Chapter 15

3M: Sticky Film And Scratchy Things That Sell Around The World

- **Problem**: 3M's many divisions and thousands of local operations use separate information systems, managers unable to access timely data
- **Solution**: SAP's Business Suite Applications to replace all legacy software around the world, rolling out the enterprise software in phased and modular stages
- Demonstrates: The need for global firms to have international systems for monitoring the business
- Illustrates: The use of enterprise software suite to minimize integration problems

The Growth of International Information Systems

- **Global economic system and global world order driven by advanced networks and information systems**
- **Growth of international trade has radically altered domestic economies around the globe**
- **For example, production of many high-end electronic products parceled out to multiple countries**
  - **E.g., Hewlett-Packard laptop computer**

AN HP LAPTOP'S PATH TO MARKET

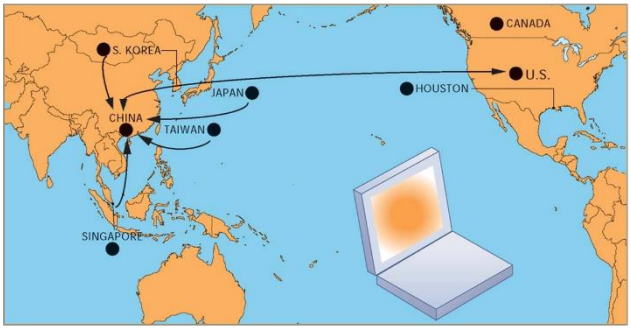


FIGURE 15-1 HP and other electronics companies assign distribution and production of their products to a number of different countries.

- **Strategy when building international systems.**
  1. **Understand global environment**
     - Business drivers pushing your industry toward global competition
     - Inhibitors creating management challenges
  2. **Develop corporate strategy for competition**
     - How firm should respond to global competition
  3. **Develop organization structure and division of labor**
     - Where will production, marketing, sales, etc., be located
  4. **Consider management issues**
     - Design of business procedures, reengineering, managing change
  5. **Consider technology platform**

INTERNATIONAL INFORMATION SYSTEMS ARCHITECTURE

The major dimensions for developing an international information systems architecture are the global environment, the corporate global strategies, the structure of the organization, the management and business processes, and the technology platform.

FIGURE 15-2

- **Global business drivers:**
  - **General cultural factors lead toward internationalization and result in specific business globalization factors**

GENERAL CULTURAL FACTORS	SPECIFIC BUSINESS FACTORS
Global communication and transportation technologies	Global markets
Development of global culture	Global production and operations
Emergence of global social norms	Global coordination
Political stability	Global workforce
Global knowledge base	Global economies of scale

- **Challenges and obstacles to global business systems**
  - **General cultural challenges**
    - Cultural particularism
      - Regionalism, nationalism, language differences
    - Social expectations:
      - Brand-name expectations, work hours
    - Political laws
      - Transborder data flow
      - Transborder data and privacy laws, commercial regulations
  - **Specific challenges**
    - Standards
      - Different EDI, e-mail, telecommunication standards
    - Reliability
      - Phone networks not uniformly reliable
    - Speed
      - Different data transfer speeds, many slower than U.S.
    - Personnel
      - Shortages of skilled consultants

- **State of the art**
  - **Most companies have inherited patchwork international systems using 1960s-era batch-oriented reporting, manual entry of data from one legacy system to another, and little online control and communication**
  - **Significant difficulties in building appropriate international architectures**
    - Planning a system appropriate to firm's global strategy
    - Structuring organization of systems and business units
    - Solving implementation issues
    - Choosing right technical platform

Organizing International Information Systems

- **Global strategies and business organization**
  - **Three main kinds of organizational structure**
    - Centralized: In the home country
    - Decentralized/dispersed: To local foreign units
    - Coordinated: All units participate as equals
  - **Four main global strategies**
    - Domestic exporter
    - Multinational
    - Franchisers
    - Transnational

