

A taxonomy of web search

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Presentation Plan

- Introduction
- Intent of the Paper
- Classic Model for IR
- Intent Behind a Web Search
- Statistics
- Evolution of Search Engines

The intent behind a web search

- **Informational**

The intent behind a web search

- **Informational** (?) (less than 50%)

The aim of the paper

- Introduce and analyze a taxonomy of web searches
- Point out the differences between them
- How search engines evolved to deal with these web-specific needs



The classic model for IR, augmented for the web

The classic model for IR, augmented for the web

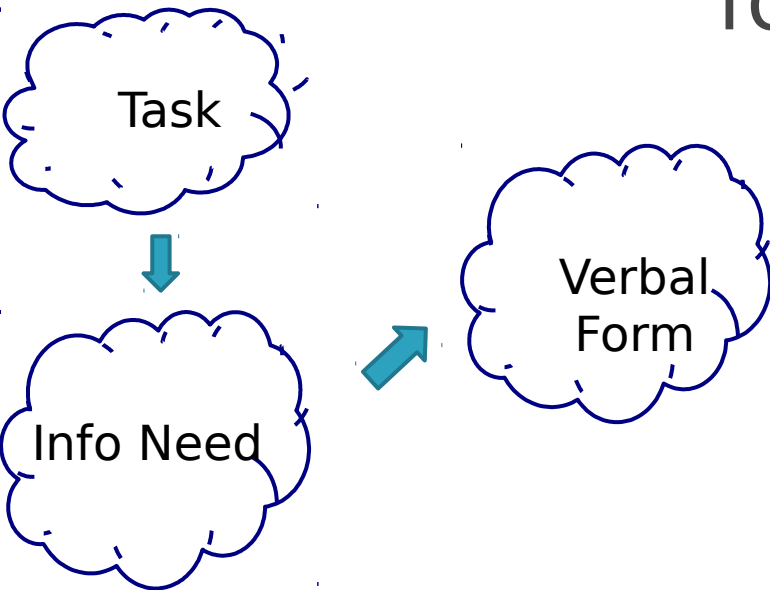


Task

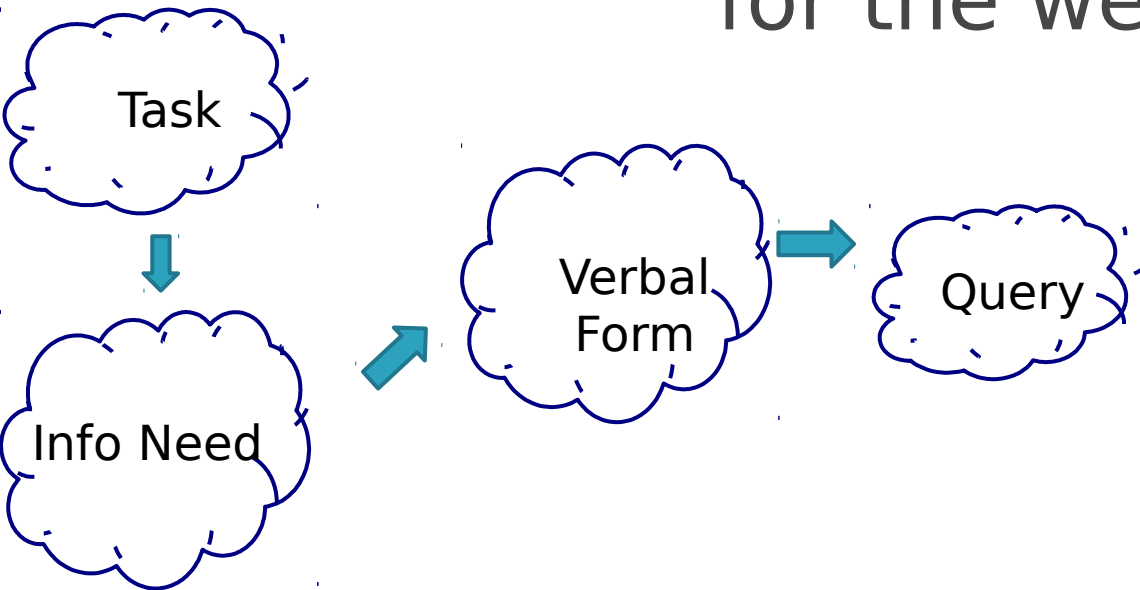
The classic model for IR, augmented for the web



