

MIS, 11e

Module 9: Global Information Systems

Module Objectives

By the end of this module, you should be able to:

- 9.1 Discuss the reasons for globalization and for using global information systems, including e-business and Internet growth.
- 9.2 Describe global information systems and their requirements and components.
- 9.3 Explain the four types of organizational structures used with global information systems.
- 9.4 Examine five obstacles to using global information systems.

Globalization

- Expansion of global markets is a major factor in developing global information systems (GIS) to handle integrated services
- A clear understanding of customs, laws, technological issues and local business needs and practices is required
- E-business is a major factor in the widespread use of global information systems
- Companies adopt a tactic of “localization of a Web site” to specific countries across the globe
- Areas that have limited network accessibility rely on mobile network to connect with people online.
- GIS can help a company have improved control and coordination of activities - thereby gaining access to new global markets.
- Strategic planning is a core function of GIS
- GIS can be defined along two dimensions: control and coordination
- Trade-off between the amount of control needed and the amount of coordination needed defines the organization’s globalization strategy.

Global Information Systems

- Works across national borders
- Facilitates communication between headquarters and subsidiaries in other countries
- Incorporates all the technologies and applications found in a typical information system
- Used to gather, store, manipulate, and transmit data across cultural and geographic boundaries
- Allows organizations to have increased control and better coordination with its subsidiaries

GIS

Control

- Using managerial power to ensure adherence to the organization's goals
- Requires a centralized architecture for data, standards, defined behaviors, and performance-tracking systems across the organization.

Coordination

- Process of managing interaction among activities in different, specialized parts of an organization
- Requires a decentralized architecture for data, standardization within departments, the ability to communicate with other departments.

GIS Components

- Two basic components
 - Global database
 - Information-sharing technologies

Global Database

- Designing and implementing is technically challenging due to different character sets and formats of information such as phone numbers and postal codes.
- Currency conversion can also be a challenge in database development

GIS Components

Information-Sharing Technologies

- International companies can use a variety of technologies
- Small companies may outsource and take advantages of existing public network providers
- Large company may develop custom applications and use own network
- **Value-added network** can also be used. They are private, multipoint networks managed by a third party and used by organizations on a subscription basis.
 - No longer used with the gaining rise of the Internet

GIS Design and Implementation

- Information system managers face design and implementation challenges when developing a global network.
- Global networks requires bridges, routers, gateways, and switching nodes that allow several networks to connect worldwide
- Information system managers must determine which communication media are best to meet global performance and traffic needs
- Information system managers must choose the best transmission technology for the global network's needs and their objectives.
- Vendor support may not be available globally
- Other challenges include differences in languages, business methods and **transborder data flow**

Requirements of GIS

- Must support complex global decisions
- **Multinational Corporations (MNCs)** are organizations with assets and operations in at least one country other than their home country.
- Six factors to consider with a global environment
 - Legal
 - Cultural
 - Economic
 - Political
 - Technological
 - Environmental

GIS Classifications

- Classified based on different kinds of managerial support it provides: operational, tactical, and/or strategic

Strategic

- Involves broad and long-term goals

Tactical

- Concentrates on medium-range activities that move the organization toward achieving long-term goals

Operational

- Involves day-to-day activities

GIS Operational and Strategic Support

Operational

- Global data access
- Consolidated global reporting
- Communication between headquarters and subsidiaries
- Management of short-term foreign exchange risks

Strategic

- Strategic planning support
- Management of global tax risks

GIS Implementation Challenges

- Different cultures, politics, social and economic infrastructures, and business methods
- Issues to be addressed perform implementing GIS
 - Identify its business opportunities in the marketplace
 - Justification of investment in a GIS
 - Screening of personnel for technical and business expertise
 - Careful coordination of the migration to GIS

Organizational Structures

- Four types of organizations that do business across national borders
 - Multinational organizations
 - Global organizations
 - International organizations
 - Transnational organizations
- The organization's structure determines the GIS architecture

