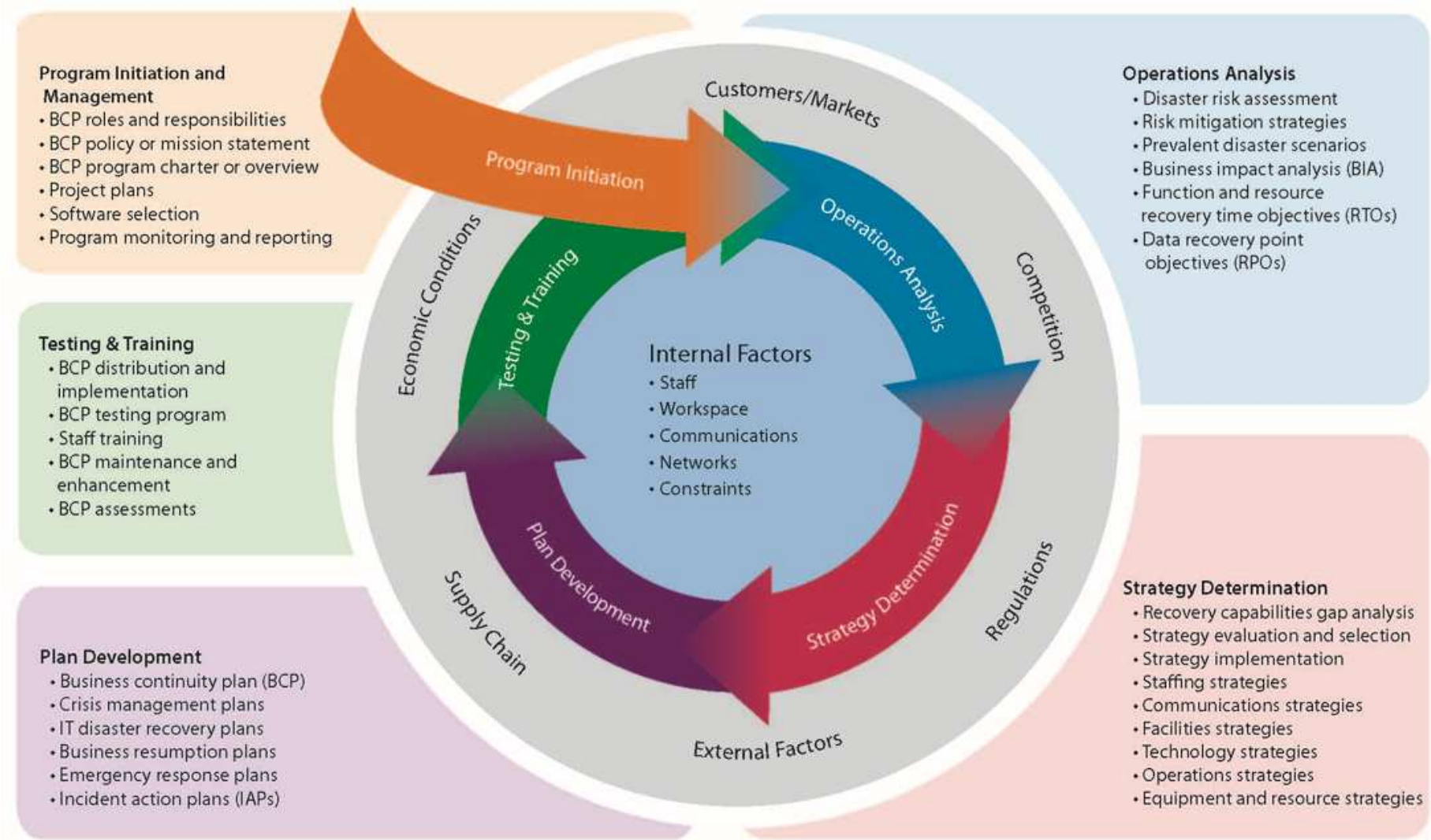
- Risk-rate ALL suppliers and services-providers
  - Different than other vendor risk assessments
  - Rating based on their impact to the continuity of your operations
  - Consider criticality of product/service, portability, etc.
  - Include technology providers
- Evaluate vendor continuity capabilities based on the assigned risk rating
  - Evaluation frequency
  - Evaluation criteria
- Proactively remediate and validate deficiencies

