

Management Information System

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8. MIS & Competitive Advantage



Learning Objectives

By the end of this session, students should be able to:

- Define Competitive Advantage: Understand how Strategic Information Systems (SIS) create unique value and outperform industry rivals.
- Analyze Porter's Five Forces: Master the framework to evaluate industry attractiveness and the impact of technology on market competition.
- Master Generic Strategies: Identify how firms apply Cost Leadership, Differentiation, and Focus strategies using digital tools.
- Apply Value Chain Analysis: Trace business activities to uncover operational efficiencies and margin growth through IT integration.
- Evaluate IT ROI: Assess the financial and accounting implications of Information Systems, focusing on tangible and intangible asset valuation.
- Understand Ecosystems & Disruption: Explore Network Effects and how disruptive technologies shift the strategic landscape for the digital firm.

Phase 1: The Problem

Why do Industry Giants Vanish Overnight?

Case Study: The Ghost of Blockbuster

The Problem of Rigidity

In 2004, Blockbuster had 9,000 stores. By 2010, they were bankrupt.

The Failure: They relied on physical retail and late fees (16% of revenue). They lacked the *Information System* to pivot to streaming.



Source: Instagram @dailyfeedpov

Case Study: Nokia: The Hardware Trap

Nokia dominated the mobile world. But they missed the shift to **Software Ecosystems**.

- They focused on the physical device.
- Apple focused on the *App Store* (Information System).
- Competitive advantage shifted from manufacturing to **Information Management**.



Source: <https://salim106136.blogspot.com/2016/02/nokia-bankruptcy.html>

Phase 2: Why it Matters

The Urgency of Strategic Alignment

The Commodity Trap

**"Efficiency is doing things right;
Effectiveness is doing the right things."**

- Peter Drucker

The "Digital Firm" Era

Laudon's Definition

A digital firm is one where nearly all significant business relationships are digitally enabled and mediated.

- Core business processes are automated.
- Time-shifting and Space-shifting.
- Data becomes the primary asset on the balance sheet.



The Accounting Problem: IT ROI

Why Accountants Struggle with MIS

MIS investments are often "Intangible Assets."

$$\text{ROI} = \frac{(\text{Gain From Investment} - \text{Cost of Investment})}{\text{Cost of Investment}}$$

Problem: How do you value "Better Decision Making" or "Customer Loyalty" in a spreadsheet?

Phase 3: The Theory

Framework for Strategic Advantage

What is Competitive Advantage?

