

Chapter III: Business Impact Analysis

Objectives

- Examine objectives of Business Impact Analysis (BIA)
- Define resource, outage, disruption and impact
- Define Recovery Time Objective (RTO)
- Define Recovery Point Objective (RPO)
- Review operations from the perspective of BCM
- Define supply chain and process flow
- Define single-points-of-failure
- Identify organization infrastructure and physical support operational requirements
- Review the relationship between BIA and BCM
- Determine the cost of BCM.

Organization Objectives and Business Impact Analysis

Through Business Continuity Management (BCM) an organization builds resilience to threats. To do this it is necessary to first understand the organization, the organization's deliverables which are its products, services, activities and resources that are essential to ensure continuity of critical activities at an appropriate level. Questions to be answered include:

- What are the objectives of the organization?
- What are the deliverables of the organization?
- What resources do these deliverables require?

Senior managers determine the criticality of the organization's deliverables and set priorities for the resumption of operations. **Business Impact Analysis (BIA)** determines the importance of the organization's activities by assessing the impact over time, if they are interrupted, and establishes continuity and recovery objectives.

BIA forms the foundation from which the BCM process is built. It quantifies the impact over time of a disruption and provides the rationale upon which appropriate continuity and recovery strategies can be formulated. The activities of BIA include: planning the project, collecting the data, analyzing the data, documenting the findings and recommendations, and obtaining senior management acceptance of the findings and recommendations.

The objectives of BIA are to:

- Determine the priority of the objectives of the organization.
- Determine the critical deliverables of the organization.
- Identify the critical resources required by the deliverables.
- Determine the impact over time of disruptions.
- Determine resumption timeframes for critical operations following disruptions.
- Provide information from which appropriate recovery strategies can be determined.

Organizations depend on resources being available in order for operations to function properly. A **resource** is an asset used to conduct operations. Resources include personnel, facilities, equipment, inventory, utilities and systems. An **outage** is the unavailability of a resource which may cause a disruption in operations. This may be due to destruction, disablement or denial of use of a resource. **Disruption** is an interruption of operations. Generic scenarios which may result in disruptions are used to assess the impact over time on the organization. BIA is conducted without reference to specific causes of disruption. **Impact** is the effect of an event. The level of impact depends on factors such as loss of life, environmental damage, asset damage and duration of disruption. Both financial and non-financial impacts may result from a disruption.

Recovery Time Objective

It is generally not practical for organizations to immediately recover all operations following a disruption. A **Recovery Time Objective (RTO)** is the prospective point in time when an operation must be resumed before a disruption compromises the ability of the organization to achieve its objectives. Establishing the RTO for each critical operation is a key activity of BIA. Various critical operations may have a different RTO and a single critical operation may have a staggered RTO allowing the operation to gradually recover over time, for example, 50% capability within two days and 100% capability within seven days. The business continuity process after a disruption should be conducted focusing on recovering operations with the shortest RTOs first.

Each RTO may be tentatively determined early in the BIA based on ‘ideal’ recovery objectives. After further review, short RTOs are often adjusted to reflect the financial realities of executing a fast recovery. Short RTOs will typically require more expensive strategies. As with any program, BCM must fit within the organization’s budget.

In order to assess the impact of a crisis to the organization and prioritize operations, the entire supply chain, including internal process flow, must be understood. Establishing the RTO for each operation requires balancing the impact over time to the organization against the cost to recover within the RTO. Senior management makes the final RTO determinations.

BIA determines the resource requirements over time to enable each function within the organization to achieve continuity and recovery within established timeframes. It identifies requirements regarding resources including:

- air conditioning
- communications
- data
- equipment
- facilities
- gas
- information technology
- inventory
- materials
- personnel
- power supply
- sewer
- supplies
- systems
- vital records
- water

Recovery Point Objective

Unless information is secured on an ongoing basis utilizing redundant remote operations, there is a risk of information loss. For example, if information is secured in the evening of every business day, then information created during the next day and before the next evening backup will be subject to loss.

