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Part I Introduction

Chapter 1 What Is Planning?

1.1 Learning Objectives

Upon completion of the chapter, the reader can:

1. Define the following terms and phrases:
   - Accuracy
   - Activity
   - Analysis
   - Capability
   - Certainty
   - Contingency plan
   - Controlling
   - Data
   - Data schema
   - Deming's cycle
   - Effectiveness
   - Efficiency
   - Emergency operation
   - Empirical cycle
   - Goal
   - Hierarchy of hypotheses
   - Hierarchy of plans
   - Hypothesis
   - Incidence
   - Incident
   - Incident action plan
   - Input
   - Leading
   - Logical framework approach
   - Management
   - Management by objectives
   - Objective
   - Operations
   - Operations management
   - Operations plan
   - Organizing
   - Outcome
   - Output

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- Plan
- Planning
- Process
- Productivity
- Quality
- Scientific method
- Staffing
- Stakeholder
- Strategic plan
- Strategy
- Systems theory
- Tactical plan
- Task
- Validity
- Work.

2. Compare and contrast the hierarchy of strategic, operational, and tactical plans.
3. Describe the management model known as "management by objectives."
4. Define the term "incident command system."
5. Recognize management by objectives as one of fourteen critical principles for the operation of an incident command system.
6. Describe the four steps of Deming's cycle.
7. Describe how the iteration of Deming's cycle is used to accomplish goals.

1.2 The Definition of Planning

Plans are designs for achieving goals.

Planning (the process of creating plans) is a fundamental property of intelligent behavior. All humans engage in planning. It involves the process of "deciding what to do and how to do it." The basic principle of planning is that individual and short-term decisions are coordinated to support strategic, long-term objectives. Plans provide the level of detail necessary for the accomplishment of a **goal**. The planning process usually begins with the most general concepts and leads to increasingly specific plans and tasks, resulting in integration between the parts.

Plans may be formal or informal. Informal plans tend to relate more abstract ideas and coalesce organically. Formal plans (i.e., those used for business and governmental purposes) are more likely to be documented and stored in a format accessible to multiple people across space and time. Plans provide a means for more predictable performance of plan execution.

1.3 The Hierarchy of Plans

Management universally recognizes three levels of organizational needs as follows: strategic, operational, and tactical [1, 2]. Each of the three levels is associated with a particular type of plan. This cascade represents a **hierarchy of plans**. The three hierarchical plans are interdependent, as they support the fulfillment of the three organizational needs.

Strategy is a plan of action or policy designed to achieve a significant overall aim. **Strategic plans** are descriptions of an organization's goals, the strategies necessary to

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accomplish those goals, and the performance management system used to monitor and evaluate progress. Strategic plans describe long-term goals and broad responsibilities for accomplishment. Simply stated, strategic plans tell us “why” (see also Table 24.1).

Processes consist of activities (i.e., tasks) that accomplish operational **objectives**. **Operations** consist of a group of processes implemented according to strategic objectives. Operational planning is a subset of strategic planning [3]. **Operations plans** describe processes, short-term ways of achieving objectives. Operational plans guide how a strategic plan is implemented during a given period. Simply stated; operational plans tell us “what” (see also Table 24.1).

Tactical plans describe directions (e.g., checklists, standard operating procedures, job action sheets), and short-term ways of managing resources (e.g., personnel, equipment). Tactical plans explain in detail how an operational plan is implemented during a given period. Tactical plans tell us “how.”

On occasion, groups may also refer to the fourth type of plan, **contingency plans**. Contingency plans describe processes (i.e., short-term ways of achieving objectives) when our planning assumptions turn out to be wrong. Incorrect planning assumptions occur when unexpected events have disrupted a planned course of action, and alternate courses of action are required. Contingency plans guide how a strategic plan is implemented, given specific or unforeseen circumstances. Simply stated, contingency plans tell us “what if” when existing plans become inoperable or unsuitable.

Epidemiologists use the word **incidence** to describe the occurrence of an adverse event. Similarly, emergency managers refer to the term **incident** when describing an adverse event that necessitates emergency intervention. This intervention is implemented as an **emergency operation** managed using a standard **incident command system** (ICS). **Incident action plans** (IAPs) are plans that synchronize tactical operations and ensure support of incident objectives [4]. Emergency managers have developed a specific process and set of forms that assist incident personnel in completing the incident action planning process [4]. The approach to disaster planning offered in this book combines strategic, operational, and tactical levels of planning into one ADEPT™ planning system that may then be utilized at all levels, thus integrating international, national, state/provincial, and local plan stakeholders.

