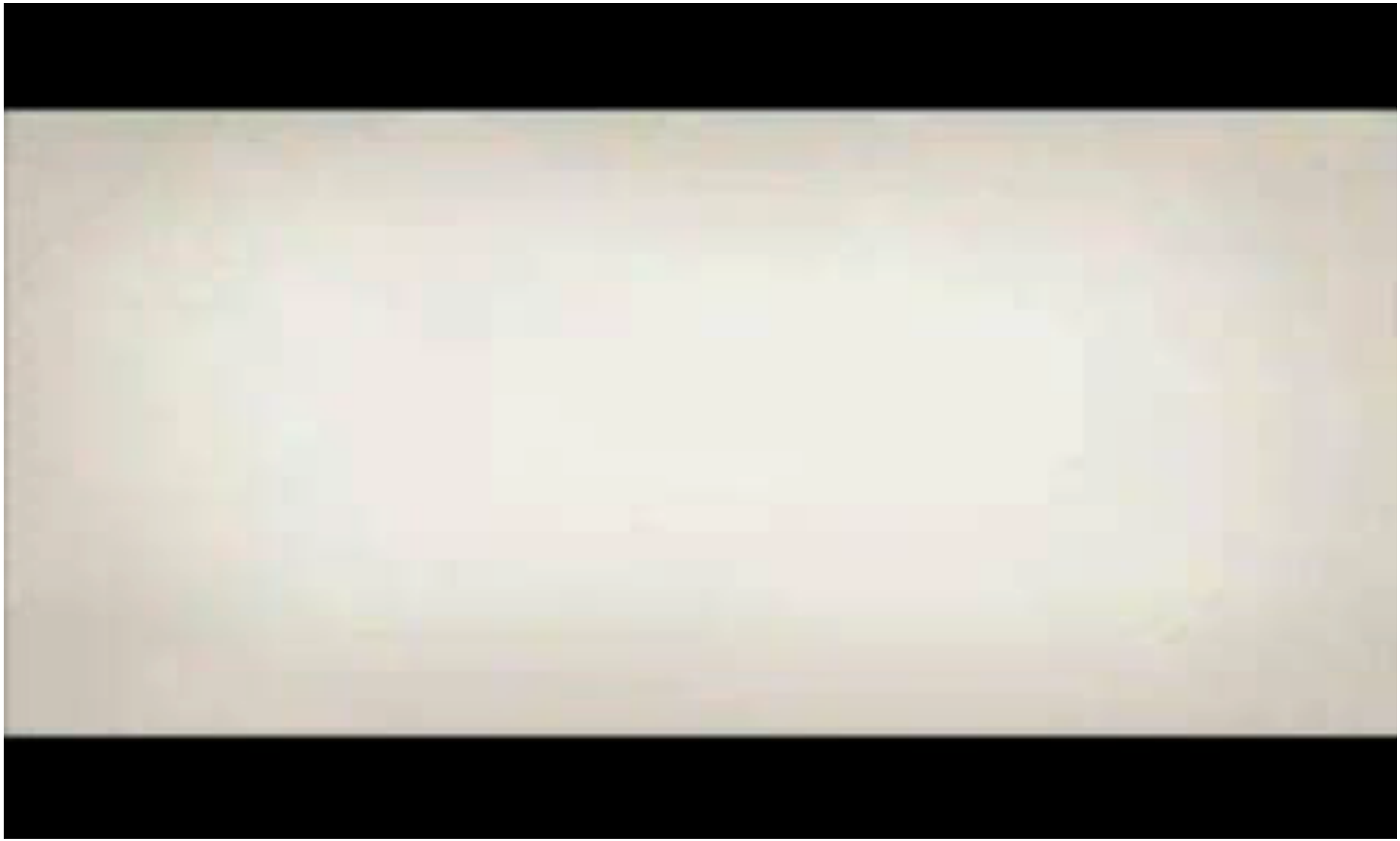
Digital Enterprise Research Institute

Semantic Social Network

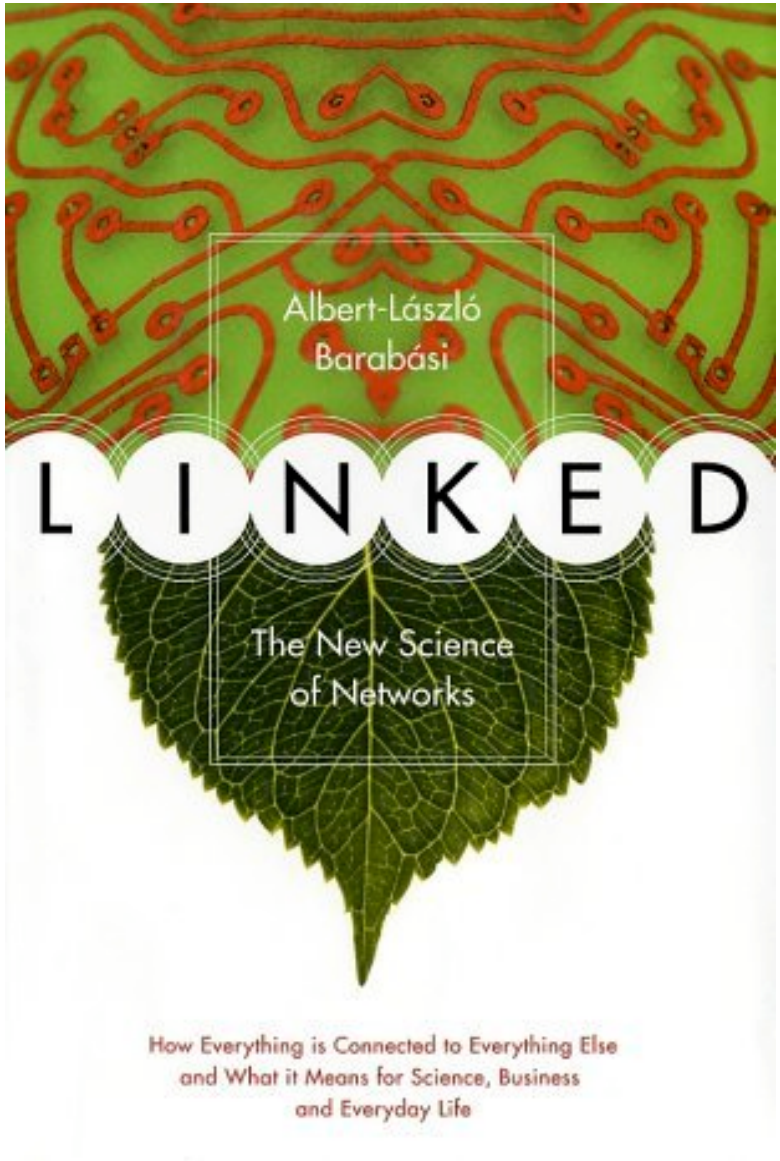
Kim, Hak Lae

creative commons

Seoul, Korea – July 16, 2008

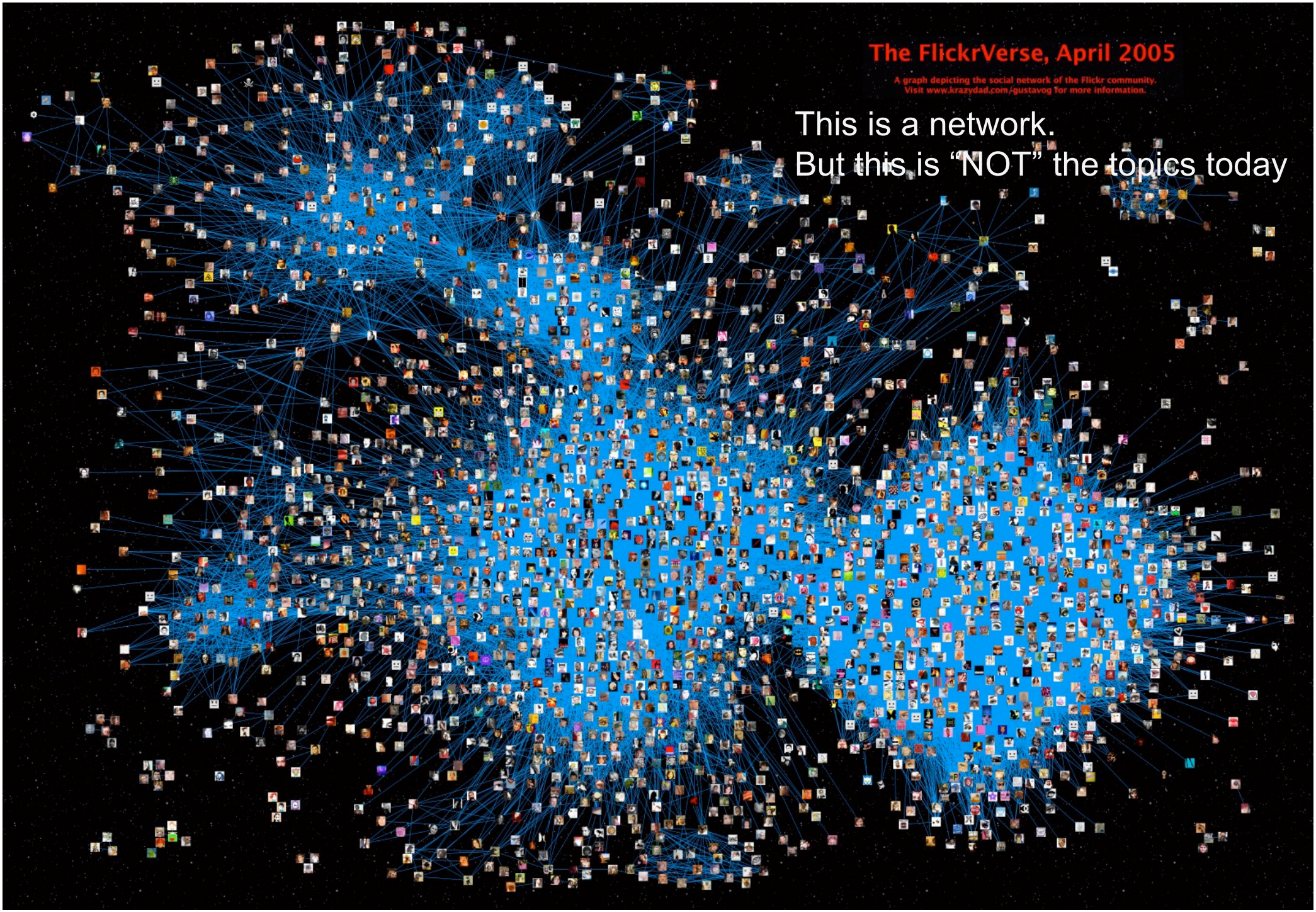


http://kr.youtube.com/watch?v=hBB13MVoWI8



How Everything Is Connected to Everything Else and What It Means

- The Random Universe
- Six Degrees of Separation
