Enterprise and Desktop Search

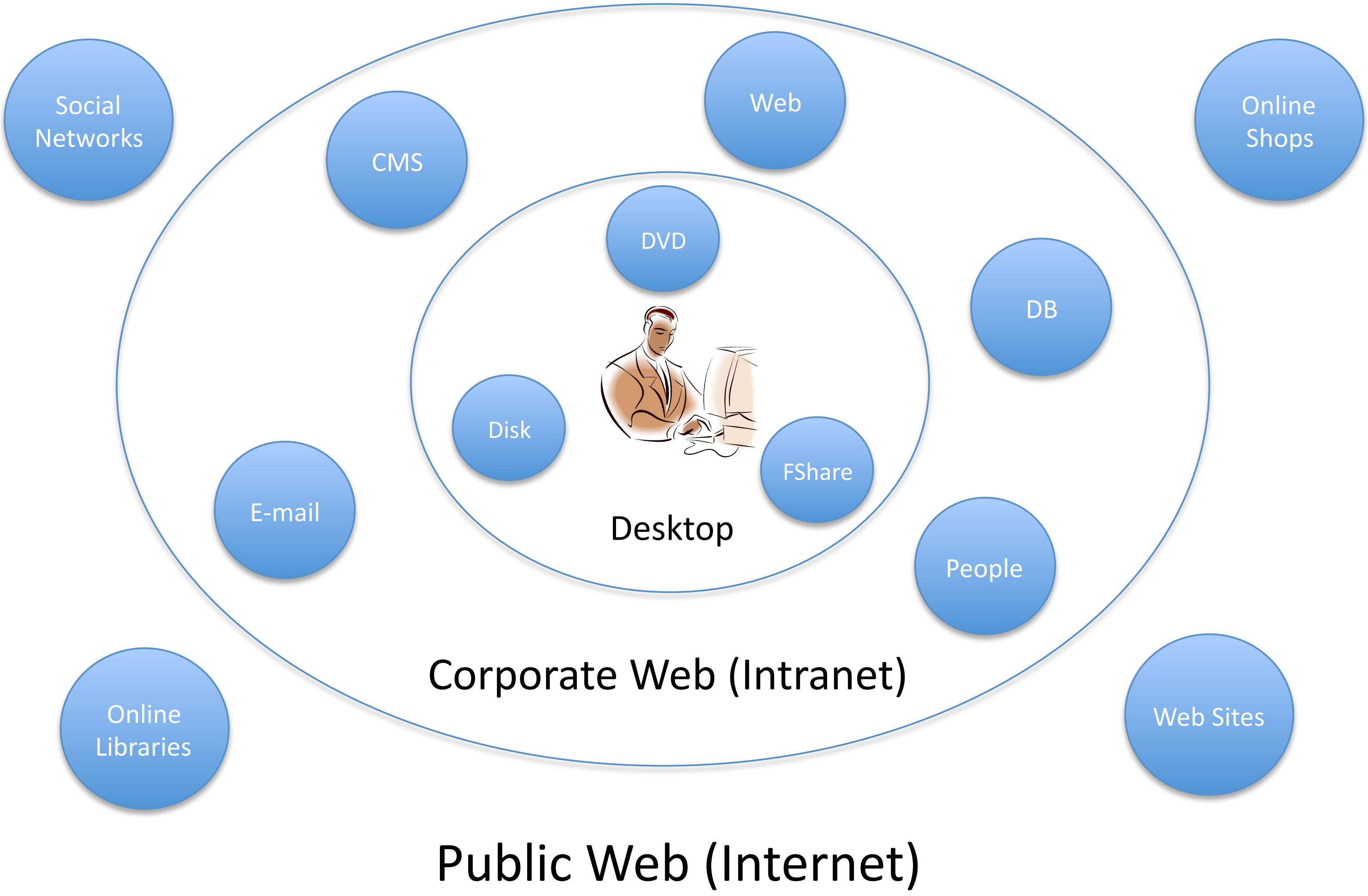
Lecture 1: Introduction

Pavel Dmitriev
Yahoo! Labs
Sunnyvale, CA
USA

Pavel Serdyukov
Delft University
of Technology
Netherlands

Sergey Chernov
L3S Research Center
Hannover
Germany

Search Environment of a Company Employee



Search Settings and Goals

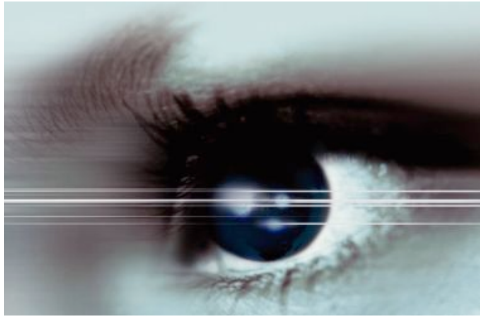
- Desktop Search
  - Files & directories I created, files I downloaded, OS and application data, e-mail, data on DVD/USB…
- Enterprise Search
  - Intranet Search: web pages and files from the group/department/company intranet, database contents, corporate email, people…