1.4 Planning As a Critical Function of Management

Plans are the foundation for the effective management of operations. Comprehensive plans often include strategic, operational, and tactical levels of detail.

> Standardized operations are the key to reproducible quality in outcomes.

Planning should be deliberative and reproducible. Planning results in more efficient use of scarce resources than ad hoc allocations (thus its importance during resource-constrained emergency operations).

Planning is one of five critical functions of management (e.g., planning, **organizing**, **staffing**, **leading**, and **controlling**) [2]. Planning involves learning. Managers design systems in which individuals may work together efficiently. Managers also ensure that everyone understands the group’s objectives and its methods for obtaining the selected aims. Planning involves decision-making, that is, choosing from alternative future

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courses of action. Managers compare plans with actual outcomes to guide corrective actions, as needed.

But before we take a deeper dive into the activities involved in planning, let us first consider planning within the context of management. In this book, we are considering a system for emergency management. However, these core principles for management (and planning) are just as applicable for *any* sector or management system (emergency or non-emergency).

1.5 The Definition of Management

Management is "the process of designing and maintaining an environment (or system) in which individuals working together in groups efficiently accomplish selected aims" [2]. Put simply, management is a system used to accomplish the goals of a group. Managers are responsible for the development, maintenance, and improvement of this system.

Industrialization occurred rapidly during the early twentieth century. Scientific advancements in systems theory began to impact the practice of management and professionalize the discipline. Frederick Taylor introduced a "scientific approach to management," which focused mainly on workers' tasks. Later, Henri Fayol (called "the father of operations management") introduced the process approach, which shifted from an emphasis on improving the worker's performance of tasks to develop management skills for producing successful outcomes [5]. According to Fayol, control of processes is the key to managing an operation's predictability and efficiency [2].

1.6 The Operational Approach to Management

Operations consist of a group of processes that are implemented by an organization according to a strategy. Since Fayol's work, this study of (public and private) business processes has developed into **operations management** [6]. In simple terms, operations management is concerned with designing and controlling the production of goods or services.

In this book, operations management includes designing and controlling services related to emergencies (i.e., emergency management), specifically health. However, this same planning approach is applicable for all emergency management and any public and private production of goods or services (including the emergent and non-emergent operations).

The fundamental approach to maintaining the quality of any set of operations begins with defining that set of tasks. Technically speaking, tasks are slightly different than activities. A task is defined as a piece of work to be undertaken or done. Work is defined as an activity that involves mental or physical effort to achieve a result. Activities are actions taken by a *group* to achieve their *aims*. In the United States, incident command systems often refer to these actions as "tasks" [7]. However, this book uses the term "activities" to represent the group's tasks.

> In this book, tasks = activities

Systems are groups of processes that transform inputs (i.e., resources) into outputs and outcomes (i.e., objectives). A process is a set of activities that are interrelated or interact with one another. **Systems theory** is the interdisciplinary study of how processes transform **inputs** (i.e., resources) into **outputs** (products and services) and **outcomes** (i.e., **objectives**).

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Operations management is responsible for this transformation. In the case of emergencies, managers use an incident command system to organize emergency operations. According to an organization's strategy, these operations transform human and material resources into services that address the population's acute needs. Incident command systems (ICS) are responsible for developing and implementing a daily incident action plan [4].

However, to be functional and reproducible, a process should be standardized, organized, repeatable, measurable, and aligned with strategy. These standards relate quality according to the following three measures: physical structure (i.e., equipment and facilities); process (i.e., how the system works); and outcome (i.e., the final product or results in terms of capability). In this case, a **capability** is defined as the ability to accomplish an intended strategic goal.

Table 1.1 depicts the relationship between processes, operations, strategy, and **quality** (e.g., performance).

Operations consist of a group of processes (i.e., tactics) implemented according to a strategy. Processes consist of activities (i.e., tasks) that accomplish objectives according to the group's goals. The performance quality for an activity is measured in **efficiency** (expressed as a rate of outputs produced per resource used). For objectives, measures of quality relate to the **effectiveness** of the operations in accomplishing the intended outcomes. Goals measure quality in terms of the functional ability to address a specific need or requirement of the strategy successfully.