- The Small World
- Hubs and Connectors



This is a network.

But this is “NOT” the topics today

This Presentation

Link, Web, and Semantic Web

Social Network and Social Tagging

Linked Data and Data Portability on the Web

Part 1:

Link, Web, and Semantic Web

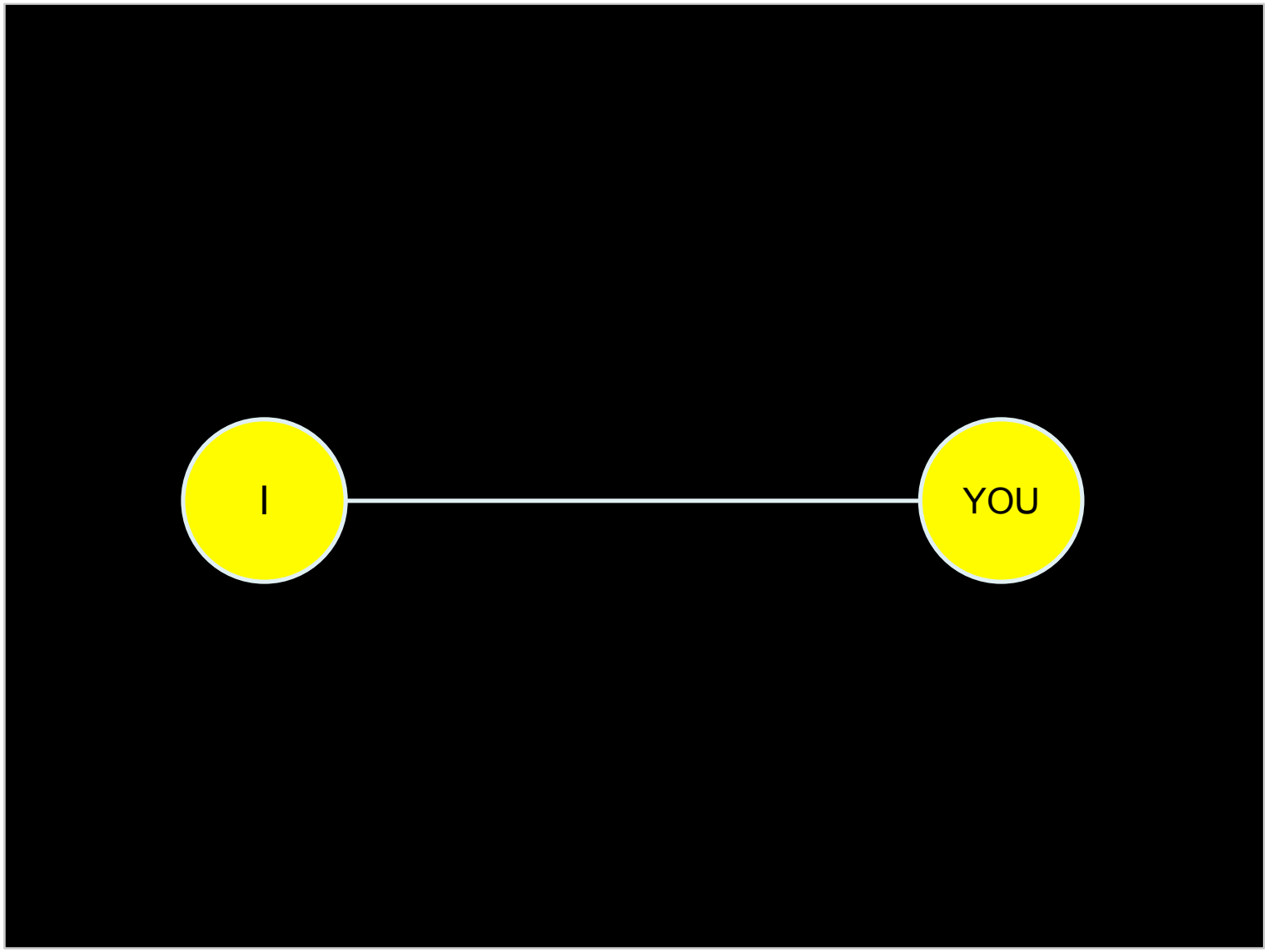
BASIS ELEMENT TO BUILD WEB

Link

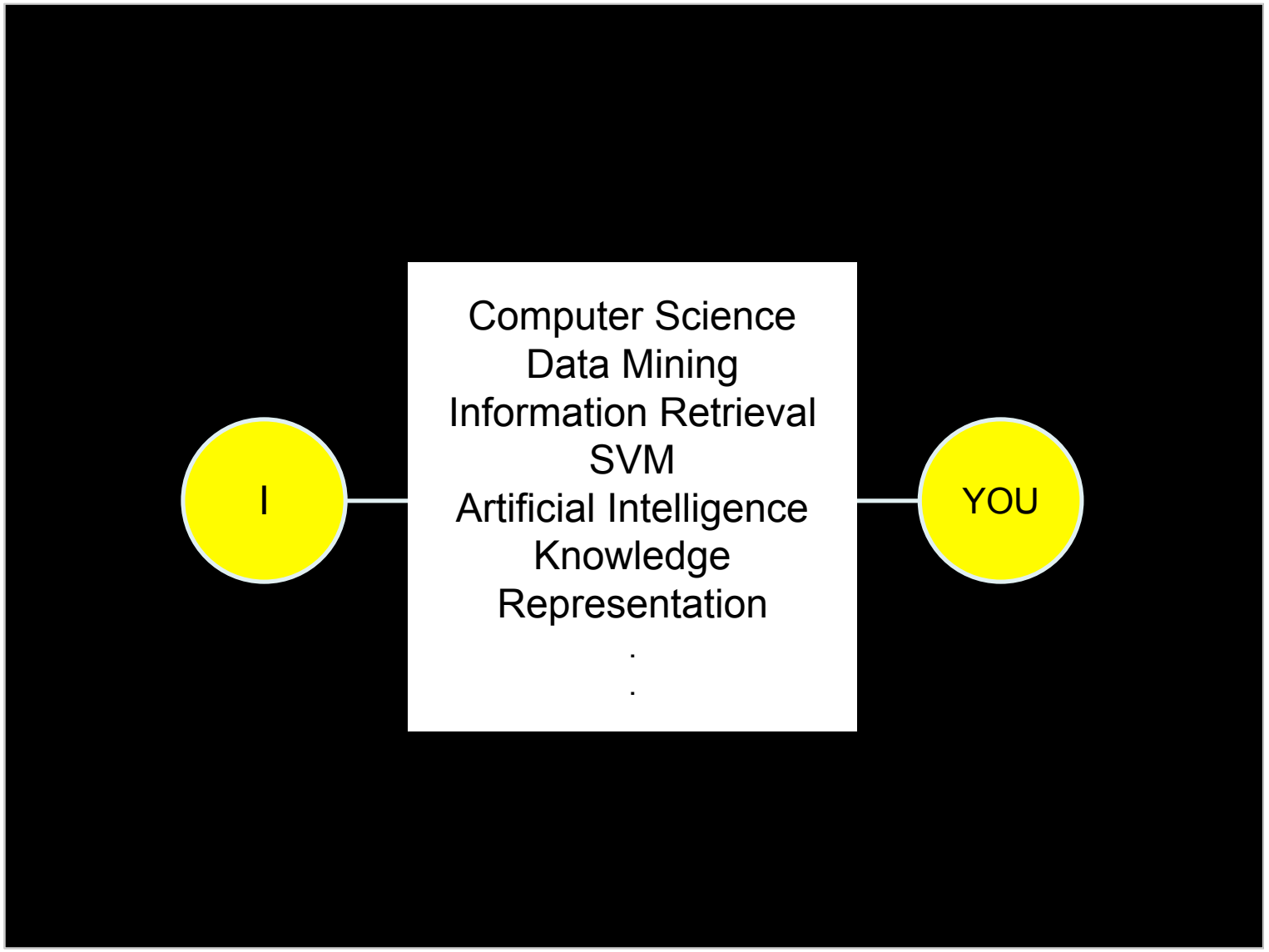
A reference in a resource to another resource