  - Public Site Search: inventory, web site contents…
- Web Search
  - Publicly accessible documents on the Web

Benefits of Enterprise Search

(Bennet 08)

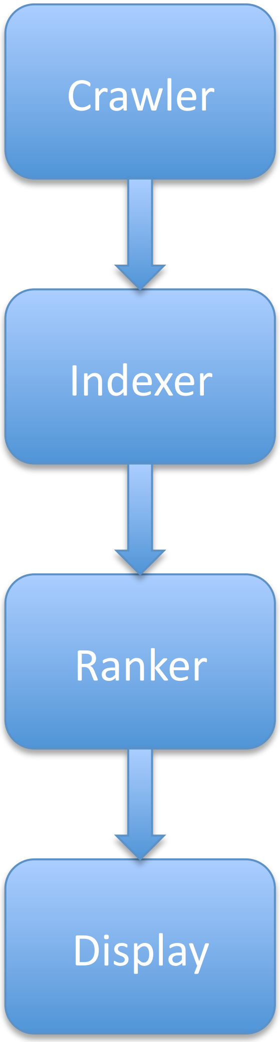
- Direct benefits for the user
  - Employees/user can find what they want → they are happy

- Financial benefits/ROI
  - Employees are more productive
  - Users are likely to buy more products from your site



- Strategic/Business Intelligence benefits
  - Monitor and detect how users' interest changes over time
  - See what people are searching for but not finding (documents, products, etc)
  - Track closely important users/products/customers