1.7 Management by Objectives

Management by objectives (MBO) is a strategic management model invented by Peter Drucker [6]. According to the theory, being included in goal setting and action plans

Table 1.1. The organizational hierarchy of management processes, operations, and strategy

Level of hierarchy	Processes (i.e., tactics)	Operations	Strategy
Work organized by	Activities (i.e., tasks)	Objectives	Goals
Inputs	Resources	Activities	Objectives
Performance measures	Efficiency • Productivity • Cycle time • Satisfaction • Timeliness • Resource utilization • Cost • Safety	Effectiveness	Functional ability
Work resulting in	Outputs	Outcomes	Capabilities
Plan applicability	Incident action plan	Emergency operations plan	National response framework
Operational period	Hours to days	Days to months	Multi-year

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encourage participation and commitment among stakeholders and align objectives across the organization. MBO, therefore, represented the first inclusion of employees as stakeholders in operational level planning. It also involves establishing a management information system to compare actual performance and accomplishments according to the defined objectives. Thus, MBO also helped to build systems for objective-based monitoring and evaluation of performance.

If you are involved in emergency management in the United States, you have undoubtedly already heard of the US National Incident Management System (NIMS) [7]. NIMS is an operational ICS that provides a standardized approach to the command, control, and coordination of emergency response in the United States. MBO is one of the fourteen fundamental principles underpinning the NIMS incident command system in the United States.

1.8 Deming's Cycle

But of course, MBO is not just about organizational structure. It is a system for decision-making. Figure 1.1 represents a simple two-stage process for defective decision-making. The **hypothesis** is an "educated guess" based upon subjective information. It is said to be "unscientific" because it is based upon a "hunch" and not measurable observation. Unfortunately, decision-makers use this approach to problem-solving all too often. It involves actions based on subjective information (e.g., a hypothesis), not data collection. Perhaps one reason this method persists is that it represents at least some small amount of planning before action! Many of us have worked with managers that subscribe to the erroneous principle of "Ready, fire, aim." It would falsely appear that at least having a hypothesis before acting would constitute an advancement in strategy. But it is a false choice, indeed. Actions (especially the life-critical decisions of emergency management) are best supported by evidence, not a hypothesis.

By the beginning of the twentieth century, managerial decisions involving the actions of increasingly larger firms were becoming increasingly more expensive and risk laden. Managers needed a better approach as they made decisions regarding how best to improve business operations. Figure 1.2 depicts DeGroot's **empirical cycle** depicting the **scientific method** as applied to decision-making. This scientific method (i.e., empirical method) forms the basis of all modern science.

During the early twentieth century, W. Edwards Deming began work on a scientific approach to modern management called Total Quality Management™ (TQM). TQM™ represented the first of many subsequent models developed for process improvement (e.g., Kaizen™, Lean™, and Six Sigma™).

Deming's PDCA (plan–do–check–act) cycle is an iterative 4-step management method for the continuous improvement of processes and products [8, 9]. Figure 1.2 illustrates how **Deming's cycle** represents the scientific method applied to the management.

The concept of PDCA is based upon the empirical method of generating a hypothesis, creating an experiment, testing the hypothesis, and evaluating the results *before* committing to an action. In effect, Deming added the process of scientific investigation (represented as

Figure 1.1 An example of unscientific decision-making

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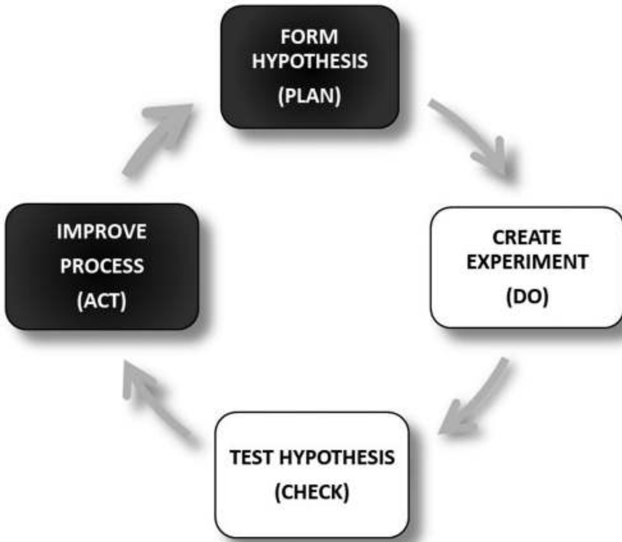

Figure 1.2 DeGroot's empirical cycle (with the Deming PDCA cycle inlayed in parentheses)

