

The Use of Social Tags in Interactive Information Retrieval

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PETER L. BERNSTEIN

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Work details

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Common Knowledge

Popularity

Cover images

Against the Gods: The Remarkable Story of Risk

by Peter L. Bernstein

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Vivendo do Ócio

56

Send Vivendo do Ócio Ringtones to Cell

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Vivendo do Ócio é uma banda brasileira de rock formada em 2006 na Bahia. Eles ganharam o prêmio de "Melhor Show" no Bahia de Todos os Rocks.

Em 2008 eles venceram o GAS Sound, um concurso de bandas promovido pelo Guaraná Antartica e transmitido pela RedeTV! E eles também venceram o prêmio de "Aposta MTV" no Video Music Brasil 2009. Além de ter feito uma apresentação ao vivo no Video Music Brasil 2009.

Read more... Edit

Popular tags: indie, rock, indie rock, brazilian, alternative See more

Shouts: 358 shouts

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By naza1715

No real name given + Add Contact

This photo was taken on May 28, 2011 in Singapore, Central Singapore, SG.

Bay Of Bengal

Indian Ocean

South China Sea

Malaysia

Sulawesi Sea

INDONESIA

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399 44 26 1

This photo belongs to

photostream (603)

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Suggestions

1:54

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by mugumogu

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滑り込むねこ

by mugumogu

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mugumogu

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Category: Pets & Animals

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Nuclear winter is a real and present danger

Nature, Vol. 473, No. 7347. (19 May 2011), pp. 275-276.

by Alan Robock

posted to social nuclear climate by pak on 2011-08-05 17:40:51 ★★ along with 2 people (0)

Abstract

Copy

Analysis of direct, indirect, and intangible costs of epilepsy

In Análisis de costes directos, indirectos e intangibles de la epilepsia, Vol. 26 (2011), 32-38.

by A. Pato Pato, E. Cebrián Pérez, I. Cimas Hernando, J. R. Lorenzo González, I. Rodríguez Constenla, F. Gude Sampedro

posted to test support social questionnaire quality golie-10 primary pharmacoeconomics outcome of medical life intangible indirect human hospital file-import-11-08-05 epilepsy emergency economics direct diagnostic cost care benefit autor_sergas autor_chop assessment article analysis adolescent admission absenteeism by biblioCHOP to the group autores Complejo Hospitalario de Pontevedra on 2011-08-05 08:44:17 ★★ (0)

Abstract

Notes

Copy

Social structure of dermatology: Between the Middle Ages and the contemporaneous

In Estructura social de la dermatología: Entre la edad media y la contemporánea, Vol. 99 (2008), 241-243.

by I. García-Doval, F. Cabo

posted to structure specialist social relation of note middle medieval medicine medical human history hierarchy herpetiformis file-import-11-08-05 dermatology dermatitis conflict century behavior autor_sergas autor_chop ages adaptation 17th 16th 15th by biblioCHOP to the group autores Complejo Hospitalario de Pontevedra on 2011-08-05 08:42:45 ★★ (0)

Notes

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Social risk factors for noncompliance with tuberculosis treatment in Pontevedra [Spain]

In Factores sociales de riesgo para la falta de cumplimiento terapéutico en pacientes con tuberculosis en Pontevedra., Vol. 18 (2004), 38-44.

by L. Anibarro, S. Casas, J. Paz-Esquete, et al.

posted to tuberculostatic tuberculosis treatment study studies spain socioeconomics socioeconomic social risk retrospective refusal psychological prisoners prisoner persons migration middle male immigration humans human homelessness homeless file-import-11-08-05 female factors factor emigration comorbidity autor_sergas autor_chop aspect article antitubercular and alcoholism agents agent aged adult adjustment adaptation by biblioCHOP to the group autores Complejo Hospitalario de Pontevedra on 2011-08-05 08:41:59 ★★ (0)

Abstract

Notes

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Treatment completion in latent tuberculosis infection at specialist tuberculosis units in Spain

In International Journal of Tuberculosis and Lung Disease, Vol. 14 (2010), 701-707.

by L. Anibarro, S. Casas, J. Paz-Esquete, et al.

posted to unspecified tuberculosis treatment study studies spain social side sex risk rifater rifampicin retrospective pyrazinamide priority preventive prevalence plus patient outcome observational middle male major latent journal isoniazid infection immigration humans human hospitals gender follow-up

