

# Hyper media Web

P.VISWANATHAN

[pviswanathan@vit.ac.in](mailto:pviswanathan@vit.ac.in)

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# Hypertext & Hypermedia

## **Golden Rules of Hypertext:**

There is a large body of information organized into numerous fragments.

The fragments relate to one another.

The user needs only a small fraction of the fragments at any time.

## **Poor design of hypertext is common:**

Too many links

Long chains of links to reach relevant material

Too many long dull articles

# Authoring tools

## Actions

import  
edit  
export  
print  
search

## Objects

an article or node  
a link  
collections of articles or nodes  
webs of links  
entire hypertext

### Features to consider in an authoring tool:

- Range of editing functions available
- Availability of lists of links
- Link verification
- Range of display-formatting commands
- Availability of search-and-replace functions
- Control of color
- Capability to switch easily between author and browser modes
- Availability of graphics and video facilities
- Possibility of collaboration
- Data compression
- Security control
- Encryption
- Reliability
- Possibility of integration
- Import and export of standard interchange formats

# Hypertext & Hypermedia

## **Additional considerations beyond the usual concerns of good writing:**

Know the users and their tasks

Ensure that meaningful structure comes first

Apply diverse skills

Respect chunking

Show interrelationships

Ensure simplicity in traversal

Design each screen carefully

Require low cognitive load:

## **Authoring strategies for creating the introductory article include:**

Executive overview

Top-down

Menu

Search strategy

# World Wide Web

- Dystopian versus utopian view of the flood of information
- Web page design guidelines
  - parallel early user-interface writings
  - advice is typically incomplete or lacks generalize ability
  - paucity of empirical data to validate or sharpen insights offered
- Guidelines typically based on personal experience
- Nielsen's usability-testing approach
  - Sun Microsystems web site design
  - studied nine different designs
  - revealed problems and highlighted key principles of design
  - empirical testing needed to verify findings

# Genres and Goals for Designers

## **Categorizing Websites:**

- By the originator's identity
- By the number of web pages or amount of information that is accessible
- By goals of the originators
- By measures of success.

# Users and Their Tasks

## Components of Objects/Actions Interface Model:

### Task

- Structured information objects (e.g. hierarchies, networks)

- Information actions (e.g. searching, linking)

### Interface

- Metaphors for information objects (e.g. bookshelf, encyclopedia)

- Handles for actions (e.g. querying, zooming)

# Users and Their Tasks

## **Strategies for aggregating information:**

- Short unstructured lists : City guide highlights, organizational divisions, current projects (and this list)
- Linear structures : Calendar of events, alphabetic list, human body slice images from head to toe, Orbital swath
- Arrays or tables : Departure city/arrival city/date, latitude/longitude/time
- Hierarchies, trees : Continent - country - city (e.g. Africa, Nigeria, Lagos), or Concepts (e.g. sciences - physics - semiconductors - gallium arsenide)
- Multi-trees, faceted retrieval : Photos indexed by date, photographer, location, topic, film type
- Networks: Journal citations, genealogies, World Wide Web



# Users and Their Tasks

## **Atomic information actions include:**

- Looking for Hemingway's name in an alphabetical list
- Scanning a list of scientific article titles
- Reading a paragraph
- Following a reference link

## **Aggregate information actions are composed of atomic actions:**

- Browsing an almanac table of contents, jumping to a chapter on sports and scanning for skiing topics
- Locating a scientific term in an alphabetic index and reading articles containing the term
- Using a keyword search in a catalog to obtain a list of candidate book titles
- Following cross reference from one legal precedent to another, repeatedly, until no new relevant precedents appear
- Scanning a music catalog to locate classical symphonies by eighteenth century French composers

# Object-Action Interface Model for Web Site Design

## **Metaphors for interface objects**

- File cabinets, folders, and documents
- Books with chapters
- Encyclopedia with articles
- Television with channels
- Shopping mall with stores
- Museum with exhibits

## **Handles for interface actions**

labels

icons

buttons

image regions

## **Detailed design issues**

Query Previews

rapid rough search

query refinement to narrow  
search

Session Management

# Object-Action Interface Model for Web Site Design

## Webpage design

- Compactness and branching factors
- Sequencing, clustering, and emphasis
- Support for universal access
- Good graphical design
- Navigation support

## Testing and maintenance for websites

Usability testing recommended

Test in realistic settings

Early in-house testing with limited numbers of users

Extensive in-house testing

Intensive field testing

Phased roll-out process

Usage logs helpful

User feedback

User expectations and organizational policy guide rate of change

**THANK YOU**