The Concept

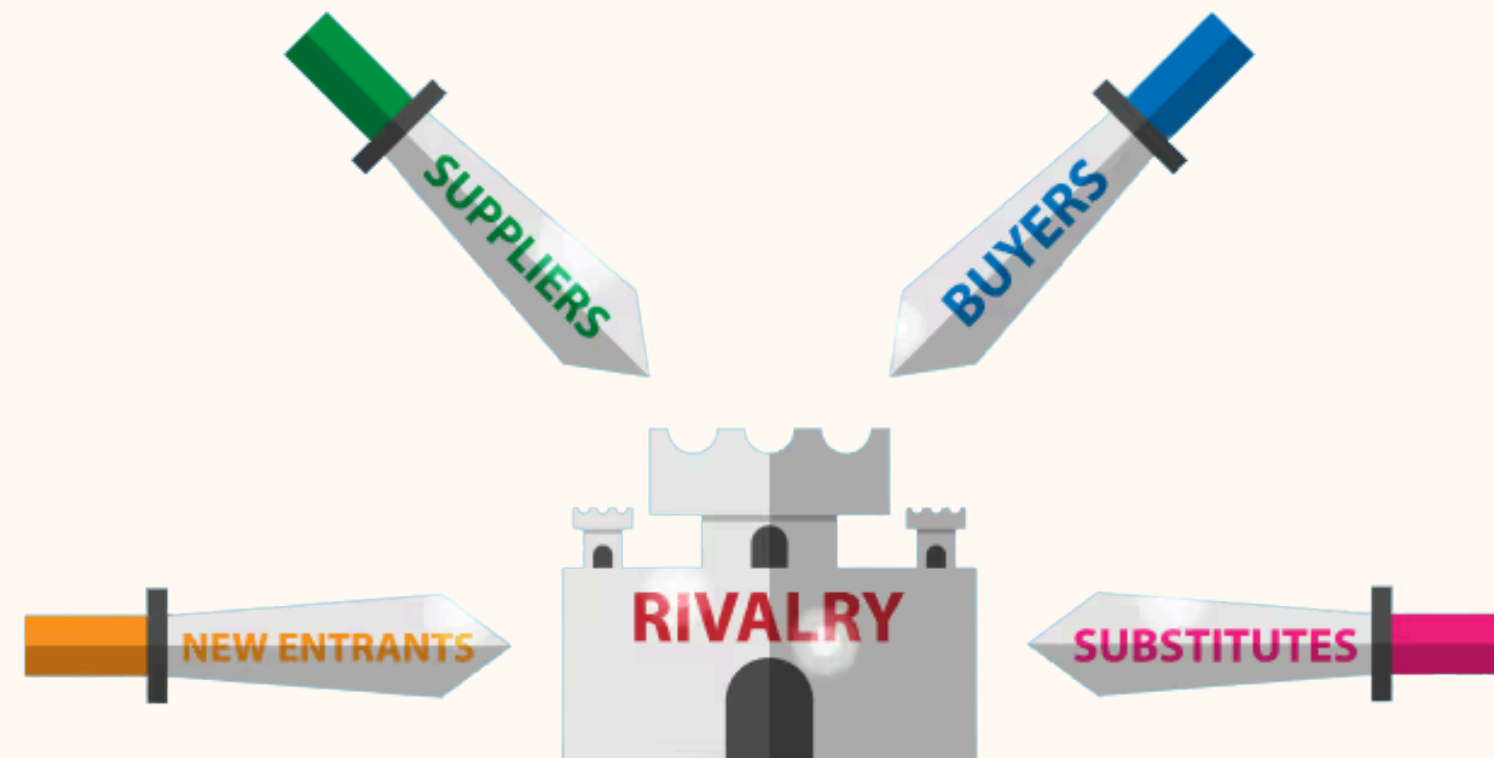
The ability of a firm to outperform its rivals by producing goods or services at a lower cost or higher value.

Strategic IS (SIS)

An information system that helps an organization gain a competitive advantage or reduce a competitive disadvantage (Bidgoli, 2020)

Porter's Five Forces Model

How Information Systems impact the structure of competition:



| Force 1: Threat of New Entrants

How MIS Helps:

Information Systems create Barriers to Entry.

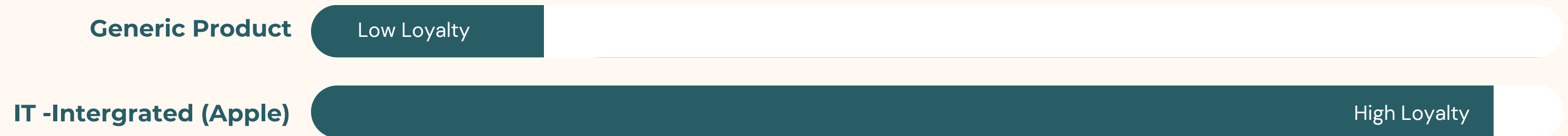
- High capital requirements for IT.
- Proprietary software (e.g., Bloomberg terminals).
- Patents and Data Moats.



Source: <https://meetingnotes.com/blog/porters-5-forces-template-examples>

| Force 2: Buyer Power

Effect of Switching Costs



Switching Costs: The cost (time, money) for a customer to change suppliers. MIS increases this via ecosystem lock-in (iCloud, CRM points).

| Force 3: Supplier Power

Neutralizing Suppliers

When suppliers are few, they have power.

