

**Business Continuity Toolkit Resource**

**Common Resilience and Recovery Approaches**

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9. Introduction

This resource is part of the business continuity management (BCM) toolkit, and it provides examples of resilience and recovery approaches for your business. These approaches may be used in combination and are not exclusive of each other in some cases.

Resilience approaches should be implemented before a disruption occurs to minimize the likelihood and impact of a disruption, while recovery approaches are documented in continuity plans and are used after a disruption occurs.

The alternatives are provided as examples and may not be relevant to all situations. Businesses may use this resource to obtain a better understanding of options to increase their resilience before a disruption and recover their critical activities after the disruption has occurred.

1. People resilience and recovery

Resilience approaches to minimize the likelihood and/or impact of a disruption include:

1. Allocate staff to roles which will allow the business to continue at minimum capacity in a crisis. If a business requires more than 75% of its employees to function at minimum capacity, is considered to be at increased risk
2. Seek and enter into agreements with third parties who can provide personnel if internal staff are not available
3. Train staff to work in different aspects and roles in the business by using job rotations. This minimizes risks to the business when it is functioning at minimum capacity
4. Develop a succession plan to document which personnel can perform which duties, and which teams can help each other based on skills and training
5. Document procedures or job guides for all roles that are staffed by critical personnel with no trained backup personnel
6. Train additional specialized personnel for all critical personnel that don’t have backups
7. Enter into agreements with third parties to provide contractors with similar skillsets for critical personnel that don’t have backups internally.

Recovery approaches to restore the resource or its functionality include:

1. Identify key personnel across the business and delegate a similar level of authority and responsibilities to them based on the succession plan
2. Engage third party personnel/contractors
3. Leverage documented job guides for critical activities where primary personnel are not available.
4. Specialized equipment resilience and recovery

Resilience approaches to minimize the likelihood and/or impact of a disruption include:

1. Implement a preventative maintenance program
2. Purchase spare critical parts to ensure their availability when required
3. Purchase additional units of critical equipment
4. Establish contracts with third parties that can bring their own equipment when needed or rent it to the organization
5. Enter into a reciprocal agreement with an industry peer or similar organization to leverage their equipment during downtime for a fee, e.g., a newspaper printing press can be used by peers during downtime where no printing is scheduled.

Recovery approaches to restore the resource or its functionality include:

1. Conduct emergency maintenance using the spare parts on hand, or urgently order missing parts
2. Use redundant equipment or re-allocate similar equipment from other operational areas
3. Engage third parties to bring their own equipment during service delivery or rent it from them
4. Draw upon the reciprocal agreement to use equipment from a peer organization.
5. Facilities resilience and recovery

Resilience approaches to minimize the likelihood and/or impact of a disruption include:

1. Designate an alternate location with sufficient space and workstations
2. Diversity production sites, e.g., manufacturing products at 2 or more sites with excess capacity
3. Implement remote work options and ensure critical personnel have laptops that they take with them at the end of the working day
4. Identify a location for a temporary alternate facility/operations site that would only be utilized in case of a disruption to the primary site
5. Identify backup suppliers that can manufacture the organization’s products if its primary production facility is disrupted, e.g., by keeping copies of designs and specifications that can be shared in case of a disruption to a production plant
6. Identify alternate methods to supply products/services to customers if storefronts or service locations are not available, e.g., converting vans to offer a mobile service, selling products through e-commerce channels, etc.
7. Enter into a reciprocal agreement (mutual aid) with an industry peer or similar organization to allow the use of their facilities or sites for a fee
8. Maintain geographic separation and redundancy for critical personnel/operations, e.g., split critical activities such as order fulfilment across two or more sites if possible.