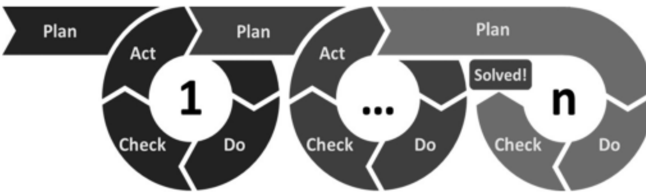

Figure 1.3 Multiple iterations of the PDCA cycle are repeated until the problem is solved
Source: Wikipedia
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white boxes in Figure 1.2) to managerial decision-making. These added steps of scientific investigation typically include experimentation and hypothesis testing. These two additional steps allow managers to test their educated guesses before investing resources. This approach is beneficial in the case of emergencies when resources are characteristically constrained. The PDCA cycle is also useful for improving emergency response operations because it is intended to be repeated. This repetition creates a continuous quality improvement model over time, rather than a static current capability model.

Figure 1.3 depicts how the cycle is designated for repetition, adding the lessons learned from each iteration until the problem is solved or the approach is proven to be efficacious and therefore considered scalable.

1.9 Program Logic Models

An **analysis** is a process of breaking a complex system into smaller parts to understand it better. Program logic models are schematic diagrams representing the logic underlying the program's design, indicating how various components interact with the goods or services they produce and how they generate the desired results [10, 11]. Figure 1.4 depicts a generic logic model that can help clarify these assumptions for any public program. This figure compares the program logic model's six components to the three components of operations (i.e., resources, processes, and objectives).

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Table 1.2. Example of a "log frame" associated with the Logical Framework Approach

	Description	Indicators	Means of verification	Assumptions
Goal				
Outcome				
Outputs				
Activities				

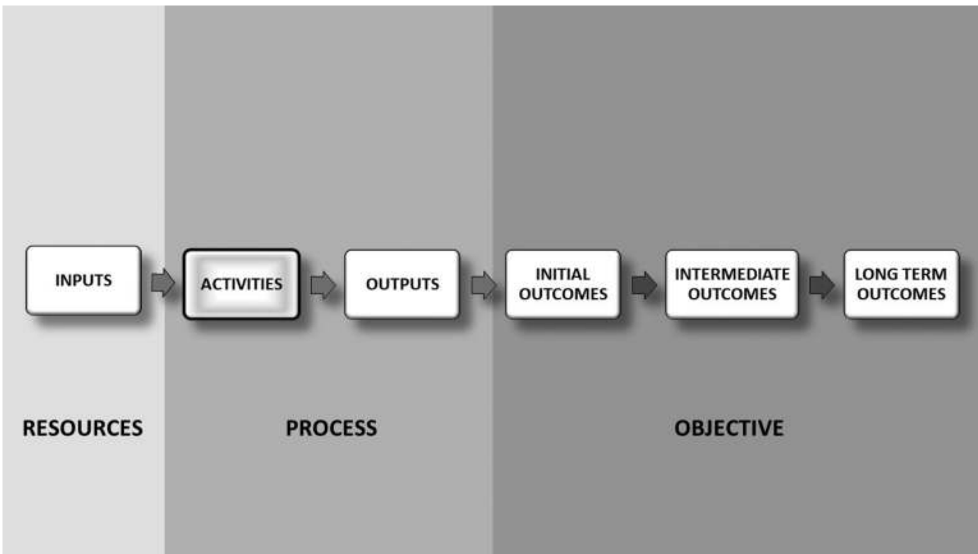

Figure 1.4 Example of a generic program logic model

Resources are inputs into a process by which activities create outputs and outcomes that meet the operational objective.

1.10 Logical Frameworks

The **logical framework approach** (LFA) [12] applies the program logic model to disaster assistance and development projects. It is also widely known as "objectives-oriented project planning." The LFA format (i.e., the logical framework or "logframe") is a 4 × 4 table consisting of project activities, outputs, outcome, and goals crossmatched to a description; indicators; means of verification; and risks/assumptions (shown in Table 1.2).

The LFA logframe provides a standardized format used to connect operational-level project plans to strategic-level donor goals for improved monitoring, evaluation, and reporting. The "logic" of the LFA works from the bottom up. Activities are accomplished to produce measurable outputs as a measure of efficiency. Outputs, in turn, generate the intended outcome as a measure of effectiveness. The accomplishment of all outcomes then results in meeting the strategic goal. This **hierarchy of hypotheses** allows for a cascading of measurable planning assumptions that integrate the informational needs of both strategic and operational-level management [2, 12].

