Management Information Systems

The Modern Organization in the Global, Web-Based Environment

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(Adapted from Introduction to IS, Rainer and Turban)

LEARNING OBJECTIVES

- Differentiate among data, information, and knowledge
- Differentiate between information technology infrastructure and information technology architecture
- Describe the global business environment and the new information technology infrastructure
- Discuss the relationships among business pressures, organizational responses, and information systems

Homo Conexus

- You are the most connected generation in history
- You practice **continuous computing**
- You are surrounded by a personal, movable information network

Information Systems: Concepts and Definitions

Data Item
- Elementary description of things, events, activities and transactions that are recorded, classified and stored but are not organized to convey any specific meaning.

Information
- Data organized so that they have meaning and value to the recipient.

Knowledge
- Data and/or information organized and processed to convey understanding, experience, accumulated learning and expertise as they apply to a current problem or activity.

Data and Information

Data
- Raw facts, numbers, text…

Information
- Data that have a particular meaning in a specific context
- Is this data or information?

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Information liquidity
- The ease with which a system can convert data into information that business professionals can use
  - Systems in organizations often have low liquidity
  - Employees have to pick up the slack
- A key role you will play as a business professional is using IT to convert data into information
- Even with 'perfect' liquidity, people are still the critical resource.

Data and Information: Examples

Example
- Encoded radio signals from Enigma
- Submarine attack plans

Example
- Current temperature, moisture level, speed and direction of the air front near Lake Ontario
- The weather forecast for NYC for the next three days

Example
- Sales numbers for three divisions of a computer manufacturer
- Projected earnings for the company

Example
- Evidence of the existence of water on Mars
- Pictures of the surface of Mars

Information Systems: Concepts and Definitions (continued)

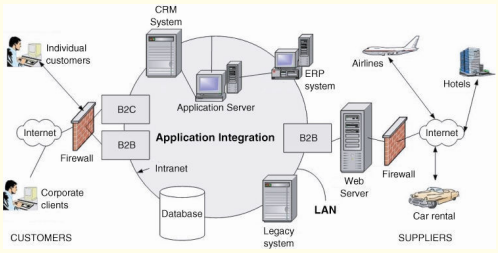
Information Technology Architecture

A high-level map or plan of the information assets in an organization, which guides current operations and is a blueprint for future directions.

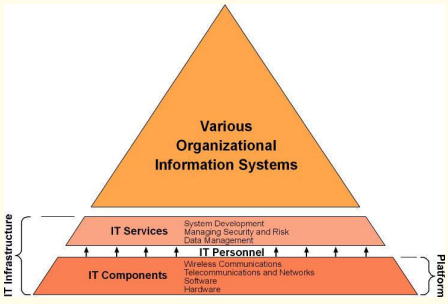
Information Technology Infrastructure

The physical facilities, IT components, IT services and IT management that support an entire organization.

IT Architecture of Online Travel Agency



IT Components, IT Platform, IT Services, and IT Infrastructure



The Global, Web-Based Platform

- Best represented by the Internet and the World Wide Web
- Enables us to connect, compute, communicate, collaborate, and compete everywhere and anytime
- Operates without regard to geography, time, distance, and language

The Stages of Globalization

(From Thomas Friedman in The World is Flat)

- Globalization 1.0 (from 1492 to 1800)
- Globalization 2.0 (from 1800 to 2000)
- Globalization 3.0 (from 2000 to the present)

Thomas Friedman's Ten Flatteners

- Fall of the Berlin Wall
- Netscape goes public
- Development of work-flow software
- Uploading
- Outsourcing
- Offshoring
- Supply Chaining
- Insourcing
- Informing
- The Steroids

The Steroids

- Digital
  - all analog content and processes are being digitized
- Mobile
  - thanks to wireless technologies, computing, connecting, collaborating can be done anywhere
- Virtual
  - the process of shaping, manipulating, and transmitting digitized content can be done at very high speeds, so that users do not have to think about these processes
- Personal
  - Individuals can perform all these processes on their own computing devices

The Great Convergence

We are in a convergence of three powerful, technological forces:
(1) Cheap and ubiquitous computing devices
(2) Low-cost, high bandwidth
(3) Open standards

In essence, we have computing everywhere and anywhere, anytime and all the time, with access to limitless amounts of information, services, and entertainment.

