New Approach for Web Search - Faceted Metadata

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Outline
- The Concept of Facet
- Potential and Challenges of Faceted Approach
- Facet Analysis Issues
- User Interface and Usability Issues - Flamenco Projects
- Conclusion
- Q & A

Current State of Site Search
- Most Successful at directing users to appropriate web site.
- Notorious Site Search
- Site Search and Tasks
- Task-based Site Search
- Dynamically presented Appropriate Metadata

Metadata for Organizing Collections
- Faceted Metadata
- Flat or Hierarchical Metadata
- Single-valued or Multi-Valued Metadata


Definition of Facet
- “Clearly defined, Mutually exclusive, and collectively exhaustive aspects, properties or characteristics of a class or specific subject” (Maple, 1997)

Why Facets?
- Seek an information resource based on a variety of characteristics
- A single hierarchical structure approach
  - Hard to develop
  - Bias Access
Faceted Metadata Examples

- Recipes: Cuisine, main ingredients, cooking style, holiday, …
- Travel Site: Articles have authors, dates, places, prices, …
- Image Collection: artist, date, style, type of image, major colors, theme…
- Medical Domain: disease type, drug type, physiology, surgery type, patient type, …

Examples

- Yahoo
- Mass.gov
- Wine.com
- Epicurious.com
- Kohler.com
- Tower Record.com

Problems of Faceted Approach

- Mismatch Labeling
- Inconsistent category metadata
- Difficulty in deciding correct or appropriate facet
- Challenge to defining a Useful and Usable Collection of facets

Facet analysis is the sorting of terms in a given field of knowledge into "homogenous, mutually exclusive facets, each derived from the parent universe by a single characteristic of division ... every distinctive logical category should be isolated, every new characteristic of division should be clearly indicated." — B. C. Vickery

Easing into Facet Analysis

1. Analysis of compound subjects into terms
2. Organization of those terms into facets
3. Display of relationships between the terms
4. Synthesis of terms into compound subject headings
5. Allocation of subject headings to site or sub-site divisions.

- Spiteri, L. (1998). A Simplified Model For Facet Analysis

Principles for Facet Analysis

- Differentiation
- Relevance
- Ascertainability
- Permanence
- Homogeneity
- Mutual Exclusivity
- Fundamental Categories

- Spiteri, L. (1998). A Simplified Model For Facet Analysis
Issues – User Interface Design & Usability Testing
- User Interface Design – Search & Browsing
- Usability Issues

Current Faceted Metadata Search System
- Simple navigation
- Offer multifaceted navigation
- Hybrid of search and navigation

Current Faceted System - Flamenco
- Image Collection of the Find Art Museum of San Francisco
- Approximately 35,000 images
- University of California, Berkeley, By Yee, K.P. et al.
- Faceted Category Interface

Usability Studies – Flamenco (Hearst et al., 2002)
- 19 architects and city planners
- Several different types of tasks
- Usefulness and Understanding
- A strong sense of control
- Frequency (Browsing-12.7%, Searching – 5%)
- Power and Flexibility
- Easy to refine and expand
- Ease to Use

Usability Studies – Flamenco (Hearst et al., 2003)
- Usability Study for Search
- 32 art history students
- Search by Faceted Metadata vs Baseline
- More Successful
- More usage time
- 90% - Preferred the metadata approach overall
- 97% - Helped users learn more about the collection
- 75% - More flexible
- 72% - Easier to use
Potential of Faceted Metadata Search

User Perspectives:
- Friendly-Intuitive Approach
- Task-based search

System Designer Perspectives:
- Scalable and Manageable
- Help to maintain a fresh content

Conclusion

- Not a New Idea
- Well-Classified Faceted Metadata
- Seamlessly Interface for search and browse
- Getting more prominent use
- Integration with General Web Search

Reference


Any Questions?

Thanks!!