# Enterprise Search
# A View From the Trenches

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# Agenda

- Context
- What is Enterprise Search?
- How is it different from Internet search?
- Content
- User interface
- Language
- Search context
- Results
- Search Logs

# Some context

- Largest not-for-profit HMO in the US
- 8.2 million members
- About 145,000 employees, plus 15,000 or so doctors
- 8 Regions
- About 35 Unions
- 30 hospitals
- 431 medical office buildings
- Operating revenues of $22.5 billion

# Enterprise search: definition

- Search implemented within a business context for internal users
  - Index internal content
  - Serve internal clients and end-users
- As opposed to companies “optimizing” search on the Internet, which is more of an external, marketing and PR function
  - Buying ads
  - Optimizing content
- I am going to talk specifically about internally-facing search for employees – not the public site

# Technology is not really the issue

- It's tempting to assume that "the best" search engine is the answer to all search problems
- There are many enterprise search products on the market, each has its strengths and weaknesses
- It's important to know the business climate of the organization when choosing one
  - Content
  - Users – end users and business clients
  - What capabilities users expect
  - Capabilities users need
  - Organizational commitment to search

# Enterprise search: how it's different

- Search is not the business of the enterprise
  - Most organizations do not invest any time in search
  - As opposed to companies whose life-blood is improving search
- User task is different
  - Internet: find an answer or a starting point
  - Intranet: find the right answer, know it's the right answer
- Statistical data is not there
  - Fewer searches per day
  - Less content
- In-links are not there
  - Important in improving relevancy on the Internet

# My job is about

- Serving many individual business clients, each concerned about their own content and priorities
- Stepping back and advocating for
  - The end user
  - Organizational information strategy
  - Constant improvement vs. project focus
- Devising strategies to get the right information to the user
- Leverage search to make the organizational complexity transparent to the user

