Information Security

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Chapter 3

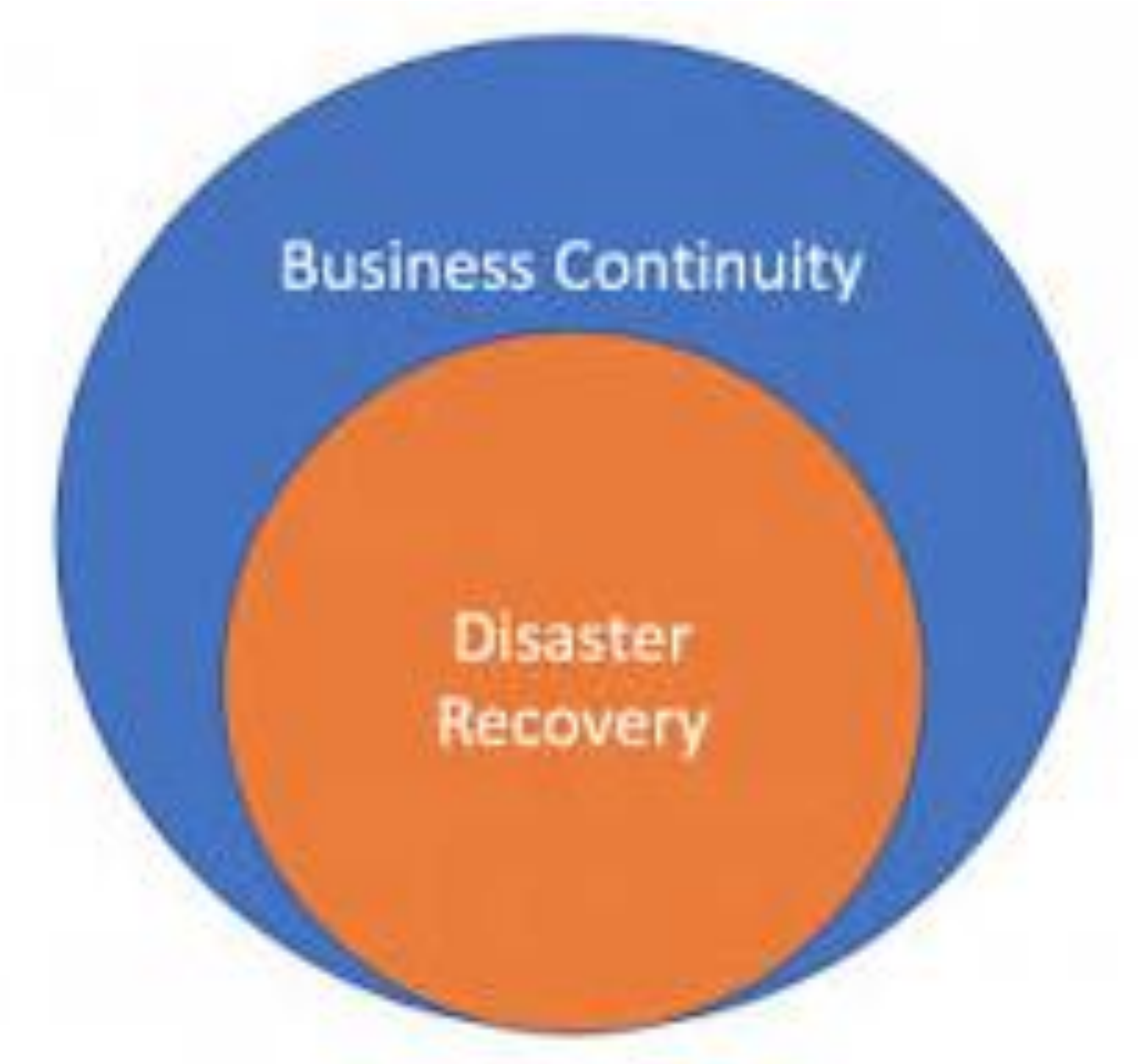
Business Continuity Planning

Despite our best wishes, disasters of one form or another eventually strike every organization. Whether it’s a natural disaster such as a hurricane or earthquake or a manmade calamity such as a building fire or burst water pipes, every organization will encounter events that threaten their operations or even their very existence.

Resilient organizations have plans and procedures in place to help mitigate the effects a disaster has on their continuing operations and to speed the return to normal operations. Recognizing the importance of planning for business continuity and disaster recovery.

Business continuity planning (BCP) involves assessing the risks to organizational processes and creating policies, plans, and procedures to minimize the impact those risks might have on the organization if they were to occur. BCP is used to maintain the continuous operation of a business in the event of an emergency situation. The goal of BCP planners is to implement a combination of policies, procedures, and processes such that a potentially disruptive event has as little impact on the business as possible.

BCP focuses on maintaining business operations with reduced or restricted infrastructure capabilities or resources. As long as the continuity of the organization’s ability to perform its mission-critical work tasks is maintained, BCP can be used to manage and restore the environment. If the continuity is broken, then business processes have stopped and the organization is in disaster mode; thus, **disaster recovery planning** (DRP) takes over The top priority of BCP and DRP is always people. The primary concern is to get people out of harm’s way; then you can address IT recovery and restoration issues.


Business Continuity
Disaster Recovery

You should understand the distinction between business continuity planning and disaster recovery planning. One easy way to remember the difference is that BCP comes first, and if the BCP efforts fail, DRP steps in to fill the gap. For example, consider the case of a datacenter located downstream from a dam. BCP efforts might involve verifying that municipal authorities perform appropriate preventive maintenance on the dam and reinforcing the datacenter to protect it from floodwaters.