Phase 3 – Manufacturing Considerations

- Equipment and Environmental Replacement Lead Times
- Impact to Raw Materials, WIP, and Finished Goods
- Contingency Inventory
  - Safety Stock
  - Trunk Stock
  - Distribution Channels
- SLAs vs. RTOs
- Scaling and Sustainability Capabilities
- Supply Chain and/or Distribution Channel Disruptions

PLAN DEVELOPMENT

RSM's Business Continuity Planning Methodology



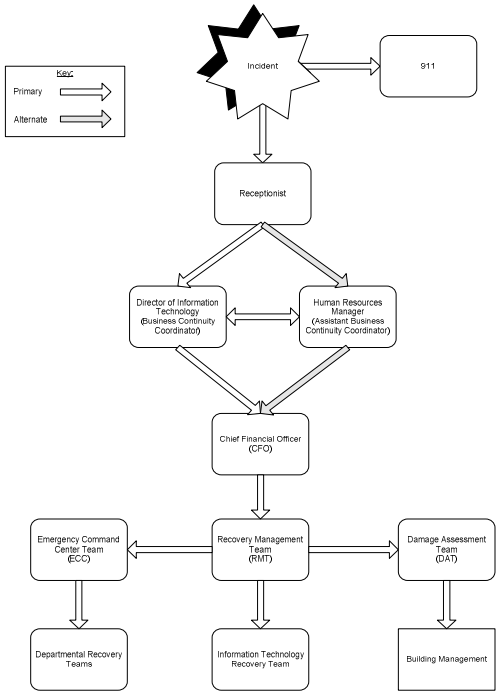
BCP Manual – Structure and Format

- Defined, consistent, and logical
- Should facilitate (or even mimic) a recovery effort
- Supported by a detailed table of contents or even chapter summaries
- Segregates administrative and overview sections from actionable recovery plans
- Includes team-specific sections/plans (“playbooks”)

See Handout 2 – Sample BCP Outline

Recovery Coordination Teams

- Discovery and notification
- BCP activation
  - Broad disaster identification/detection options
  - Clear communication and escalation channels
  - Defined roles and alternates
  - Summary graphic and detailed narrative
  - Defined activation criteria
  - Correlation to other portions of the BCP



Recovery Coordination Teams continued

- Initial evaluation and escalation
- Damage assessment
- Internal and external communication
- Coordination with external parties
- Coordination with other internal processes
- Priority determination
- Strategy selection and allocation
- Overall recovery coordination
- Recovery process tracking and administration

Departmental Business Resumption Plans (BRPs)

- Team/department overview
  - Ongoing (“normal”) responsibilities
  - Disaster responsibilities
- Departmental recovery strategies
  - Facilities/workspace
  - Technology
  - Personnel
  - Other
- Team assignments (including alternates)
- Business functions and priorities/RTOs
- External resource requirements (schedule)