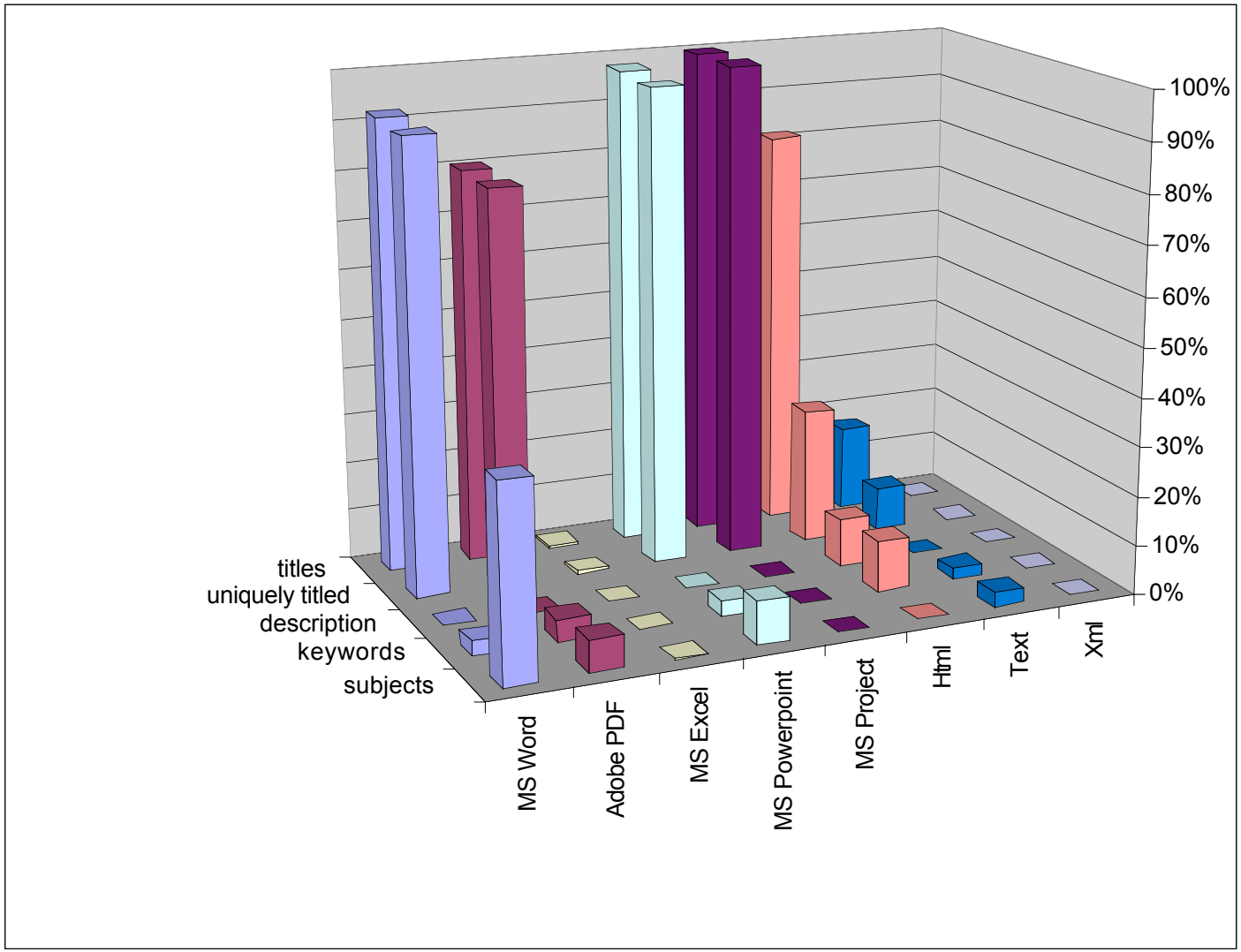
# Our biggest challenge: Content

- Clutter
  - Many of the same problems as the Internet – where the solution is to improve ranking
    - Lack of in-link analysis really hurts this for an Intranet
    - We have to come up with different strategies
- Disparate repositories
  - Different technologies (databases, DMS)
  - Managed by different groups
  - Different navigation and metadata schemes
- “Over the wall” attitude
  - Content is our job, search is your job.
    - Not always a lot of interaction between search team and content owners
- “Wild west” – no centralized strategy

# Some statistics

- About 600 Intranet sites
- Number of documents almost doubles each year

# Document Metadata



# Security

- **Five cases**
  - The content shouldn’t be in the search indexes at all
  - The content should be in the index, but only be returned for certain individuals
  - The content should be returned in results, but different information should be shown in the results for different individuals, and access to the full document should be restricted
  - The content should be returned in results for everyone, but gaining access to the full document should be restricted
  - The content should be returned and accessible to everyone

# The core task: finding answers

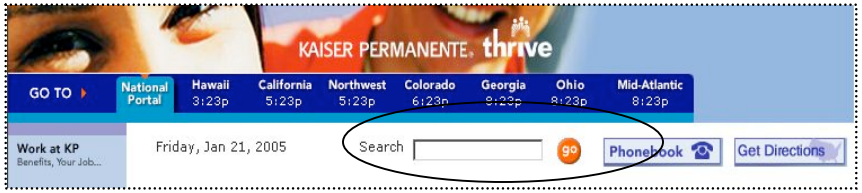
Question/Information Need → Query

- Can users find the search box?
- Are we indexing the right information?
- Are we protecting information that should not be searchable?
- Most searchers enter only one or two-word queries, what can we do on the backend to improve that query before sending it to the search engine?
- What search terms are people using that are not returning results?
- What search terms are people using that are returning too many or inappropriate results?
- Once the results are returned, what can be done to categorize them, describe them, rank them.
- What next steps can we offer the user if their initial results do not answer their question?

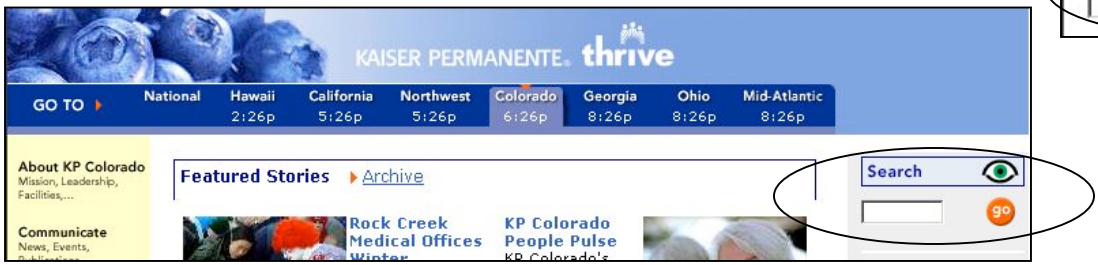
Results → Refinement → Answer

# Can the user find the search box?

- Inconsistent placement.
- Size – text box usually too small to accommodate a reasonable query.
- Wording around search box/button is inconsistent.
- Text entry boxes are “ugly” – designers want them to be as small and inconspicuous as possible

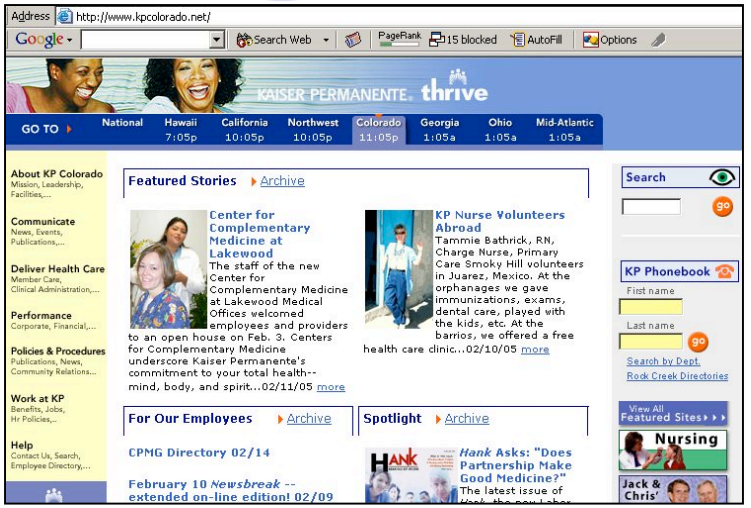




# “White box” confusion

- There are so many white boxes out there…
- Our top three searches are for Google.com, Yahoo.com and msn.com
  - Anecdotally, this is very common on Intranets
  - Might indicate that users don’t necessarily understand the distinction between the Intranet and Internet
  - Or perhaps even the difference between the browser and the page
- Makes sense really
  - Many users navigate the Web with search (rather than using the address bar)
  - Many browsers throw unknown addresses to a search