The Great Convergence (continued)

We have the creation of a global, Web-enabled playing field that allows for multiple forms of collaboration – the sharing of knowledge and work – in real time, without regard to geography, distance, or, in the near future, even language.

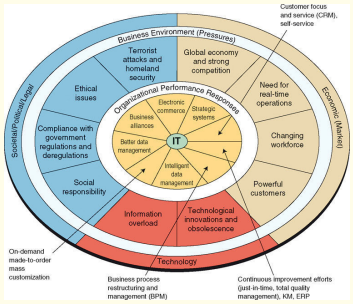
The field now includes some ***3 billion new people***, formerly digitally disenfranchised.

Business Pressures, Organizational Responses, and IT Support

Business Pressures

- Market Pressures
- Technology Pressures
- Societal Pressures

Business Pressures, Organizational Responses, and IT Support



Market Pressures

The Global Economy and Strong Competition

The Changing Nature of the Workforce

Powerful Customers

Technology Pressures

- Technological Innovation and Obsolescence
- Information Overload

Societal Pressures

- Social Responsibility
- Government Regulation and Deregulation
- Protection Against Terrorist Attacks
- Ethical Issues

Organizational Responses

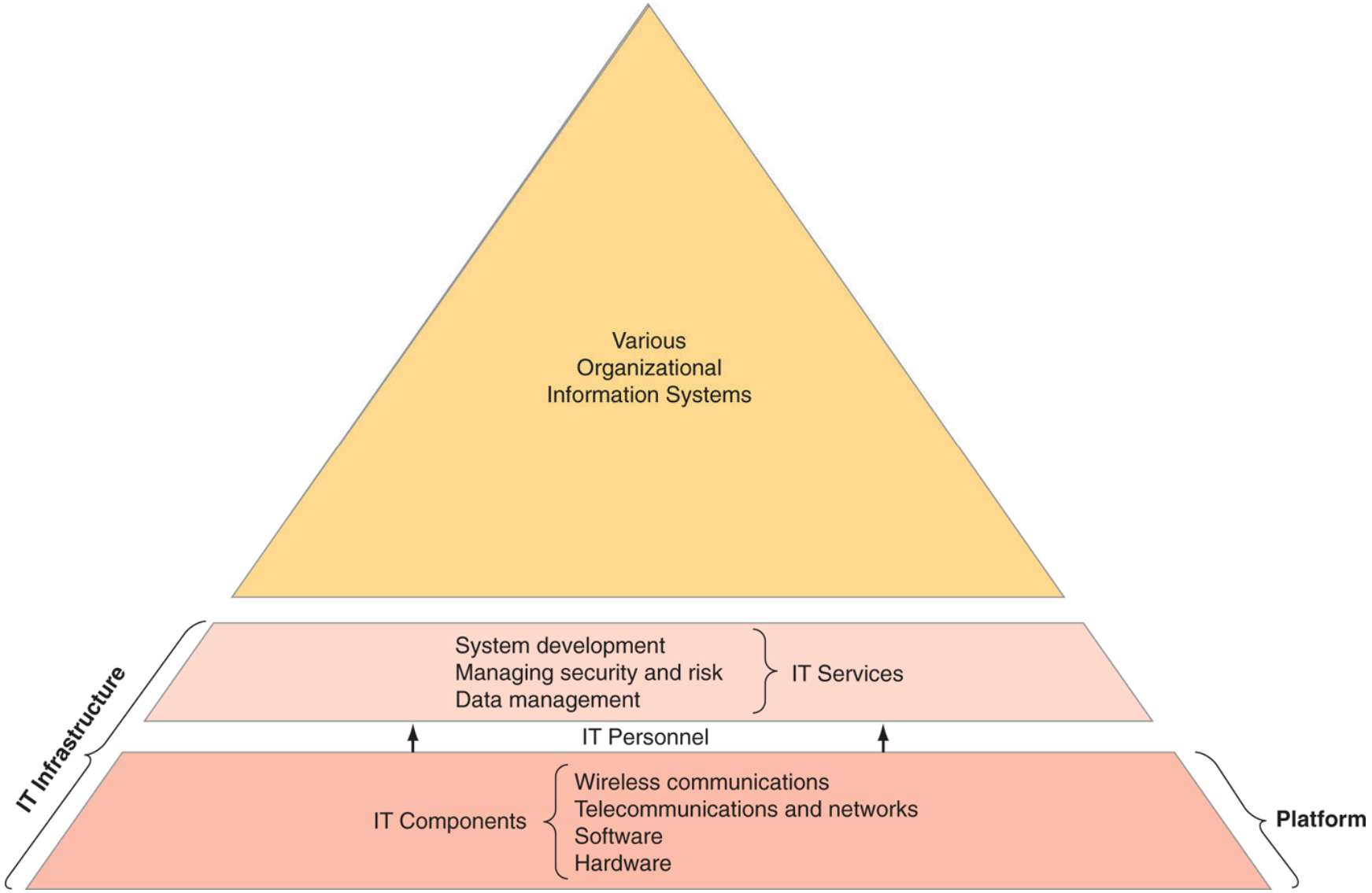
- Strategic Systems
- Customer Focus
- Make-to-Order and mass customization
  - See Reebok
  - See Bodymetrics video
- E-business and E-commerce

