

BUSINESS IMPACT ANALYSIS

A BIA quantifies business interruption, identifies qualitative impacts and vulnerabilities, and lays the foundation for the business continuity plan.

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Heavy rains in Houston in May 2015 caused deadly flooding and brought back painful memories of Tropical Storm Allison in 2001. A months-long labor dispute ending in February 2015 crippled ports along the West Coast of the United States that offload goods imported from Asia. A cyber-attack on Sony Pictures Entertainment discovered late in 2014 resulted in the release of personally identifiable employee information and scores of confidential emails and significantly disrupted their technology infrastructure. Notable events in 2011—the Sendai earthquake and resulting tsunami in Japan and the flooding in Thailand—significantly impacted the global supply chain.

These are just a few examples of regional and trans-national incidents that caused significant business interruption, financial loss, and reputational damage. More common, but no less significant to businesses, are facility property damage, technology failure, loss of information, utility outage, and damage to or failure of critical process equipment. Numerous other natural hazards, human-caused accidents and intentional acts, and technological causes can result in casualties, property damage, business interruption, environmental contamination, and damage to a company's reputation and its relationships with stakeholders.

Businesses should conduct a risk assessment to identify the likelihood and potential magnitude of threats and hazards that could injure people, damage property, interrupt business operations, and contaminate the environment. A business impact analysis (BIA) should also be conducted to assess the impacts on business operations, repu-

tation, and relationships with stakeholders. The BIA can provide risk managers with information to determine risk transfer and risk control strategies. The BIA enables the business continuity practitioner to prioritize the recovery of business processes and develop continuity strategies that are documented in business continuity plans.



What is a Business Impact Analysis (BIA)?

A BIA is a management-level analysis that identifies the potential impacts of business interruption and their escalation over time. Loss of revenue, loss of market share, deferred revenue (cash flow), increased expenses, regulatory fines, and contractual penalties (or loss of incentive bonuses) can be estimated. “Qualitative” impacts may not be easily quantified, but they are no less important. Delayed delivery of products or services to customers, defective products, and customer service issues can jeopardize long-standing relationships. If an incident becomes a headline

in the media or incurs the scrutiny of government officials, then reputation management becomes an overarching concern. Potential impacts on employees and the environment must also be assessed.

Business continuity planning is focused on recovering business functions and processes at minimally acceptable levels within predetermined time periods to avoid unacceptable impacts. The BIA provides the information to:

- Prioritize the recovery of business functions and processes based on their relative contributions to the business.
- Define the time periods for recovery.
- Identify the resources required to support business functions and processes at a minimally acceptable level.
- Develop continuity strategies and document business continuity plans.

Terminology

Two business continuity terms define the limits of acceptable downtime and data loss—“recovery time objective” (RTO) and “recovery point objective” (RPO).

RTO is defined as the maximum duration that a process can be interrupted before the resulting impacts are deemed by business management to be unacceptable. Business functions (e.g., finance) and processes that comprise each function (e.g., accounts receivable, accounts payable, etc.) may have varying RTOs. When RTOs are compiled and sorted from shortest duration to longest duration, the recovery of business functions and processes is prioritized (i.e., process with the shortest RTO is recovered first).

The timing of potential business interruption is also part of the analysis. If an interruption occurs at a seasonal peak in business operations—for example retailers during the holiday shopping season—then the impacts could be amplified. There are numerous deadlines associated with contractual obligations, regulatory requirements, and financial matters. Deadlines and peaks in business operations provide information that can be used to re-prioritize continuity and recovery efforts at the time of loss and can also be used to implement enhanced loss prevention measures at critical times.

RPO is a determination of the maximum amount of data that can be lost without causing unacceptable impacts. Businesses have numerous computer applications each with associated data. The volume of data generated every minute and hour can be substantial for businesses handling high volumes of transactions. New data and data changed since the last accessible and restorable backup can be lost if the building, room, or hardware hosting the data is damaged; data is corrupted; or if data is accidentally or intentionally deleted.