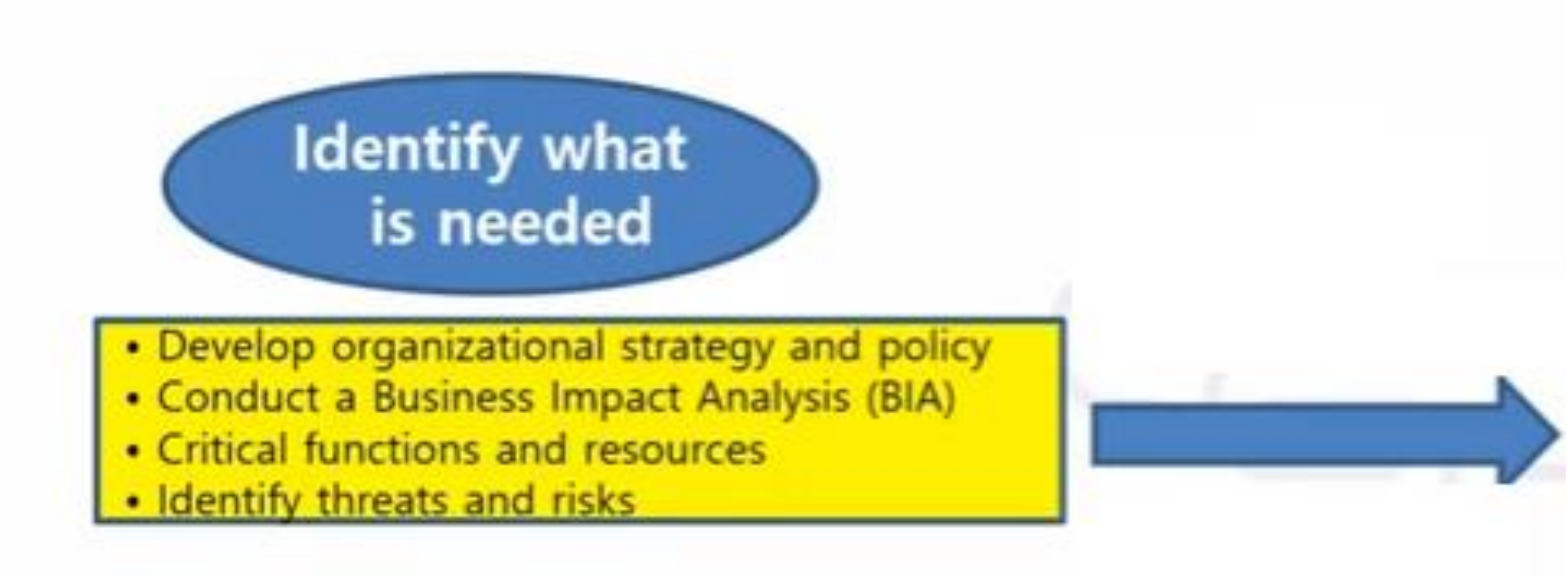
The overall goal of BCP is to provide a quick, calm, and efficient response in the event of an emergency and to enhance a company's ability to recover from a disruptive event promptly. **The BCP process, as defined by (ISC), has four main steps**:

- Project scope and planning
- Business impact assessment
- Continuity planning
- Approval and implementation

Project Scope and Planning

Project Scope and Planning: As with any formalized business process, the development of a strong business continuity plan requires the use of a proven methodology. This requires the following:

- Structured analysis of the business's organization from a crisis planning point of view
- The creation of a BCP team with the approval of senior management.
- An assessment of the resources available to participate in business continuity activities.
- An analysis of the legal and regulatory landscape that governs an organization's response to a catastrophic event.



Identify what is needed

- Develop organizational strategy and policy
- Conduct a Business Impact Analysis (BIA)
- Critical functions and resources
- Identify threats and risks

Business Organization Analysis: One of the first responsibilities of the individuals responsible for business continuity planning is to perform an analysis of the business organization to identify all departments and individuals who have a stake in the BCP process. Here are some areas to consider:

- Operational departments that are responsible for the core services the business provides to its clients.

- Critical support services, such as the information technology (IT) department, plant maintenance department, and other groups responsible for the upkeep of systems that support the operational departments.
- Senior executives and other key individuals essential for the ongoing viability of the organization

BCP Team Selection: In many organizations, the IT and/or security departments are given sole responsibility for BCP and no arrangements are made for input from other operational and support departments. In fact, those departments may not even know of the plan's existence until disaster strikes or is imminent. This is a critical flaw! The isolated development of a business continuity plan can spell disaster in two ways.

First, the plan itself may not take into account knowledge possessed only by the individuals responsible for the day-to-day operation of the business. **Second**, it keeps operational elements “in the dark” about plan specifics until implementation becomes necessary. This reduces the possibility that operational elements will agree with the provisions of the plan and work effectively to implement it. It also denies organizations the benefits achieved by a structured training and testing program for the plan.

The role of senior management in the BCP process varies widely from organization to organization and depends on the internal culture of the business, interest in the plan from above, and the legal and regulatory environment in which the business operates. Important roles played by senior management usually include setting priorities, providing staff and financial resources, and arbitrating disputes about the criticality (i.e., relative importance) of services.