MIS allows firms to:

- Search for more suppliers globally (E-procurement).
- Integration with supplier systems to reduce lead times.
- Cross-Docking: Reducing warehouse costs by coordinating with suppliers in real-time



Source: Canva Image

| Force 4 : Threat of Substitutes

Digital Substitutes

E-books vs. Physical books.
Uber vs Taxis.

The MIS Defense

Add "Smart Features" that a substitute can't mimic.

E.g: Personalized recommendations on Netflix.

| Force 5: Industry Rivalry

90%

of rivalry today is fought via Data Analytics.

Firms use Information Systems to monitor competitor prices and react in seconds (Dynamic Pricing).

Three Generic Strategies



Cost Leadership

Being the lowest-cost producer.

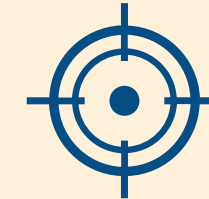
(e.g., Amazon, Walmart)



Differentiation

Unique products valued by customers.

(e.g., Apple, Tesla)



Focus (Niche)

Focusing on a specific market segment.

(e.g., Ferrari, Niche software)

| Strategy 1: Cost Leadership

How Amazon Wins:

- Robotic Warehouses (Kiva Systems).
- Predictive Shipping (Data Analysis).
- Automated Supply Chain.

Accounting Insight: This leads to massive **Operating Leverage** and lower COGS.



Source: (Youtube)

Amazon automation: How it could replace 600,000 workers nationwide

<https://www.youtube.com/watch?v=j1k09qZjACo>

| Strategy 2: Differentiation

Information as a Product

Apple doesn't just sell phones; they sell an **Information Ecosystem.**

- Seamless syncing (iCloud).
- User experience (UI/UX).
- Security and Privacy as a differentiator.



| Strategy 3: Focus / Niche

What it is :

Targeting a narrow segment with specialized Information Systems.

Example:

Specialized accounting software for Law Firms (e.g., Clio). It has features that generic Excel doesn't have.

The Value Chain Model

Analyzing Internal Activities to Find Margin

Primary vs. Support Activities

Type	Activities	Role of MIS
Primary	Inbound Logistic, Operations, Marketing	SCM, Manufacturing System, CRM
Support	HR, Procurement, Technology, Finance	ERP, HRM System, E-Procurement

Margin = Total Value - Total Cost

Primary Activities

Inbound Logistics

Receiving data and materials. SCM systems reduce bottlenecks here.

Operations

Converting inputs to outputs. Computer-aided manufacturing (CAM).

Sales & Marketing

CRM (Customer Relationship Management) is the king here.

Support Activities

The "Enablers"

- **Administration:** Financial systems and accounting control.
- **Human Resources:** Talent management systems.
- **Technology:** R&D and IT infrastructure.
- **Procurement:** Sourcing inputs.



Source: Canva Image

Walmart's Value Chain

Walmart uses a "**Retail Link**" system.

- Suppliers can see Walmart's inventory levels in real-time.
- No human intervention is needed to reorder.
- Lowers storage costs (Support Activity efficiency).



Source: https://www.8thandwalton.com/wp-content/uploads/2020/08/RetailLinkSS_8x2rc.png

Network Effects (Metcalfe's Law)

$$V \approx n^2$$

The value (V) of a network is proportional to the square of the number of users (n).

Why it matters: Once you have the most users (e.g., Facebook, LinkedIn), it is nearly impossible for competitors to win.

The Accounting & MIS Synergy

Measuring The Invisible

ABC & Information Systems

Traditional accounting spreads "Overhead" evenly.

ABC uses Information Systems to trace costs to specific activities.

- MIS provides the "Granular Data."
- Allows managers to see which products are *actually* profitable.