Hyperlinks
and
World Wide Web

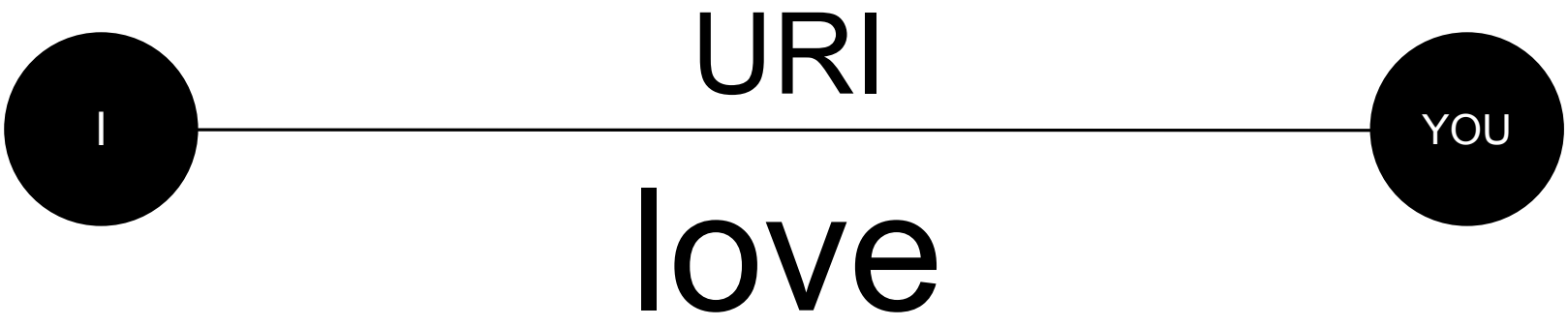
..predefined linkage between one object and another



Link Analysis amongst two points



Semantic Web

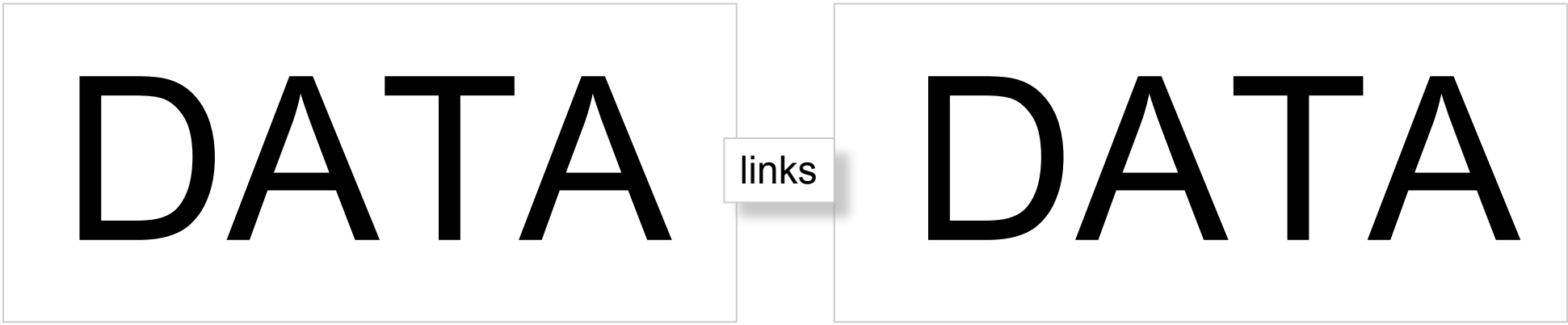


How many different types of links on the web...

document	connects	document
services	connects	services
people	connects	people

We are already in these links...

All data including documents, services, people ...



YET, HOW COULD WE CONNECT HETEROGENEOUS DATA ON THE WEB?

Part 2:

Social Network & Social Tagging

http://kr.youtube.com/watch?v=6a_KF7TYKVc

WE BECOME SOCIAL

myspace.com
240,000,000

facebook
80,000,000

friendster
65,000,000

hi5
70,000,000

orkut
67,000,000

LinkedIn
22,000,000

flickr
YouTube
SECOND LIFE
WIKIPEDIA

Source data point: http://en.wikipedia.org/wiki/List_of_social_networking_websites

Six Degrees of Separation

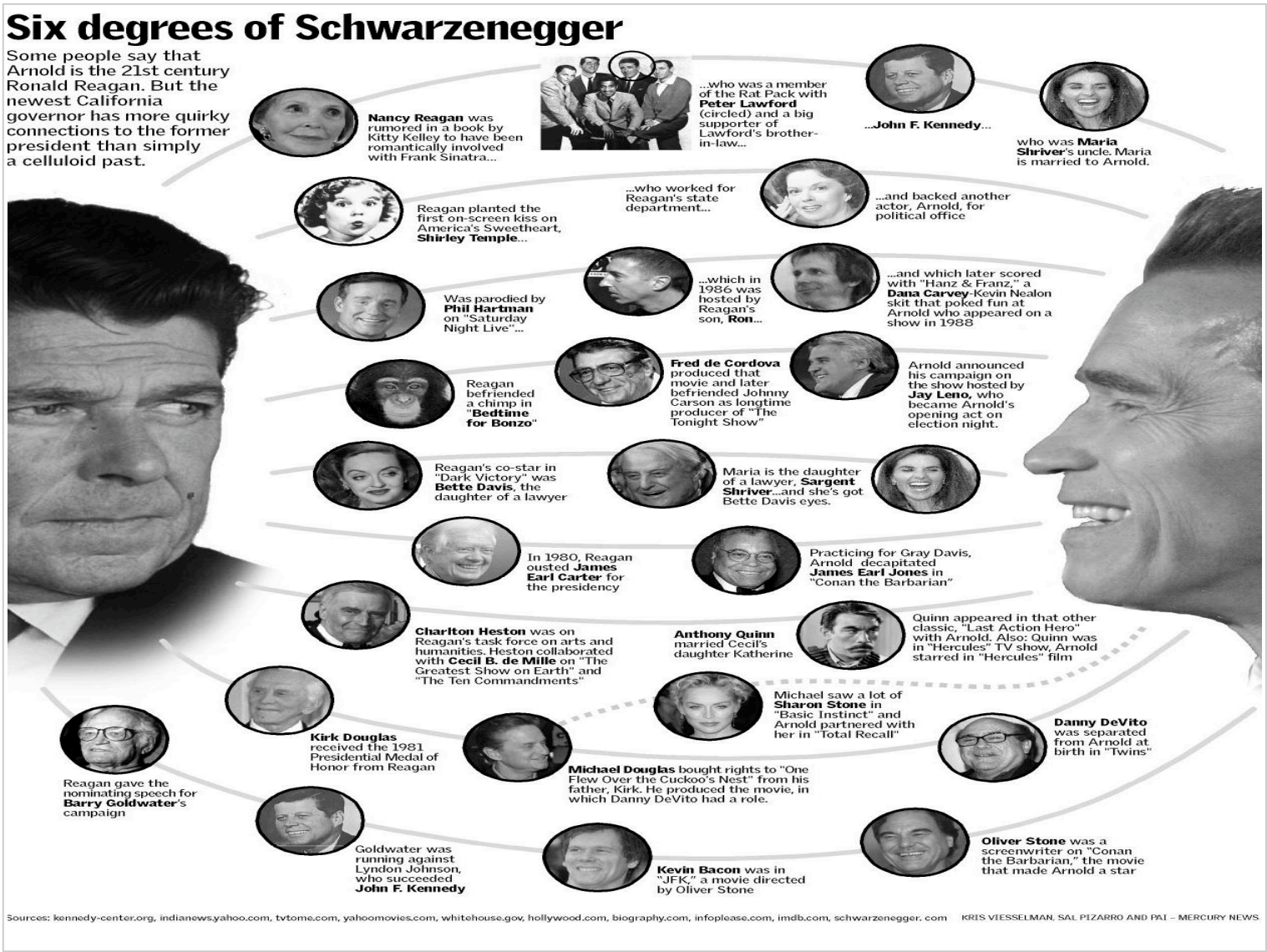
- Stanley Milgram

- Random people from Nebraska were to send a letter (via intermediaries) to a stock broker in Boston
- Could only send to someone with whom they were on a first-name basis

Among the letters that found the target, the average number of links was …

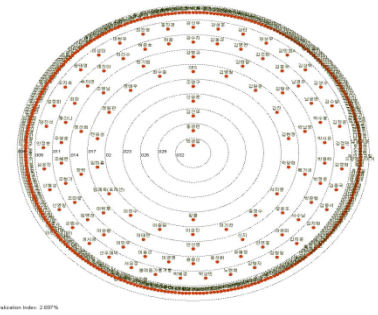
6

How does ‘Six degrees of separation’ work?