Resource Requirements: After the team validates the business organization analysis, it should turn to an assessment of the resources required by the BCP effort. This involves the resources required by three distinct BCP phases:

- BCP Development
- BCP Testing, Training, and Maintenance
- BCP Implementation

BCP Development: The BCP team will require some resources to perform the four elements of the BCP process (project scope and planning, business impact assessment, continuity planning, and approval and implementation). It's more than likely that the major resource consumed by this BCP phase will be effort expended by members of the BCP team and the support staff they call on to assist in the development of the plan.

BCP Testing, Training, and Maintenance

The testing, training, and maintenance phases of BCP will require some hardware and software commitments, but once again, the major commitment in this phase will be effort on the part of the employees involved in those activities.

BCP Implementation When a disaster strikes and the BCP team deems it necessary to conduct a full-scale implementation of the business continuity plan, this implementation will require significant resources. This includes a large amount of effort (BCP will likely become the focus of a large part, if not all, of the organization) and the utilization of hard resources. For this reason, it's important that the team uses its BCP implementation powers judiciously yet decisively.

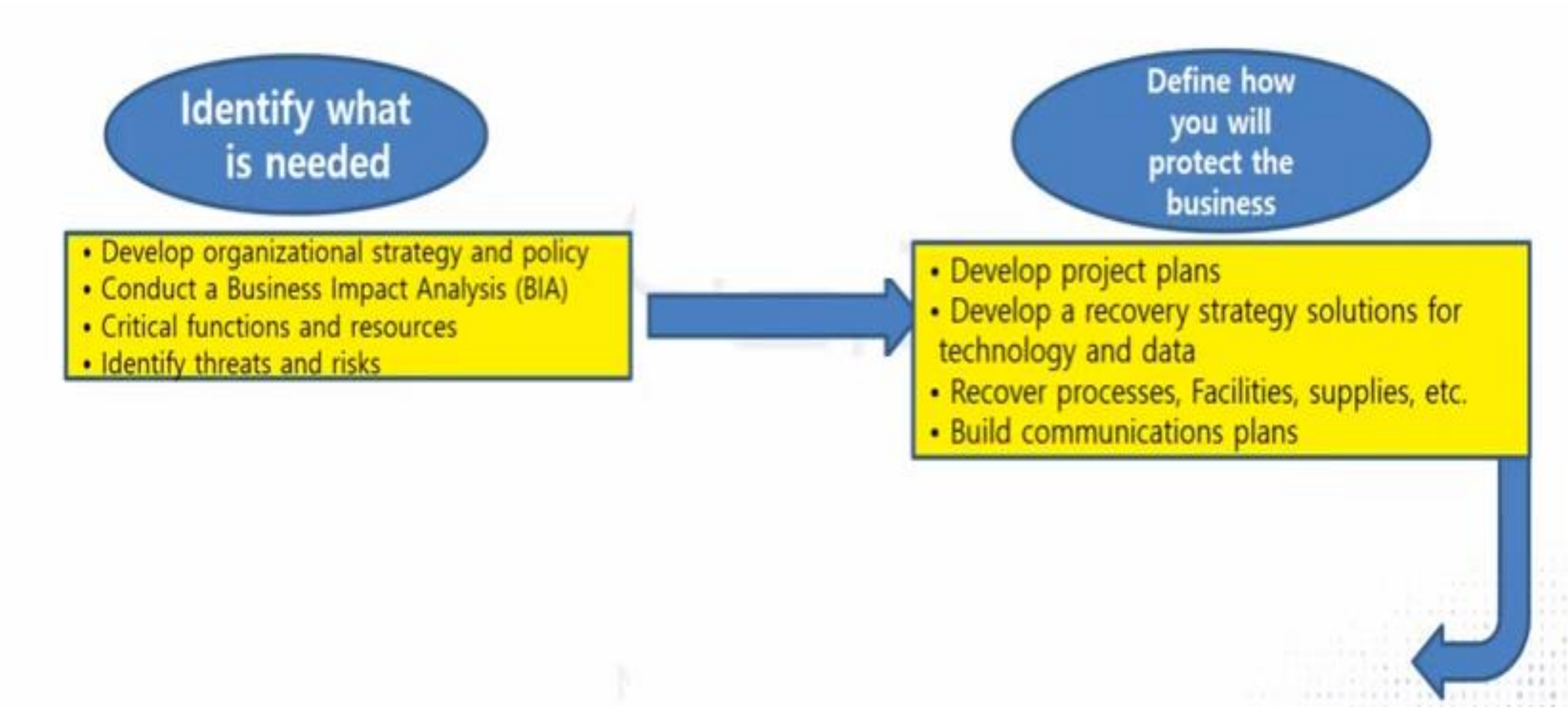
Legal and Regulatory Requirements: Many industries may find themselves bound by federal, state, and local laws or regulations that require them to implement various degrees of BCP. The officers and directors of publicly traded firms have a fiduciary responsibility to exercise due diligence in the execution of their business continuity duties. In other circumstances, the requirements (and consequences of failure) might be more severe.

Business Impact Assessment

Business Impact Assessment: Once your BCP team completes the four stages of preparing to create a business continuity plan, it's time to dive into the heart of the work—the **business impact assessment (BIA)**. The BIA identifies the resources that are critical to an organization's ongoing viability and the threats posed to those resources. It also assesses the likelihood that each threat will actually occur and the impact those occurrences will have on the business.

The **results of the BIA** provide you with quantitative measures that can help you prioritize the commitment of business continuity resources to the various local, regional, and global risk exposures facing your organization.