A **Recovery Point Objective (RPO)** is a retrospective point in time to which information must be recovered to ensure objectives can be met. Each RPO is determined in a cost-benefit analysis balancing the value of information at risk and the cost of controls that can be utilized to minimize information loss. The RPO establishes the pre-crisis period of acceptable information loss. Senior management makes the final RPO determinations.

Operations

For BCM purposes, there are two levels of information that need to be collected and analyzed to develop an understanding of the operations of an organization. The first level contains information common to all operations at a specific location and includes building construction and utilities such as electricity, communication, water, air conditioning and heating. The second level addresses information specific to each operation, such as daily volumes, equipment used, functions performed, relationships with other operations and external interfaces. This information helps in identifying some of the threats that must be addressed when developing alternative strategies.

All critical areas of the organization that must remain operational or rapidly recover for normal activities to continue need to be identified. **Critical operations** are activities that are necessary to safely support the primary mission of the organization. Critical operations are determined based on two variables: the importance of the operation and the time sensitivity of the operation. Generally critical operations include life-safety and environmental controls, customer service support-related operations, revenue-generating operations or operations that directly support revenue-generating operations. Within the domain of revenue-generating operations, some operations are more critical than others. The most profitable operations should receive special attention.

There are many operations that are important but not time sensitive and therefore are not identified as critical operations. For example, marketing operations are an important long-term function for nearly every organization, yet nearly all marketing operations can be suspended for a few days. On the other hand, there are many activities that are time sensitive but not critical. For example, a general staff meeting at 10am is time sensitive but typically general staff meetings are not critical.

Senior management reviews the level of importance of operations as assessed by each department. Occasionally, individual departments overestimate the importance of their activities; the management team will likely have to make a number of downward revisions.

Interdependencies

Supply chains and process flows illustrate interdependencies in operations. The emergence of a deliverable to the final customer is dependent on all operational components functioning properly.

A **supply chain** is a sequence of operations conducted by a system of organizations involved in the creation and distribution of a deliverable. Supply chain management includes the activities that procure materials and services, transforms them into intermediate goods and finished products and delivers them to customers. With an increasing reliance on supply chains comes more risk. Increasing globalization, specialization and reliance on fewer suppliers exacerbates the situation. The current approach of low-inventory supply chains operating across political boundaries adds a new dimension to risk.

A **process flow** (internal supply chain) consists of the sequence of operations by which an organization creates a deliverable. The process flow of a manufacturer converts raw materials into physical products as its deliverable. An information service organization transforms raw data into useful information as its deliverable.

