Managing International Information Systems

Worldwide Changes driven by Information Technology

- Transformation in industrial economies and societies into knowledge and information-based economies.
- Emergence of a global economy and global world order.

International Information System Infrastructure

- The basic Information System required by organizations to coordinate worldwide trade and other activities.

Major Dimensions of International Information System Infrastructure

- Global Environment: Business Drivers & Challenges
  - **Business Drivers:** A force in the environment to which businesses must respond and that influences the direction of business.
  - **Management Challenges:** factors that could scuttle the development of global business.
- Corporate Global Strategies
  - How will your firm respond?

Major Dimensions of International Information System Infrastructure

- Organization Structure
  - How will you accomplish a division of labor across a global environment?
  - Where will production, administration, accounting, marketing, and human resource functions be located?
  - Who will handle the systems function?
- Management & Business Procedures
  - How can you discover & manage user requirements?
  - How can you induce change in local units to conform to international requirements?
  - How can you reengineer on a global scale
  - How can you coordinate systems development?

Major Dimensions of International Information System Infrastructure

- Technology Platform
  - Changing technology is a key driving factor leading toward global markets, you need to have a corporate strategy and structure before you can rationally choose the right technology.

Global Business Driver

- General Cultural Factors
  - Global communication & transportation technologies
  - Development of global culture
    - Global Culture created by television and other globally shared media permits different cultures and peoples to develop common expectation about right & wrong, desirable & undesirable, heroic & cowardly.
  - Emergence of global social norms
  - Political stability
  - Global knowledge base

Global Business Driver

- Specific Business Factors
  - Global markets
  - Global production & operations
  - Global coordination
  - Global workforce
  - Global economies of scale

General Challenges & Obstacles to Global Business Systems

- Cultural particularism: making judgments and taking action on the basis of narrow or personal characteristics, rejects the concept of a shared global culture and rejects the penetration of domestic markets by foreign goods and services.
  - ◆ Regionalism
  - ◆ Nationalism

General Challenges & Obstacles to Global Business Systems

- Social expectations
  - ◆ Brand-name expectations: domestic brand built domestically
  - ◆ Work hours
- Political laws
  - ◆ Transborder data: movement of information across international boundaries in any form.
  - ◆ Privacy laws:

Specific Challenges & Obstacles to Global Business Systems

- Standards
  - ◆ Different EDI, email, telecommunications standards
- Reliability
  - ◆ Phone networks not reliable
- Speed
  - ◆ Data transfer speeds differ
- Personnel
  - ◆ Shortages of skilled consultants

Organizing International Information System

- Organizational issues
  - ◆ Choosing a strategy
  - ◆ Organizing the business
  - ◆ Organizing the systems management area

Global Strategies

- Domestic Exporter
  - Heavy centralization of corporate activities in the home country of origin.
  - E.g. Caterpillar.
- Multinational
  - Concentrates financial management and control out a central home base while decentralizing production, sales, and marketing operations to units in other countries.
  - E.g. General Motors, and Intel.

Global Strategies

- Franchiser
  - Product is created, designed, financed, and initially produced in the home country, but for product-specific reasons must rely heavily on foreign personnel for further production, marketing, and human resources.
  - E.g. McDonald, Mrs. Field, and KFC.

Global Strategies

- Transnational
  - Truly globally managed firms that have no national headquarters; valued added activities are managed from a global perspective without reference to national borders, optimizing sources of supply and demand and taking advantage of any local competitive advantage. Few companies have attained this status, Citicorp, Sony, Ford are attempting.

Global Systems to Fit the Strategy

- Centralized System for Domestic Exporter
  - System development and operation occur totally at the domestic home base.
- Duplicated System for Franchiser
  - Development occurs at the home base but the operations are handed over to autonomous units in foreign operations.
- Decentralized System for Multinational
  - Each foreign unit designs its own unique solutions and systems.
- Networked Systems for Transnational
  - System Development and operations occur in an integrated and coordinated fashion across all units.