Identify Priorities: The first BIA task facing the BCP team is identifying business priorities. Depending on your line of business, there will be certain activities that are most essential to your day to-day operations when disaster strikes. The priority identification task, or criticality prioritization, involves creating a comprehensive list of business processes and ranking them in order of importance. Although this task may seem somewhat daunting, it’s not as hard as it seems.



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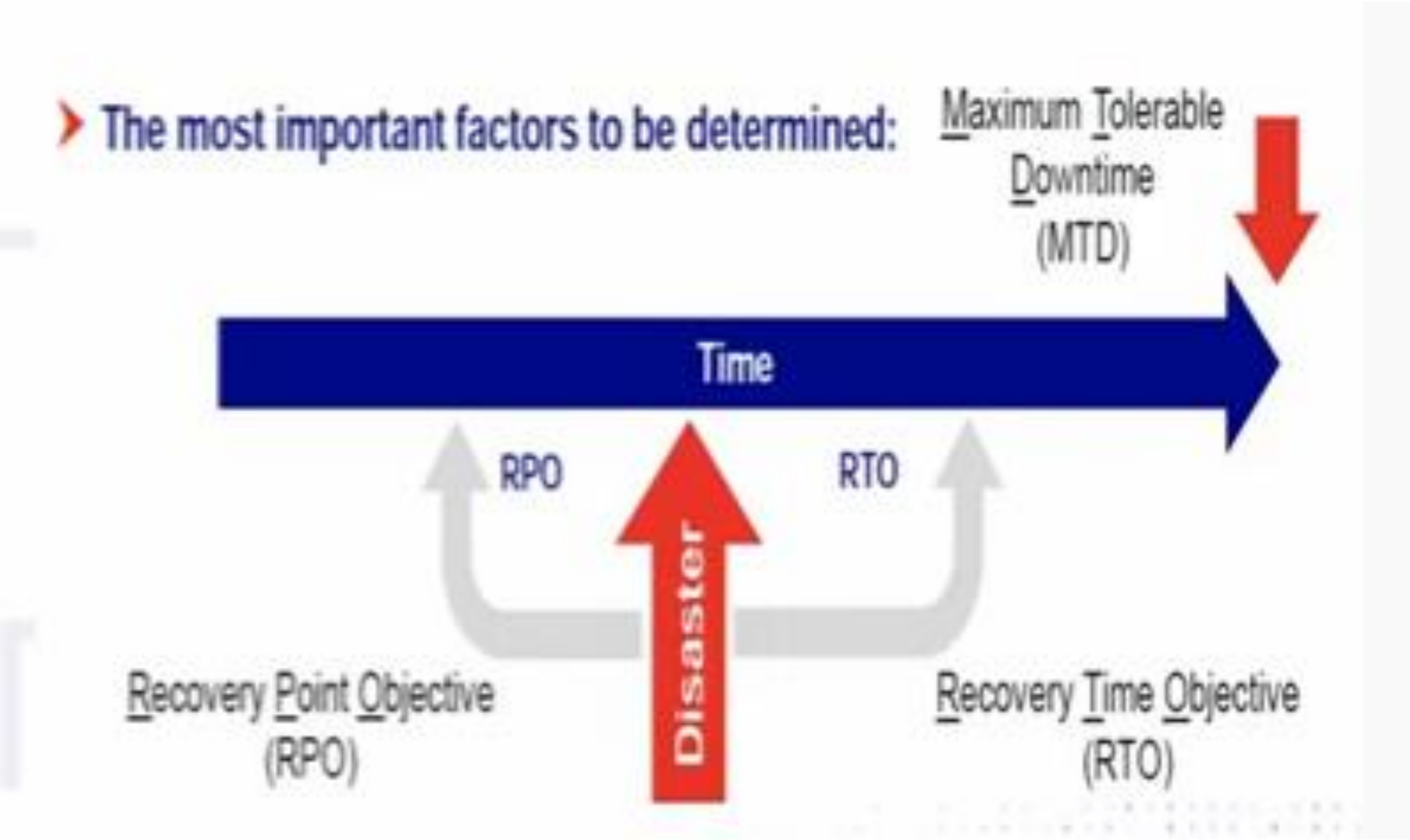
- Build communications plans

This process helps identify business priorities from a qualitative point of view. Recall that we're describing an attempt to simultaneously develop both qualitative and quantitative BIAs. To begin the quantitative assessment, the BCP team should sit down and draw up a list of organization assets and then assign an asset value (AV) in monetary terms to each asset. These numbers will be used in the remaining BIA steps to develop a financially based BIA.

The second quantitative measure that the team must develop is the **maximum tolerable downtime (MTD),** sometimes also known as maximum tolerable outage (MTO). The MTD is the maximum length of time a business function can be inoperable without causing irreparable harm to the business. The MTD provides valuable information when you're performing both BCP and DRP planning.



