Cognitive Objectives

15. Give examples of elements involved in an EN.
16. Give example of a popular model, i.e., Client/Server (C/S) model for EN.
17. Explain five types of client/server (C/S) configurations.

18. Explain three types of organizational structure and requisite information flow.
19. Explain two types of organizational control and co-ordination and requisite distribution of decision making power and control policy.

20. Map types of C/S configuration with organizational structures and controls; Evaluate organization structures suitable for EN
21. Explain business drivers for EN
22. Give examples of problems of EN
23. Understand evolving trends in EN: Intranet and Extranet
ENTERPRISE NETWORK (c.o. 14, 15)

- HARDWARE; SOFTWARE; TELECOMMUNICATIONS, DATA RESOURCES
- MORE COMPUTING POWER ON THE DESKTOP
- NETWORK LINKING SMALLER NETWORKS

CLIENT / SERVER MODEL (c.o. 16)

SPLITS PROCESSING

- CLIENT
  - USER: POINT OF ENTRY
  - COMPUTER / WORKSTATION / LAPTOP
  - USER INTERACTS WITH CLIENT
  - THRU GRAPHICAL USER INTERFACE (GUI)
  - ENTER & RETRIEVE DATA
  - ANALYZE & REPORT
- SERVER
  - COMPUTER SATISFIES USER’S NEEDS
  - NOT VISIBLE TO USER
  - PROCESSING
  - ACCESS TO DATABASES
TYPES OF CLIENT/SERVER COMPUTING (c.o. 17)

- Distributed Presentation
- Remote Presentation
- Distributed Logic
- Remote Data Management
- Distributed Database

Organization: Structural Designs and Controls (c.o. 18, 19, 20)

- Example Organizational Structures
  - Hierarchical
  - Matrix,
  - Network (can be Virtual)
    » Consider how information flows in these various structures.
- Example Organizational Controls/Coordination
  - Centralized
  - Decentralized
    » Consider how information and decision power are distributed in these types of control.
- Try to reason a suitable C/S computing structures and control policy for above situations.
Mapping Types of C/S Configurations with Organization Structure Designs and Control (c.o. 20)

- Core lesson:
  - Primary choice of computing structure is influenced critically by (intended) organizational design and control
    - (arguably the primary business case for C/S model of EN)

Secondary Business Cases or Drivers for C/S (c.o. 21)

- Streamline business processes
- Flatten organization
- Enhance coordination and integration
- Increase knowledge worker productivity and effectiveness
- Flexibility
PROBLEMS POSED BY ENTERPRISE NETWORKING (c.o. 22)

- CONNECTIVITY PROBLEMS
- LOSS OF MANAGEMENT CONTROL
- ORGANIZATIONAL CHANGES
- HIDDEN COSTS OF CLIENT / SERVER COMPUTING
- NETWORK RELIABILITY & SECURITY

CONNECTIVITY (c.o. 22)

* MEASURE OF ABILITY OF COMPUTING DEVICES TO PASS & SHARE INFORMATION WITHOUT HUMAN INTERVENTION

SOME SOLUTIONS (c.o. 22)

- MANAGING THE CHANGE
- EDUCATION & TRAINING
- DATA ADMINISTRATION DISCIPLINE
- PLANNING FOR CONNECTIVITY

Evolving Trends in EN: INTRANET (c.o. 23)

- INTERNAL NETWORK
- WWW TECHNOLOGY
- FIREWALL: Security System to Prevent Invasion of Private Networks
- OVERCOMES COMPUTER PLATFORM DIFFERENCES
- OFTEN INSTALLED ON EXISTING NETWORK INFRASTRUCTURE
Evolving trends in EN: EXTRANET (c.o. 23)

PRIVATE INTRANET ACCESSIBLE TO SELECT OUTSIDERS

LINK ORGANIZATION TO
- IMPORTANT CLIENTS
- BUSINESS PARTNERS
- TOP EXECUTIVES & BOARD MEMBERS

Summary/ review Questions

- What are EN, C/S, Internet, WWW, Connectivity
- What are various types of C/S computing configurations?
- What are various organizational structures and controls?
- How do various C/S configurations map with various organization structures and controls?
- What are the business drivers for EN?
- What are some problems with EN?
- What are some evolving trends in EN?
Appendix I, II

- Electronic Commerce Basics
- Information on Internet capabilities, generic benefits, WWW’s, Intranets etc.