2003	del.icio.us
2004	Flickr CiteULike Connotea
2005	YouTube LibraryThing
2006	Last.fm
2007	WordPress (version 2.3)

Motivation

- In interactive information retrieval, **individuals** interact with an **information retrieval system** to find documents meeting their information needs
 - Query formulation / reformulation
 - Relevance judgment
- Research in social tagging has focused on tags, and behavior and motivations of taggers
- **How can social tags be used to enhance interactive information retrieval?**

Conceptual Framework

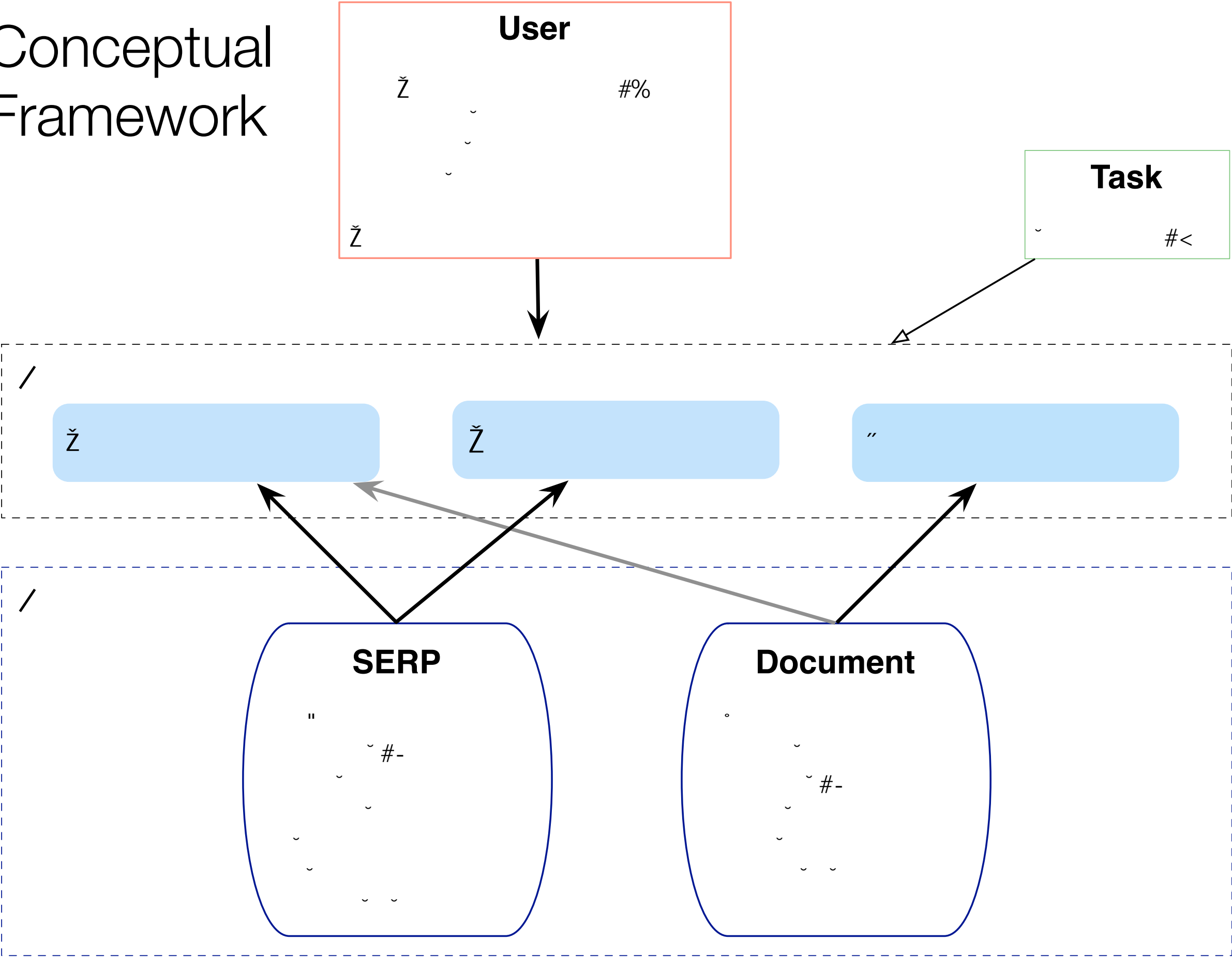


Image Searches

- Query formulation/reformulation:
 - concept-based
 - content-based
- Different relevance criteria:
 - relevance criteria changes according to stage of search process

Research Questions

RQ1: What are the characteristics of tag and non-tag searches?