GLOBAL BUSINESS AND STRATEGY

BUSINESS FUNCTION	DOMESTIC EXPORTER	MULTINATIONAL	FRANCHISER	TRANSNATIONAL
Production	Centralized	Dispersed	Coordinated	Coordinated
Finance/ Accounting	Centralized	Centralized	Centralized	Coordinated
Sales/ Marketing	Mixed	Dispersed	Coordinated	Coordinated
Human Resources	Centralized	Centralized	Coordinated	Coordinated
Strategic Management	Centralized	Centralized	Centralized	Coordinated

- **Global systems to fit the strategy**
  - **Configuration, management, and development of systems tend to follow global strategy chosen**
  - **Four main types of systems configuration**
    1. **Centralized:** Systems development and operation occur totally at domestic home base
    2. **Duplicated:** Development occurs at home base but operations are handed over to autonomous units in foreign locations
    3. **Decentralized:** Each foreign unit designs own solutions and systems
    4. **Networked:** Development and operations occur in coordinated fashion across all units

GLOBAL STRATEGY AND SYSTEMS CONFIGURATIONS

SYSTEM CONFIGURATION	Strategy			
	Domestic Exporter	Multinational	Franchiser	Transnational
Centralized	X			
Duplicated			X	
Decentralized	x	X	x	
Networked		x		X

FIGURE 15-3 The large Xs show the dominant patterns, and the small Xs show the emerging patterns. For instance, domestic exporters rely predominantly on centralized systems, but there is continual pressure and some development of decentralized systems in local marketing regions.

- **To develop a global company and information systems support structure:**
  1. **Organize value-adding activities along lines of comparative advantage**
     - E.g., Locate functions where they can best be performed, for least cost and maximum impact
  2. **Develop and operate systems units at each level of corporate activity—regional, national, and international**
  3. **Establish at world headquarters:**
     - Single office responsible for development of international systems
     - Global CIO position

Managing Global Systems

- **Principle management challenges in developing global systems.**
  - **Agreeing on common user requirements**
  - **Introducing changes in business processes**
  - **Coordinating application development**
  - **Coordinating software releases**
  - **Encouraging local users to support global systems.**

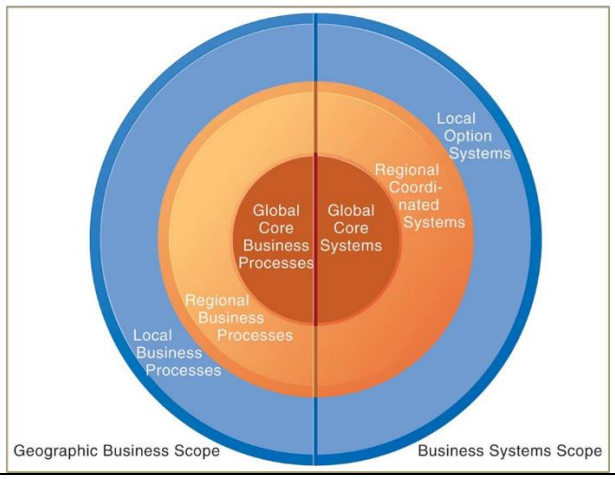
- **Typical scenario: Disorganization on a global scale**
  - **Traditional multinational consumer-goods company based in U.S. and operating in Europe would like to expand into Asian markets**
  - **World headquarters and strategic management in U.S.**
    - Only centrally coordinated system is financial controls and reporting
  - **Separate regional, national production and marketing centers**
  - **Foreign divisions have separate IT systems**
  - **E-mail systems are incompatible**
  - **Each production facility uses different ERP system, different hardware and database platforms, etc.**

- **Global systems strategy**
  - **Share only core systems**
    - Core systems support functionality critical to firm
  - **Partially coordinate systems that share some key elements**
    - Do not have to be totally common across national boundaries
    - Local variation desirable
  - **Peripheral systems**
    - Need to suit local requirements only

LOCAL, REGIONAL, AND GLOBAL SYSTEMS

Agency and other coordination costs increase as the firm moves from local option systems toward regional and global systems. However, transaction costs of participating in global markets probably decrease as firms develop global systems. A sensible strategy is to reduce agency costs by developing only a few core global systems that are vital for global operations, leaving other systems in the hands of regional and local units.