Electronic Commerce Basics

- The Net is becoming a mass medium for home shopping, banking, and a host of other services

- A virtual worldwide mall
  - Internet is available in over 200 countries; at least 50,000 networks
  - membership grows by at least 10% per month
  - low overhead; no bricks and mortar
  - open 24 hours per day
  - learn about consumers via buying habits
Cybershoppers

- Nearly 600 million people worldwide are online as of September 2002
  - This number is expected to reach 1 billion by 2006

- Cybershoppers spent an estimated $211 billion in 1998 (source p. 30 PC Magazine, Feb 9, 1999)
  - Expected to reach $1 trillion in 2003 (Andrew Wyckoff, head of the OECD's information economy department)

INTERNET SERVICE PROVIDER (ISP)

- COMMERCIAL ORGANIZATION
- WITH PERMANENT CONNECTION TO INTERNET
- SELLS TEMPORARY CONNECTIONS TO SUBSCRIBERS

*
WWW NEEDS

- FUNCTIONAL ARCHITECTURE: Consistent Link to Internet / WWW
- STRUCTURAL ARCHITECTURE: Internal Arrangements of all Files
- NAVIGATIONAL ARCHITECTURE: Consistent Linkages Within Document and to Others

* 

Appendix II

- Information on Internet capabilities, generic benefits, WWW’s, Intranets etc.
INTERNET CAPABILITIES

<table>
<thead>
<tr>
<th>CAPABILITY</th>
<th>FUNCTIONS SUPPORTED</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-MAIL</td>
<td>PERSON-TO-PERSON MESSAGING; DOCUMENT SHARING</td>
</tr>
<tr>
<td>USENET NEWGROUPS</td>
<td>ELECTRONIC BULLETIN BOARDS</td>
</tr>
<tr>
<td>CHATTING</td>
<td>INTERACTIVE CONVERSATIONS</td>
</tr>
<tr>
<td>TELNET</td>
<td>LOG ON ONE COMPUTER, WORK ON ANOTHER</td>
</tr>
<tr>
<td>GOPHERS</td>
<td>LOCATE TEXT USING HIERARCHY OF MENUS</td>
</tr>
<tr>
<td>ARCHIE</td>
<td>SEARCH DATABASES FOR FILES AVAILABLE FOR DOWNLOADING</td>
</tr>
<tr>
<td>WAIS</td>
<td>LOCATE FILES IN DATABASES USING KEYS</td>
</tr>
<tr>
<td>FTP</td>
<td>TRANSFER FILES FROM COMPUTER TO COMPUTER</td>
</tr>
<tr>
<td>WORLD WIDE WEB</td>
<td>HYPERTEXT LINKS TO RETRIEVE/FORMAT/DISPLAY INFORMATION</td>
</tr>
</tbody>
</table>

PEOPLE-TO-PEOPLE COMMUNICATION

- E-MAIL: International “Post Office”
- USENET: On-line Forums on a Topic
- LISTSERV: e-mail Discussion Groups
- CHATTING: Live, Interactive Conversations
- “FLAMING”: Rude, Discourteous Behavior
WORLD WIDE WEB (WWW)

- STANDARDS TO STORE, RETRIEVE, FORMAT, DISPLAY INFORMATION
- CLIENT-SERVER ARCHITECTURE
- GRAPHICAL USER INTERFACE
- DYNAMIC LINKS TO OTHER DOCUMENTS ("hot links")
- EXPLOSION IN BUSINESS USE

WORLD WIDE WEB (WWW)

- HYPERTEXT MARKUP LANGUAGE (HTML): Hypertext Tool to Create Dynamic Links to Same or Other Documents
- BROWSER: Tool Supports Graphics, Hyperlinks, to Navigate Web
WORLD WIDE WEB (WWW)

- **HOME PAGE:** WWW Text / Graphics Screen; Welcomes User; Introduces Organization; Starting Screen for Document

- **WEB SITE:** All WWW Pages Maintained by an Organization.

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RETRIEVAL ON THE INTERNET

- **FILE TRANSFER PROTOCOL (FTP):** Easy Tool for Transferring Remote Files

- **ARCHIE:** Tool for Key-word Searches of Databases; Provides File Names

- **GOPHER:** Character-oriented tool; Locates Text Thru Easy-to-use Menus

- **VERONICA:** Searches for Key Words in Gopher

- **WIDE AREA INFORMATION SERVERS (WAIS):** Tool for Key-word Searches of Databases; Requires Database Names

- **SEARCH ENGINE:** Tool for Locating Sites, Information on Internet / WWW
GENERIC INTERNET BENEFITS

- REDUCES COMMUNICATION COSTS
- REDUCES TRANSACTION COSTS
- ENHANCES COMMUNICATION; COORDINATION
- ACCELERATES KNOWLEDGE RETRIEVAL AND DISTRIBUTION
- ELECTRONIC COMMERCE

INTERNET CHALLENGES

- SECURITY: Exposure to Thieves & Vandals; Hackers Steal, Use Passwords; Not Yet Safe for Large Business Transactions
- TECHNOLOGY: Lack of Uniform Standards; Transfer of Graphics, Video can be Costly
- LEGAL ISSUES: Need More Laws Governing Electronic Commerce; Are e-mail Contracts, Electronic Signatures Legal?

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