Information Retrieval System



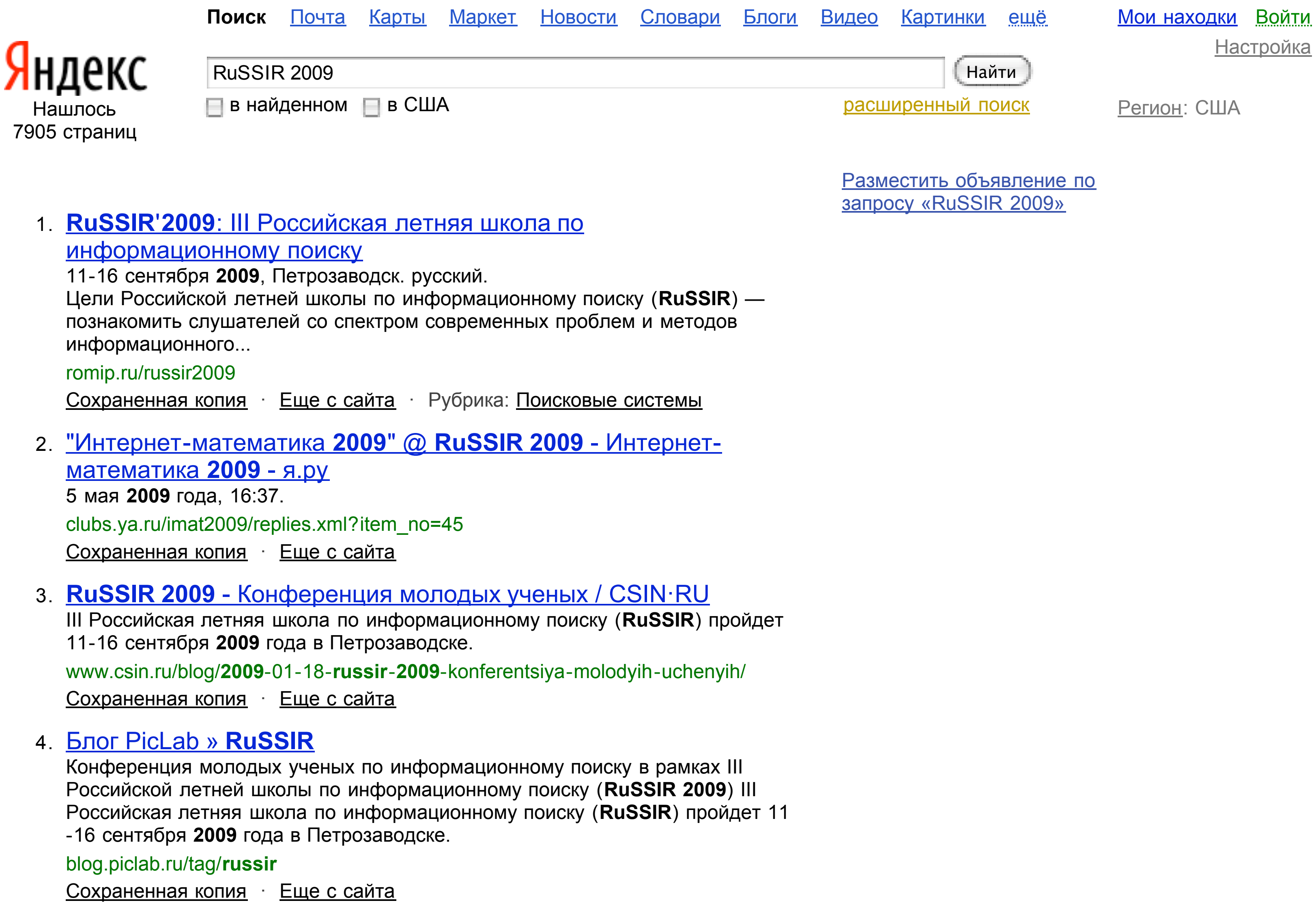
Downloads/collects the data

Processes the data and builds Inverted Index

Evaluates user queries against the index and computes a list of (ranked) results

Organizes and displays the results to the user, facilitates navigation through the result set

Web Search



Нашлось 7905 страниц

Разместить объявление по запросу «RuSSIR 2009»