- The most important factors to be determined:

Maximum Tolerable Downtime (MTD)

Time

RPO

RTO

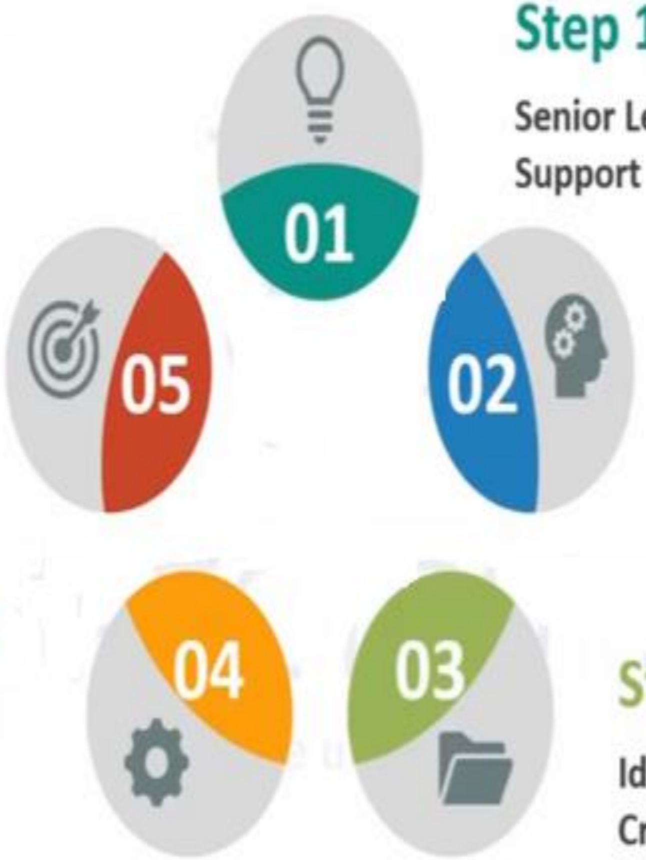
Disaster

Recovery Point Objective (RPO)

Recovery Time Objective (RTO)

This leads to another metric, **the recovery time objective (RTO),** for each business function. This is the amount of time in which you think you can feasibly recover the function in the event of a disruption. Once you have defined your recovery objectives, you can design and plan the procedures necessary to accomplish the recovery tasks. The goal of the BCP process is to ensure that your RTOs are less than your MTDs, resulting in a situation in which a function should never be unavailable beyond the maximum tolerable downtime.

BIA Process



Step 1

Senior Leadership Support

Step 2

Conducting the Business Impact Analysis (BIA)

Step 3

Identify and Prioritize Critical Organization Functions

Step 4

Estimate Recovery Time Frames

Step 5

Determine Maximum Tolerable Downtime

Risk Identification: The next phase of the BIA is the identification of risks posed to your organization. Some elements of this organization-specific list may come to mind immediately. The identification of other, more obscure risks might take a little creativity on the part of the BCP team.

The risk identification portion of the process is purely qualitative in nature. At this point in the process, the BCP team should not be concerned about the likelihood that each type of risk will actually materialize or the amount of damage such an occurrence would inflict upon the continued operation of the business. The results of this analysis will drive both the qualitative and quantitative portions of the remaining BIA tasks.

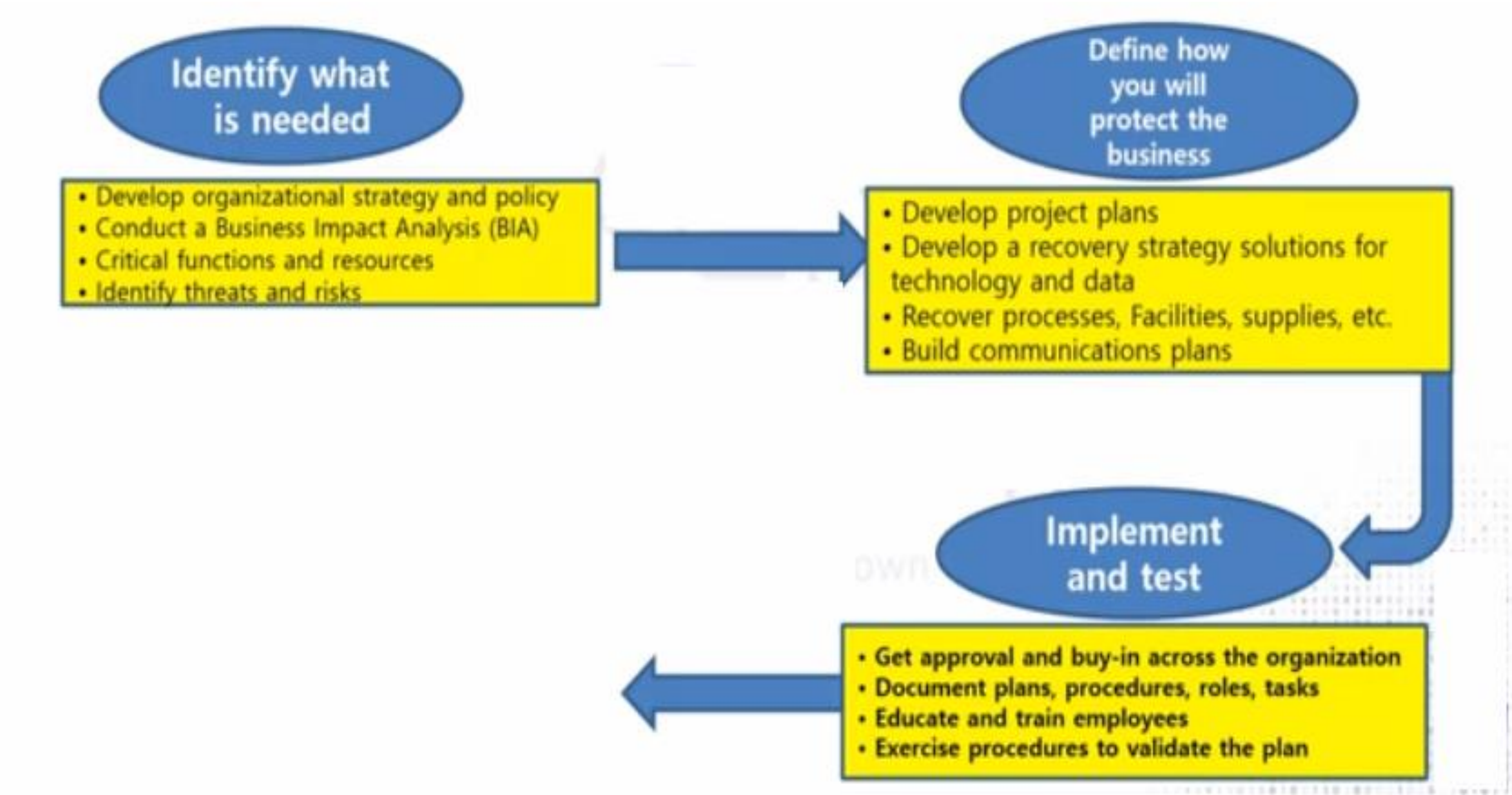
Resource Prioritization: The final step of the BIA is to prioritize the allocation of business continuity resources to the various risks that you identified and assessed in the preceding tasks of the BIA. From a quantitative point of view, this process is relatively straightforward. You simply create a list of all the risks you analyzed during the BIA process and sort them in descending order according to the ALE computed during the impact assessment phase.

