# **Business Continuity Overview**

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# **Executive Summary**

Lumen is committed to Business resiliency and survivability during an Incident or Business Disruption. Lumen's Corporate Business Continuity Management ("BCM") Program ["Program"] supports an environment of prevention, collaboration, communication, response, and recovery, ultimately allowing us to serve Customers, Shareholders, Employees, and other Interested Parties in the face of Disruptive Events.

As one of four core members of the United States Communication Sector Coordinating Council partnering with the United States Department of Homeland Security National Coordinating Center ("NCC"), it is of paramount importance to Lumen to protect the operation of our company and our Customers' business.

This *Business Continuity Overview* summarizes Lumen's BCM Program and its resiliency and preparedness capabilities and readiness.

## **Program goals**

The Program supports Lumen's vision, strategy, and corporate objectives with the following goals. Annually:

- Evaluate the purpose and operations of every Business Unit in Lumen, identifying threats, hazards, and potential impacts to critical Business priorities
- Develop strategies for mitigation, continuity, and recovery
- Maintain uninterrupted Service whenever possible, and when necessary, coordinate recovery from Business Disruptions safely and quickly
- Enable continuous improvement by periodically reviewing Program strategy and performance.

## **Program governance**

**Standards:** Lumen has aligned its program to industry best practices.

**Leadership:** Lumen's highest-level executives, Top Management, support the Program by providing necessary Resources and assigning Program partners to represent their individual Lumen Organization's interest in operational resiliency.

**Policy:** In adherence to *Business Continuity Management Program Global Corporate Policy* ("Policy"), Lumen is committed to maintaining a Corporate BCM Team, framework, Program objectives, and assignment of resources to execute the Program. The BCM Program Policy is reviewed and updated on an annual basis.

**Metrics:** The Corporate BCM Team maintains a dashboard to monitor and evaluate the performance of program activities.

**Audit:** Lumen engages internal and external audit firms to perform multiple types of Assessments designed to address our Customers' diverse compliance requirements.



# **Program framework**

As supported by Policy, the key to resiliency is the Program's framework. In alignment with ISO 22301:2019. Lumen's BCM Program is based on a Plan-Do-Check-Act model comprised of the following key components:

#### **Business Continuity Management System** • Competence & training awareness • Business impact analysis • Management commitment · Risk assessment Roles & responsibilities Strategy evaluation Communication Plan development Resources · Incident management structure **Establish Implement** Policy • BC DR Procedures & operate program Exercising and testing · Performance metrics Maintain & **Monitor &** · Non-conformities Exercise/testing results **Review** improve Post incident reviews · Root cause analysis Internal/external audit · Corrective actions • Improvement opportunities Quarterly updates Management reviews Act

# **Establish program**

- Program management: Dedicated Resources establish accountability and reinforce Lumen's commitment to the business continuity standards required to provide Customers reliable and resilient service.
- Competence, training, & awareness: The Program utilizes role-based training curriculum to help ensure Interested Parties are competent to the responsibilities for executing required tasks.



#### Implement and operate

- Business impact analysis ("BIA"): Annual interviews are conducted to identify Lumen's key operational functions and the impact(s) a Disruption would have on them. BIAs provide an understanding of time-critical priorities, key Resources, and interdependencies so that Recovery Time Objectives ("RTOs") can be established, approved, and integrated into Planning Strategies.
- Risk assessment ("RA"): Annual RA interviews are conducted to evaluate threats, hazards, and potential causes of Disruptions , the probability of their occurrence, and the severity of their Impact when they occur.
- Strategy evaluation and Plan Development: The BIA and RA collectively provide data integral to
  evaluating, developing, and implementing strategies for reducing the likelihood and Impacts of
  Disruptive Incidents.
- Incident Management and Business Continuity/Disaster Recovery Plans: The Incident Management process and BC/DR Plans provide procedures for maintaining continuity of Operations and are implemented to effectively respond to and recover from Lumen-wide Operational Disruptions.
- Exercising and testing: To test viability and develop a state of readiness, Lumen requires Critical Plans be updated and exercised annually.