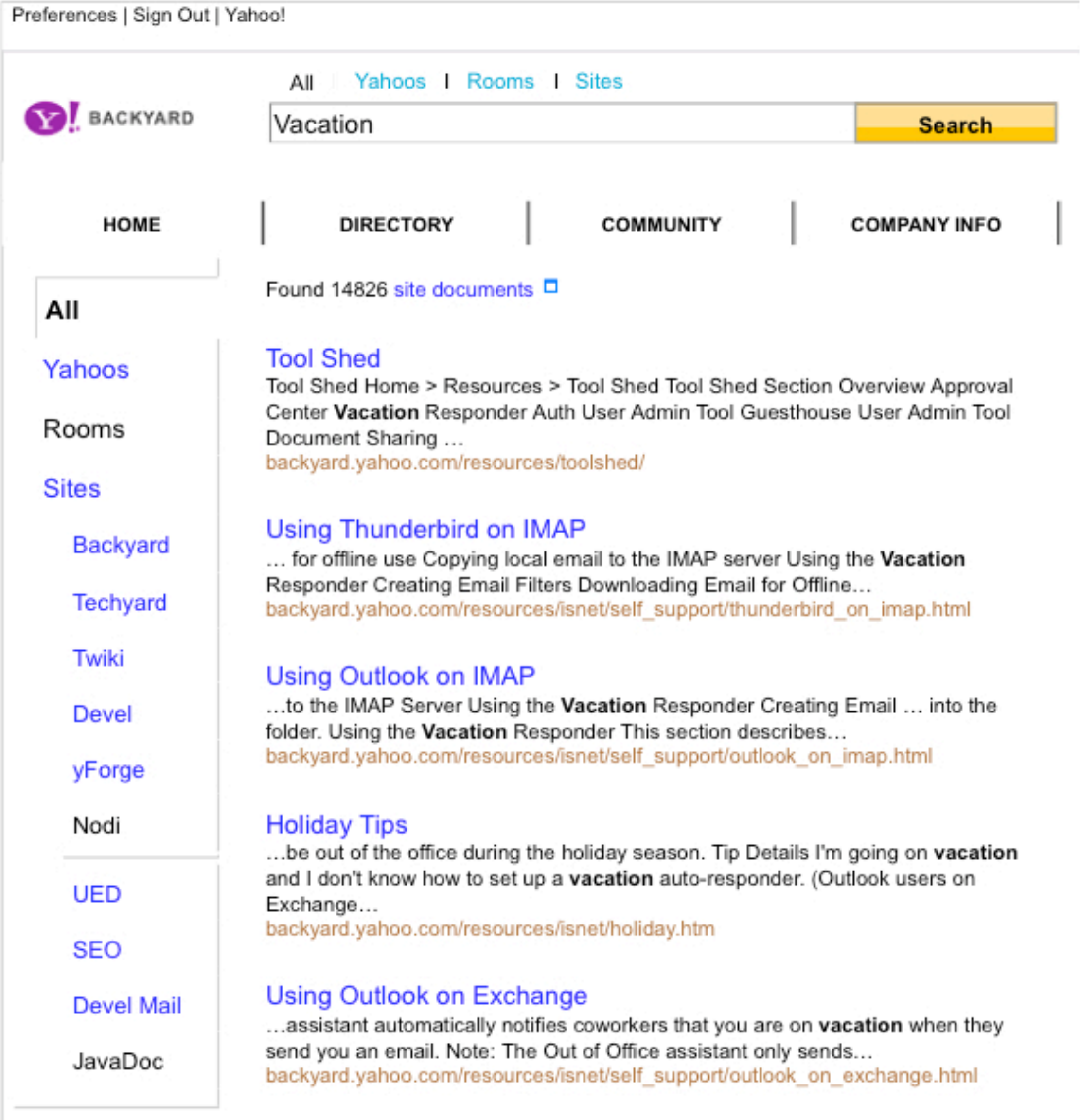
1. **RuSSIR'2009**: III Российская летняя школа по информационному поиску
   11-16 сентября **2009**, Петрозаводск. русский.
   Цели Российской летней школы по информационному поиску (**RuSSIR**) — познакомить слушателей со спектром современных проблем и методов информационного...
   romip.ru/russir2009
   Сохраненная копия · Еще с сайта · Рубрика: Поисковые системы
2. "Интернет-математика **2009**" @ **RuSSIR 2009** - Интернет-математика **2009** - я.ру
   5 мая **2009** года, 16:37.
   clubs.ya.ru/imat2009/replies.xml?item_no=45
   Сохраненная копия · Еще с сайта
3. **RuSSIR 2009** - Конференция молодых ученых / CSIN·RU
   III Российская летняя школа по информационному поиску (**RuSSIR**) пройдет 11-16 сентября **2009** года в Петрозаводске.
   www.csin.ru/blog/**2009**-01-18-**russir**-**2009**-konferentsiya-molodyih-uchenyih/
   Сохраненная копия · Еще с сайта
4. Блог PicLab » **RuSSIR**
   Конференция молодых ученых по информационному поиску в рамках III Российской летней школы по информационному поиску (**RuSSIR 2009**) III Российская летняя школа по информационному поиску (**RuSSIR**) пройдет 11 -16 сентября **2009** года в Петрозаводске.
   blog.piclab.ru/tag/**russir**
   Сохраненная копия · Еще с сайта