Reorganizing the Business

- How should a firm organize itself on an international scale?
  - Organize value-adding activities along lines of comparative advantage. Functions should be located where they can best be performed.
  - Develop and operate systems units at each level of corporate activity – regional, national and international.
    - Host country systems to serve local needs.
    - Regional systems to handle telecommunications and systems development across national boundaries.
    - Transnational systems to create linkages across major regional areas and coordinate the development and operation of international telecommunications and systems development.

Reorganizing the Business

- How should a firm organize itself on an international scale?
  - Establish at world headquarters a single office responsible for development of international systems, a global **Chief Information Officer** (CIO) position.

Managing Global Systems

- Management Challenges
  - Agreeing on common user requirements
  - Introducing changes in business procedures
  - Coordinating applications development
  - Coordinating software releases
  - Encouraging local users to support global systems

Strategy: Divide, Conquer, Appease

- Define the Core Business Processes
- Identify the Core Systems to Coordinate Centrally
  - Core Systems: Systems that support functions that are absolutely critical to the organization. Only some core systems are truly worth to be coordinated on a transnational basis.

Strategy: Divide, Conquer, Appease

- Choose an Approach
  - Incremental - lack of visibility; opposition from all who lose from transnational development
  - Grand Design (do everything at once) - inability to focus resources; opposition is strengthened because the effort requires huge resources
  - Evolutionary - evolve from existing applications

Strategy: Divide, Conquer, Appease

- Make the Benefits Clear
  - The ability to switch suppliers from one region to another in a crisis.
  - The ability to move production in response to natural disasters.
  - The ability to use excess capacity in one region to meet demand in another.
  - Improvement in production, operation, and supply & distribution.
  - Global customers and global marketing. Fixed costs amortized over a larger customer base.
  - Ability to optimize the use of corporate funds over a much larger capital base.

Implementation Tactics: Cooptation

- Cooptation
  - Bringing the opposition into the process of designing and implementing the solution without giving up control over the direction and nature of the change.
- Tactics
  - Permit each country unit the opportunity to develop one transnational application first in its home territory, and then throughout the world.
  - Develop new transnational centers of excellence focus on specific business processes. They perform initial identification and specification of the business process, define information requirements, perform business & systems analysis, design & testing.

Management Solution

- Agreeing on common user requirements
  - Establishing a short list of the core business process and core support systems will begin a process of rational comparison across the many divisions of the company, develop a common language for discussing the business, and lead to an understanding of common elements.
- Introducing changes in business procedures
  - Success will depend on legitimacy (the extent to which one's authority is accepted on grounds of competence, vision, or other qualities), actual raw power, and ability to involve users in the change design process.

Management Solution

- Coordinating applications development
  - Choice of change strategy is critical.
- Coordinating software releases
  - Institute procedures to ensure that all operating units convert to new software at the same time so that everyone's software is compatible.
- Encouraging local users to support global systems
  - Involve users in the creation of the design.
  - Recruiting a wide range of local individuals to transnational centers of excellence.

Technical Issues

- Hardware
  - Computer hardware platform standardization
  - Location of computer centers
  - Selection of hardware suppliers
- Software
  - Finding applications that are user friendly and truly enhance the productivity of international work teams
  - How old systems interface with new one?
  - Difference language and convention

Technical Issues

- Telecommunications
  - Different national standards
  - Costs and tariffs
  - Network management
  - Installation delays
  - Poor quality of international service
  - Regulatory constraints
  - Changing user requirements
  - Network capacity

Technical Issues Solution

- Hardware & Systems Integration
  - Hardware platform selection
  - Data standard
  - Technical standard
- Connectivity on a Global basis
  - Build their own international private network
  - Rely on a network service based on the public switched networks
  - Use Internet and intranets

New Technical Opportunities

- Networks based on satellite systems, digital cellular phones, and personal communications services will make it easier to coordinate work and information in many parts of the globe that cannot be reached by existing ground-based systems.

- **Virtual Private Networks** (VPN) from Internet service providers can provide many features of a private network to firms operating internationally.

- The global connectivity and low cost of Internet technology will remove obstacles of geography and time zones for companies seeking to expand operations and sell their products abroad.