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1.11 Challenges of Effective Planning

"Effective planning allows people's needs, preferences, and values to be reflected in decision-making regarding the future" [13, p. 54]. "Planning is a social activity – that is, it involves people, and the results are affected by those involved and how they participate in the process. Good planning does more than simply identify the easiest solution to a particular problem. It can be an opportunity for learning, development, and consensus-building" [13, p. 54]. In essence, effective planning is reflective of effective management in that both processes relate to a system in which individuals working together in groups efficiently accomplish selected aims.

A planning process's outcome is significantly affected by how people are involved, interact, and communicate. Different people involved in the planning process may perceive a planning decision from many different perspectives. These participants are commonly called plan **stakeholders**. How stakeholders are involved is a critical factor in the effectiveness of the planning process [13]. This book refers to anyone involved in plan development, execution, or evaluation as a stakeholder of the Emergency Operations Plan (EOP). This book is primarily written for use by plan stakeholders to guide their participation in disaster planning (particularly for public health and medicine). Plan stakeholders may include public health and hospital officials, as well as their staff. In the setting of multi-sectoral planning, plan stakeholders typically include a much broader range of professions. Besides health professionals, participants involved in public health disaster planning should include a broad extent of capabilities. Following is a list of some of the most common stakeholders involved in planning for public health emergencies, besides public health:

- Chief executive's office (i.e., mayor, governor, president, premiere).
- Emergency management.
- Hospitals, laboratories, clinics, and home care services.
- Non-governmental organizations (NGO) and charities.
- Houses of worship and faith-based organizations (FBO).
- Public safety (police, fire, and emergency medical services).
- Public utilities: water, sewerage, power, telephone.
- Department of transportation, roads, and bridges.
- Department of education and schools.
- Public services: meals, social outreach, interventions.
- Military and national guard.
- Telecommunications, news, and weather agencies.
- Airport and seaport.
- Private industry and vendors.
- Community clubs and service organizations, community advocates.
- Traditional leaders of the community, community volunteers.

There are many challenges to effective planning. A few examples of these challenges are listed as follows [13]:

- Planning is often time-consuming and challenging to sustain.
- Many people have limited knowledge, experience, and time to develop, evaluate, or improve a plan's quality.
- Plans must often address a broad range of contingencies (tending toward a voluminous document) yet must also be user-friendly and easily accessible.

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- Processes must be well-integrated and based on measurable performance.
- It is often tricky for planning committees to provide sufficient detail for many individuals' broad set of activities.

Existing models and guidance for planning have significant shortfalls [13]:

- Many plans tend to focus on content (or tasks) rather than the process (or management/ coordination).
- Many plans lack clear indicators of performance and outcome or measures of effectiveness.
- Many plans are cumbersome. They tend to be large documents that are difficult to navigate.
- Some plans describe response strategies and fulfill legal regulations but do not address operational problems.
- Detailed operational-level plans are often not integrated into the overall strategies.
- Even where well-written plans may exist, the staff are often not trained regarding their specific roles and responsibilities according to the plan.
- Paper plans are bulky and difficult to distribute.
- "Disaster planning is an illusion unless it [14]:
  - o is based on valid assumptions about human behavior,
  - o incorporates an inter-organizational perspective,
  - o is tied to resources, and
  - o is known and accepted by the participants" (p. 35).

1.12 Four Characteristics of an Effective Plan

An effective plan has four characteristics: applicability, process, format, and content.

1.12.1 Applicability

Consideration should be given to the intended purpose of the plan, as well as its intended audience. Broad, strategic objectives are often most useful to top leadership and decision-makers, whereas managers and workers frequently use detailed tactical checklists and incident action plans. Operational plans tend to connect strategic directives with tactical details under one system of command.

1.12.2 Process

The process used is an essential determining factor of both the outcome of effective planning and the output of effective plans. It is through the planning process that we may manage (i.e., plan, organize, staff, direct, and control) the activities of planning to ensure outcomes with a high degree of **certainty** (i.e., **validity** and **accuracy**) and **productivity** (i.e., effectiveness and efficiency).

1.12.3 Format

The organizational format of the plan is critical for clarity of communication and ease of information sharing. Large amounts of information require a **data schema** to organize information for easy entry, storage, and retrieval upon command. This ease of access is

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