Departmental BRPs continued

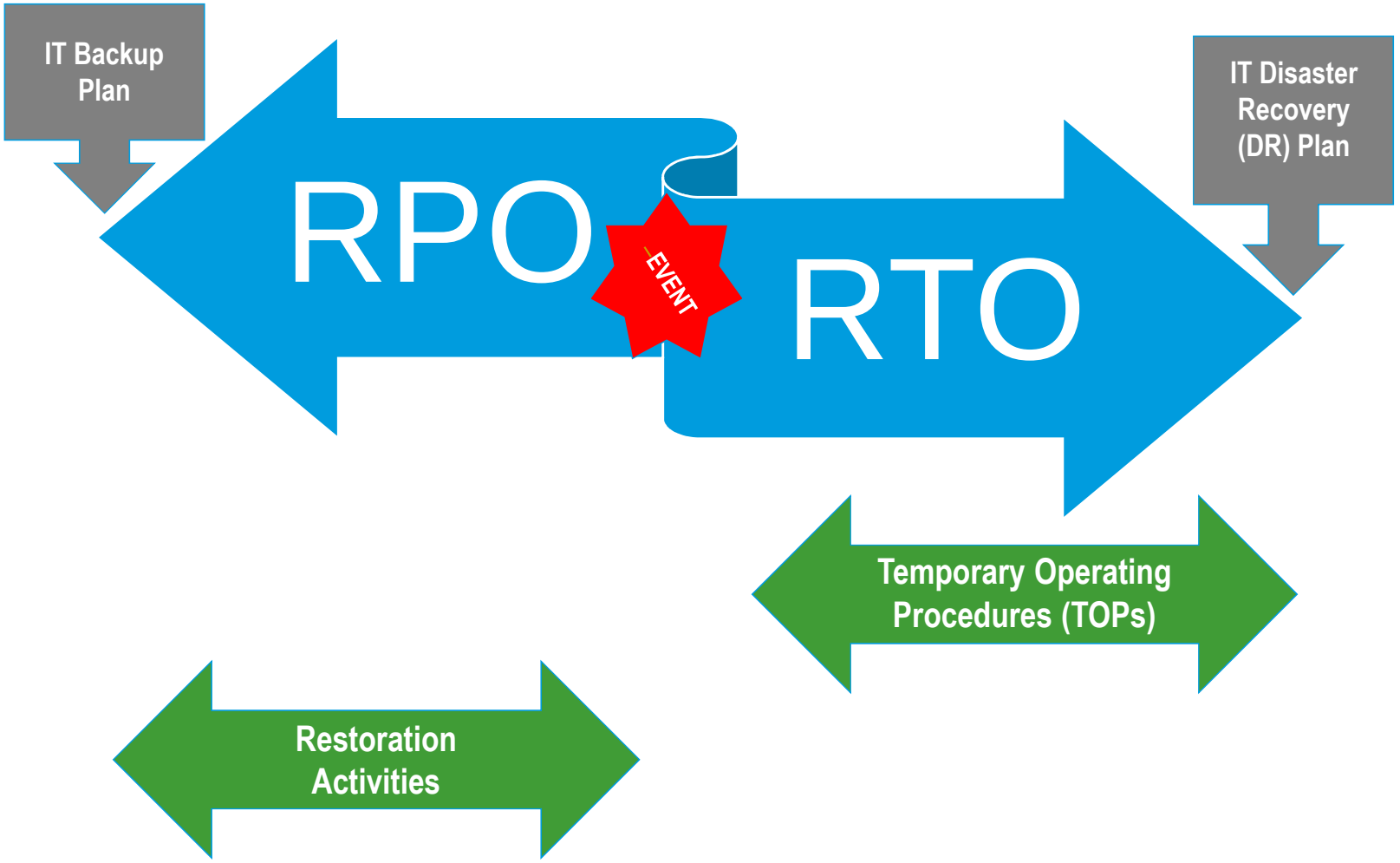
- Internal resources requirements
  - Quantity over time (schedule)
  - Source (including off-site storage)
- Administrative/common recovery tasks
- **Custom recovery tasks**
- Reference materials
  - Contact lists
  - Resource inventories
  - User manuals
  - Standard Operating Procedures (SOPs)
  - Configuration specs or parameters
  - Other
- Other miscellaneous sections, such as:
  - Interdependency diagrams
  - Vital records list

See Handout 3 – BCP Chapter Template

Custom Recovery Tasks

- Unique content for each team/department
- Integrate with, but do not replace, Common Recovery Tasks
- Highlight variations from normal procedures
- Supported by SOPs and other reference information
- Follow a consistent structure (framework) of key steps or phases, such as:
  - Essential Activities
  - Temporary Operating Procedures (TOPs)
  - Restoration Activities
  - Resumption Activities
  - Migration Activities

Custom Recovery Tasks continued



IT Disaster Recovery Plans (DRPs)

- Overview and scope
- Team assignments (including alternates)
- Recovery priorities and RTOs
- Recovery strategy or strategies
- Resource requirements
  - Quantity
  - Specs
  - Source
  - Location
  - Other

IT DRPs continued

- Technical restoration tasks
  - Restoration
  - Configuration
  - Validation
- Interdependencies and other considerations
- Reference materials
  - Contact lists
  - Diagrams
  - Inventories
  - Addresses and settings
  - Administration and support procedures
  - Other

Pandemic Response Plans

"Recognized variation from traditional BCPs"

