

INFS 111: INFORMATION IN SOCIETY

Session 8– CURRENT TRENDS IN INFORMATION
AND COMMUNICATION TECHNOLOGY

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Session Overview

- Change in the technological environment of information generation, transfer and use is occurring at a rapid pace such that it is becoming difficult to keep pace with the rate of change . This session is a follow -up discussion on the functions and use of technology to create, read, transmit , solve and retrieve data and information

Session Objectives

By the end of this session, the student should be able to:

- Identify current information technology used to create, read, store, retrieve and transmit data and information.
- Discuss the most critical current problems of information technology.

Session Outline

The key topics to be covered in the session are as follows:

- Topic 1: Introduction
- Topic Two: Data Creation and Conversion
- Topic Three: Information creation and manipulation systems
- Topic Four: Information transmission
- Topic Five: Interactive Systems: storage, retrieval and creation combined

Topic One:

INTRODUCTION

The Technological Environment in Information and Communication

- The technological environment in information and communication changes so rapidly that it is difficult to keep up and label the changes as current. E.g.
 - Cellular phone technology
 - Apple iPhones
 - Samsung Galaxy
 - Nokia
 - HTC
 - Techno

Topic Two:

DATA CREATION AND CONVERSION

Real-time Monitoring Systems

- Information technologies facilitate a variety of functions related to information from its generation to preservation.
- There are a number of technologies that generate data on the spot. They are generally called real-time monitoring systems.

Examples of Real-time Monitoring Systems

- Medical application
- Pulse oximetry
- Thermometer
- On-line electronic cardiography

Military or Police or Security Applications

- Motion detection
- Polygraph
- Home alarm systems

Environmental Systems

- Farmers monitor moisture and trigger irrigation systems.
- Monitor demand for power.
- Public toilets.
- Use of motion detectors to trigger automated flushing.

Artificial Intelligence (AI)

- There are numerous applications for data creation, conversion and reading;
 - Machine translations
- European Union with some twenty official languages;
 - Expert systems
- Interpretation of information;
 - Medical diagnostic
 - AI is used in eliminating potential diseases

Topic Three:

INFORMATION CREATION AND MANIPULATION SYSTEMS

Information Creation

- Word processing
- Desk top publishing
- Voice recognition
- Document printing

Information Creation Cont'd

- First colour desktop printer appeared in the mid 1990s
- 3D printers
 - High quality colour printing
 - Copying and fax technologies
 - Xerography
 - Fax machine

Topic Four:

INFORMATION TRANSMISSION

Information Transmission

- Systems for information transmission has seen loads of improvements over what used to be (*refer to session 7*)
- Communication now takes place
 - Electromagnetically
 - Optically

Information Transmission

- Over the air waves
- Electronically
- Over copper wire and fiber optics
- POTS
- ARPANET
- Internet
- Netscape
- Internet Explorer

Information Transmission

- Firefox
- Internet, Intranets and extranets
- LANS
- WANS
- Move from wired systems to wireless ones
- Wi-Fi
- PDAs
- Cell phones
- Hand-held devices
- Drop box

Storage and Retrieval: Electronic Databases

- Dialog
- Eric
- Ovid
- LexisNexis
- Wilson web
- EBSCOHOST
- OPACS
- Hybrid libraries

Storage and Retrieval: Digital Libraries

- Collection of books, journal articles, graphics, newspapers and other materials in digital format.
- **Characteristics**
 - They can all be searched
 - They can all be accessed from anywhere
 - They can all be copied using electronic means without error

Topic Five:

INTERACTIVE SYSTEMS: STORAGE, RETRIEVAL AND CREATION COMBINED

Introduction

- Historically, systems used to record and provide access to information was static.
- Today, there are interactive systems that allow for creation, storage and retrieval at the same time;
 - VR
 - Computer games
 - Blogs
 - WIKIs
 - Wikipedia

Storage and Preservation

- Information containers have to be stored, preserved and referred for use.
- Two approaches exist;
 - Preservation of original copy e.g. rare books
 - Reproduction of original copy e.g. digitization of paper copies

Difficulty in Preserving Digital Documents

- Web documents pose more complex challenges ephemeral in nature.
- Internet archive (www.archive.org).
- Migration of data collections to new software and hardware.
- Google books library project.

Difficulty in Preserving Digital Documents

- Harvard university, university of Michigan
- Oxford university, Stanford university and the New York public library collaboration
- ProQuest project
- Library of Congress American memory collection

Difficulty in Preserving Digital Documents

- JSTOR
- Access to select group of dated journal articles
- International Children's Digital Library
- European Digital Library(EDL)
- Cloud computing

References