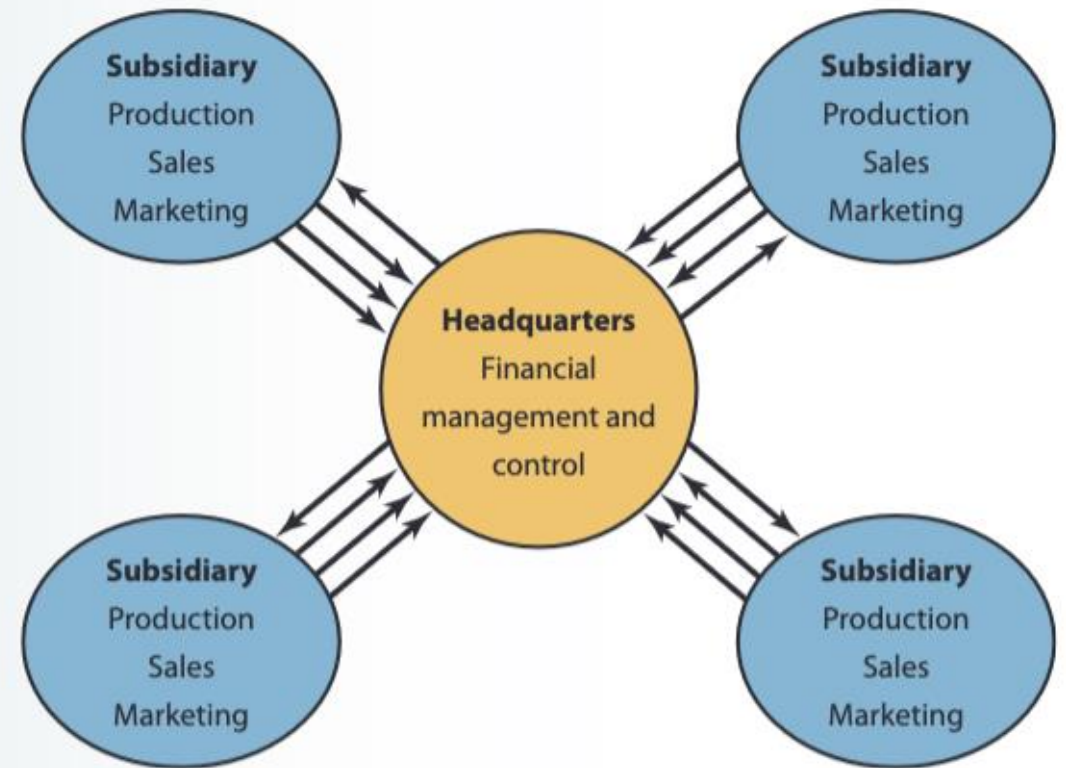
Organizational Structures

Multinational Structure

- Production, sales and marketing are decentralized
- Financial management remains the parent company's responsibility

Exhibit 9.1

Multinational structure



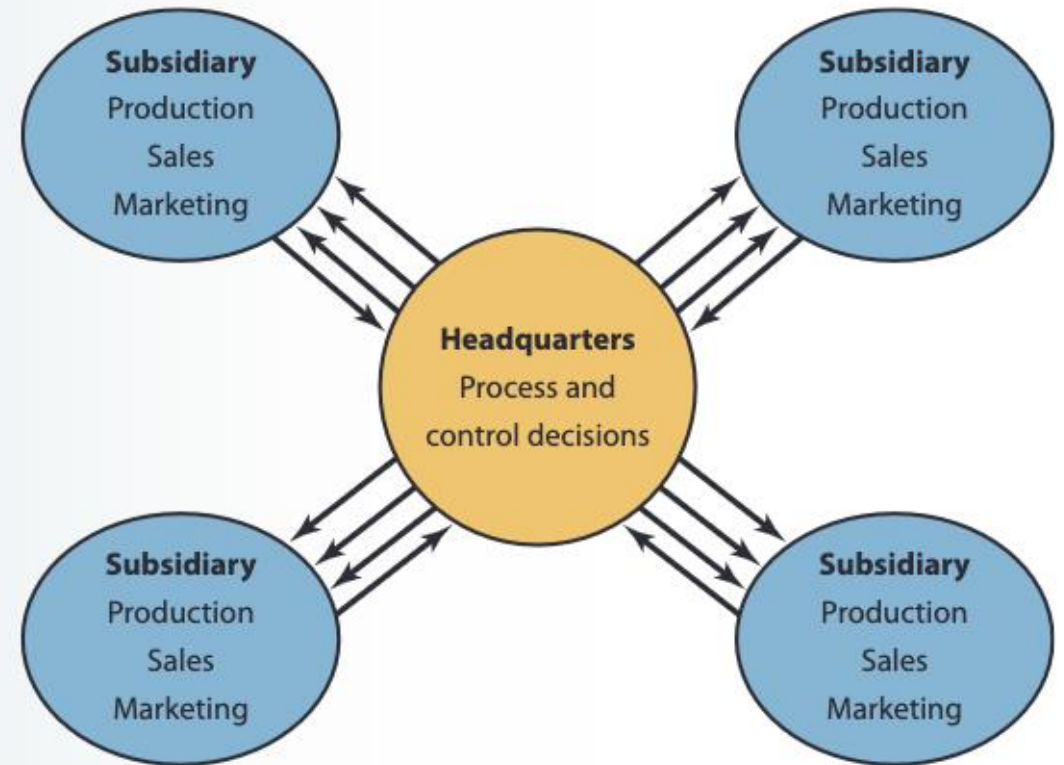
Organizational Structures

Global Structure

- Uses highly centralized information systems
- Subsidiaries have little autonomy