This provides you with a prioritized list of the risks that you should address. Select as many items as you're willing and able to address simultaneously from the top of the list and work your way down. Eventually, you'll reach a point at which you've exhausted either the list of risks (unlikely!) or all your available resources (much more likely!).

Continuity Planning

Continuity Planning: The first two phases of the BCP process (project scope and planning and the business impact assessment) focus on determining how the BCP process will work and prioritizing the business assets that must be protected against interruption. The next phase of BCP development, continuity planning, focuses on developing and implementing a continuity strategy to minimize the impact realized risks might have on protected assets.

Strategy Development: The strategy development phase bridges the gap between the business impact assessment and the continuity planning phases of BCP development. The BCP team must now take the prioritized list of concerns raised by the quantitative and qualitative resource prioritization exercises and determine which risks will be addressed by the business continuity plan.



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Implement and test

- Get approval and buy-in across the organization
- Document plans, procedures, roles, tasks
- Educate and train employees
- Exercise procedures to validate the plan

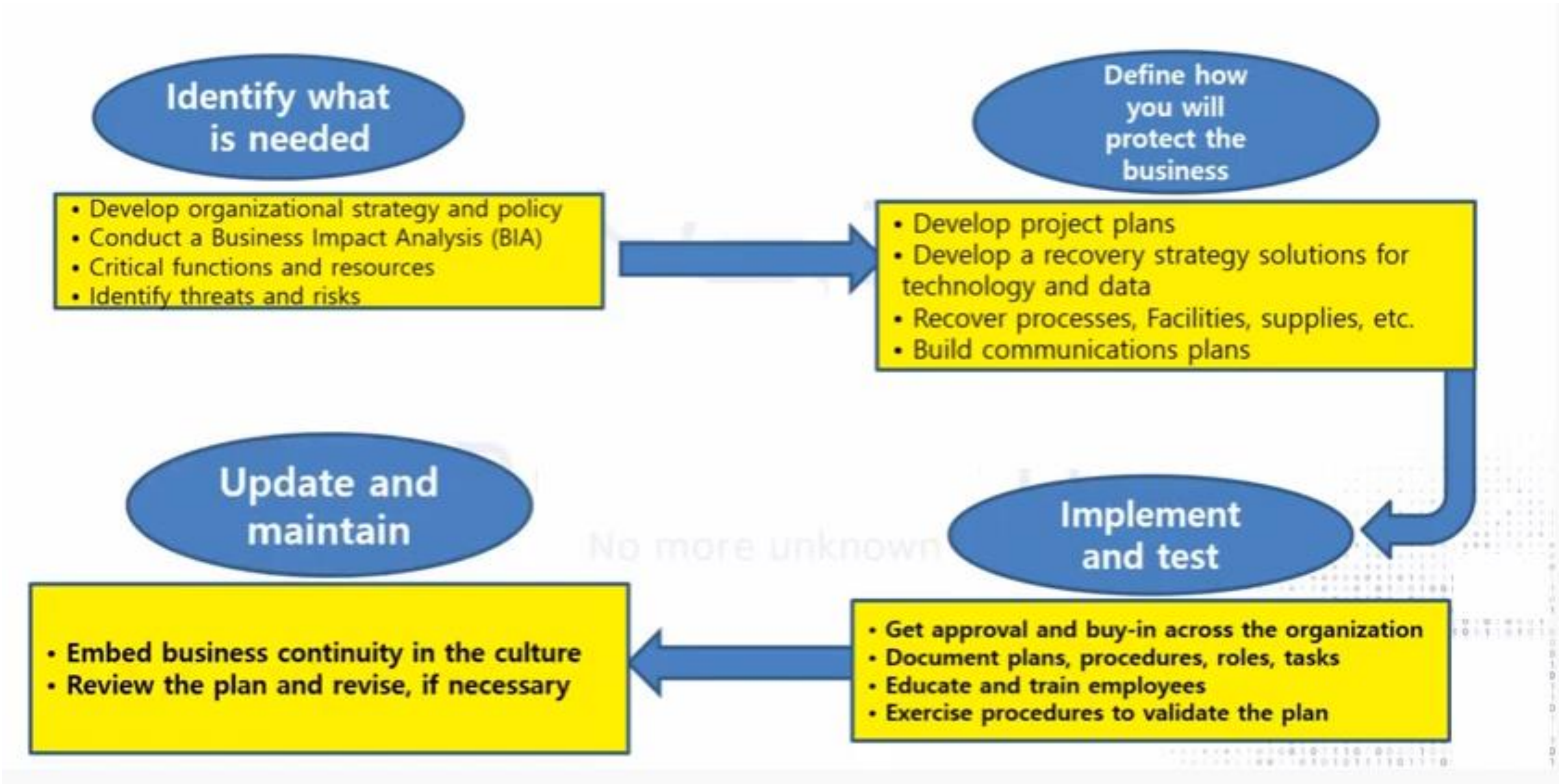
Fully addressing all the contingencies would require the implementation of provisions and processes that maintain a zero-downtime posture in the face of every possible risk. For obvious reasons, implementing a policy this comprehensive is simply impossible. The BCP team should look back to the MTD estimates created during the early stages of the BIA and determine which risks are deemed acceptable and which must be mitigated by BCP continuity provisions.