Web Search

- Crawl and index data from the public web, present simple result set (plus ads) to the user
- Main challenges are ranking quality and scale

- Huge industry (est. $30B by 2010), very active research community (Cyber 09)
  - Major web search companies employ tens of thousands of people
- Good search quality, ubiquitous usage
- Still evolving, but more or less standard architecture, evaluation, and algorithms
- Example Systems:
  - Yahoo, Yandex, Google, Bing, Baidu, etc.

Enterprise Search



Found 14826 site documents

Tool Shed
Tool Shed Home > Resources > Tool Shed Tool Shed Section Overview Approval Center **Vacation** Responder Auth User Admin Tool Guesthouse User Admin Tool Document Sharing …
backyard.yahoo.com/resources/toolshed/

Using Thunderbird on IMAP
… for offline use Copying local email to the IMAP server Using the **Vacation** Responder Creating Email Filters Downloading Email for Offline…
backyard.yahoo.com/resources/isnet/self_support/thunderbird_on_imap.html

Using Outlook on IMAP
…to the IMAP Server Using the **Vacation** Responder Creating Email … into the folder. Using the **Vacation** Responder This section describes…
backyard.yahoo.com/resources/isnet/self_support/outlook_on_imap.html

Holiday Tips
…be out of the office during the holiday season. Tip Details I'm going on **vacation** and I don't know how to set up a **vacation** auto-responder. (Outlook users on Exchange…
backyard.yahoo.com/resources/isnet/holiday.htm

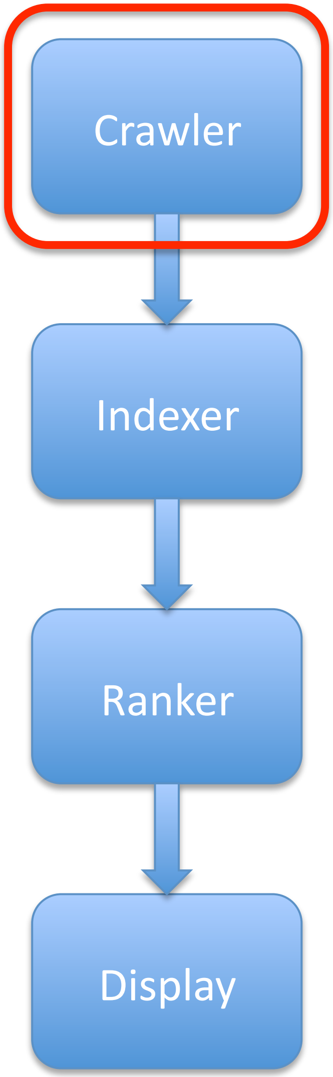
Using Outlook on Exchange
…assistant automatically notifies coworkers that you are on **vacation** when they send you an email. Note: The Out of Office assistant only sends…
backyard.yahoo.com/resources/isnet/self_support/outlook_on_exchange.html

Enterprise Search

- Crawl and index information from a variety of repositories in variety of formats
- Need to rank different types of entities
- Simple result set not enough, need to provide exploratory interfaces