Recovery approaches to restore the resource or its functionality include:

1. Instruct personnel who can work remotely to resume their activities from home
2. Instruct personnel who are required in-person to mobilize to the alternate location/facility
3. Engage backup suppliers to manufacture the organization’s products
4. Draw upon the reciprocal agreement to use the facilities of a peer organization
5. Begin using alternate methods to supply products/services to customers such as mobile service vans or e-commerce sales.
6. Technology resilience and recovery

Resilience approaches to minimize the likelihood and/or impact of a disruption include:

1. Establish manual workarounds for systems that cannot currently meet business RTO/RPO requirements
2. Maintain data and virtual machine (VM) backups/snapshots to tape or disk
3. Maintain offsite backups with spare infrastructure in a secondary datacenter
4. Maintain redundant systems with fail-over capability (active-passive or active-active setup)
5. Maintain spare laptops and copies of operating system images to accelerate deployment in case of a disruption impacting laptops
6. Implement a virtual desktop infrastructure (VDI) solution in case of a disruption impacting laptops
7. Establish alternative communication lines, e.g., LTE as a backup for landline/fiber internet
8. Implement additional cybersecurity solutions (endpoint protection, user security awareness training, email filtering, web traffic filtering, etc.).

Recovery approaches to restore the resource or its functionality include:

1. Instruct personnel to begin working with manual workarounds while systems are being restored
2. Restore/rebuild systems from backups in a secondary hosting environment
3. Provide spare laptops to personnel who lost their primary workstations or provide them with access to virtual desktops (VDI solution) and an allowance to purchase retail laptops if needed.
4. Third party resilience and recovery

Resilience approaches to minimize the likelihood and/or impact of a disruption include:

1. For third party utilities, maintain backup sources such as power generators, solar power systems with battery supply, onsite water tank/reservoir, etc.
2. Identify backup suppliers and enter into a standing agreement to provide the product or service within required recovery times if the primary supplier is disrupted
3. Diversify the supply of products or services across 2 or more suppliers to reduce reliance on a single supplier
4. Revise supplier contracts to include business recovery timeframes and obtain evidence of the supplier’s compliance (test results)
5. Train in-house personnel on how to deliver the service internally, if possible, during a disruption
6. Include clauses in supplier contracts allowing the organization to re-badge or temporarily hire third party personnel if the third party employing them is disrupted, e.g., bankrupted.

Recovery approaches to restore the resource or its functionality include:

1. Activate backup utility supplies, e.g., power generation, and ensure additional resources are ordered such as re-fueling for generators
2. Engage backup suppliers or ramp up supply from third parties who were only providing partial volumes in case one supplier is not available
3. Instruct in-house personnel to begin performing previously outsourced activities in case third parties are not available
4. Temporarily re-badge or hire third party personnel if the third party employing them is disrupted, e.g., bankrupted.
5. Vital records resilience and recovery

Resilience approaches to minimize the likelihood and/or impact of a disruption include:

1. Store copies with a third party document storage vendor or bank vault
2. Store copies at other sites the organization operates in a secure location such as a locked cabinet or vault
3. Store digital copies on encrypted storage media (USB storage) that are kept with key employees on their keychains, in their homes or a bank vault
4. Store digital copies on systems that are backed up regularly, e.g., SharePoint or file server.

Recovery approaches to restore the resource or its functionality include:

1. Retrieve copies of vital records from offsite physical or digital storage locations.
2. Inventory and finished goods resilience and recovery

Resilience approaches to minimize the likelihood and/or impact of a disruption include:

1. Identify backup suppliers that can manufacture the organization’s products if its primary production capability is disrupted, e.g., by keeping copies of designs and specifications that can be shared in case of a disruption
2. Identify manufacturers that can provide components of products that can be assembled by the organization
3. Maintain spare inventory at a secondary location
4. Maintain excess production capacity to enable the organization to produce more than the expected demand (ability to accommodate larger demand or a partial production disruption).

Recovery approaches to restore the resource or its functionality include:

1. Engage backup suppliers to manufacture the organization’s products
2. Engage manufacturers that can provide components of products
3. Draw upon spare inventory
4. Utilize excess production capacity to make up for partial/reduced production capabilities.