Exhibit 9.2

Global structure



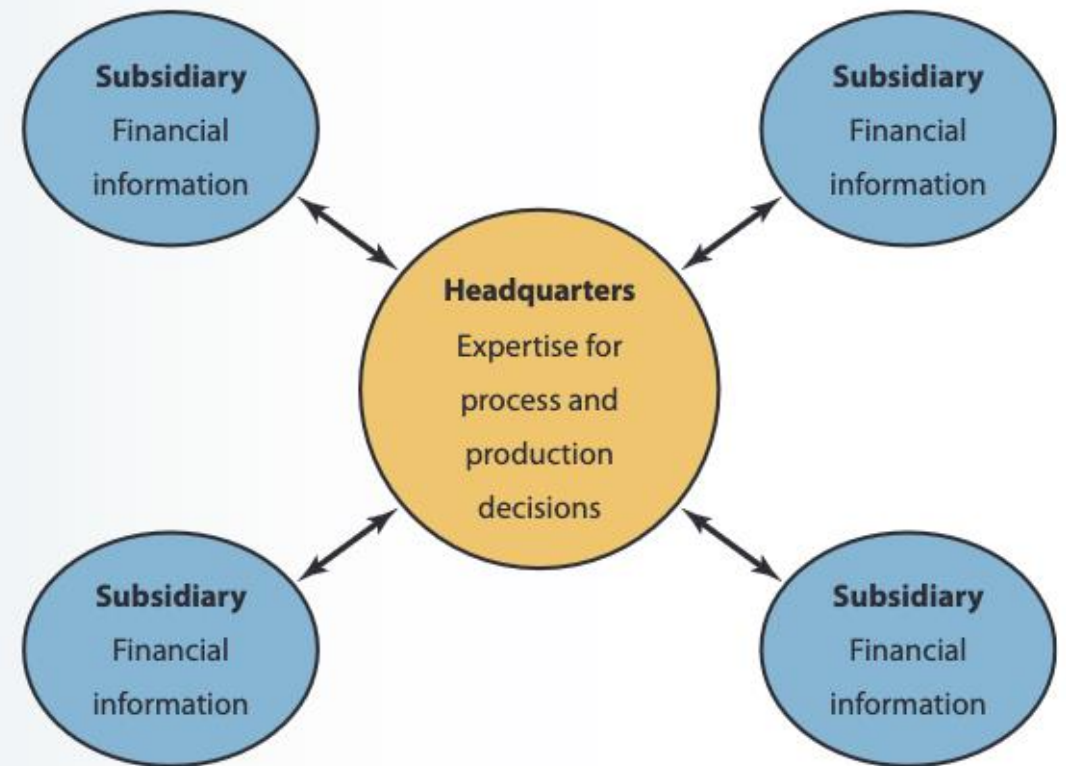
Organizational Structures

International Structure

- Operates like a multinational corporation
- Subsidiaries depend on headquarters more for process and production decisions