#### Monitor and review

- Tracking performance metrics: The progress of each Lumen Organization's compliance with BCM
  Program objectives and requirements is continually tracked and communicated to key Program
  Personnel on a quarterly basis.
- Post incident reviews ("PIR"): PIRs provide Impacted/Activated Groups an opportunity for recovery
  process feedback; reflection on lessons learned; and to address any issue(s) which may require
  follow-up action.
- Management Reviews: These are conducted annually or when significant Business changes occur, to review the state of the BCM Program and confirm alignment with Lumen's Strategy and Operational Initiatives.

# Maintain and improve

Non-conformities, Corrective Actions, and Improvement Opportunities: These are tracked and
periodically reviewed to address findings or gaps and to enable continuous improvement of the
Program.



# **Key plan elements**

While business continuity plans are proprietary, Lumen uses a company-wide planning model that incorporates information as outlined in the plan's Table of contents below:

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# **Program roles and responsibilities**

Roles	Responsibilities
Corporate Business Continuity Management Office	<ul> <li>Lumen's Program is managed by full-time Business Continuity Professionals who govern and support the Corporate BCM Program. Responsibilities include:</li> <li>Developing and maintaining Program methodology and framework for recovery of Business Operations, Facilities, Applications, and the Incident Response structure</li> <li>Maintaining a BCM Guidebook containing the detailed procedures for how to execute the components of the Program</li> <li>Facilitating Incident Management activities, to include:         <ul> <li>developing and maintaining Program structure and processes - Team membership, role-based training, and exercises</li> <li>facilitating and managing Event communications with Interested Parties</li> </ul> </li> <li>conducting Post Incident Reviews and tracking Action Items to closure</li> <li>Tracking and reporting execution results to determine recoverability and maturity</li> <li>Directing and supporting continuous Program improvements</li> <li>Conducting Reviews with Management on BCM capabilities</li> <li>Maintaining, managing, and administering the BCM-related tools (i.e., planning repositories, Incident communications, training modules, etc.)</li> </ul>
Senior Leadership Team ("SLT") / Top Management	<ul> <li>Lumen's highest level of leadership, representing all major Lumen Organizations demonstrate leadership and commitment by:         <ul> <li>Ensuring Program Resources are available</li> <li>Championing the program, instilling the values of the Program within Lumen worldwide, and promoting continuous improvement</li> <li>Ensuring the integration of the Program into Lumen Business processes</li> </ul> </li> <li>Appointing Executive Sponsor(s) to implement and execute the Program framework within their Lumen Organization and subsequent Functional Group(s)</li> <li>Identifying unacceptable levels of BCM risk</li> </ul>



<ul> <li>Accountability for the management, prioritization, implementation, and continuous improvement of the BCM Program in their Functional Group/Lumen Organization</li> <li>Appointing Business Continuity Coordinators ("BCCs") and granting them the authority to coordinate execution of the Program and verify their responsibilities</li> </ul>
Appointing Incident Management Team Commanders to provide efficient command and control over recovery activities and concise communications to Stakeholders and other Interested Parties
<ul> <li>Establishing the structure within their Functional Group to coordinate execution of the Program</li> <li>Obtain ongoing training and education necessary to design, implement, and maintain the Program's desired execution outcome</li> </ul>
<ul> <li>Responsible for the development, approval, and distribution of Plans</li> <li>Verifying Plan recovery strategies are implemented, maintained, and exercised</li> <li>Revising Plans as Business conditions require (<i>i.e.</i>, changes in Roles, Environment, Technology, or Operations)</li> <li>Assuming command over an appropriate response structure</li> <li>Activating Plans when pre-defined triggers have been met and recovering the critical activity within its desired timeframe</li> </ul>
<ul> <li>Support Plan Owner in developing and maintaining Plan(s) in the required planning repository</li> <li>Assisting Plan Owner with any maintenance, exercise, and QA activities</li> </ul>
<ul> <li>IMTs are comprised of Team Members representing key Functional Groups that may serve a critical role during life safety Incidents or Business Disruptions.</li> <li>Primary Team Members are paged out for all activations and Secondary Teams are paged out if they are impacted or needed to support an Incident.</li> <li>Each Team is accountable for the overall command, control, and communications within their Functional Group during recovery</li> </ul>
<ul> <li>Identify, have access to, and assess the applicable legal and regulatory requirements related to the continuity of activities, and Resources</li> <li>Incorporate/keep current about all applicable Program legal, regulatory, contractual, and other requirements</li> </ul>
Complete Program awareness training on an annual basis and other additional training as needed by periodic objectives, projects, or initiatives