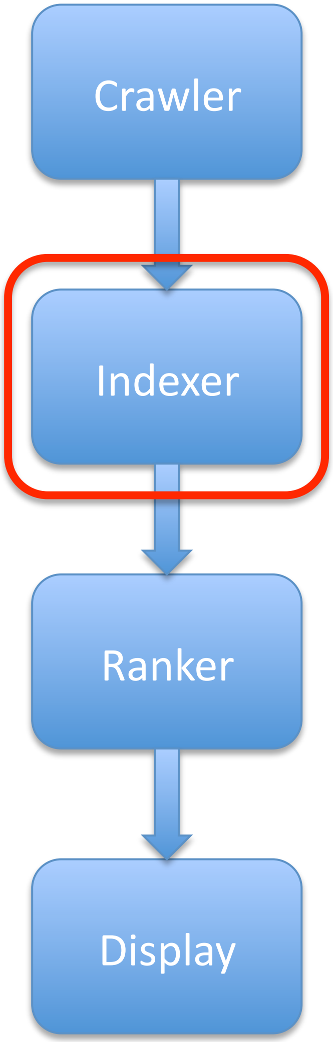
- Rapidly growing industry (20+% annual growth, est. $2.55B by 2010), relatively little research (Gref 09)
- Rather poor quality, comparing to web search
- Lots of unsolved problems and research opportunities
- Example Systems:
  - Autonomy, Endeca, FAST, Google, IBM OmniFind, Oracle, etc.

Differences between Web Search and Enterprise Search (Crawling)



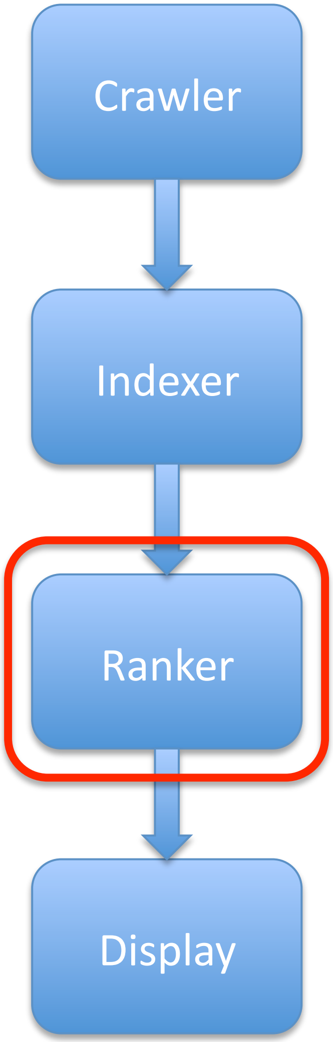
- Diverse information sources and formats, many are not “crawl-friendly”
  - Web pages, files, databases, etc.
  - “Compound” and “composite” documents
- A “click” may have undesirable side effects
  - Document deleted
  - Charge for accessing a 3rd party’s database
- Many security domains
- Hard to create a research test collection

Differences between Web Search and Enterprise Search (Indexing)



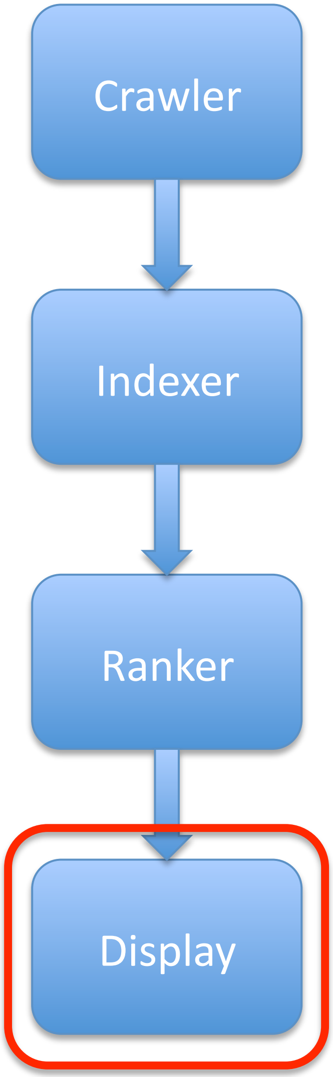
- Data is semi-structured and semantics is often known
  - Search for "objects" (people, rooms, printers, etc)
- Need to incorporate access-control info
- Vocabulary mismatch is a big problem
  - Need to use thesaurus
- Need to index special symbols/ punctuation
- Need to efficiently support the kinds of queries generated by exploratory interfaces

Differences between Web Search and Enterprise Search (Ranking)



