Why is search so hard?

Most people can tell you what they want, but they have trouble being specific enough for a machine to interpret their requests or make suggestions.

http://www.ucomics.com/adamathome
May 19, 1999
Can we “just tell it what we want”?  

- Words can have specialized meanings  
  - “Old House” is a renovator’s term, and has special meaning  
- Words can have double meanings  
  - “Dinosaur” can be a prehistoric beast or a metaphor for someone whose time has passed  

Since I captured this response, the database has learned about “old houses” and now returns more useful results.  

Is search used at all?  

- UIE reports on their usability testing say that:  
  - 53% of users found what they wanted without using the site search engine  
  - Only 30% succeeded using search  
  - Search entry boxes located on every page are generally ignored  
- Jakob Nielsen’s Usability column suggests:  
  - Over half of all users are “search dominant” going directly to a search function  
  - Others use search only when links fail  
  - Search entry boxes or buttons should be located on every page  

In a recent usability test we conducted, even general consumers wanted search -- “a place where they could type in what they were looking for”
Is the solution a “one field” interface?

Search Interaction

- Formulate a question
- Refine search
- Create the query
- Review results
- Select an item
- Examine selected item
- Evaluate likelihood of success
- Evaluate success

The user interface includes elements to:
- Enter the query
- Display the list of results
- Display an item found

Example: Where can I find quotations by Ingmar Bergman?
Formulating the Query

Search interfaces are hard for general users
- The “Boolean Paradox”
  - “Find the names of all people living in New Jersey and Maryland”

STATE=NJ AND STATE=MD vs STATE=NJ OR STATE=MD

- Queries which are easy to say can be difficult to express in precise syntax
  - “Let’s find a western. No John Wayne, except the one with Katherine Hepburn might be OK, and no Val Kilmer. Not too much violence, and some good scenery.”

- Engines support different capabilities - no consistency
  - Search rules vary; syntax varies

How people express a search query depends on what they are looking for and their starting approach to the problem of finding information

- FIND
  I know exactly what I’m looking for and just need to find it

- STRUCTURED
  I want to narrow down my choices and then be able to look through some options

- QUERY
  I can describe what I’m looking for and need to see a few good options

- BROWSE
  I just want to explore. I’ll follow my nose.

- GUIDED
  I want to be taken through in a planned way - not really a search?
Find

- Find offers precision in a single step
  - For those who know the domain well
  - Have a second source of information
  - Need precision or efficiency

Structured

- Relies on a classification scheme
- May use a hidden search mechanism to keep content evergreen
- Shortcuts allow users to jump through structure

www.eddiebauer.com
Mental models and classifications

- A classification scheme for experts
  - Type
  - Winery
  - Region

- Does it answer:
  “What wine will I like?”

http://www.wine.com/home/

Mental models and classification

- A classification scheme for non-experts - Organized by a description of how it tastes

Asked themselves:

How do average shoppers talk about wine?

http://www.bestcellars.com/
Designing Usable Search Interfaces
Whitney Quesenbery, Whitney Interactive Design

Query

- Simple query screen to a more complex one
- http://www.hotbot.com

- Balancing complexity with enough fields
- Are they assuming:
  “Only people who know books will use the advanced search?”
Designing Usable Search Interfaces
Whitney Quesenbery, Whitney Interactive Design

Query

- Power search goes all the way back to a one-field interface

Users enter a complete query, with no assistance.

http://www.amazon.com

Making the UI helpful

- Create a sequence
- Prompts provide instruction
- Examples are available when needed
Browse: Facets

Each recipe is assigned at least one:
- Main ingredient
- Course/meal
- Preparation style
- Cuisine
- Season/Occasion

Starting from any one of these ‘facets’ the user may
- Back up to a previous selection
- Choose another facet to narrow the search
- Select from one of the list of recipes presented

All selections are done by clicking on links - no entering text

http://www.epicurious.com

Using browsing to create a complex search

- The Enhanced Search screen shows all of the options in the browse, but allows for combinations
- It retains a sense of browsing, even though it is constructing a boolean search behind the scenes

http://www.epicurious.com
Reviewing results

- How well does the interface present results so that an item can be selected with confidence?
- Enough information in the result item to give a strong scent of information.
- Ability to discriminate between different types of documents.
- Easily scan-able.

Combining Search Options

- Combines several approaches on one page.
- Links to special features that are likely to provide direct answers.
- Simple text-box search (and a link to an advanced search).
- Browse, using index terms.

http://www.vanguard.com/site/search.html
Helping users identify the document type

- Document types help users find the right item in a long list search results

Offering results in more than one format

- Improving the chance for a successful choice
  - Grouping and classification of results
  - Editorial selection
  - Related actions
Image browsing

- Image searches allow results to be browsed visually
- Display includes file name, size and source

Refining the search

- Combining refining the search with reviewing the results
- Continuously displayed results
- Options to search within the current results set
Selecting the scope of the search

- The advanced search screen does not have many options, except the ability to select the scope of the search by selecting which references are searched.

Combining query and results on a screen

- "Where can I find a house?"
- Direct manipulation to form a query
  - A visual representation of the query and the results
  - Rapid, incremental, and reversible actions
  - Selection by pointing
  - Immediate and continuous display of results

Developed at the HCIL of University of Maryland
http://www.cs.umd.edu/hcil
Combining query and results

People Browser

The full set is always available, but a simple query is constructed by checking types of people. People matching the query are shown in purple.

http://www.chiplace.org/people/

References

- A comparison of different search engines in 1996 and 1999
- Clarifying Search: A User Interface Framework for Text Searches - Shneiderman, Byrd, Croft
- UIE on search: http://world.std.com/~uieweb/searchart.htm
- Innovations in Classification - Peter Merholz
About Whitney Quesenbery

Whitney has extensive user interface design and project management experience. She has produced award winning multimedia products, user interfaces, web sites, and software applications. A key player in the development of the LUCID Framework, she promotes the importance of human interaction and usability in interface design.

Manager of the STC Usability SIG
Outreach Director for UPA

“It’s exciting when a new design changes people’s lives by helping them work better.”

User Interface Designer: Created user interfaces for software applications, web sites, multimedia applications, documentation.

Big-Picture Visioning: Whitney specializes in the big picture for applications and projects. She sees how the client’s needs and the users’ needs best fit together, and she knows how to present that vision for maximum effect.

Theatrical Lighting Designer 1974-1989: Discovered that a computer screen is just like a tiny stage in the way that audience attention is directed by the design.