Exhibit 9.3

International structure



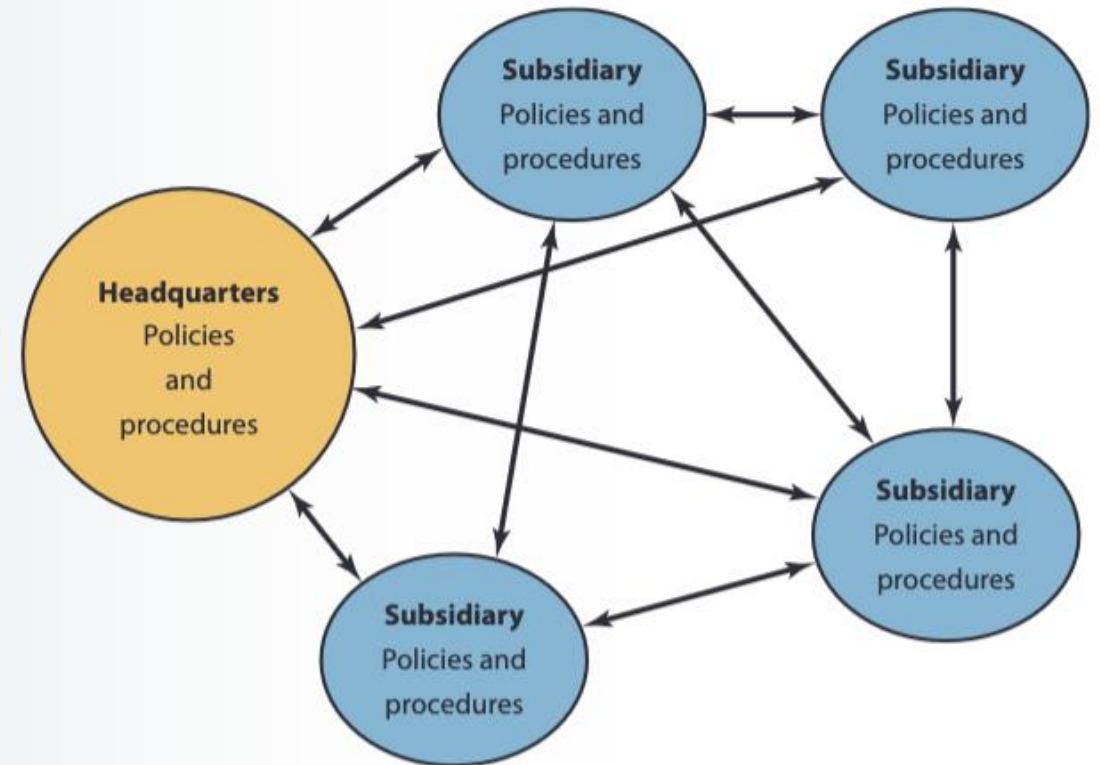
Organizational Structures

Transnational Structure

- Parent company and all the subsidiaries work together in designing policies, procedures, and logistics for delivering products and services to the right market

Exhibit 9.4

Transnational structure



Offshore Outsourcing

- **Offshore outsourcing** is an alternative for developing information systems.
- Organization chooses an outsourcing firm in another country that can provide needed services and products.
- Uses for tasks that include (but is not limited to) the following:
 - Manufacturing labor
 - Medical diagnosis
 - Tax preparation
 - Programming

Offshore Outsourcing for Software Development

Table 9.1 Top 10 Countries for Outsourcing Software Development in 2021

China

Hungary

India

Philippines

Poland

Russia

South Korea

Taiwan

Ukraine

Vietnam

Obstacles to Using GIS

- Factors that can hinder the success of a GIS include the following:
 - Lack of standardization (time zone, taxes, languages, etc.)
 - Cultural differences
 - Diverse regulatory practices
 - Poor telecommunication infrastructure
 - Lack of skilled analysts and programmers
 - Failure to delegate control of information systems to host countries

Lack of Standardization

- Impedes on the development of a cohesive GIS
- Electronic data interchange, e-mail, and telecommunication standards vary throughout the world due to different standards
- Costs associated with integrating different platforms
- Too much standardization can also decrease an organization's flexibility to respond to local preferences
- Makes sharing software difficult and impractical which is why only 5 to 15 percent of company's application is truly global
- Managing the coordination and planning for variations of local needs

Cultural Differences

- Cultural differences can include difference in values, attitudes, and behaviors
- Content and images on a website are not globally acceptable
- Cultural issues are best addressed with education and training

Diverse Regulatory Practices

- Diverse regulatory practices can impede on the integration of the GIS
- Applies to business practices and technological use
- Jurisdiction of ownership on the contents of the GIS
- Intellectual property laws and enforcement is different globally

Poor Telecommunication Infrastructures

- International companies must take into consideration the telecommunication infrastructures of other countries
- Differences in telecommunication systems make it difficult to consolidate them
- An organization's website design needs to take into consideration access and cost for high-speed Internet and Internet protocols.

Lack of Skilled Analysts and Programmers

- Shortage of qualified information systems professionals in the United States and Western Europe.
- Companies must consider the nature of each culture and differences when forming teams.
- Training and certification programs available on the Internet can provide a solution for narrowing skills gaps

Summary

Now that the lesson has ended, you should be able to:

- Discuss the reasons for globalization and for using global information systems.
- Describe global information systems and their requirements and components.
- Explain the four types of organization structures used with global information systems.
- Examine five obstacles to using global information systems.