# Managing and responding to an Incident

## **Defining an Incident**

Lumen defines an *Incident* as a man-made or naturally occurring Disruptive Event where the Impacts affecting its Employees, Assets, or Critical Business Operations meet predefined activation triggers. Activation triggers would include but are not limited to: life threatening situations (severe weather, natural disasters, pandemic/epidemic, workplace violence), extended outages, or security breaches for top Critical Systems or Applications, or extended evacuations due to building infrastructure failures or environmental emergencies.



## Weather/Nature/ Health

- Flood
- Ice/Snow
- Volcanos
- Earthquakes
- Pandemic/Epidemic
- Wildfire
- Hurricanes
- Tornados



# Man-made/ Environment

- Workplace Violence
- Civil Unrest
- Work Stoppage
- Acts of Terrorism
- National Security
- Criminal Behavior
- Hazardous Materials



# **Equipment/ Infrastructure**

- Extended Outages
- Equipment Failures
- Technology Disruptions
- Unsafe Facilities
- Security Breaches

# **Activating Incident Management Teams ("IMTs")**

Lumen IMTs are operational 24/7 and convene virtually when any Member becomes aware of an actual or impending situation within their support area. Incident Commanders are engaged to determine if the Incident has met an activation trigger or threshold. If the situation warrants, the Incident Commanders coordinate the activation of the Team and the necessary notifications. The IMT(s) reconvene at agreed-upon time intervals to provide status updates on their Team's tactical recovery and any resources or logistics requirements. Incident Status Reports are updated and distributed after each meeting and disseminated appropriately to Top Management, Functional Groups, and other Interested Parties. A Post-Incident Review incorporating lessons learned and after-action items from all Activated Teams are created to track Action Items to closure.

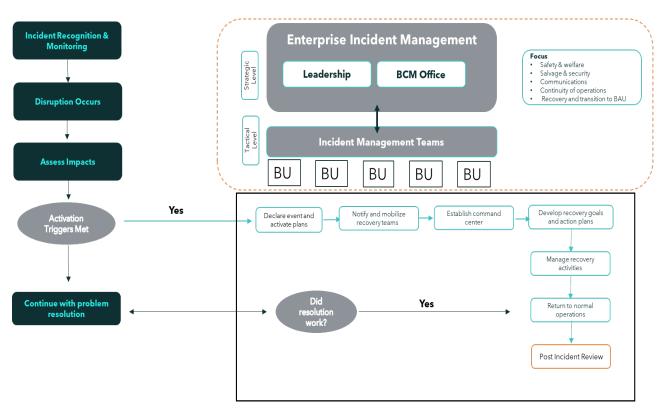


## **Communicating during an Incident**

Lumen implements redundant communications capabilities utilizing alternate carriers. Primary and back-up conference bridges are supplied by separate Vendors using diverse Networks and routes. Lumen owns and maintains an automated paging system, utilized for activating its Incident Management Teams and notifying Registered Employees of Disruptive Events or Critical Situations. Additionally, in times of Network congestion or domestic emergencies affecting normal telecommunications means, Lumen Critical Personnel are afforded priority access through the Government Emergency Telecommunications Service ("GETS") for public switch telephone networks ("PSTN") and the Wireless Protection Service ("WPS") for cellular phones.

## Recognition, response, and recovery flow

The figure below illustrates how the Incident Management process unfolds and Interested Parties are kept informed.



# Resiliency and preparedness capabilities

As a leader in global communications and IT services, Lumen's preparedness capabilities and resiliency strategies include, but are not limited to:









Personnel

**Facilities** 

Network / IT

#### Network & IT infrastructure

#### **Network footprint**

Lumen serves Customers in more than 60 countries across the globe, with Network and fiber capabilities that connect more than 350 metropolitan areas with 100,000-plus on-net buildings. This globally diverse Network, including approximately 450,000 route miles of fiber, enables a broad range of Services and Solutions to meet Customers' evolving demands for capacity and reliable connectivity.