Data can be backed up using a variety of methods and media. Backup schedules vary from continuous to every day or longer depending upon the criticality of the data. The method and frequency of data backup and the location of the backup media will determine the amount of time that it would take to recover data. Data synchronized with another site may be continuously available, whereas a series of daily incremental and weekly backups to media that is stored at a commercial vendor may take many hours or days to restore.



RESOURCES are at the core of business continuity planning are continuity strategies that can be executed to continue time-sensitive business processes at minimum acceptable levels. The identification of resources required to continue business processes is a significant aspect of the business impact analysis. Resources include qualified people, facilities (and supporting infrastructure), machinery and equipment, technology, and supply chain (goods and services). The shorter the RTO or the lower the tolerable amount of data loss (RPO), the more robust the planning for, and

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provision of, resources to achieve the recovery objective.

Planning The BIA

Careful planning of the business impact analysis can ensure that accurate information is consistently developed thereby providing a solid foundation for determination of recovery priorities and investments in resources to support continuity strategies. A business continuity practitioner with strong leadership, project management, interpersonal, communication, and technology skills is essential.

Scope

The scope of the business impact analysis should be approved by management. Options include the enterprise, single business unit, or a single product or service line. Product lines or services that generate significant revenue or profit margin would be priorities for analysis. Other products or services should be included if they have growth potential or are a required part of a “bundle” with high priority products or services. Analysis of a product or service line that involves multiple facilities would require an analysis of the dependencies between facilities.

Senior operations and finance managers should be able to identify critical lines of business. A facilitated planning session that flowcharts business processes, dependencies, and interdependencies for each product or service line and their associated revenue is an excellent way to determine the BIA scope. As the flowchart is developed, persons with the institutional knowledge of the processes that support products and service lines should be identified. These persons will complete questionnaires during the data collection phase.

Planning Assumptions & Scenarios

A common question about business continuity planning is “How many scenarios should be planned for?” In contrast to emergency planning for life safety and property conservation where the cause usually dictates the scope of the response, business continuity planning addresses **impacts** rather than what caused the impacts. Therefore, the assumption that underlies the

business impact analysis is the facility that houses the business function and processes is not available and all resources to continue the process must be available elsewhere. Causes or scenarios that caused the business interruption would be considered when potential continuity strategies are evaluated and the availability of capable resources is determined.

Criteria

During the business impact analysis process “owners” are asked about the potential severity of impacts resulting from the downtime of their business process. It’s not enough to use subjective ratings such as low, medium, or high. Impact ratings should be defined using a combination of quantifiable and qualitative criteria. Quantifiable monetary thresholds include lost revenue from production downtime or lost sales associated with the interruption of incoming calls to customer service and sales representatives. Qualitative impacts could include product or service quality issues or delays affecting customer relationships. Management should approve the criteria used to define the level of impacts.

The criteria for rating impacts, time periods for downtime before impacts, time periods for recovery time objectives, and related fields can be programmed into the BIA questionnaires.

Resource Requirements

The BIA should capture detailed information about the minimum, qualified resources required to sustain a critical business process (*see “Resource Requirements” list below*). The BIA questionnaire should be structured so that process owners select from pre-populated lists that will ensure that resources will be consistently identified by the same name spelled the same way. Each resource becomes a “record” that can be compiled into a master database and sorted using unique resource names. For example, if process owners are asked to manually input names for computer applications, “MS Office” would be sorted differently than “Microsoft Office.” Master lists of resources including computer applications, suppliers, and machinery and equipment can be exported from other databases and built into database applications including Microsoft Excel.

Process owners' requested RTOs for technology resources should be also be selected from a pre-populated list of Information Technology's computer application recovery times (e.g., "<= 2 hours", "> 2 hours <= 8 hours," etc.) Use of IT's criteria will enable grouping by application and sorting by RTO to identify gaps between IT's recovery capabilities and process owners' needs for application recovery.