Park, Kyung Rim

박경림의 마당발 효과 – 좁은 세상 (Small World)



4.08

'친구야 반갑다'의 모든 출연자에 연결되는 정도

연예인의 숨어있는 친분 관계에 대한 흥미

Social Network on the Web

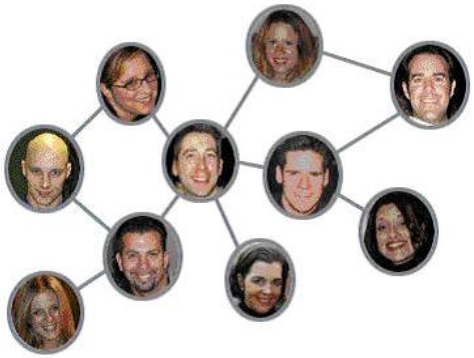
...on the Semantic Web

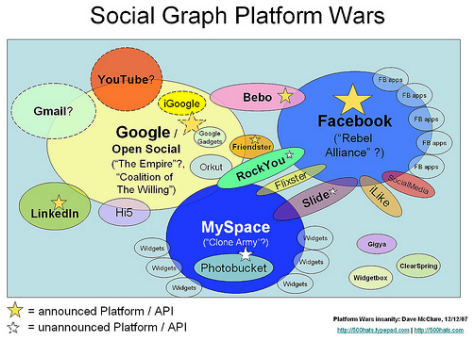
URI

foaf:knows

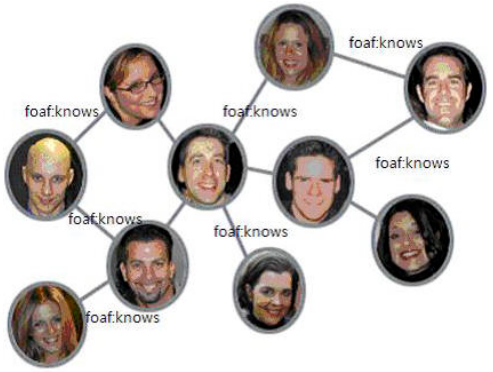
There is little semantics for describing the relationship between two persons.

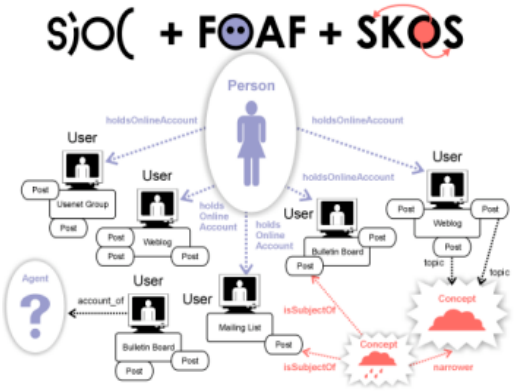
I know you, you know me, and we know each other

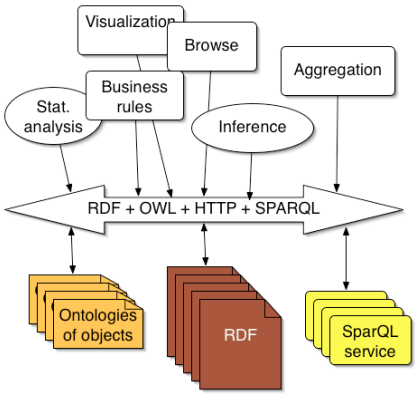




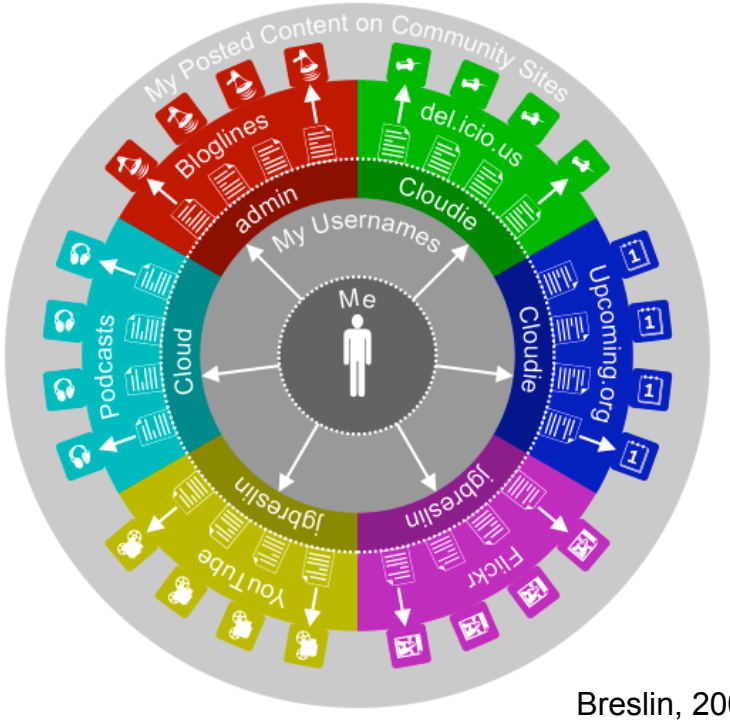
Social Network vs Semantic Social Network







But, are SNS sites only the sources for building social networks?



Breslin, 2007

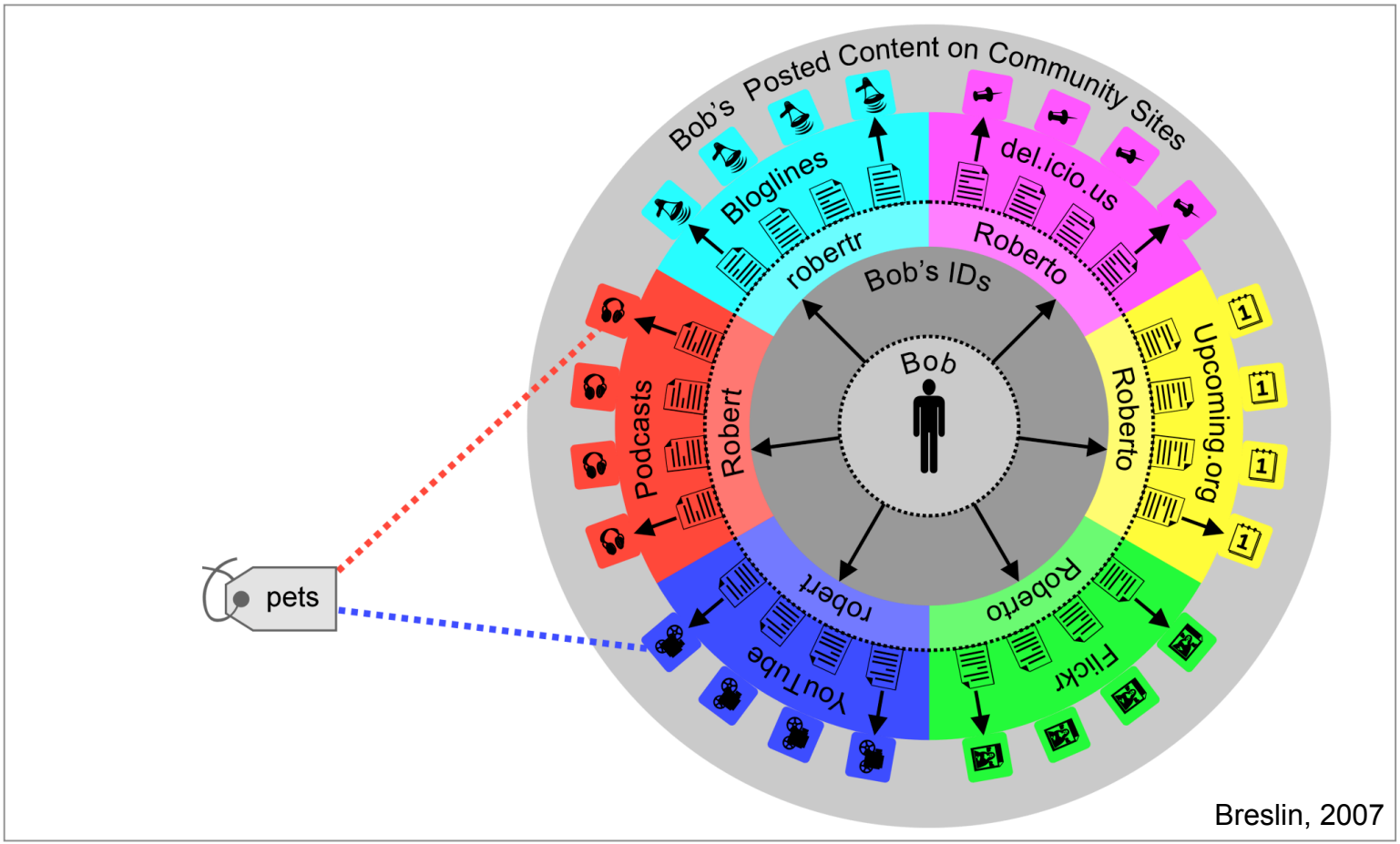
We contribute various our efforts in social media sites.