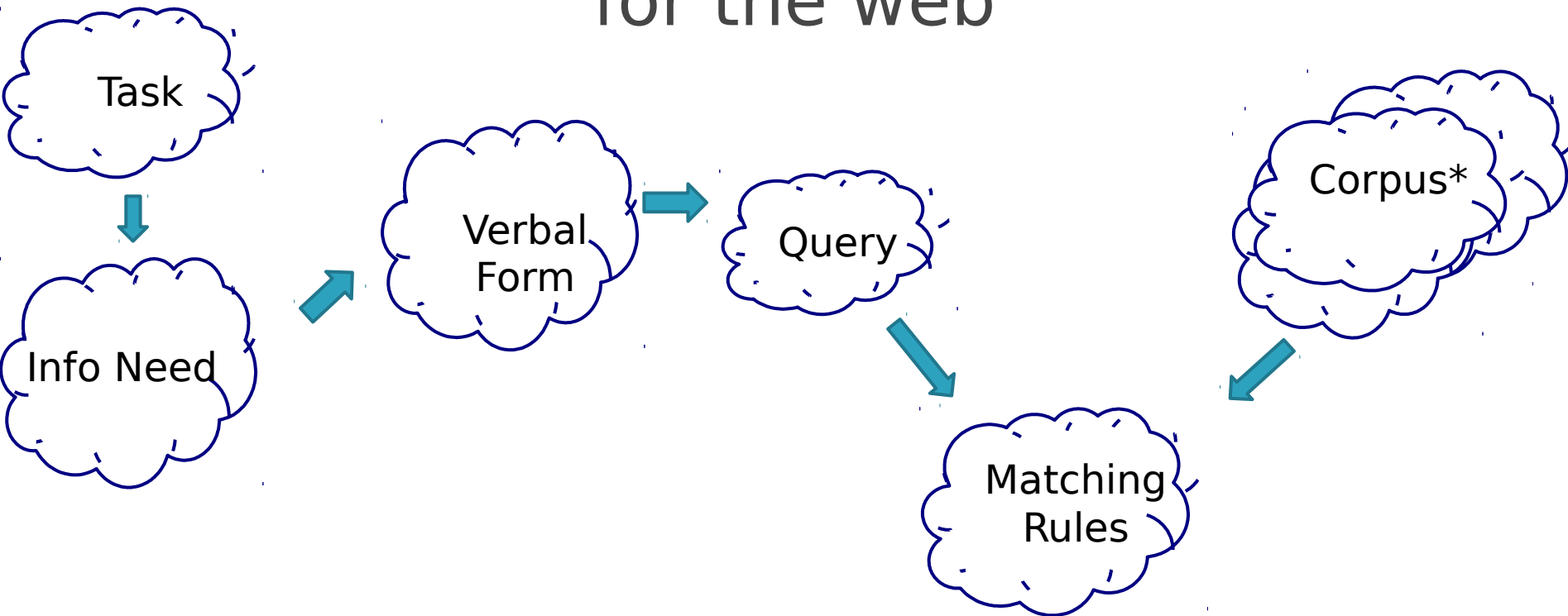
The classic model for IR, augmented for the web