- Small set of correct answers (often just 1)
- Less hyperlinks and anchortext, and of poorer quality
- Poorer quality of content (pages are not created with a search engine in mind)
- User identity is often known
  - Can use user context
- Often need to retrieve ALL relevant documents
- No (intentional) spam
- Federation and blending is often necessary

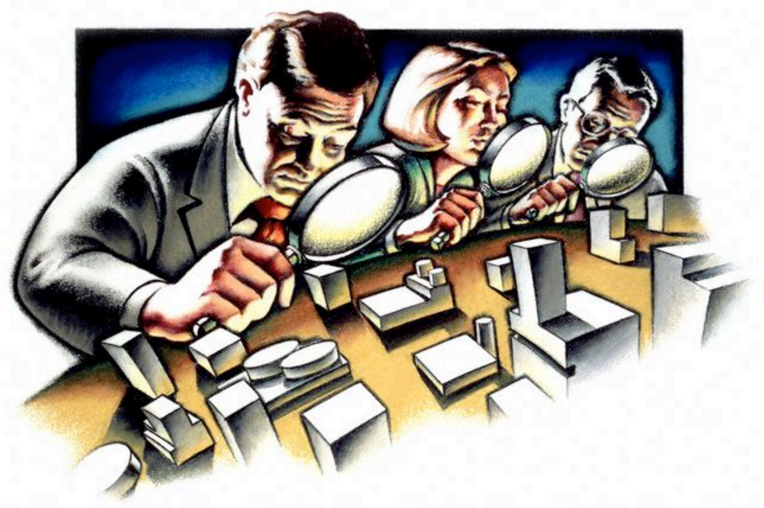
Differences between Web Search and Enterprise Search (Display)



- Known identity and user history → personalized results presentation
- Search clients are not just browsers
  - Applications/Advanced search interfaces
- Since ranking is hard, need to provide exploratory interfaces / interactive search & browse experience, give the user more control

How to Measure Success?

- Evaluation metrics used for Web Search are not always suitable for Enterprise Search. Need ways to evaluate
  - Quality of interaction
  - Success of task completion
  - User satisfaction



Desktop Search

- Why *desktop search*?
- Size of data on the desktop is big and continuously growing
- We are moving towards Social Semantic Desktop
  - Social – communication in a social network
  - Semantic – metadata descriptions and relations

Desktop Search – Current Status

- Documents on the desktop are not linked to each other in a way comparable to the web
- Simple full text search
  - no personalization
  - no context
  - no ranking possible or too poor
- Metadata enriched search makes use of
  - associations to contexts and activities
  - provenience of information
  - sophisticated classification hierarchies

Google™

Spotlight

Windows Search

Differences between Web Search and Desktop Search

- Search on the desktop vs. Search on the Web
  - Re-finding vs. finding
  - Integration across many applications and file formats
  - Users prefer to navigate, not to search
  - Many information types: ephemeral, working, archival
  - Extra sources for ranking improvement:
    - File metadata
    - Usage metadata
    - Folder structure
  - Privacy concerns

Blending of the 3 Search Settings

- Many web collections require login to access
  - I want to sea s I have access to (ACM Digita
  - I want to sea s I don’t have access to to access (Amazon)
- More and mo stored online
  - E-mail, phot
- To further im eed to understand u ext
- Would like to search seamlessly over all the three mediums

Course Overview

- Lecture 1: Introduction
- Lecture 2: Searching the Enterprise Web
  - What works and what doesn't?
  - Using User Feedback in Enterprise Web Search
- Lecture 3: Exploratory Search
  - Look-up search vs Exploratory search, faceted search, result categorization and clustering

Course Overview

- Lecture 4: Expert Finding
  - Profile-based, document-based, and graph based methods

- Lecture 5: Desktop Search
  - Architecture and evaluation, just-in-time retrieval, context detection and usage

- Conclusion

What we would like you to get out of this Course

- Understand the challenges in Desktop and Enterprise search
- Have an idea of what the current state-of-the-art is in the area
- Be inspired to apply techniques developed for one setting to another setting
- Think about creating applications that blend the boundaries among the 3 settings

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