Conducting the BIA

The process for conducting a BIA is presented below. A business impact analysis is typically conducted using questionnaires and interviews to gather information from the owners of business processes that are most familiar with them. Questionnaires may be integrated into commercially available business continuity planning software. These products are relational databases using the questionnaires to populate the database, and the software aggregates and presents information for

BIA Methodology

1. Create business impact analysis questionnaires or license and customize vendor technology
2. Conduct a BIA workshop to instruct process owners about the BIA process and how to complete questionnaires
3. Complete questionnaires by process owners within the scope
4. Review questionnaires
5. Interview process owners who completed questionnaires
6. Compile and analyze results to determine recovery priorities and possible continuity strategies; make recommendations to address identified vulnerabilities

analysis. Questionnaires can also be constructed using a combination of documents and spreadsheets that are compiled manually. Regardless of the tools used to capture information, the process requires structuring the tools to capture information specific to the business operations.

Educating process owners so they understand how to complete BIA questionnaires is essential to obtain accurate information. This training is typically provided during a workshop to explain the purpose of the BIA, the information required, and how to apply the criteria.

Once questionnaires have been completed and reviewed by the business continuity practitioner, process owners should be interviewed to fill information gaps and verify the accuracy of judgments pertaining to the criticality of business processes (ratings of impacts and recovery time objectives). The interviews also provide an opportunity to explore identified vulnerabilities and possible continuity strategies and technology manual workarounds.

BIA Report

The business impact analysis report is a compilation, presentation, and analysis of information gathered during the BIA. Completion of the report includes:

- Analyze the data collected against the approved criteria to establish an RTO and RPO for each operational area and the technology that supports them.
- Determine the order of recovery of business functions and technology
- Document minimum resource requirements for resumption and recovery of core and support business functions and their escalation over time.
- Document dependencies of each business process and the supporting infrastructure (data systems and related technology, supply chain, third party partners and other resources).
- Include a gap analysis between current capabilities to meet the defined RTO and RPO and the needed capabilities.

The prioritization for recovery of business processes is presented by sorting business processes by duration of downtime before impact (shortest duration at the top) and the severity of impacts (most significant impacts at the top). Resources required to support business processes are compiled. Any opportunities for mitigating vulnerabilities during the BIA should be presented for management action.

The prioritization of business process by recovery time and the identification of resource requirements must be compared to the availability (recovery time) and capability of resources—available at another company controlled facility or available from third parties—to recover business processes. This process, called the “GAP analysis” identifies the differences between the current availability and capability of resources and what is required to prevent unacceptable impacts. These gaps should be addressed when economically feasible and as approved by senior management.

Using the BIA for Business Continuity Plan Development and Incident Management

The BIA should clearly identify priorities for the development of continuity strategies—those processes that must be recovered within agreed upon recovery time objectives to prevent impacts that management has deemed unacceptable. The compilation of resources including internal and external dependencies that support each process defines the requirements for each continuity strategy.

The information in the BIA should present a picture of loss potential and priorities for management action. Senior management should review the business impact analysis report and be fully briefed on the most significant findings. Ultimately, senior management should approve the business impact analysis and provide direction for the development of continuity strategies. As strategies are developed, management will also

be tasked to review strategies, validate that they can achieve the recovery objectives, and approve any expenditures, agreements, or other steps necessary to provide or arrange the resources to execute continuity strategies.

The compilation of recovery priorities and resource requirements also provides important content for the business continuity plan. The prioritization of business processes provides the incident management team with a list to review when it assesses the actual impacts of an incident. Processes that have been interrupted by the incident would be priorities for recovery by execution of predefined continuity strategies. The compilation of resource requirements identifies the sources for procurement, logistics, and other resource management tasks to execute continuity strategies.

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