



LESSON PREVIEW

Competitive Advantage

Have you ever had an idea that you felt could catapult you into the type of success shared by Bill Gates, Oprah Winfrey, or Henry Ford? These names conjure up images of youngsters who started with nothing and became multimillionaires, nay, billionaires. Why not you? Unfortunately, for every person who takes an idea and transforms it into a successful business venture, there are many others with similar ideas whose businesses fail.

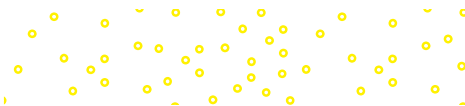
What makes one company succeed while others don't? Money—cash used to back an idea and provide startup capital—is one aspect. But once a business has started, maintaining a competitive advantage is vital to a business's survival. And in today's global marketplace, competition comes from everywhere in the world. Management information systems (MIS) are indispensable tools used by managers to stay above the competition and maintain competitive advantages.

After completing this section, you will be able to:

- Explain the concept of competitive advantage and how MIS impact it.
- Explain how Porter's five forces dictate the use of MIS in organizations.
- Describe how MIS and data analytics are used to measure the impact of the threat of a new entry into the market, of supplier and buyer power, and of product substitution.
- Describe how MIS are used to develop a SWOT (strengths, weaknesses, opportunities, and threats) analysis.
- Describe how MIS are used to develop a PESTEL (political, economic, sociocultural, technological, environmental, and legal) analysis.
- Define Porter's generic business strategies.
- Describe the red and blue ocean strategies.
- Describe Christensen's disruptive innovation model.
- Describe Lieberman and Montgomery's first-mover advantage.
- Describe the fast-follower strategy.
- Explain how MIS assist organizations to become more efficient.
- Describe how MIS tools allow firms to develop Lean Six Sigma efficiencies in the workplace.
- Explain how MIS aid companies with inventory management.
- Describe the advantages and disadvantages of the JIT strategy.



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Competitive Advantage

Competitive advantages are attributes that allow firms to provide goods and services with higher perceived values than those of their competitors. MIS (management information systems) allow managers to build upon an organization's existing strengths to create competitive advantages.

As General Electric's previous CEO, Jack Welch, stated, "If you don't have a competitive advantage, don't compete."



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Porter's Five Forces

In 1979, Professor Michael E. Porter published *How Competitive Forces Shape Strategy*, in which he described how all organizations must develop plans to deal with certain factors if they wish to succeed, or even continue to exist. These are **Porter's five forces**:

1. *Existing competition*: Profit margins decrease as the number of competitors offering essentially the same products or services increases. Businesses can use **monopolistic competition** to increase profits by creating a brand image that customers perceive to have greater value than a competitor's comparable product.
2. *New entries into the market*: The easier it is for new competitors to enter the market, the more an existing company must deal with competition. Data analytics can predict where competitors may gain a foothold. To counter this, a company might buy out potential rival start-ups.
3. *Supplier power*: Large companies that purchase great amounts from suppliers can pressure those suppliers to lower prices, which can decrease production costs. This is known as **economies of scale**. If a supplier tries to raise its prices, the company can simply threaten to buy elsewhere.
4. *Buyer power*: Buyers can influence how much a company charges for its goods. **Elasticity of demand** refers to how quickly consumer demand changes with a change in price. If an increase in price results in a large decrease in customer demand, the company loses its profit margin.
5. *Product substitution*: Businesses must contend with firms that offer viable alternative products to consumers. One way large businesses deal with this is to develop products that compete with the alternative.



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The Use of MIS in Developing a SWOT Analysis

A **SWOT analysis** (analysis of strengths, weaknesses, opportunities, and threats) is used by businesses in their strategic planning by identifying internal strengths and weaknesses and examining external opportunities and threats.