The classic model for IR, augmented for the web

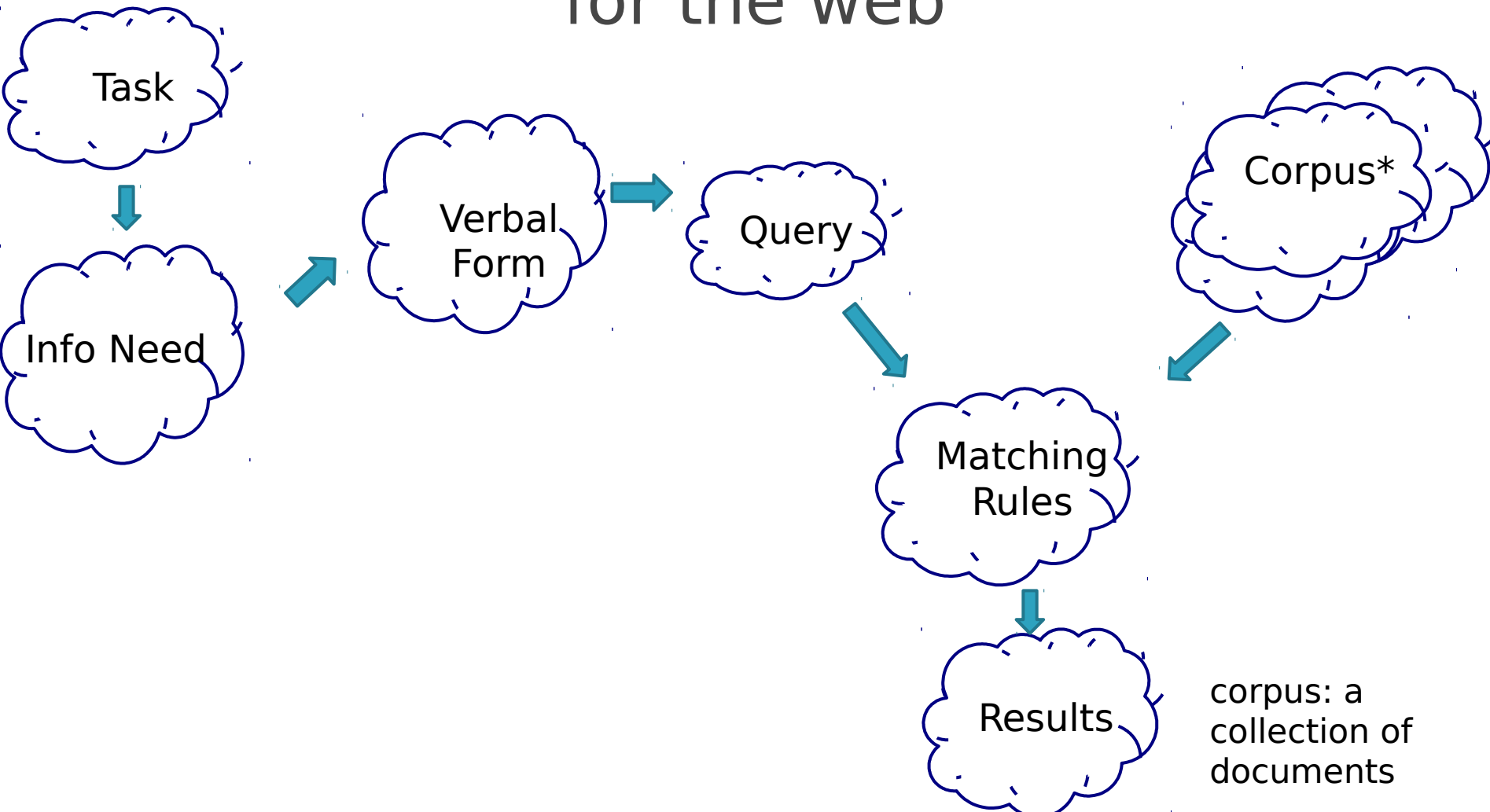


The classic model for IR, augmented for the web

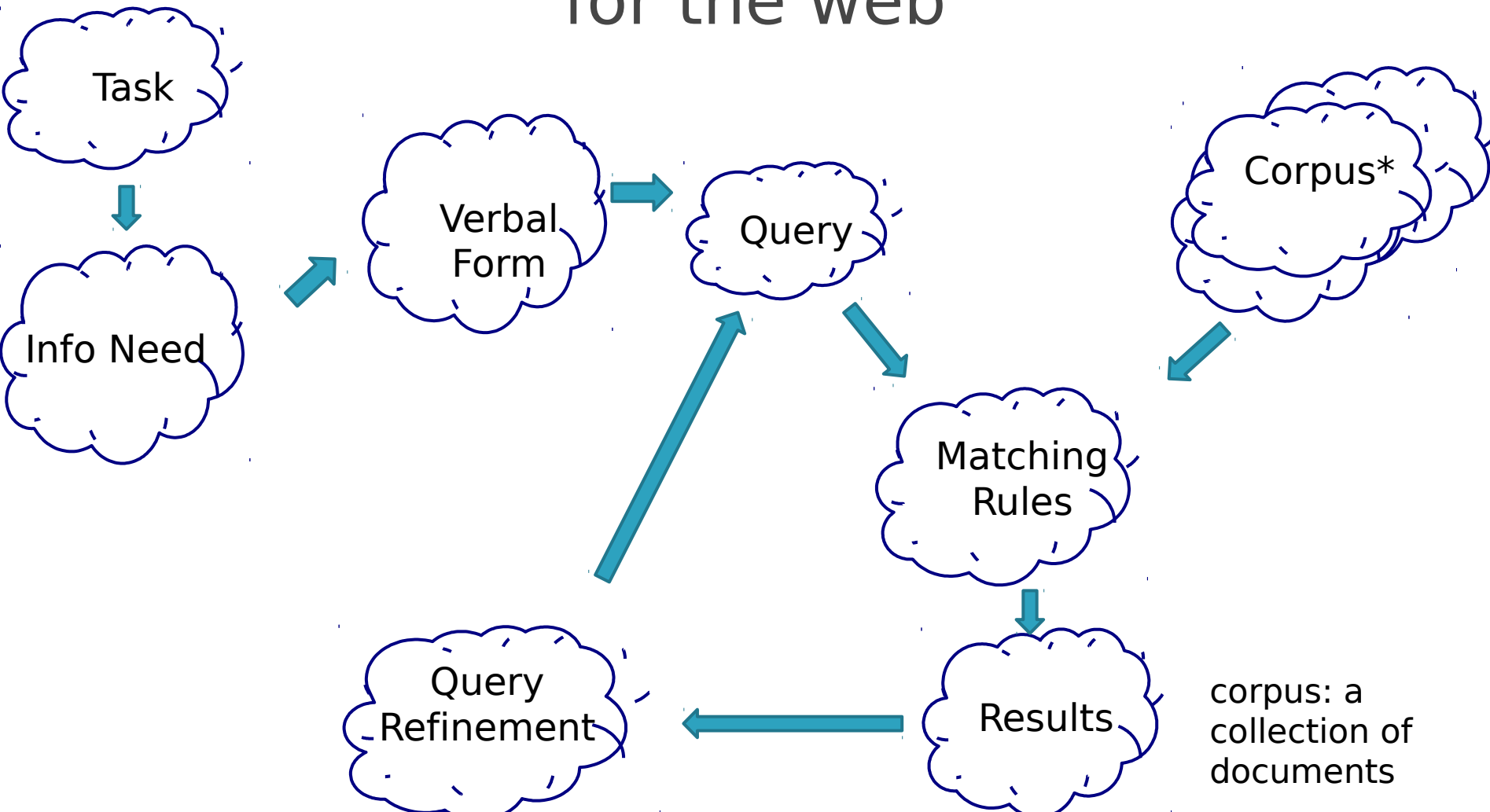


corpus: a collection of documents

The classic model for IR, augmented for the web



The classic model for IR, augmented for the web



1 - Informational Queries