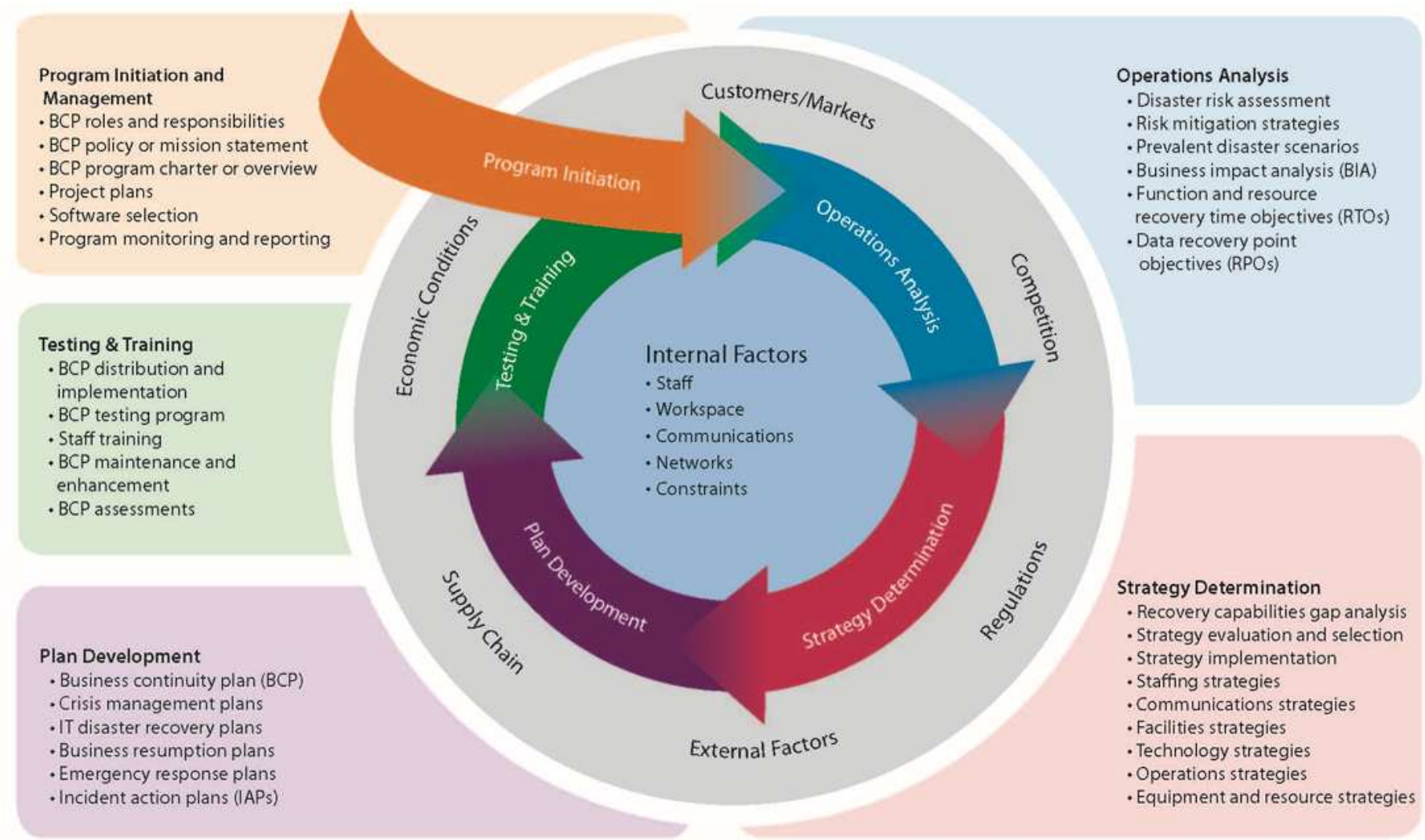
- Little or no impact on facilities, technology, etc.
- Major impacts on staffing, customers, vendors, etc.
- Leverage and integrate with crisis management plans
- Consider:
  - Prevention and containment
  - Monitoring
  - Escalation and de-escalation
  - Personnel (HR) policies
  - Demand variations
  - Operational priorities and scaling

Phase 4 – Manufacturing Considerations

- Assessment of Physical and Operational Impacts
- Unique Escalation Levels and Criteria/Factors
- Transfer Considerations
  - Compatibility
  - Capacity
  - Authority
  - Coordination
- Decreased Operational- and/or Cost-Efficiency
- SOPs and/or Controls Adjustments
- Long-Term Recovery (Migration/Return)