RQ2: How does the role of tags differ for text and image search across stages of the search process?

RQ3: How does prior knowledge of tags influence the use of tags during the search process?

Research Methodology

- Laboratory-based experiment study
 - compare tag and non-tag searches
 - compare image and text searches
- Sources of data collection:
 - transaction logs
 - screen recordings
 - questionnaires
 - interviews

Text Search A

78 matches

[Yelp sucks. I need unbiased reviews. Help!](#)

Are there any web sites that have unbiased restaurant reviews? I want to perhaps) of restaurants. I don't even care if it costs at this point; it doesn't even better. Yelp keeps sending me to lousy places. I've had horrible coff ... sounds a bit like Yelp to me. Is it? Anybody have any feedback on Zag around Munster, Indiana). [\[read more...\]](#)

[Chicago -> Memphis -> Dallas -> Austin. Looking for good Recommendations?](#)

Broke young couple driving Chicago -> Austin. Looking for best route and Recommendations? Our current plan is to take 57 and 55 down to Memphis. We might consider a detour for big cheap awesome, especially if it makes the westerly route so as to pass ... [\[read more...\]](#)

[Chicago Restaurants for Cheap Locavores](#)

What are the outstanding Chicago restaurants specializing in seasonal & I'm planning a special birthday dinner at the end of the month. I'd like to see while I'm not going to settle for a Vienna Beef, I'm not exactly ready to book restaurants ... [\[read more...\]](#)

[SF food](#)

What to eat in San Francisco/the Bay Area that I can't find in Chicago? Good food recs. What does San Francisco do better than Chicago? What is available looking for restaurants, but I'll have access to a kitchen for a few days, so cool too. ... [\[read more...\]](#)

[train food](#)

Train ride from Portland to Chicago. In coach. I don't want to buy food on 1. Food should be vegetarian (no beef jerky!). 2. As far as I know, there should be sufficient to sustain me for the entirety of the 46 hour train ride [\[read more...\]](#)

Text Search B

53 matches

Related tags: [resolved](#), [mouse](#), [keyboard](#), [mac](#), [apple](#), [shopping](#), [computer](#),

[Help me give a near-useless embedded machine a useful](#)

Do people have ideas about what fun things I can do with a little embedded around two years ago, I received what appears to be one of the few Cher shipped out. (There's a huge backstory to these almost-vaporware computers received it, I was no longer ... (keyword in HTML) [\[read more...\]](#)

Tags: [mpc5121e](#), [embedded](#), [cherrypal](#), [greenmachine](#), [linux](#)

[Help me pick a new best friend for the next 4 years](#)

Finding a new laptop is making my head spin. I'm finding a lot of advice for "docs" or "people who need a mobile video editing suite" but I'm in the mid graphics programs like Flash and Photoshop and I don't do video games.

Tags: [computer](#), [purchasing](#), [shinynew](#), [laptop](#)

[Second time's the charm?](#)

Please help me rearchitect my Apple-specific wireless home network and within (sorry!). I have a big (~100GB) iTunes library I've been accumulating more recent days, my DVDs as well. That project is still ongoing and may cataloging my ... MyBook straight to my computer, I plugged it into the Tin the house and still use iTunes [\[read more...\]](#)

Tags: [backup](#), [network](#), [apple](#), [harddrive](#), [macbook](#)

[Dual-Bay SATA Enclosures](#)

Dual-bay SATA Enclosures! Which ones let me copy from one drive to the one, and in the end, I want a box into which I can stuff two harddrives, copy internal laptop harddrive and them. Bonus points if I can hook it up via USB Will this ... [\[read more...\]](#)

Tags: [SATA](#), [USB](#), [hard](#), [enclosure](#), [mac](#)

[IKEA. O whv did you discontinue the RIAN?](#)

Collections and Tasks for Text Search

- Ask MetaFilter subsite of MetaFilter

Online question-answering community

All questions are archived, searchable, tagged – older questions tagged by volunteers

On average a question has 14 comments and 4 tags attached

- Tasks

finding information to help decide which laptop computer to buy

finding travel information on where to stay, eat, and what to do in Chicago

Image Search C

694 matches

Ceiling Fixture, Roc...enter, New York City



[Guy Zinn, New York ...ty (baseball)] (LOC)



Winter in Florida bi New York, New Yo



Letter Carriers in New York City



Skyline - N.Y.C.: Wo...rs Trust Bldg. (LOC)