- The purpose of such queries is to find information assumed to be available on the web in a static form.



The intent behind a web search

1 - Informational Queries

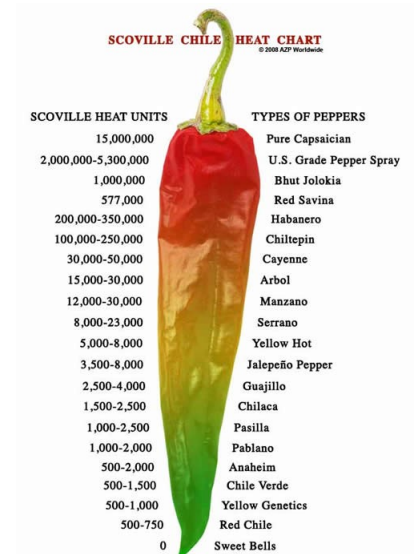


Wide

E.g. San Francisco

Narrow

E.g. Scoville heat units



The intent behind a web search

- Informational (?) (less than 50%)
- **Navigational**

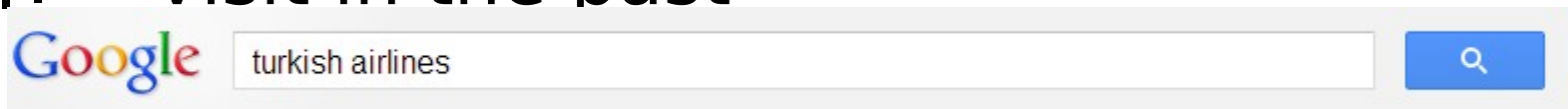
Give me the URL of the site I want to reach