TESTING & TRAINING

RSM's Business Continuity Planning Methodology



Testing & Training – Initial Activities

- Train personnel on the overall BCP and their specific recovery roles
- Implement recovery strategies
- Perform initial testing—typically walk-through exercises:
  - Verify the BCP is accurate, adequate and usable
  - Validate effectiveness of recovery strategies
  - Allow participants to experience key recovery processes and practice their roles
  - Identify weaknesses and opportunities to enhance the Plan
- Establish an ongoing BCP program

BCP Training Program

- Key positions need to develop and maintain familiarity with their role and key BCP components
  - Document structure and navigation
  - Teams and responsibilities
  - Activation and escalation procedures
  - Recovery priorities and outage tolerances
  - Core recovery strategies
- All staff should be aware of the BCP Program and key concepts
  - New-hire training
  - Ongoing awareness initiatives
- Goal is to understand the BCP – not memorize it

BCP Testing Program – Best Practices

- Avoids repetition
  - Varies test type, scope, scenario, participants, timing, etc.
- Considers realistic and unpredictable disaster circumstances
  - Adds realism to the events
- Elevates complexity and expands scope over time
- Evaluates and documents/reports all tests and any actual activations
- Considers all tests collectively to determine BCP status and identify additional testing requirements

Basic Test Schedule

- Rolling 24-month calendar
- Specific vs. approximate information
  - Timing
  - Test type
  - Participants
- Gain approval and commitment
- Maintain and adjust as needed

Test Types

- Checklist and call tree tests
- Departmental and integrated walkthroughs
- Alternate site simulation
- Operational simulation
- Capacity validation (“load testing”)
- Disaster recovery simulation
- Vendor activations
- Recovery coordination (crisis management) simulation

