The Next Generation Library and Information Services

What is new?
What is different?
What to do about it?

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Outline

• A change in what people are talking about
• How new? -- Examples.
• Big changes
• Agenda
Martin Schrettinger (1772-1851, Germany). Forget the mind of God! Use an arbitrary systematic arrangement of books and catalog. First use of “library science” 1808 -- 200 years ago.
Sir Antonio Panizzi (1797-1879, UK). Political refugee from Italy. Principal Librarian, British Museum Library (now the British Library). Panizzi’s "Ninety-One Cataloguing Rules" (1841), basis for later cataloging rules, ISBD, Dublin Core.
Charles Ammi Cutter (1837-1903, USA)
Objects [= objectives] of a catalog.
1. Find a book if
   the author is known
   the title is known
   subject is known
2. To show what the library has
   by a given author
   on a given subject
   in a given kind of literature
3. Assist in the choice of a book
   as to edition
   character (literary, topical)
   “Cutter numbers” (added to class no.).
Reader-oriented.
Melvil Dewey (1851-1931, USA).
-- Dewey Decimal Classification
-- Relative location: Arrange by classification number, not by shelf.
-- Hospitable, expansive using decimal notation.
-- Multi-faceted classification (auxiliary tables).
-- Standards for efficiency. Standardized cards and equipment.
-- Efficiency! Catalog not Catalogue
-- Founded first library school
-- Very influential.
19th century - New ideas

Paul Otlet (1868-1944, Belgium).
Universal Decimal Classification (UDC).
Facetted classification.
Universal bibliographical access.
International Federation for Documentation.
Multimedia, networks, technology.
Ideas anticipated “Information Science” and “Semantic web.”
• Adoption standardized cataloging codes and classifications.
• Centralized generation, distribution, exchange of catalog records (Library of Congress National Union Catalog; British National Bibliography; OCLC).
• Technical standards and interoperability (cards, MARC).
• Early adoption of new technology (vertical files, library automation; network systems).
• Online catalogs; remote online search of databases.
• Most information retrieval ideas were tried on the 1960s.
• Profession of librarian.

By the end of the twentieth century a spectacular achievement!
21st century - New ideas. Library 2.0!

What are people talking about now? How new?

• Ontologies: A thesaurus with more relationships.
• User generated content crowd sourcing; tagging.
• External authority lists: Geonames, VIAF
• Georeferencing (latitude, longitude): Place and space. Time.
• Visualization
• Semantic web – Strong
• Semantic web – Weak: W3C tools: (RDF, . . . ).
• Mark-up languages (XML, . . . ).
• Recommender systems.
• FRBR (Functional Requirements for Bibliographical Records)
  RDA (Resource Description and Access)
• Network Analysis
Ontologies: A thesaurus with more relationships.

**Universal Decimal Classification (UDC)**

005 Management

005.912 Office management. Office services

005.912+657 Office management AND Accountancy

005.912:657 Relationship between Accountancy and Office management

005.912/.915 Office management, registries and financial management

005.912=112.2 Office management (written in German)

005.912(075) Primer on Office management

005.912(410) Office management in the U.K.

005.912“1945/...” Office management since World War II

005.912:338.312 Office management and productivity

005.912ICI Office management at ICI [company]

005.912:001.895 Research on office management

And more complex combinations, e.g.

005.912=112.2(075)(410) German language primer on office management in the U.K.
Geotemporal referencing (Latitude, longitude, time).
Who wants a catalog without a map interface?

http://metadata.berkeley.edu/emma/

Light and Shadows: Emma Goldman 1910-1916

Search for a place Emma Goldman visited:
San Francisco, California

May 16, 1911
Emma Goldman in San Francisco, California.

May 21, 1911
Emma Goldman spoke on "The Eternal Spirit of the Revolution" at 3 pm and on "Victims of Morality" at 8 pm at Jefferson Square Hall, San Francisco, California. Madero signed a peace treaty with Díaz, but the PLM refused to lay down its weapons.

May 24, 1911
Emma Goldman debated Socialist William McDevitt in the Building Trades Auditorium, San Francisco.
1 related document

May 18, 1912
Emma Goldman and Ben Reitman arrived in San Francisco. Emma Goldman greeted upon her arrival by Mayor, reporters and cameramen including two moving picture operators. Alexander Berkman, Hippolyte Havel and Harry Kelly signed a letter, published in the New York World stating, "If the public sentiment of the country and the passive attitude of the press continue to encourage these outrages, we feel that the anarchists and other social rebels will be forced, as a matter of self-defense, to answer violence with violence."

May 19, 1912
Visualization.

Card catalog gives a sense of scale.

Very complex and dynamic displays now possible.
Language – Recommender systems

Vocabulary control and cross-references.

Different communities may use different words even within the same language.
Example: Search for “Coastal pollution”

Find Subject COASTAL POLLUTION  None retrieved
Find Title Words COASTAL and POLLUTION retrieves some.
SUBJECT HEADINGS ASSIGNED:

*Library of Congress Subject Headings*
- Marine pollution
- Coastal zone management
- Water -- Pollution
- Petroleum industry and trade
- Beach erosion
- Coasts
- Barrier islands

*Medline (MeSH)*
- Seawater
- Water pollution
- Bacteria
- Water microbiology
- Air pollution
- Environmental monitoring
- Bathing beaches
Vocabulary control and cross-references.

Relativ index to Dewey *Decimal Classification*, 6th edition. 1899. Points to class numbers for different senses or aspects of words.
“Intellectual creation” (Problematic, unless uniform title).

Form / genre: Text, music, sculpture, etc.

Edition.

Copy
IMPORTANT NEW DEVELOPMENTS

- “Publication” changed. New forms (e.g. blogs); anything accessible.
- Scientific and cultural record increasingly in varied data sets, not text.
- Scale: “Information flood” → “Information explosion” → “Big data”
- Interoperability: Libraries, archives, museums, publishers, . . . . Resources can be linked and connected.
- Computation on content.
What do we need to do to use a data set? “Data Management”

1. Discovery: Does a suitable data set already exist that is useful to me?
2. Location: Where is a copy?
3. Permission: May I use it? Legal limits?
4. Too deteriorated and/or obsolete to use?
5. Interoperability: Standardized and intelligible enough to be usable?
6. Description: It is clear enough what it represents?
7. Trust: Origin, lineage, version, and acceptable error rate?

These impediments differ in kind and so require different sorts of remedy, some more feasible and/or more affordable than others.

The emphasis is different for data sets than for printed works. But, these are the traditional issues for bibliography. These define agenda for *Future of Bibliographic Description and Access*. 
21st century agenda

Agenda
We need to:
- remember the basic needs.
- design bibliography for both new (data sets) and old (publications).
- move emphasis from describing to discovering.

Also

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