Untitled



Woolworth Bldg. (LOC)



White House Hotel (LOC)



Woolworth Bldg. (L



Image Search D

43 matches

Related tags: [libraryofcongress](#), [iwd](#), [washingtondc](#), [bainnewsservice](#), [suffr](#), [suffragettes](#), [parade](#)

Suffrage parade - Mr...Coke] Burleson (LOC)



Tags: [plume](#), [presidentialinaugu...](#), [burleson](#), [parade](#), [mondaymarch31913](#)

Suffrage paraders: M... Miss Ragsdale (LOC)



Tags: [georgegranthambain...](#), [washingtondc](#), [womansuffrageproce...](#), [presidentialinaugu...](#), [georgegranthambain](#)

Illum. Wash., D.C (LOC)



Tags: [bainnewsservi](#), [woodrowwilsoninauc](#), [nw](#), [washingtondc](#), [womansuffrageproc](#)

Suffrage parade, 1913 (LOC)



Tags: [parade](#), [march31913](#), [suffrage](#), [washingtondc](#), [1913](#)

Rose Sanderson (LOC)



Tags: [georgegranthambain](#), [suffragists](#), [trumpet](#), [bainnewsservice](#), [hats](#)

Eliz. Freeman enro to Wash. (LOC)



Tags: [march](#), [suffragemovemen](#), [horse](#), [freeman](#), [elisabethfreeman](#)

Mrs. Rosalie Jones a...Miss Ida Craft (LOC)



Suffrage Parade (LOC)



Inauguration crow Union Station (LO



Collections – Image

- The Commons collection on Flickr



Images posted to Flickr by participating cultural heritage institutions worldwide