The Role of ERP

The ultimate accounting/MIS tool

Finance

Real-time ledger

HR

Payroll integration

Supply Chain

Inventory tracking

CRM

Sales forecasting

ERP breaks down "Information Silos" to give a single version of the truth (Laudon, 2020).

Disruptive Technologies (Bidgoli)

What's Next?

- **AI & Machine Learning:** Predictive accounting.
- **Blockchain:** Transparent, unhackable ledgers.
- **IoT (Internet of Things):** Real-time asset tracking on the balance sheet.



Can Advantage Be Sustained?

Competitors eventually copy your IT. To sustain, use the VRIO Framework:

Valuable?

Rare?

**Inimitable?
(Hard to copy)**

Organized

If your MIS isn't hard to copy, your advantage is only temporary.

Important Notes

IT is not a Silver Bullet

Buying a \$1M ERP system won't save a bad business model.

- **Social-Technical View:** Successful MIS requires changing people, processes, AND technology.
- 90% of IT failures are due to "People Issues," not coding bugs.



Source: <https://www.thefinalstep.co.uk/blog/exploding-the-myth-of-the-it-silver-bullet>

Ethics & MIS

Winning isn't everything. Information Systems raise ethical questions:

- **Privacy:** Is using customer data for advantage "Creepy"?
- **Monopoly:** Does Big Tech (Google/Amazon) kill small businesses?
- **Bias:** Do algorithms discriminate in hiring or lending



Summary Checklist

Is our IT aligned with Porter's Strategies?

Have we analyzed the Value Chain?

Is the accounting ROI measurable?

Are we building a digital ecosystem

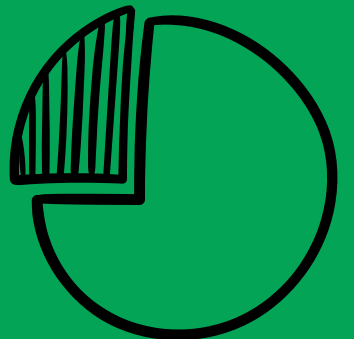
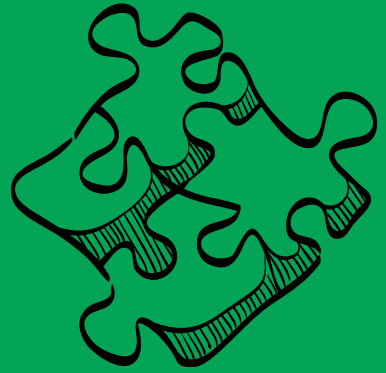
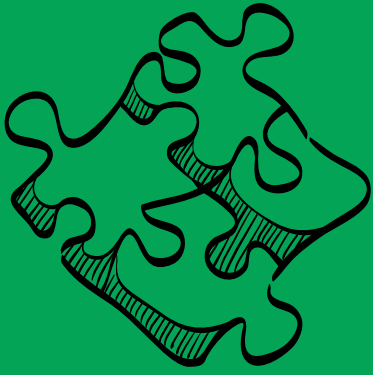
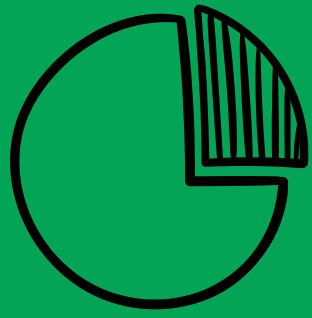
Class Discussion

"Data is the new Oil."

If data is a strategic resource, why don't we see "Data Inventory" on the balance sheet yet?
How should accountants value a database with 1 billion users?

Final Takeaway

"The goal is not to have the best technology, but to have the best strategy powered by technology."



Thankyou!

Reference

- Management Information System, Hossein Bidgoli. Cengage. 10th Edition. 2020
- Management Information System: Managing the Digital Firm. Kenneth C. Laudon & Jane P. Laudon. Pearson. 16th Edition. 2020.