Provisions and Processes: The provisions and processes phase of continuity planning is the meat of the entire business continuity plan. In this task, the BCP team designs the specific procedures and mechanisms that will mitigate the risks deemed unacceptable during the strategy development stage. Three categories of assets must be protected through BCP provisions and processes: people, buildings/facilities, and infrastructure.

Approval and Implantation

Plan Approval: Once the BCP team completes the design phase of the BCP document, it's time to gain top-level management endorsement of the plan. If you were fortunate enough to have senior management involvement throughout the development phases of the plan, this should be a relatively straightforward process. On the other hand, if this is your first time approaching management with the BCP document, you should be prepared to provide a lengthy explanation of the plan's purpose and specific provisions.

Plan Implementation: Once you've received approval from senior management, it's time to dive in and start implementing your plan. The BCP team should get together and develop an implementation schedule that utilizes the resources dedicated to the program to achieve the stated process and provision goals in as prompt a manner as possible given the scope of the modifications and the organizational climate.



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Update and maintain

- Embed business continuity in the culture
- Review the plan and revise, if necessary

Training and Education: Training and education are essential elements of the BCP implementation. All personnel who will be involved in the plan (either directly or indirectly) should receive some sort of training on the overall plan and their individual responsibilities.

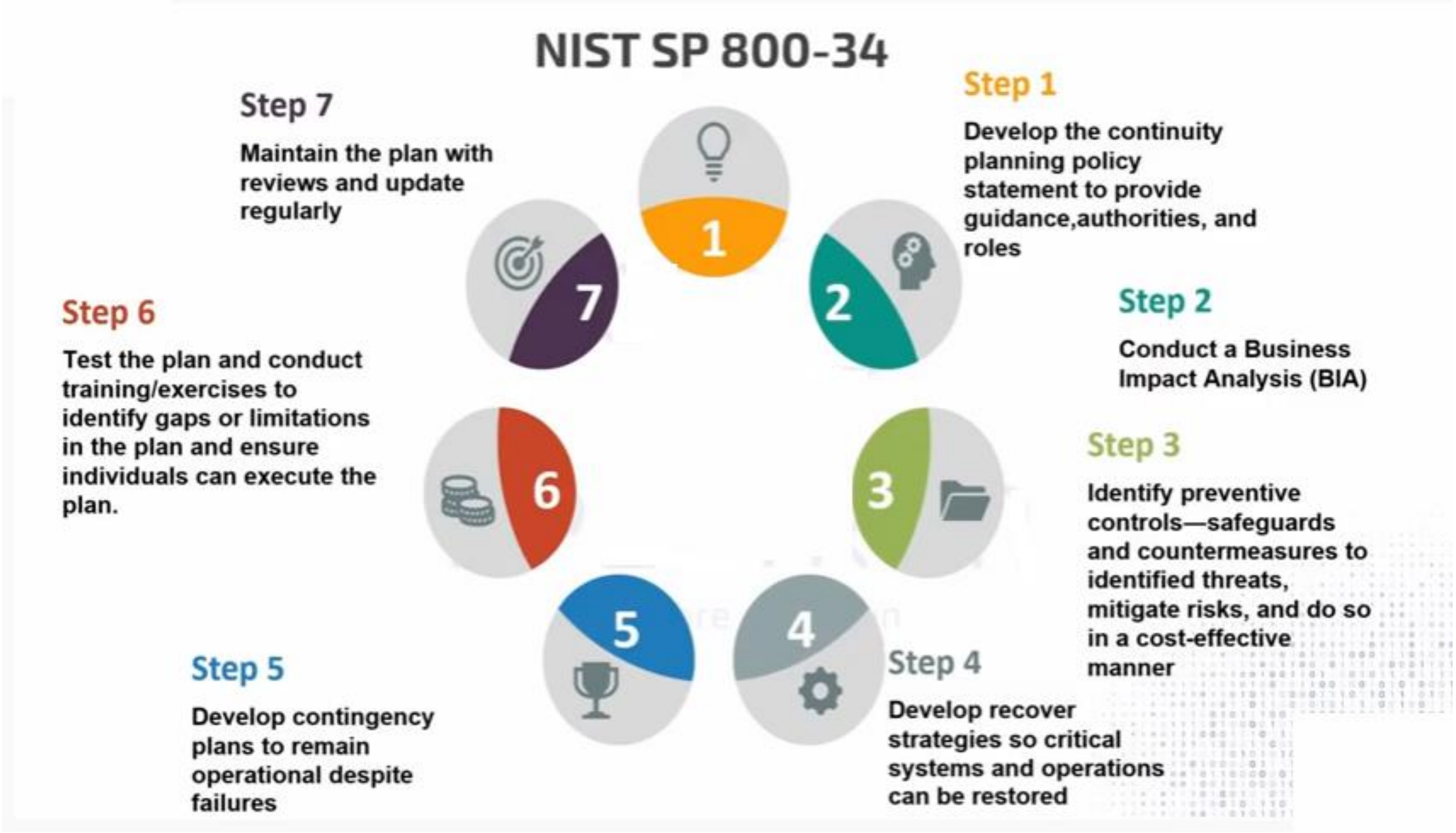
Everyone in the organization should receive at least a plan overview briefing to provide them with the confidence that business leaders have considered the possible risks posed to continued operation of the business and have put a plan in place to mitigate the impact on the organization should business be disrupted.