Thus, social networks can be applies to *everywhere* on the Web.

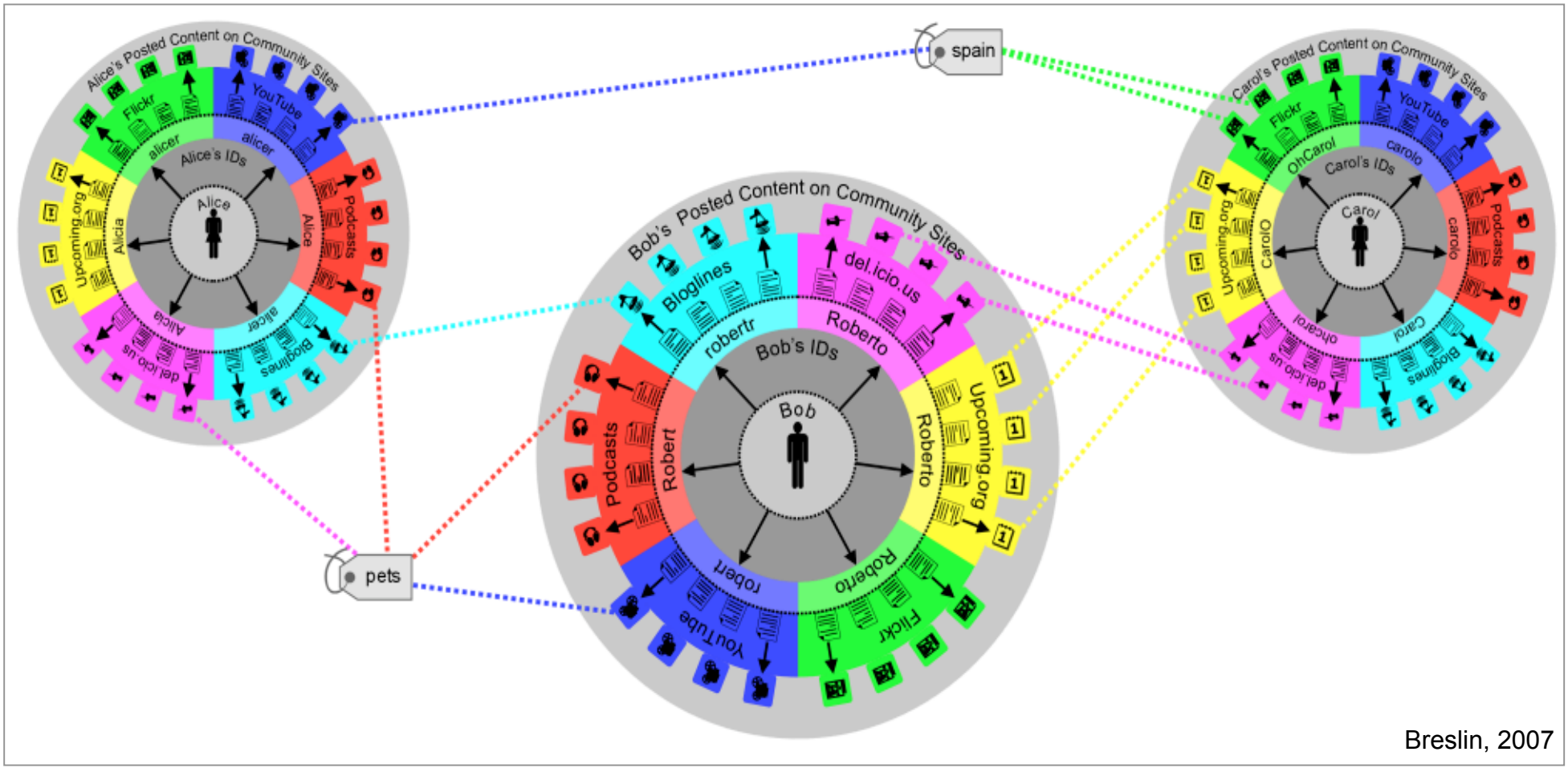
WHAT IS A DIAMOND FOR DIGGING SOCIAL NETWORK ON THE WEB?

DERI, NUI Galway

Photos, vidoes, bookmarks.... => tags



A tag can play an important role to connect us to other people



Make social relations I really care about

Make it dynamic, fun, and maintainable

Make it I can easily interact others

Be open and be global to be sociallable

DO YOU KNOW WHICH SITES DOES NOT SUPPORT TAGGING?

HOW PEOPLE TAG?

HOW PEOPLE TAG?

?

Eiffel

Tower

Paris

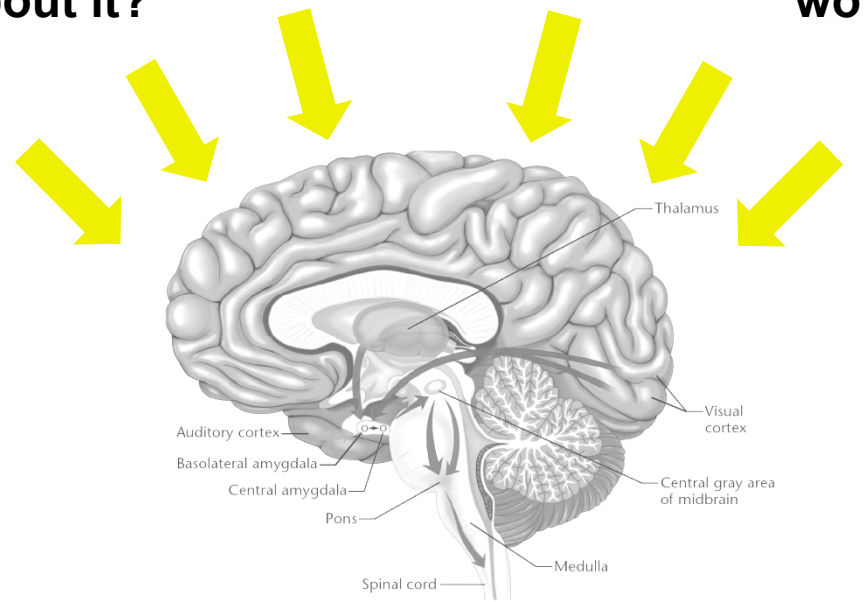
Brain?

Source image point:

HOW PEOPLE TAG?

What you thin' about it?

You tag that words



Eiffel

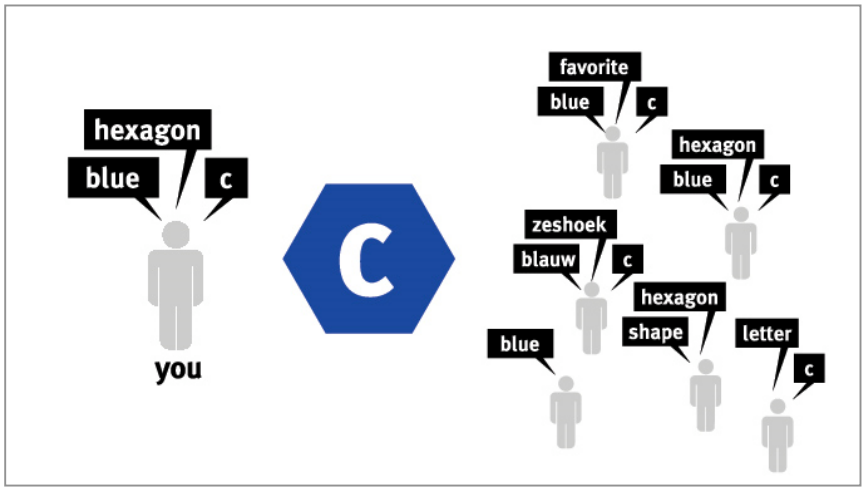
Tower

Paris

Brain?