2 - Navigational Queries

To reach a particular sites that the user has in mind because

↗ Visit in the past



[Airline tickets from - Turkish Airlines](#)

www.turkishairlines.com/en-tr/

from. Promotion Airline Tickets All Promotion Airline Tickets - Istanbul Ankara ...

[Turkish Airlines](#)

Flights and airline tickets to more than 200 destinations ...

[Türk Hava Yolları](#)

Online İşlemler - Miles&Smiles - İletişim - Kariyer İlanları - ...

[General Baggage Information](#)

General Baggage Information. 1. Can I Check My Baggage To ...

[Istanbul](#)

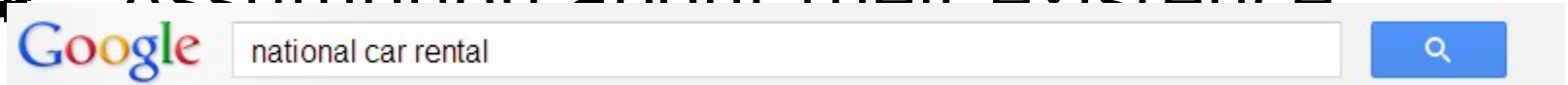
Turkish Airlines launches its renewed CIP Lounge at Istanbul ...

2 - Navigational Queries

To reach a particular sites that the user has in mind because

↗ Visit in the past

↗ Assumption about their existence



[National Car Rental - Bypass the Counter, Last Minute Specials](#)

www.nationalcar.com/

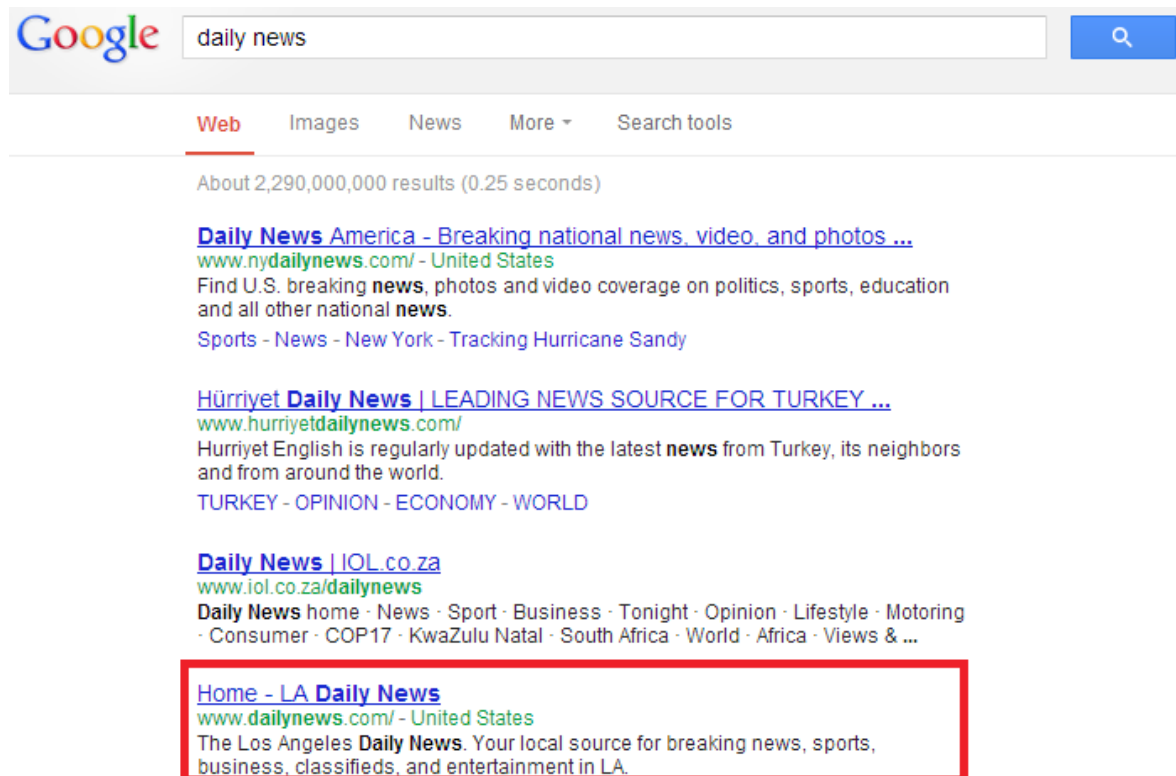
Find last minute specials and **car rental** deals off weekend and weekly rentals. Join Emerald Club our frequent renter program to bypass the counter, get an ...