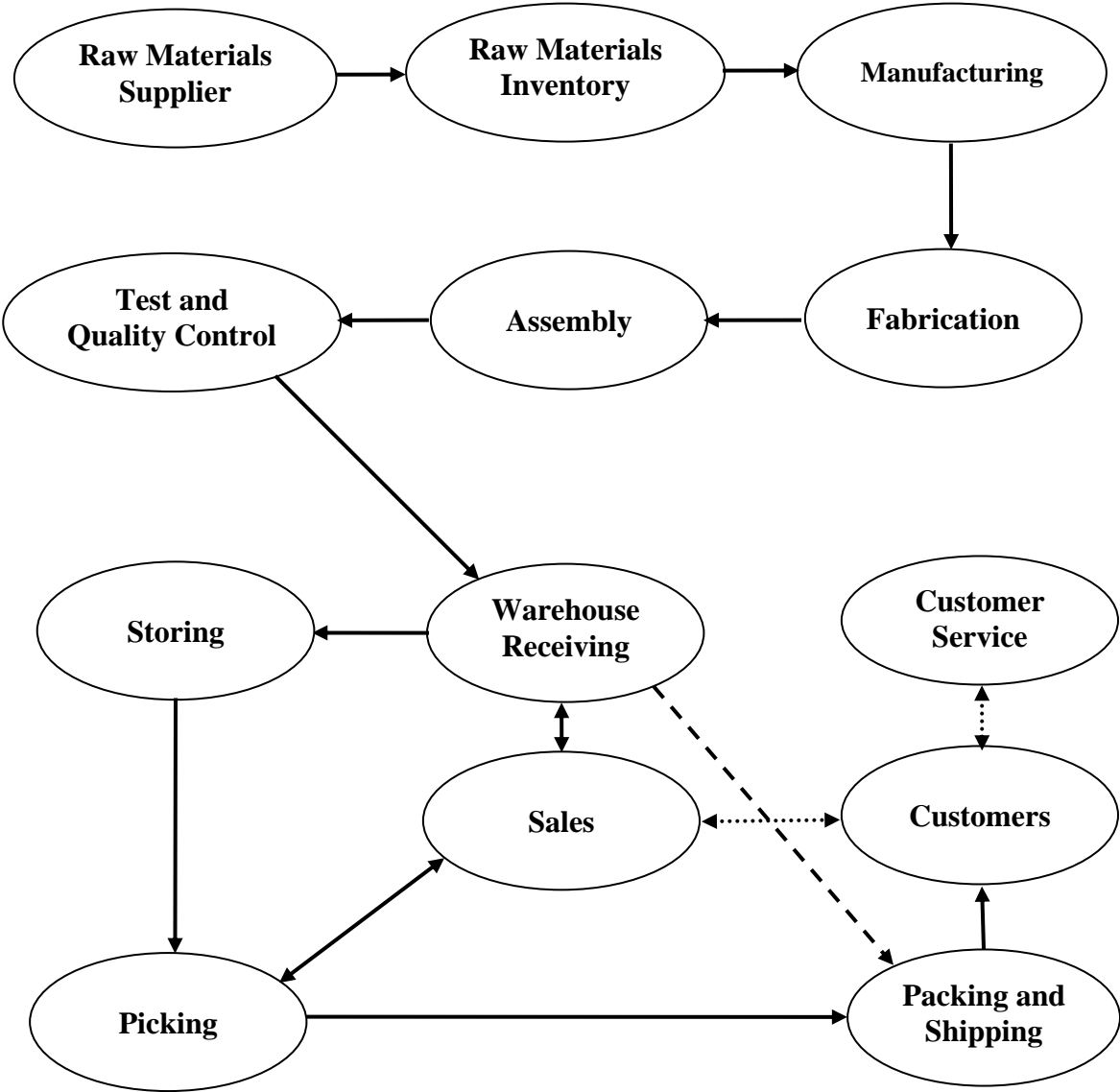
Supply chain management integrates supply and demand management within and across companies. With Just-in-Time (JIT), materials arrive only when they are needed. JIT inventory is the minimum inventory necessary to keep a perfect system running. This can present challenges for the business continuity planner who must cope with the interdependency of supply chain and process flow. For example, in Figure 3.1, if the Raw Materials Supplier was unable to deliver, Manufacturing would shortly not have the raw materials to continue operations. Other interdependencies are also present. For example, if Fabrication were disabled, Assembly would be disabled within a short period of time and Test and Quality Control would be disabled somewhat later, and so forth. Practically all manufacturing operations exhibit this type of interdependency.

Manufacturing operations are also dependent on major support provided by other departments such as Human Resources, Information Technology and Facilities. Many support functions can be briefly suspended without impacting manufacturing operations. However, Information Technology is one support function that is time critical for many manufacturers where manual override is not always a feasible option.

Service industries are also a type of supply chain with many interdependencies. Data is collected, verified, analyzed with some value added and sold to a client. The entire process is sometimes completely void of paper or other physical object.

Case Study C presents an analysis of a supply chain.

Figure 3.1 - Basic Supply Chain



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