1.4 Why Are Information Systems Important to You?

- Information systems and information technologies are **integral to your lives**
- Information systems offer **career opportunities**
- Information systems are **used by all functional areas** in an organization

Misinformation about Information Systems Career Opportunities

- **Myth #1**: There are no computing jobs.
- **Myth #2**: There will be no IT jobs when I graduate.
- **Myth #3**: All IT-related jobs are moving offshore.
- **Myth #4**: IT salaries are lower due to cheap overseas labor.


Various
Organizational
Information Systems
System development
Managing security and risk
Data management
IT Services
IT Personnel
IT Components
Wireless communications
Telecommunications and networks
Software
Hardware
IT Infrastructure
Platform

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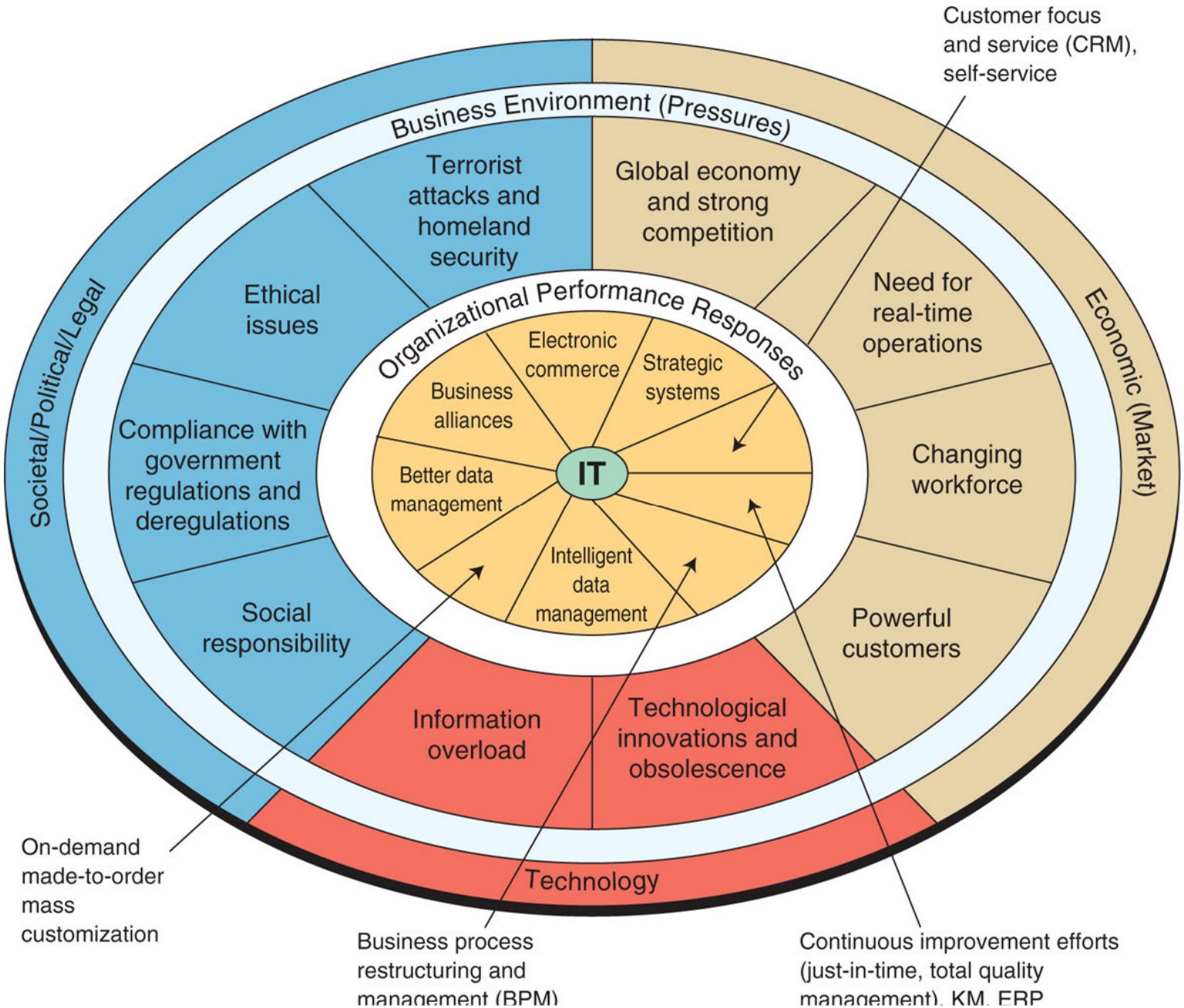
Customer focus and service (CRM), self-service
Business Environment (Pressures)
Terrorist attacks and homeland security
Global economy and strong competition
Societal/Political/Legal
Economic (Market)
Ethical issues
Need for real-time operations
Organizational Performance Responses
Electronic commerce
Strategic systems
Business alliances
Compliance with government regulations and deregulations
Better data management
IT
Changing workforce
Intelligent data management
Social responsibility
Powerful customers
Information overload
Technological innovations and obsolescence
Technology
On-demand made-to-order mass customization
Business process restructuring and management (BPM)
Continuous improvement efforts (just-in-time, total quality management), KM, ERP

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Information Technology Jobs

Position	Job Description