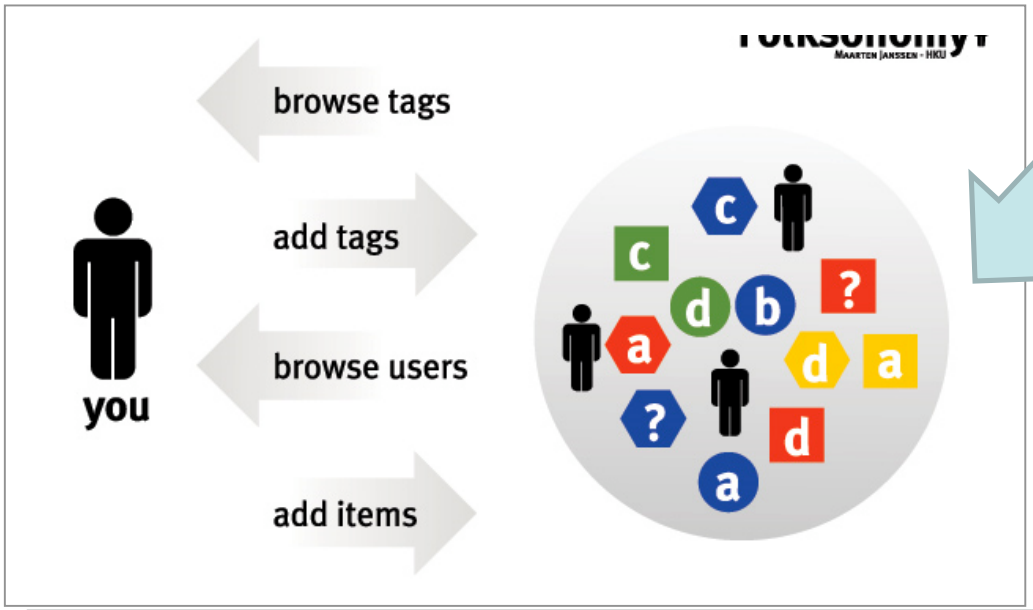
0.1 seconds

Source image point:



Personal tagging, not social

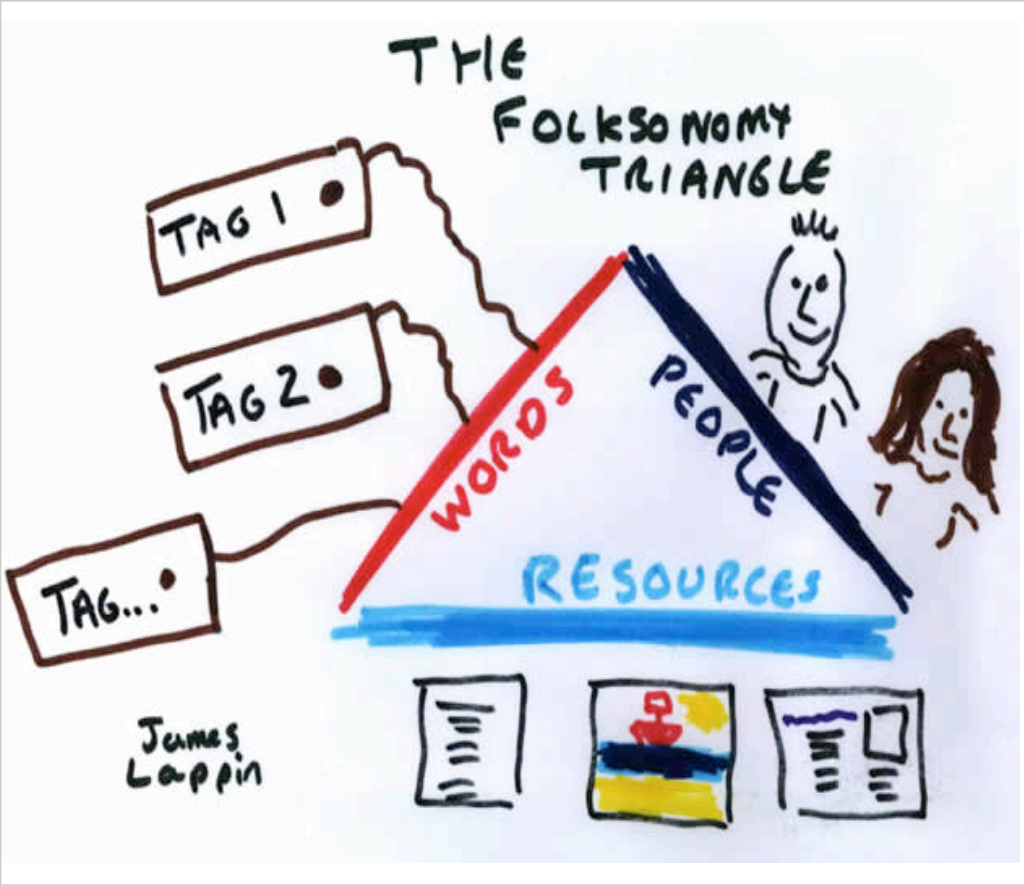
Social tagging among users



Social interaction across sites

Maarten Janssen, 2006

YET, HOW COULD WE CONNECT HETEROGENEOUS DATA ON THE WEB?



People, tags, and resources are also….

DATA

THE BASIC ELEMENT OF FOLKSONOMY IS ALSO ..

LINK.

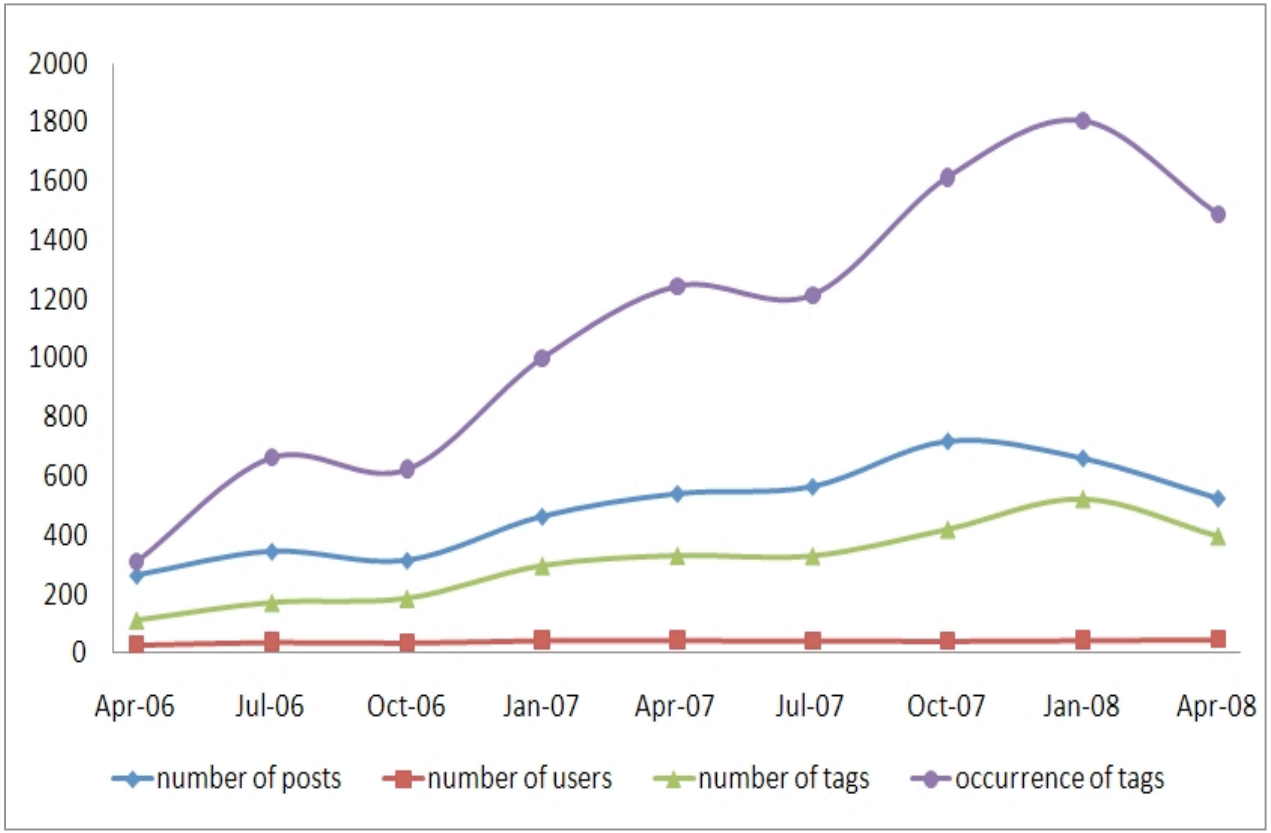
MY TAGS – THEIR TAGS – AND ALL THOSE WE CONNECTED COLLECTIVELY THEM

TAKE IT EASY!