FIGURE 15-4



1. **Define core business processes**
2. **Identify core systems to coordinate centrally**
3. **Choose an approach**
   - Piecemeal and grand design approaches tend to fail
   - Evolve transnational applications incrementally from existing applications
4. **Make benefits clear**
   - Global flexibility
   - Gains in efficiency
   - Global markets and larger customer base unleash new economies of scale at production facilities
   - Optimizing corporate funds over much larger capital base

- **The management solution: Implementation**
  - **Agreeing on common user requirements**
    - Short list of core business processes
    - Develop common language, understanding of common elements and unique local qualities
  - **Introducing changes in business processes**
    - Success depends on legitimacy, authority, ability to involve users in change design process
  - **Coordinating applications development**
    - Coordinate change through incremental steps
    - Reduce set of transnational systems to bare minimum

FONTERRA: MANAGING THE WORLD'S MILK TRADE

Read the Interactive Session and discuss the following questions

- Describe the various capabilities of SAP GTS. How does using this software help Fonterra manage its export trade? What quantifiable benefits does this system provide?
- How would you characterize Fonterra's global business strategy and structure (review Table 15-3)? What kind of a global business is it? Has Fonterra's structure and strategy shaped its uses of SAP GTS? Would a transnational company choose a different solution?
- What influence does the global business environment have on firms like Fonterra, and how does that influence their choice of systems?

- **The management solution (cont.)**
  - **Coordinating software releases**
    - Institute procedures to ensure all operating units update at the same time
  - **Encouraging local users to support global systems**
    - Cooptation: Bringing the opposition into design and implementation process without giving up control over direction and nature of the change
      - Permit each country unit to develop one transnational application
      - Develop new transnational centers of excellence

Technology Issues and Opportunities for Global Value Chains

- **Technology challenges of global systems**
  - **Computing platforms and systems integration**
    - How new core systems will fit in with existing suite of applications developed around globe by different divisions
    - Standardization: Data standards, interfaces, software, etc.
  - **Connectivity**
    - Internet does not guarantee any level of service
    - Many firms use private networks and VPNs
    - Low penetration of PCs, outdated infrastructures in developing countries

Technology Issues and Opportunities for Global Value Chains

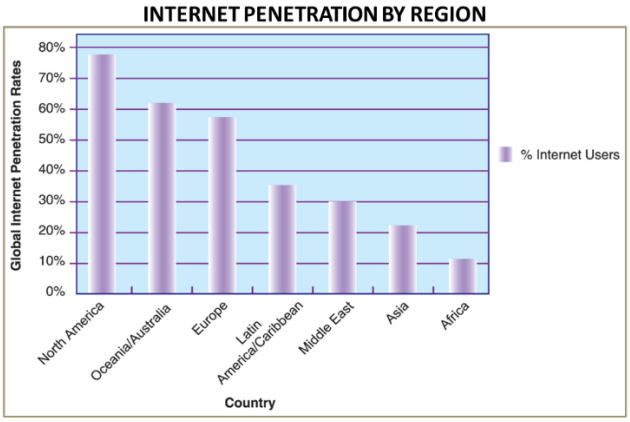


FIGURE 15-5 The percentage of the total population using the Internet in developing countries is much smaller than in the United States and Europe, but the fastest growth is in Asia.

- **Technology challenges of global systems (cont.)**
  - **Software**
    - Integrating new systems with old
    - Human interface design issues, languages
    - Software localization: converting software to operate in second language
    - Most important software applications:
      - TPS and MIS
      - Increasingly, SCM and enterprise systems to standardize business processes
      - Applications that enhance productivity of international teams

HOW CELL PHONES SUPPORT ECONOMIC DEVELOPMENT

Read the Interactive Session and discuss the following questions

- What strategies are cell phone companies using to 'close the digital divide' and market phones to the poorest segment of the world's population?
- Why do economists predict that widespread cell phone usage in developing countries would have an unprecedented effect on the growth of those countries?
- What are some examples of how cell phones might increase quality of life for residents of developing countries?
- Do you believe that cell phones will proliferate widely through Africa and Asia? Why or why not?