Internal strengths and weaknesses require examining five key factors (the **5Ps**): **p**ersonnel (human resources), **p**lant (physical resources), **p**rocesses (activities that create value), **p**urse (financial strength), and **p**ast experiences (reputation and intangible assets).

When external opportunities match with internal strengths, managers should choose an aggressive strategy, particularly when facing weak external threats. If external threats appear strong and align closely with internal weaknesses, managers should adopt a more conservative strategy.



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The PESTEL Analysis

A **PESTEL analysis** examines six key issues:

Political factors: Managers determine which political factors might impact the organization, such as tax policy or labor laws.

Economic factors: The state of the economy plays a huge role in the success or failure of any business. Big data and data analytics assist managers to determine the condition of national, state, and local economies.

Sociocultural factors: MIS allow managers to gain a sense of sociocultural changes in the environment. By improving communications throughout the organization, as well as gaining better perceptions of consumers' opinions using customer relationship management (CRM) software, managers can quickly observe changes in society.

Technology factors: A successful business takes advantage of rapidly changing technology where others fail to do so. For example, Netflix rapidly moved from physical transactions to online streaming where Blockbuster, once so successful, did not capitalize on the technological changes.

Environmental factors: The use of information systems when assessing the environment and environmental changes allows managers to ensure that their products minimize their impact on the environment.

Legal considerations: Because of the enormous amount of safety, consumer rights, labor, advertising, and health regulations surrounding all aspects of business, managers often rely on information systems to ensure compliance.



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Porter's Generic Business Strategies

Porter added to his five forces model with two strategies businesses must follow to gain competitive advantage: price leadership and product differentiation.

With **price leadership**, an organization seeks to offer a product to a large market at the lowest possible price by maximizing efficiencies and using economies of scale, which occur when increases in production result in lower costs per unit produced.

A **product differentiation** strategy requires a business to offer a product with qualities that give it a unique appeal. This allows the firm to demand a higher price than a strict price leadership strategy would entail.



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The Red and Blue Ocean Strategies

Professors W. Chan Kim and Renee Mauborgne published *Blue Ocean Strategy* in 2004 to describe a concept that further developed the price leadership versus product differentiation strategies.

The **blue ocean strategy** recommends that organizations focus on a differentiation strategy while also seeking price leadership. Existing markets can be thought of as red oceans filled with competitors fighting to gain competitive advantage through price leadership or by making product improvements. The term *red* refers to an ocean filled with predators and the blood of their prey.

Kim and Mauborgne site, as an example, how Cirque d'Soleil dealt with its competition by developing an entirely new type of circus, focused on athleticism, which had been a relatively minor part of the competition's offerings.



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Christensen's Disruptive Innovation Model

In 1997, Professor Clayton Christensen wrote *The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail*. He described how it is usually not new technologies that create change; more often it is existing technologies used in creative ways.

A **disruptive innovation** uses technology to transform a market or create an entirely new market. Successful organizations typically focus on customer service, creating a differentiated product or increasing efficiencies to gain market share through a pricing strategy.

These techniques require allocating significant resources to improve existing products and processes to increase effectiveness from a business. A company may miss an opportunity to take advantage of disruptive technology because it involves significant risk and requires allocating resources that could be used to improve existing products.

It takes foresight and imagination to make such a move, but it is this kind of thinking that can allow start-ups to gain significant competitive advantages.



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Lieberman and Montgomery's First-Mover Advantage

In the 1980s, Professors Marvin B. Lieberman and David B. Montgomery of UCLA examined the advantages and disadvantages of being the first firm to enter a product into the market. They determined that being the first to market provided three significant advantages. This is known as the **first-mover advantage**. The advantages are:

1. The firm's employees will learn how to use technologies and processes to develop the product, giving them a head start over any competition.
2. The first firm to enter the market has an opportunity to secure important raw materials and to develop necessary logistics lines ahead of any other competitors. This can create a large barrier to entry for competing firms, particularly if the organization is using rare or hard-to-acquire supplies.
3. Consumers often become accustomed to products that they adopt. A competitor must create a product that meets the specifications established by the initial entrants. This is particularly important if the product requires an installation that involves modifications to associated products. Switching to a second entrant then means consumers must make other adaptations.