# Language

- All the usual problems
  - The terms a searcher uses are not the same as the words the author used
  - Term ambiguity (bank)
  - Euphemisms
- Especially bad in an enterprise setting
  - Misspellings: especially in a medical domain
  - Use of acronyms: frequently a many-to-one phenomenon
  - Jargon: doesn’t translate between departments or frequently within departments!

# Query Interpretation and Expansion

- Query expansion through thesaurus
  - We have found that there can be as many as 7 meanings for the same acronym! Do we include all of them? Or only in specific contexts?
- Dropping stop words (words with no meaning, the, these, etc)
- Interpreting Boolean: OR
  - Is it Boolean?
  - Or an abbreviation for Operating Room or Oregon?
  - (it's most often the latter)

# Context – what did I search?

- Partly a white box problem, who knows what'll happen when you hit enter
- Since some sites search the whole Intranet (or Internet in some cases), and some just search "themselves", it's hard to know what you're going to get back
- Even if we report "your search of Biomed National returned…"
  - Do searchers know what that means? (If they see it?)
- Sometimes the content just isn't there.
  - Because there are "off-site" content sources that we don't know about yet (Docushare, LN databases, etc.)

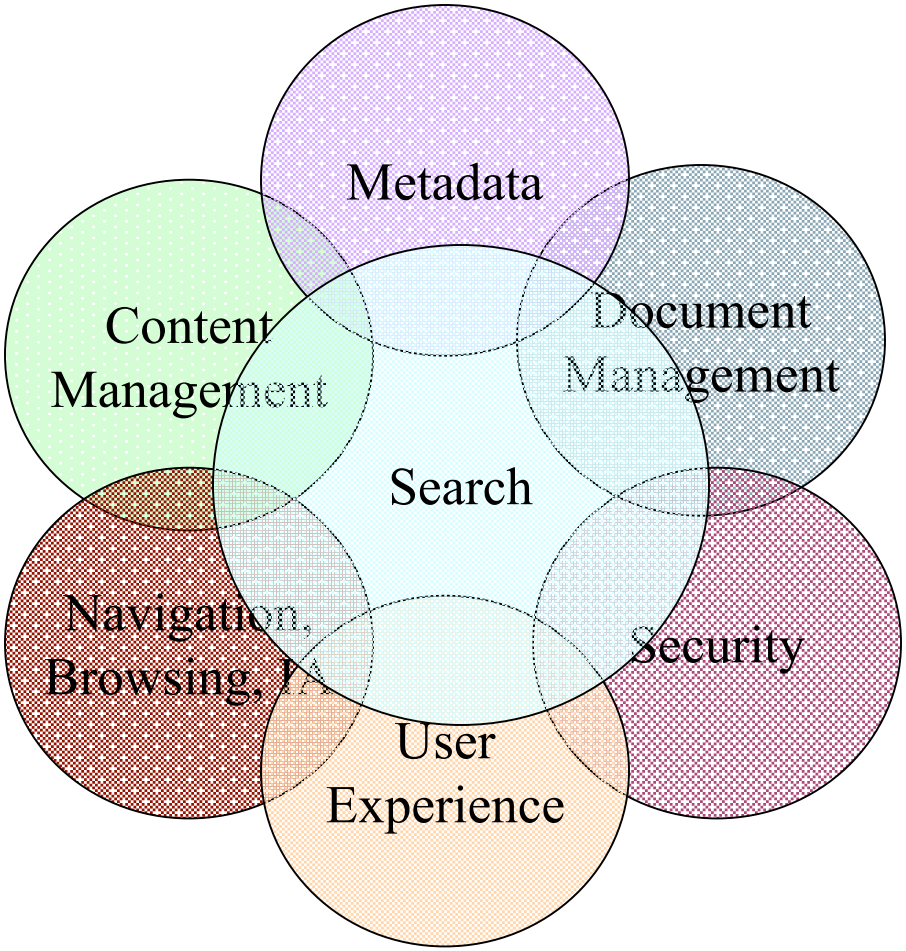
# Results presentation

- How should documents be ranked?
  - By relevance alone?
  - What about by recency?
  - What about by popular sites?
- Results from different content sources
  - Display together or apart?
- Next steps
  - Narrowing (faceted browsing)
  - Expanding
  - Sorting

# Informing decisions: search logs

- We've learned from our logs
  - Content users were looking for that we didn't offer (phonebook, acronyms, best bets)
  - The character of queries – length, number of words
  - How often particular queries occur
- How search logs benefit site information architecture
  - Content & features that should be added
  - What terms people are using – you can add them to metadata
  - Where users searched from
  - What searchers are not able to find through navigation

# Search touches many areas



# Questions