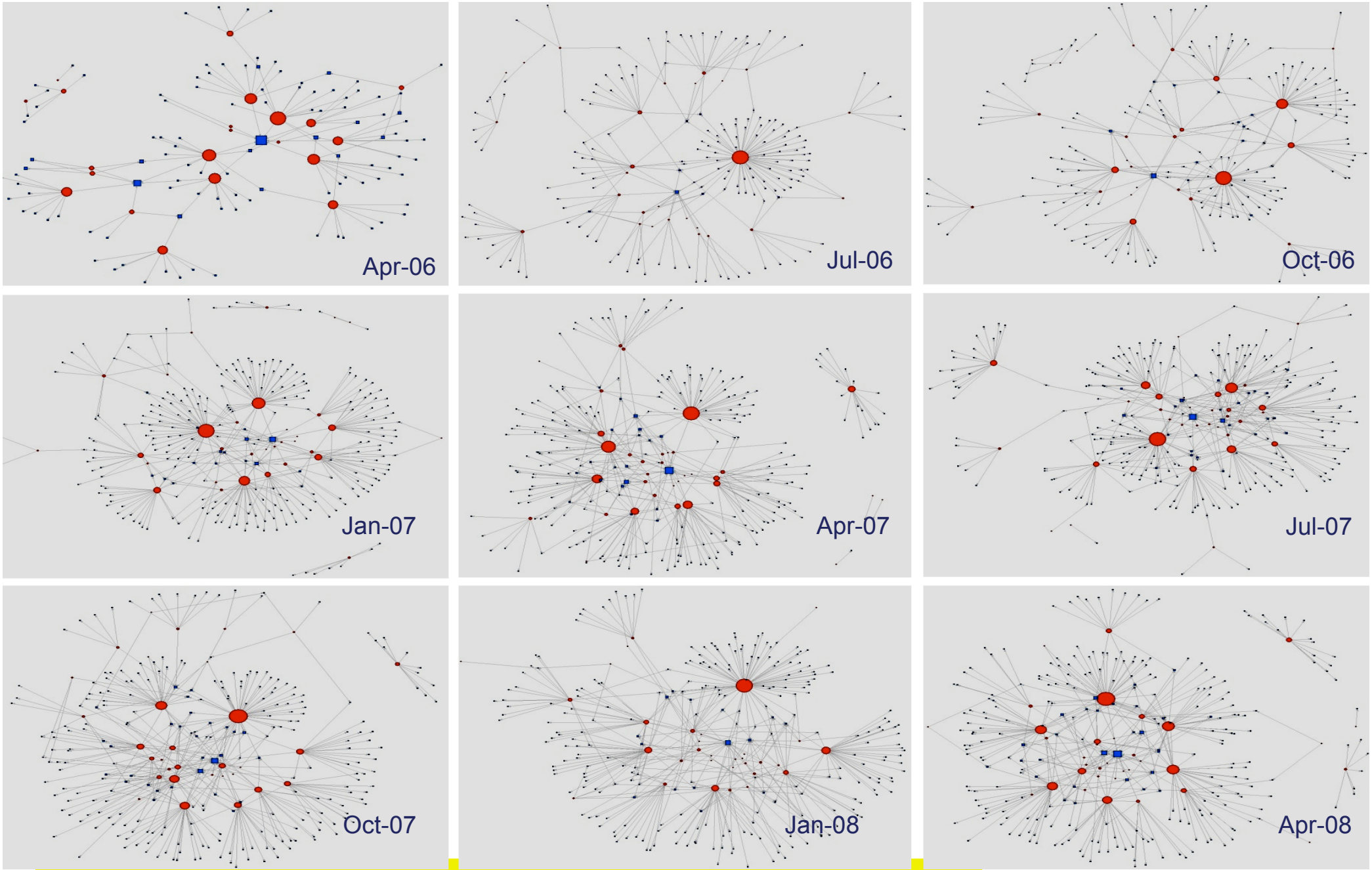
How could we find social relations from tagging practices … let's go

PLANETRDF.COM

- The selection of blogs was performed by one of the individuals – Dave Beckett
- There are 58 members in total, including blogs of individual users as well as organizations.



Aggregation of blogs belonging to 'Semantic Web enthusiasts and hackers'