[Emerald Club - Reservations - Locations - New York City](#)

The intent behind a web search

2 - Navigational Queries

- Usually one “right” result



Google search results for "daily news". The search bar shows "daily news" and the search button is visible. The results are displayed under the "Web" tab. The top result is highlighted with a red box.

Web Images News More ▾ Search tools

About 2,290,000,000 results (0.25 seconds)

[Daily News America - Breaking national news, video, and photos ...](#)
www.nydailynews.com/ - United States
Find U.S. breaking **news**, photos and video coverage on politics, sports, education and all other national **news**.
[Sports - News - New York - Tracking Hurricane Sandy](#)

[Hürriyet Daily News | LEADING NEWS SOURCE FOR TURKEY ...](#)
www.hurriyetdailynews.com/
Hurriyet English is regularly updated with the latest **news** from Turkey, its neighbors and from around the world.
[TURKEY - OPINION - ECONOMY - WORLD](#)

[Daily News | IOL.co.za](#)
www.iol.co.za/dailynews
[Daily News](#) home · [News](#) · [Sport](#) · [Business](#) · [Tonight](#) · [Opinion](#) · [Lifestyle](#) · [Motoring](#) · [Consumer](#) · [COP17](#) · [KwaZulu Natal](#) · [South Africa](#) · [World](#) · [Africa](#) · [Views & ...](#)

[Home - LA Daily News](#)
www.dailynews.com/ - United States
The Los Angeles **Daily News**. Your local source for breaking news, sports, business, classifieds, and entertainment in LA.

The intent behind a web search

- Informational (?) (less than 50%)
- Navigational

Give me the URL of the site I want to reach

- **Transactional**

Show me sites that can perform a certain transaction, such as purchase a file, or find a ma



an perform a
op, download a

3 - Transactional Queries

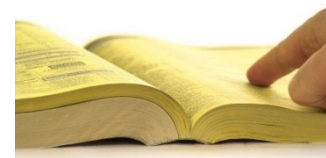
- The intent is to perform some web-mediated activity.

Shopping



Finding various web-mediated services

Downloading various types of file



Finding servers

Accessing certain databases

4 - Connectivity Queries (from wikipedia)

- Queries that report on the connectivity of the indexed web graph.

Statistics

- Two methods to determine the prevalence of various types of queries:



□ A survey of  users



□ An analysis of the query log at

1 – User Survey

Survey Questions

2. Which of the following describes best what you are trying to do?

- I want to get to a specific website that I already have in mind
- I want a good site on this topic, but I don't have a specific site in mind

3. Which of the following best describes why you conducted this search?

- I am shopping for something to buy on the Internet
- I am shopping for something to buy elsewhere than on the Internet
- I want to download a file (e.g., music, images, programs, etc.)
- None of these reasons

4. Which of the following describes best what you are looking for?

- A site which is a collection of links to other sites regarding this topic
- The best site regarding this topic

Survey Answers

2. Which of the following describes best what you are trying to do?

- 24.53% I want to get to a specific website that I already have in mind
- 68.41% I want a good site on this topic, but I don't have a specific site in mind

3. Which of the following best describes why you conducted this search?

- 8.16% I am shopping for something to buy on the Internet
- 5.46% I am shopping for something to buy elsewhere than on the Internet
- 22.55% I want to download a file (e.g., music, images, programs, etc.)
- 57.19% None of these reasons

