

REFERENCE BOOKS AND THE ORGANIZATION OF KNOWLEDGE

7/18/11

History of Information

Administrivia

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- Paper due today
- Grades for reading response #1
- Mid-term on Friday 7/22, starts at 10:10am, 90mins
- Reading response #2 due next week
- Presentations:
 - ▣ Analysis / synthesis
 - ▣ “covers the main components of your topic and reflects the research you do to contextualize, unpack, and understand the issues relevant to the reading”
 - ▣ Lead a discussion

Agenda

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- Wrap-up last week, questions
- Information Organization
- Glushko (2011), Alexander (1965)
- Presentation

What is information?

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Intangible / Tangible Information

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- Book?
- Shoes?
- Video game?
- Sculpture?
- Road sign?

Intangible / Tangible Information

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- Does it have ‘information content’?
- ‘About’ or ‘representing’ some other resource
- A thing in itself
 - ▣ Often with a ‘digital proxy or surrogate’

Organizing Systems concept

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- “an intentionally arranged collection of resources and the interactions they support”
 - ▣ Intentional: explicit or implicit acts by people / computers
 - ▣ Collection: set of physical or digital resources
 - ▣ Resources: entity, object, item, document, artifact
 - ▣ Interactions: activity, function, service supported or enabled (e.g. access)

Types of organizing systems

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- Many different strategies of classifying
 - ▣ Kind of resource determines type of system
 - Law library vs. software library
 - Knowledge management vs. data warehouses
 - Personal stamp collection vs. coin collection
 - ▣ Purpose
 - ▣ Nature or size of user community
 - ▣ Technologies or architectures
- No fixed set of categories

Google books v. Library

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- Google books, ‘a library to last forever’
- Is it really a library?
 - ▣ *Design choices* that are more characteristic of *business Organizing Systems*
 - ▣ BISAC categories instead of Library of Congress or Dewey Decimal
 - ▣ Anonymous reading?

Museum v. Crowdsourced

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- Professional curators and catalogers?

Types of organizing systems

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- Create new categories by stretching *traditional definitions*
- But...
 - ▣ Suggest features that aren't there
 - ▣ Omit the features that are distinctive

Organizing systems in a ‘design space’

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- Embodying characteristic configurations of *design choices*
- Allows for hybrid types, unbounded set of categories

Design decisions in Organizing Systems

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- **What** is being organized
- **Why** it is organized
- **How much** it is organized
- **When** it is organized
- **How or by whom** it is organized

- Organizing System embodies the composite impact of these choices

Info Retrieval / Organization Mix

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- Computers assist people in organizing
- People assist computers to optimize retrieval

Info Retrieval / Organization Mix

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- More effort put into *organizing*, the *more effectively* it can be *retrieved*
- More effort put into *retrieving*, the *less* it *needs* to be *organized* first

Christopher Alexander

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- Professor emeritus, UC Berkeley
- Architect
- Great influence in the fields of Computer Science, and later Information Science
 - ▣ Notes on the Synthesis of Form
 - Programming language design, Object-oriented etc.
 - ▣ A Pattern Language
 - Design patterns, extreme/agile programming

A City is not a Tree (1965)

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- Again, design choices:
 - ▣ “choice of subsets alone endows the collection of subsets as a whole with an overall structure”

Trees, semilattices

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- Area of overlap in semilattices is itself a *recognizable entity* and hence a *unit* also
- More restrictive conditions: a tree
 - ▣ Trees exclude the possibility of *overlapping sets*
 - ▣ Means that every tree happens to be a simple semilattice
- Structures with overlap and structures without overlap

Structural complexity

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- Tree based on 20 elements can contain at most 19 further subsets
- Semilattice much more complex *and* subtle structure than a tree

Cities, Organizing Systems

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- Not just relevant for cities and physical architecture, also relevant for information organization
 - ▣ Trees
 - ▣ Facets

- **How much** is it being organized?