Majority of images are historical

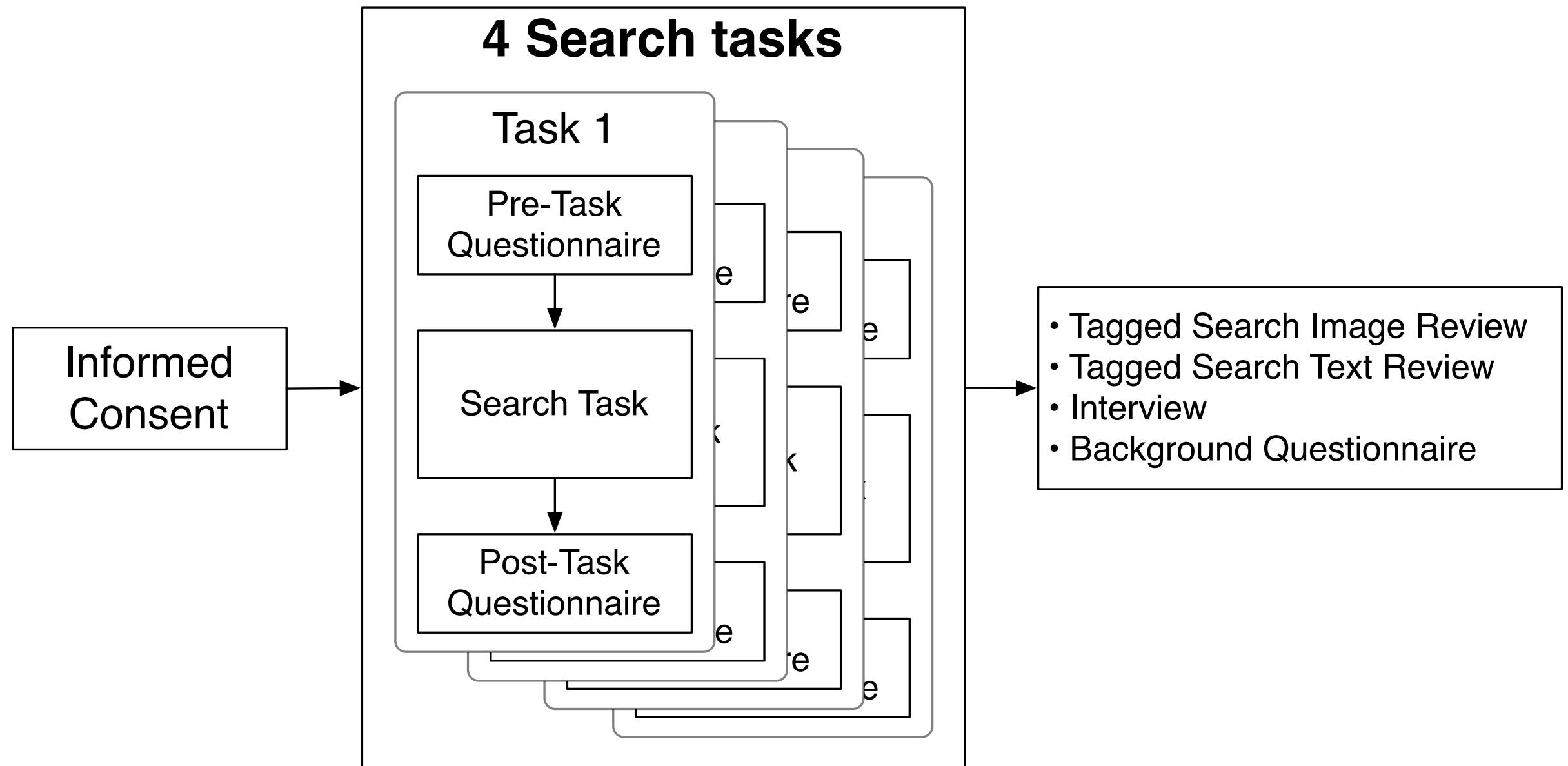
Images can be tagged by Flickr users

- Tasks

finding images of American women at work through the ages

finding representative historical images of New York City

Procedure



Subject Profiles

- 48 undergraduate students, self-identified as native English speakers
 - 30 women and 18 men
 - Ages 18 to 23, mean age of 20 years
 - 25 different majors represented – engineering, humanities, social sciences, natural sciences, business, etc.
- Majority (96%) spend at least an hour online at home, with 52% spending at least 3 hours online at home
- 27 (56%) subjects had tagged on Facebook (N=15), YouTube (N=5), blogs (N=4), Flickr (N=3), Delicious (N=2)
- 21 (44%) subjects had no tagging experience

Search Characteristics

- 48 subjects carried out four searches, for a total of 192 search sessions
- Tags used in 25 text search sessions and 25 image search sessions by 36 subjects; 14 subjects used tags for both text and image searches
- Tags used 48 times in text searches and 66 times in image searches
- Text searchers spend more time on the document page; image searchers spend more time on the SERP
- Direct and indirect tag use – 42% of tag use occurrences were indirect

Direct and Indirect Use of Tags

- Direct tag use
 - clicking on a tag
 - query reformulation
- Indirect tag use
 - using a tag without clicking on it
 - predictive judgment
 - evaluative judgment
 - basis for query reformulation
- 11 (31%) tag users only used tags indirectly

RQ1: Characteristics of Tag and Non-Tag Searches

What are the characteristics of tag and non-tag searches?

Examining the searches in which tags were used more than once, on the tagged systems subjects:

- issued a larger number of unique queries
- saw more search results
- spent more time on the SERP
- had shorter query interval durations

RQ2: Tags in Image and Text Searches

How does the role of tags differ for text searches and image searches across the search process?

- Tags were used in all three interaction processes: query reformulation, predictive judgment, and evaluative judgment
- Tags were used most frequently for query reformulation in both text and image searches. There was proportionately more use for predictive judgment in text searches than image searches.
- Tags were used as an *alternative* to reading the text snippet in text predictive judgments. Tags were used as *additional* sources of information in image predictive judgments.

RQ3: Prior Knowledge and Tag Use

How does prior knowledge of tags influence the use of tags during the search process?

- Familiarity and experience were not related to tag use in the experiment
- Understanding (definition, origin, purpose):
 - subjects who thought tags were system-generated used them less frequently
 - high rate of tag usage in subjects who thought the purpose of tags was to lead or manipulate people to content
- Previous experience with library database systems was associated with tag use

Methodological Implications

- Direct and indirect use
 - 42% of tag use occurrences were from indirect use; 31% of subjects only used tags indirectly
 - need to measure both direct and indirect use
- Performance data and experience data
 - both performance data from the *searches* and experience data from the *searchers* was collected
 - captured indirect use of tags
 - analyzing the data in combination yielded more substantial findings

Theoretical Implications

- Tags increased the interactions with the information retrieval system
- Tags are used in all three interaction processes: query reformulation, predictive judgment, and evaluative judgment
- Tags are used differently in text and image searches: tags are present in both types of interaction objects, but searcher interaction with them depends on the resource type