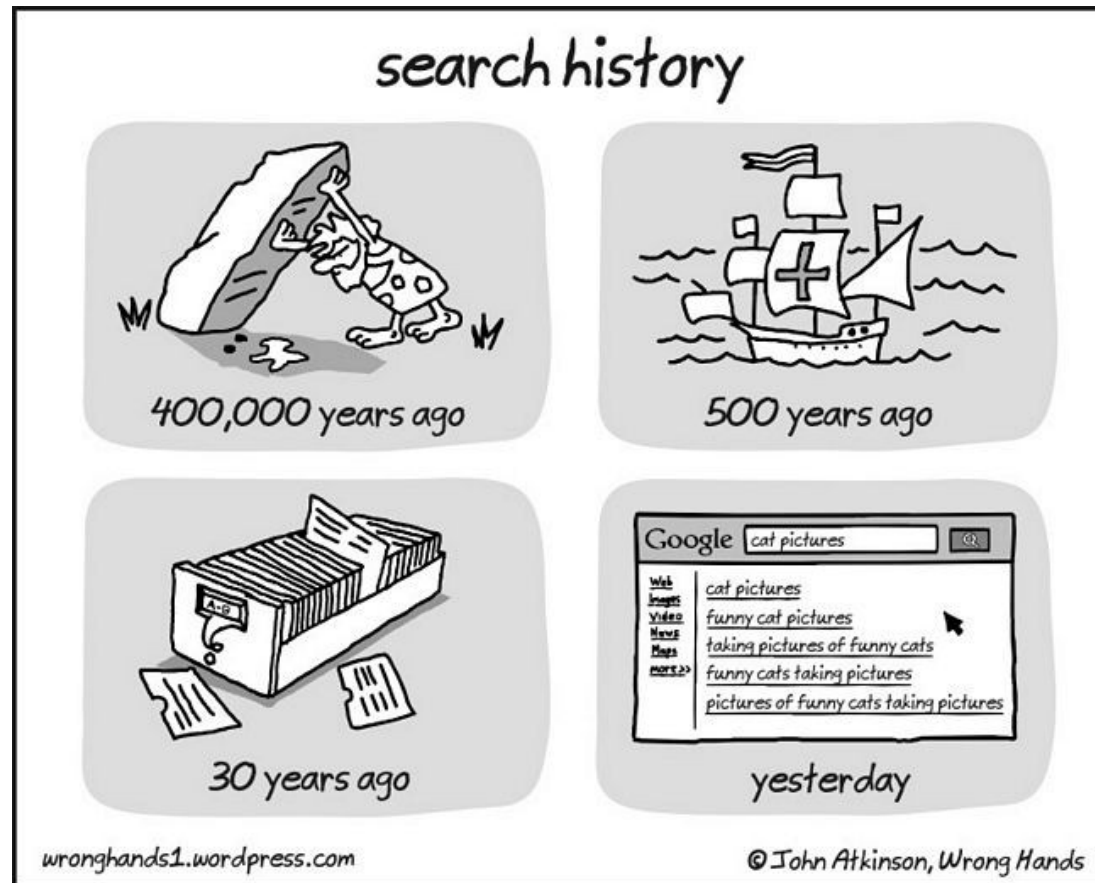
4. Which of the following describes best what you are looking for?

- 14.83% A site which is a collection of links to other sites regarding this topic
- 76.62% The best site regarding this topic

2 – Log Analysis

Type of query	User Survey	Query Log Analysis
Navigational	24.5%	20%
Informational	?? (estimated 39%)	48%
Transactional	> 22% (estimated 36%)	30%

The Evolution of Search Engines



1st Generation

- Mostly informational queries
- Very closely to classic IR.



2nd Generation

- Supports both informational and navigational queries
- Uses link analysis, anchor text, click-through data



3rd

Generation

- It is emerging now, attempts to blend data from multiple sources in order to try to answer “the need behind the query”.
- The aim is to support informational, navigational, and transactional queries.



Conclusion

- An understanding of this taxonomy is essential to the development of successful web search. Current search engines deal well with informational and navigational queries, but transactional queries are satisfied only indirectly and hence a third generation in search engines is emerging.



Thanks!



Questions