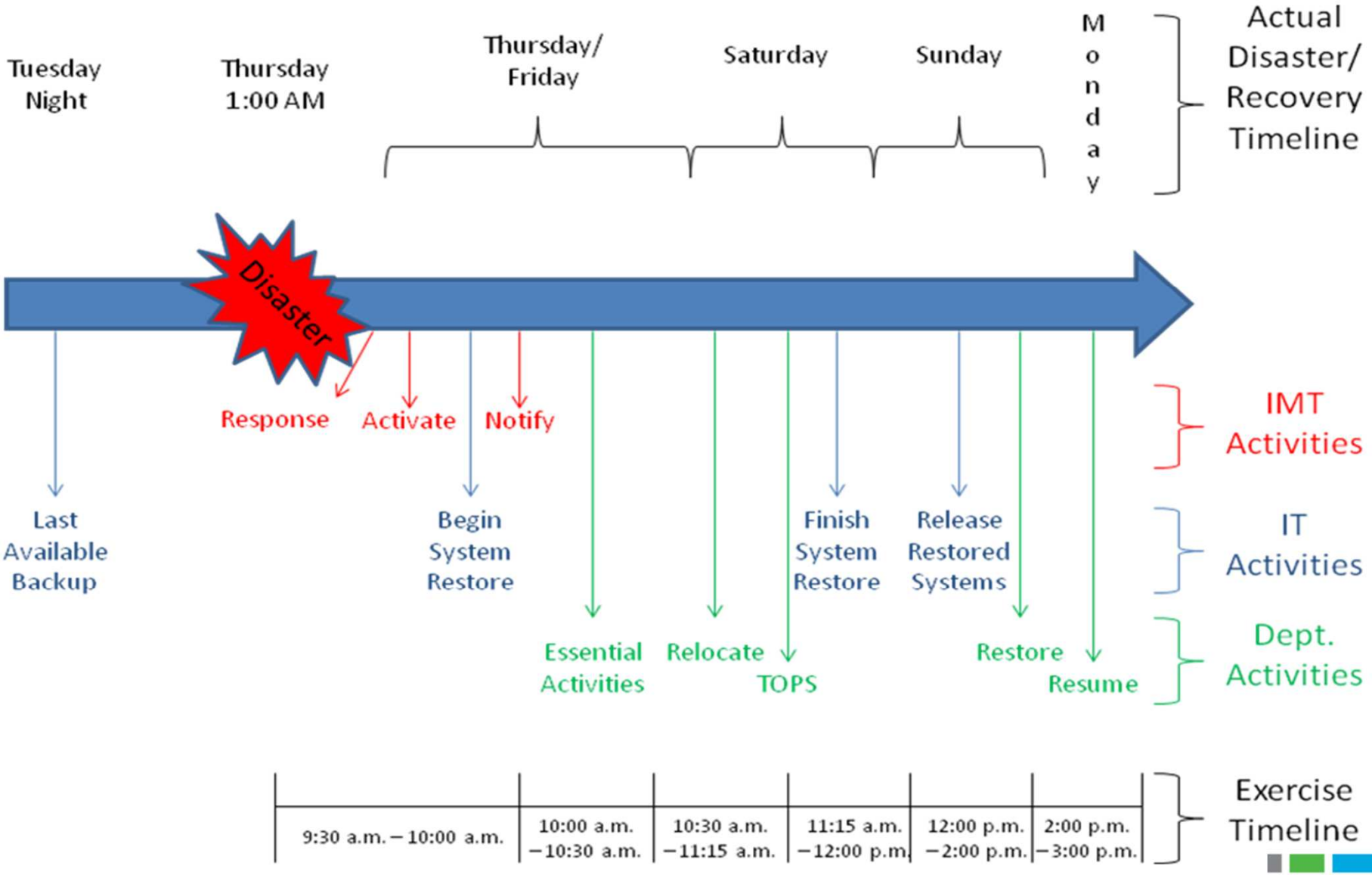
Enhanced Test Schedule

- Test scope and objectives to be achieved
- BCP objectives to be exercised
- Disaster scenario to be simulated
  - Type
  - Timing
  - Impact
- Participant roles
- Constraints or other variables

Disaster Scenario

- Correlate to BCP objectives and test objectives
- Outline realistic characteristics and circumstances
- Derive from DRA, relevant research, etc.
- Integrate unfolding circumstances
- Vary type, timing, impact, duration, constraints, etc.

Disaster Scenario – Timeline (Example)



Test Results and Actions

- Test evaluation
  - Pre-defined objectives
  - Feedback from participants, evaluators, etc.
  - Adherence to test plan
  - Adherence to BCP
- Test reporting
- Enhancement/remediation plan
  - Correlated to test results
  - Designated responsibilities
  - Defined timelines
- Monitoring and follow-up testing

Phase 5 – Manufacturing Considerations

- Variations from Standard SOPs
- Tabletop Exercises vs. Physical Simulations
- Continuous Improvements vs. ROI
- Coordination Across Sites, Product Lines, etc.
- Realistic Resource Expectations
- Interactions with Third-Parties
  - Suppliers/Vendors
  - Customers
  - Regulators

QUESTIONS AND ANSWERS?

CONCLUSIONS/ WRAP-UP

Key Elements of an *Effective* BCP Program

- Solid organizational commitment
  - Management visibly endorses the risk mitigation and recovery planning initiative
- Effective risk management
  - Disaster risks are identified and sound mitigation measures have been implemented
- Thorough BIA
  - Disruption impacts are evaluated and recovery requirements and priorities are determined

Key Elements of an *Effective* BCP Program continued

- Viable recovery strategies
  - Techniques for achieving critical recovery objectives are defined and fully implemented
- Documented recovery plan
  - Recovery processes are defined, responsibilities assigned and reference information is available
- Effective plan deployment
  - The current plan is distributed to appropriate individuals
  - Obsolete materials are collected
  - Participants remain knowledgeable of their role and the overall recovery process

Key Elements of an *Effective* BCP Program continued

- Plan testing and maintenance
  - Realistic exercises are conducted to confirm plan accuracy, prepare participants to respond and identify enhancement opportunities
  - The plan is updated on a defined schedule and whenever the organization, operation and/or environment changes

Key Elements of an *Efficient* BCP Program

- Established goals and objectives
- Clear roles and responsibilities
- Defined standards, methodologies, and techniques
- Ongoing and regular collaboration
- Proficient resource utilization
- Useful and productive tools
- Formal reporting and monitoring
- Regular evaluation and constructive feedback
- Continuous refinement

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