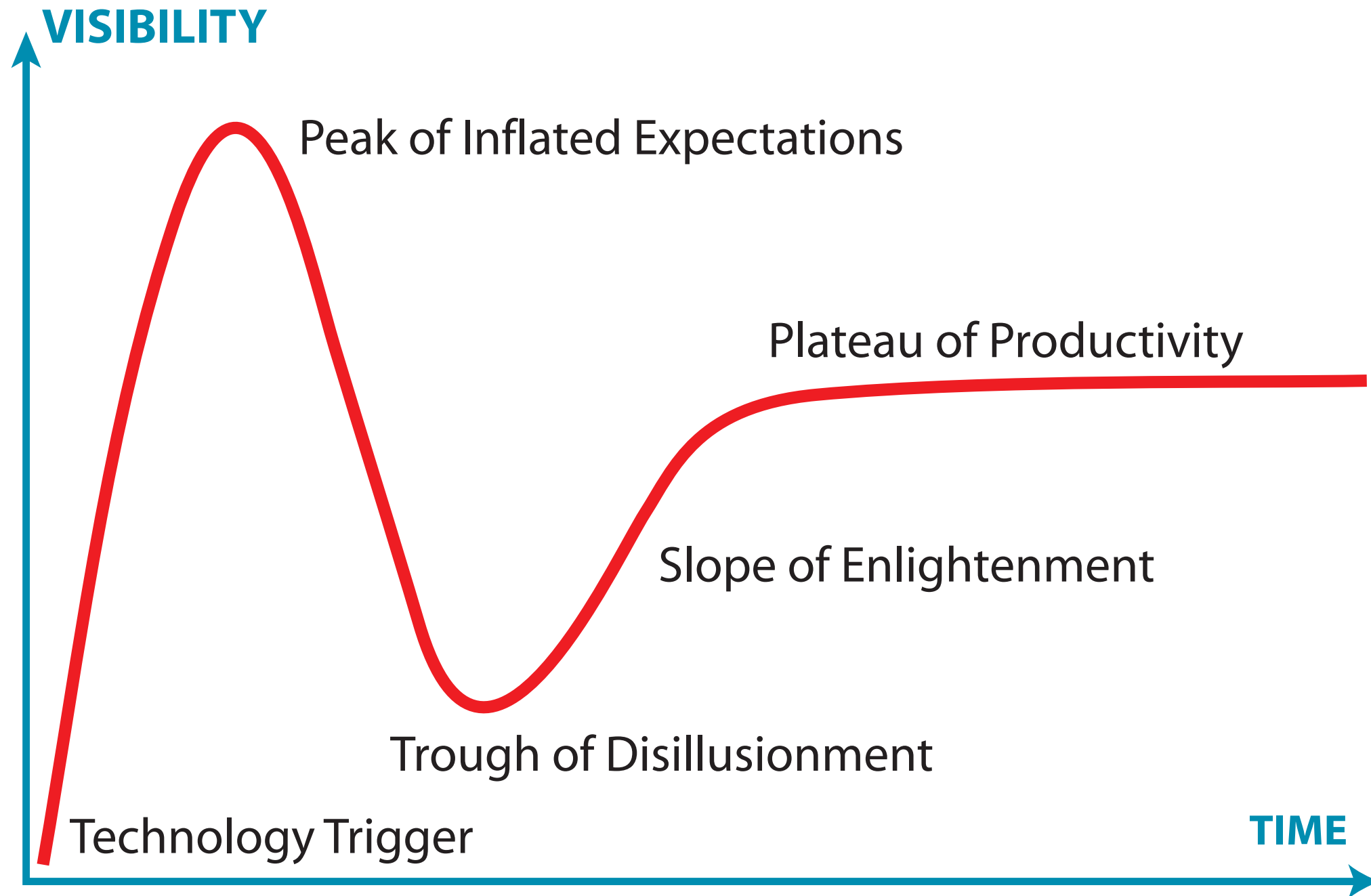
Practical Implications

- Supporting predictive judgment
 - Display tags in the SERP, together with each search result
- De-emphasize the live link aspect of tags
 - emphasize the role of tags as metadata, providing information about the information object
 - let searcher retain control of the search, especially for query reformulation

Future Directions

- Tag use in specific contexts
 - Communities (e.g., hobbies)
 - Organizations (e.g., companies)
- Tag use and resource type
 - Music, video, software, ...
- Use of tags for purposes other than search
 - Learning
 - Serendipity

The Hype Cycle (Gartner)



Questions?