## Network reliability

Geographically dispersed Network Operations Centers (NOCs") are staffed 24/7/365 to monitor, identify, and isolate causes of potential Network Disruptions, and coordinate resolution of System Outages. During a Network Outage or Event, this may include opening Event tickets, tracking and correlating Events, running Event bridges when required, and providing status to Interested Parties.

## **Network security**

To support the security of Lumen's Information and Networks, Lumen utilizes a team of Subject Matter Experts with diverse technical expertise from Operating Systems, Web Applications, Networking, Computer Forensics and Cryptography. These investigation and response capabilities are maintained 24/7/365 to protect Lumen Assets from cyber threats.

## **IT operations**

Lumen owns and manages geographically dispersed data centers, which are equipped with infrastructure, environment and connectivity to support Lumen's processing capabilities, and essential business functions. Access to data centers is restricted and backed up by battery and generators when commercial power is disrupted. Information Technology ("IT") partners with BCM Program Personnel to provide management recovery plans for Critical Applications and hardware, as well as integrating communication activities during an Incident.



#### **Facilities**

All Critical Facilities have Plans for recovering their critical infrastructure from loss of access, power, HVAC, etc. Periodic inspections and evacuation drills are conducted to protect the safety of our Employees, Customers, and Vendors.

#### Fire and life safety

Lumen is committed to the safety of its Employees and Guests, protecting Lumen Assets, providing continuity of Lumen operations, and complying with applicable regulations and codes. Fire and Life Safety plans and subsequent procedures are customized according to each Facility.

#### **Corporate security**

Global Security Services establishes security policies, manages access control systems, and coordinates security improvements to Lumen properties. This group manages the 24/7 Security Command Center which responds to alarms, monitors video, monitors global Events, supervises Security Officers, and serves as the central point of contact for all Security-related Events.

#### Alternate work arrangements

During a disaster or emergency related Event, Lumen utilizes an alternate workspace process and Team to address the needs of Business Units which occupy Impacted Facilities. Additionally, Lumen deploys remote access strategies providing the ability for Employees to work remotely in support of minimizing the Impact to Customers during Disruptive Events.

#### Personnel

With Personnel located around the globe, Lumen has incorporated into its planning a methodology to address potential or significant Disruptions in staffing levels, focusing on the following areas:

- Keeping Mission-Critical Functions operational
- Personnel remote access and Staff reduction contingency strategies
- Providing an appropriate level of awareness for our Employees and Customers
- Anticipating and responding to our Customers' needs and possible Disruptions to our supply chain

#### Health and safety

Lumen is committed to protecting the health and safety of our Employees, Customers, and Communities we serve by conducting our business in a safe and environmentally responsible manner. Health risks and/or pandemic preparedness are integrated into the planning process of the Business Continuity Program, where health and safety policies and Staff provide support and guidance during significant Business Disruptions or Disasters.



#### **Suppliers and vendors**

To minimize risk and provide Supplier accountability, multiple Lumen Groups collaborate for negotiating and executing the contractual agreement terms of sourced products and/or services. This provides Lumen the ability to assess the control measures of our Suppliers, Vendors, Business Partners and resiliency strategies are adequately implemented to address service level commitments and continuity of operations.

#### **Customers**

Lumen's Business Continuity Management Program is centered around the critical business processes that support the daily Operations of Lumen. Lumen's critical business processes are assigned a specific Recovery Time Objective ("RTO") to support the appropriate Business needs. These RTOs are considered confidential and will not be provided to Customers.

Lumen does not assign RTOs at the Product and Service level. Lumen assigns Service Level Objectives ("SLO") for the Products and Services that are offered. Customers requesting an RTO for their Products and Services with Lumen should be directed to their SLOs within the Master Service Agreement ("MSA").

A Customer Outage does not equate to a Lumen Business Continuity Plan being activated. Lumen Customers who experience an Outage of any kind are required to engage the appropriate Lumen Repair Center to initiate a Customer trouble ticket. Once a trouble ticket is created, the repair process can commence to restore the Affected Services. Key points of contact can be found here.

Lastly, when a Lumen *Business Continuity Plan* is activated, Lumen is under no obligation to notify Customers any Plan has been activated as Lumen BCPs focus solely on ensuring internal Business critical processes are able to be performed during an adverse situation.