People with direct BCP responsibilities should be trained and evaluated on their specific BCP tasks to ensure that they are able to complete them efficiently when disaster strikes. Furthermore, at least one backup person should be trained for every BCP task to ensure redundancy in the event personnel are injured or cannot reach the workplace during an emergency.

BCP Documentation: Documentation is a critical step in the business continuity planning process. Committing your BCP methodology to paper provides several important benefits:

- It ensures that BCP personnel have a written continuity document to reference in the event of an emergency, even if senior BCP team members are not present to guide the effort.

- It provides a historical record of the BCP process that will be useful to future personnel seeking to both understand the reasoning behind various procedures and implement necessary changes in the plan.
- It forces the team members to commit their thoughts to paper—a process that often facilitates the identification of flaws in the plan. Having the plan on paper also allows draft documents to be distributed to individuals not on the BCP team for a “sanity check.



NIST SP 800-34

Step 1

Develop the continuity planning policy statement to provide guidance,authorities, and roles

Step 2

Conduct a Business Impact Analysis (BIA)

Step 3

Identify preventive controls—safeguards and countermeasures to identified threats, mitigate risks, and do so in a cost-effective manner

Step 4

Develop recover strategies so critical systems and operations can be restored

Step 5

Develop contingency plans to remain operational despite failures

Step 6

Test the plan and conduct training/exercises to identify gaps or limitations in the plan and ensure individuals can execute the plan.

Step 7

Maintain the plan with reviews and update regularly

Continuity Planning Goals

Continuity Planning Goals: First, the plan should describe the goals of continuity planning as set forth by the BCP team and senior management. These goals should be decided on at or before the first BCP team meeting and will most likely remain unchanged throughout the life of the BCP.

The most common goal of the BCP is quite simple: to ensure the continuous operation of the business in the face of an emergency situation. Other goals may also be inserted in this section of the document to meet organizational needs. For example, you might have goals that your customer call center experience no more than 15 consecutive minutes of downtime or that your backup servers be able to handle 75 percent of your processing load within 1 hour of activation.

Continuity Planning Statements

Statement of Importance: The statement of importance reflects the criticality of the BCP to the organization’s continued viability. This document commonly takes the form of a letter to the organization’s employees stating the reason that the organization devoted significant resources to the BCP development process and requesting the cooperation of all personnel in the BCP implementation phase.

Here's where the importance of senior executive buy-in comes into play. If you can put out this letter under the signature of the CEO or an officer at a similar level, the plan will carry tremendous weight as you attempt to implement changes throughout the organization. If you have the signature of a lower-level manager, you may encounter resistance as you attempt to work with portions of the organization outside of that individual's direct control.

Statement of Priorities: The statement of priorities flows directly from the identify priorities phase of the business impact assessment. It simply involves listing the functions considered critical to continued business operations in a prioritized order. When listing these priorities, you should also include a statement that they were developed as part of the BCP process and reflect the importance of the functions to continued business operations in the event of an emergency and nothing more.

Otherwise, the list of priorities could be used for unintended purposes and result in a political turf battle between competing organizations to the detriment of the business continuity plan.

Statement of Organizational Responsibility: The statement of organizational responsibility also comes from a senior-level executive and can be incorporated into the same letter as the statement of importance. It basically echoes the sentiment that “business continuity is everyone’s responsibility!” The statement of organizational responsibility restates the organization’s commitment to business continuity planning and informs employees, vendors, and affiliates that they are individually expected to do everything they can to assist with the BCP process.

Statement of Urgency and Timing: The statement of urgency and timing expresses the criticality of implementing the BCP and outlines the implementation timetable decided on by the BCP team and agreed to by upper management. The wording of this statement will depend on the actual urgency assigned to the BCP process by the organization's leadership. If the statement itself is included in the same letter as the statement of priorities and statement of organizational responsibility, the timetable should be included as a separate document. Otherwise, the timetable and this statement can be put into the same document.

Maintenance: The BCP documentation and the plan itself must be living documents. Every organization encounters nearly constant change, and this dynamic nature ensures that the business’s continuity requirements will also evolve. The BCP team should not be disbanded after the plan is developed but should still meet periodically to discuss the plan and review the results of plan tests to ensure that it continues to meet organizational needs.

Obviously, minor changes to the plan do not require conducting the full BCP development process from scratch; they can simply be made at an informal meeting of the BCP team by unanimous consent. However, keep in mind that drastic changes in an organization's mission or resources may require going back to the BCP drawing board and beginning again.

Testing and Exercises: The BCP documentation should also outline a formalized exercise program to ensure that the plan remains current and that all personnel are adequately trained to perform their duties in the event of a disaster. The testing process is quite similar to that used for the disaster recovery plan.