Chief Information Officer	Highest-ranking IS manager; responsible for strategic planning in the organization
IS Director	Responsible for managing all systems throughout the organization and day-to-day operations of the entire IS organization
Information Center Manager	Manages IS services such as help desks, hot lines, training, and consulting
Applications Development Manager	Coordinates and manages new systems development projects
Project Manager	Manages a particular new systems development project
Systems Manager	Manages a particular existing system
Operations Manager	Supervises the day-to-day operations of the data and/or computer center
Programming Manager	Coordinates all applications programming efforts
Systems Analyst	Interfaces between users and programmers; determines information requirements and technical specifications for new applications
Business Analyst	Focuses on designing solutions for business problems; interfaces closely with users to show how IT can be used innovatively
Systems Programmer	Writes the computer code for developing new systems software or maintaining existing systems software
Applications Programmer	Writes the computer code for developing new applications or maintaining existing applications
Emerging Technologies Manager	Forecasts technology trends and evaluates and experiments with new technologies
Network Manager	Coordinates and manages the organization's voice and data networks
Database Administrator	Manages the organization's databases and oversees the use of database management software
Auditing or Computer Security Manager	Manages ethical and legal use of information systems
Webmaster	Manages the organization's World Wide Web site
Web Designer	Creates World Wide Web sites and pages

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