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The Advantages of a Fast-Follower Strategy

Professors Golder and Tellis followed up on Lieberman and Montgomery's first-mover strategy. They found that over half of all innovative products fail in the market, while over 80% of the successors to the products succeed.

The **fast-follower strategy** takes advantage of these findings. A company, therefore, uses the research and development conducted by the innovator and then develops a competing product at a lower cost.

The key, however, is to offer the competing product fast enough so that early adopters have a choice when purchasing the product for the first time.

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Lean Manufacturing

Lean manufacturing focuses on a commitment to excellence. In a book by Dr. James Womack, of MIT, he specifies the five tenets of Lean manufacturing:

1. The precise value of each product is specified.
2. How each product acquires its value is identified.
3. It is important to ensure that the value flows to the product without interruption and that steps that do not directly add value are eliminated.
4. Customers should be allowed to pull increased value from the producer so that nothing is created until the customer demands it.
5. The company relentlessly pursues perfection.



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How MIS Tools Are Used to Implement Lean Manufacturing Principles

MIS help to ensure that communication and information flow rapidly throughout the entire organization, giving every stakeholder the opportunity to offer suggestions and make improvements.

Information systems allow improvements that are suggested on the factory floor to travel all the way to the CEO, if appropriate.

Management information systems, particularly human resources management systems, support employee education and training so that they can participate in the Lean processes.



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The Elements of Six Sigma Production Quality

Six Sigma refers to sets of processing techniques that seek to reduce variance in output to less than 3.4 errors per 1,000,000 manufacturing steps. It attempts to minimize the number of steps in any process. Six Sigma methodologies rely heavily upon data analysis.

For a project, Six Sigma uses the acronym **DMAIC**, which stands for **d**efining the project goals, **m**easuring the current status of the project, **a**nalyzing data to find the root cause(s) of any defects, **i**mproving the current process and making it mistake-proof, and **c**ontrolling to ensure that the new process has been correctly implemented.

For developing new products, the Six Sigma process uses the acronym **DMADV**. These steps include **d**efining goals, **m**easuring product or process characteristics that are critical to its quality, **a**nalyzing and developing design improvements, **d**esigning the alternative product or process, and **v**erifying the design with a pilot process or product prototype.



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How MIS Tools Are Used to Measure and Institute Six Sigma Quality Practices

During the measure and analyze steps of the Six Sigma process, collecting data and using data analytics are essential, particularly when measuring variances in products or processes. Analysts commonly use MIS tools to develop illustrations such as scatter diagrams, histograms, Pareto charts, and regression analysis to identify and determine the causes of variances.

Once the causes of variances are fully analyzed, MIS tools assist managers to develop new designs for a pilot process or product prototype.



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Using MIS Tools for Efficient Inventory Management Systems

Inventory management systems have a great impact on a company's competitive advantage. Modern inventory management systems help to ensure a number of critical advantages, including:

- A minimal number of product touches occur from product creation to customer purchase.
- Retail stock remains available.
- Shelf space is optimized.
- Reorders remain timely.
- Stock obsolescence is minimized.
- Stock is accurately tracked at all times.



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JIT Manufacturing and Inventory Management

JIT refers to **just-in-time manufacturing and inventory management**. JIT seeks to minimize excess inventory and keep manufacturing lines agile to save money and allow for changing customer demands.

JIT requires smooth supply chains because parts and even labor are not purchased until they are needed in the assembly process. This can provide substantial savings and competitive advantages when it works. However, there may be unforeseen situations that can disrupt the entire process. The COVID-19 pandemic of 2020 is such an example. No one could have predicted the sudden widespread shortages and panic-buying of paper products and sanitizers.



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