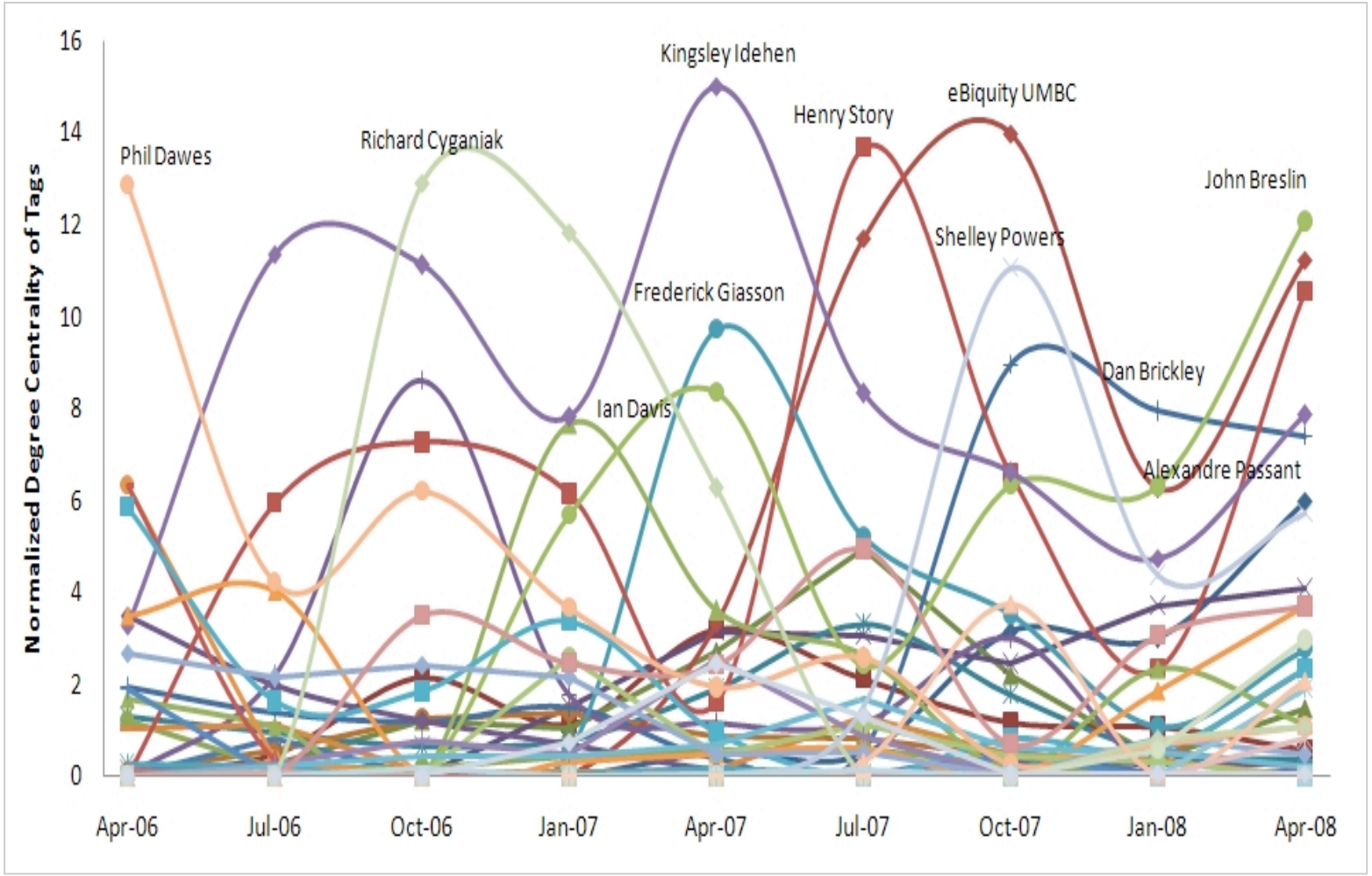


SMALL NETWORK ON THE PLANETRDF

DERI, NUI Galway

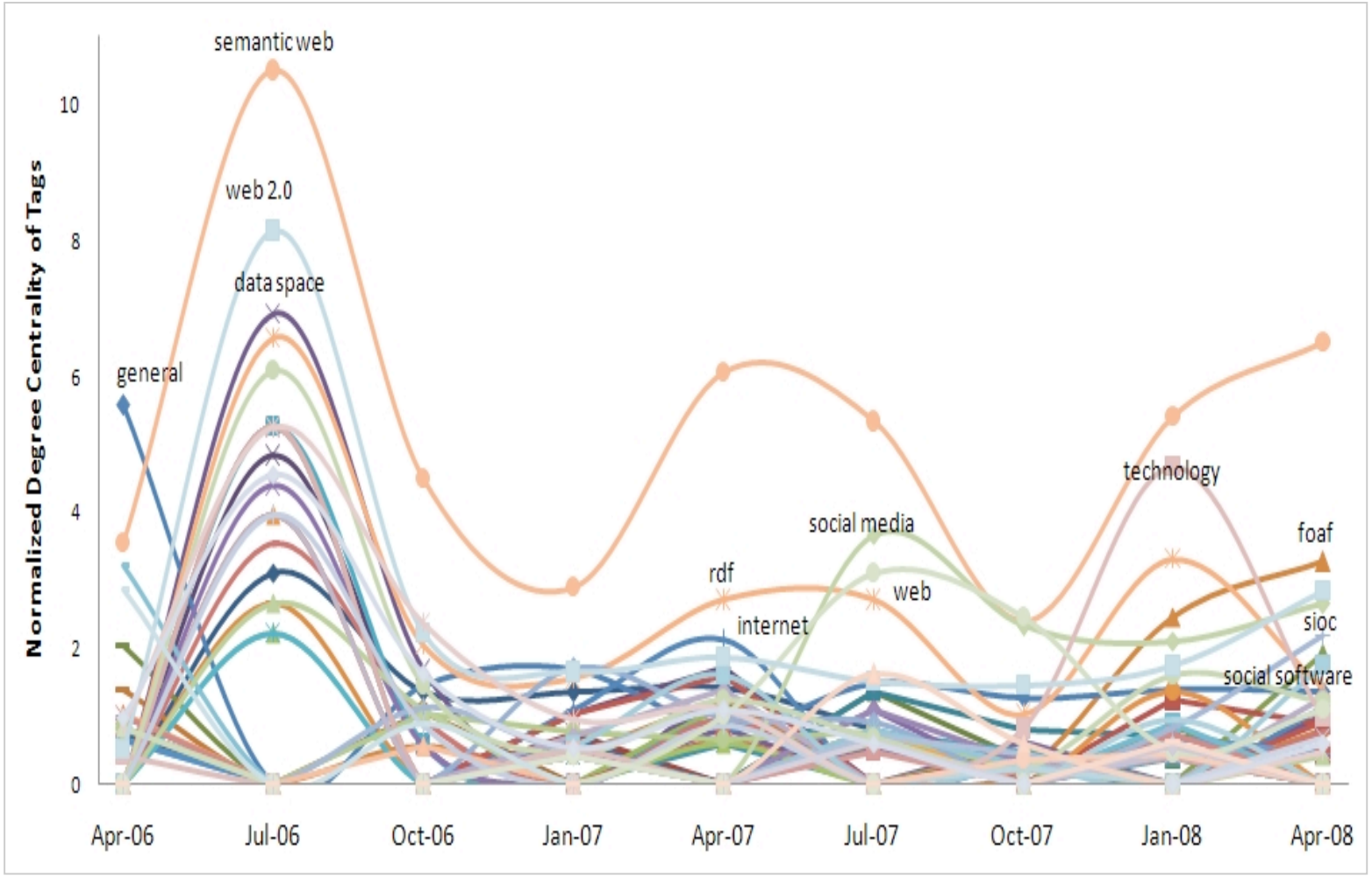
PEOPLE

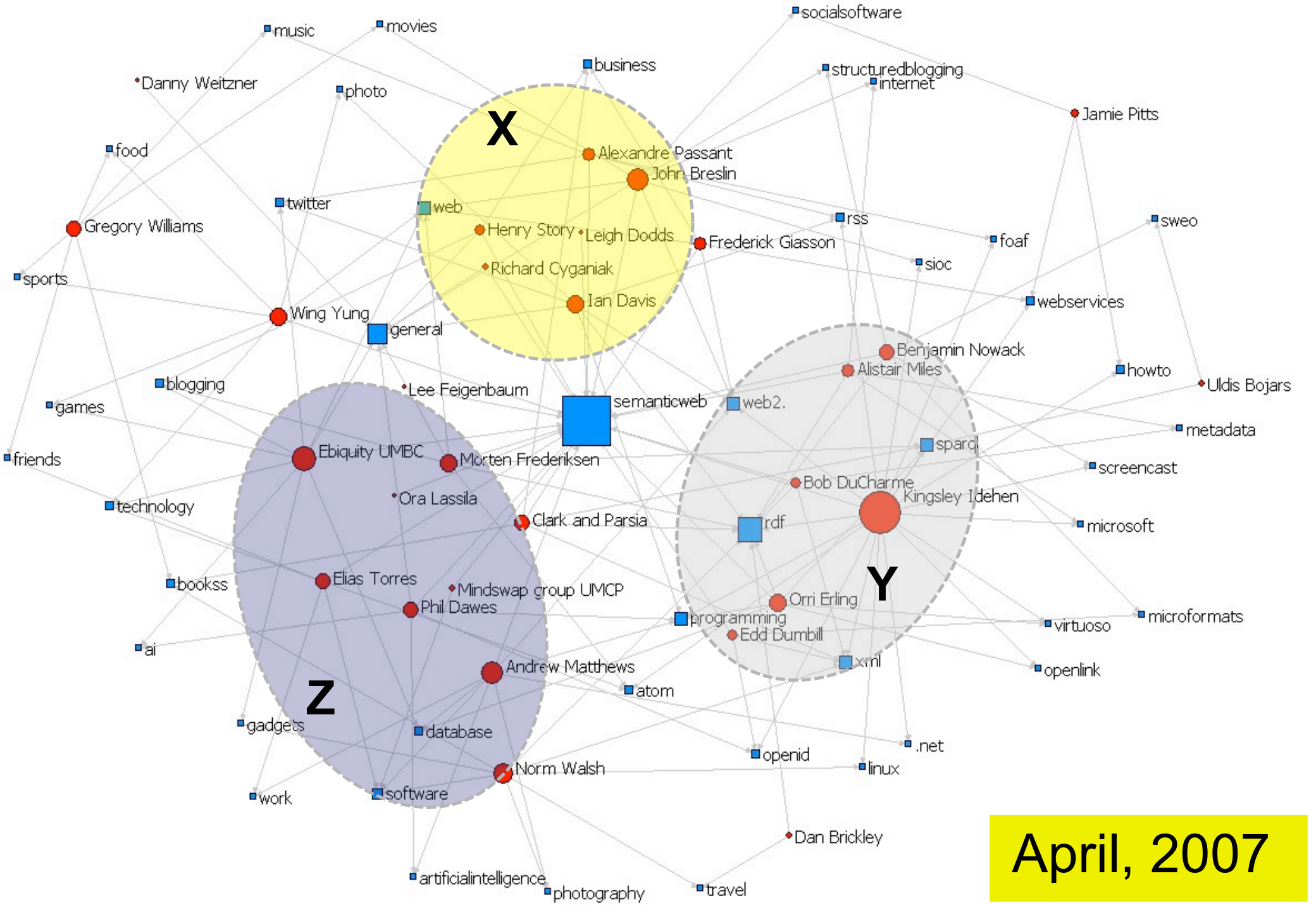
John Breslin and Dan Brickley become stars in the community



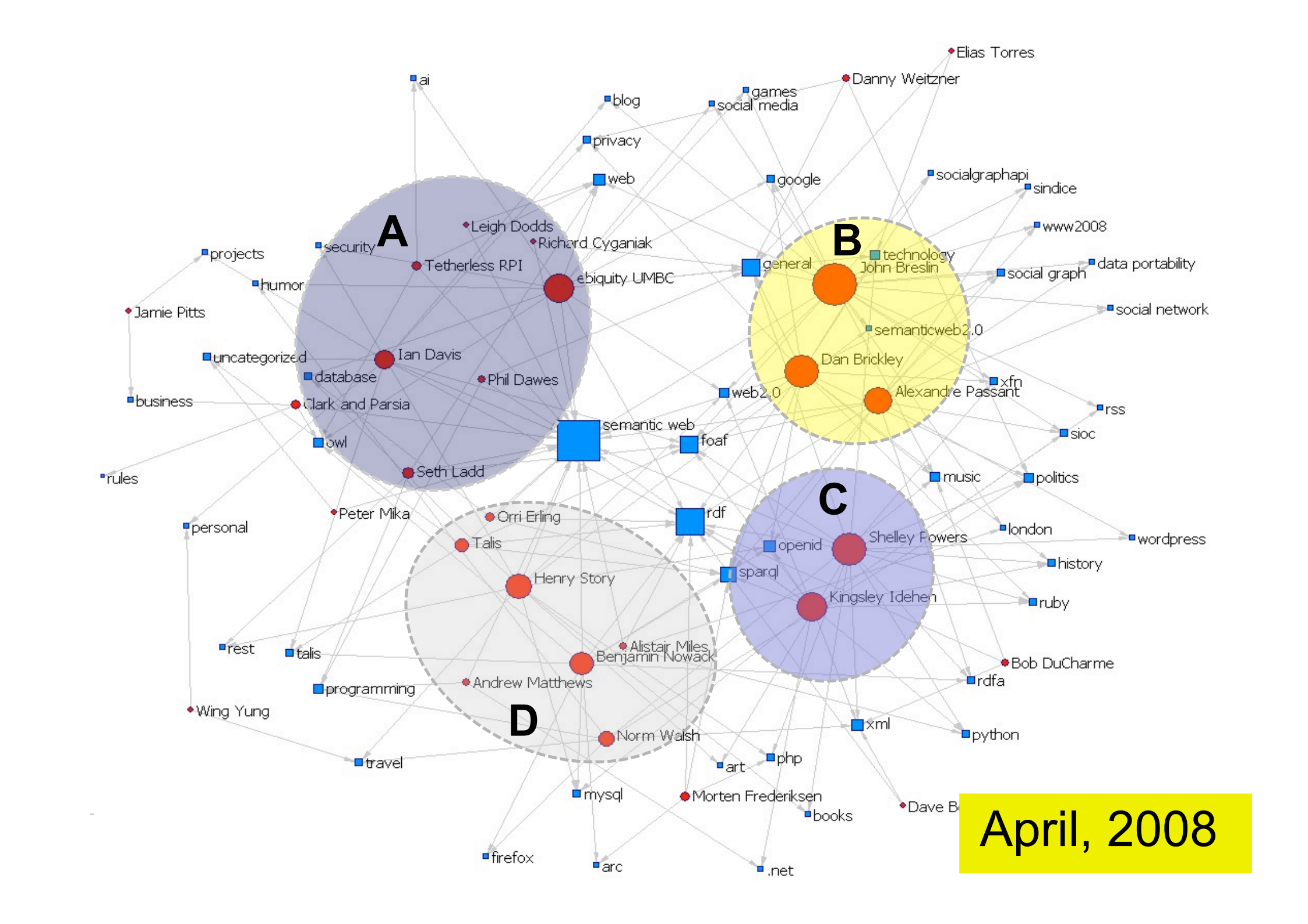
TAGS

The members have used social-related keywords as a tag after April 2007

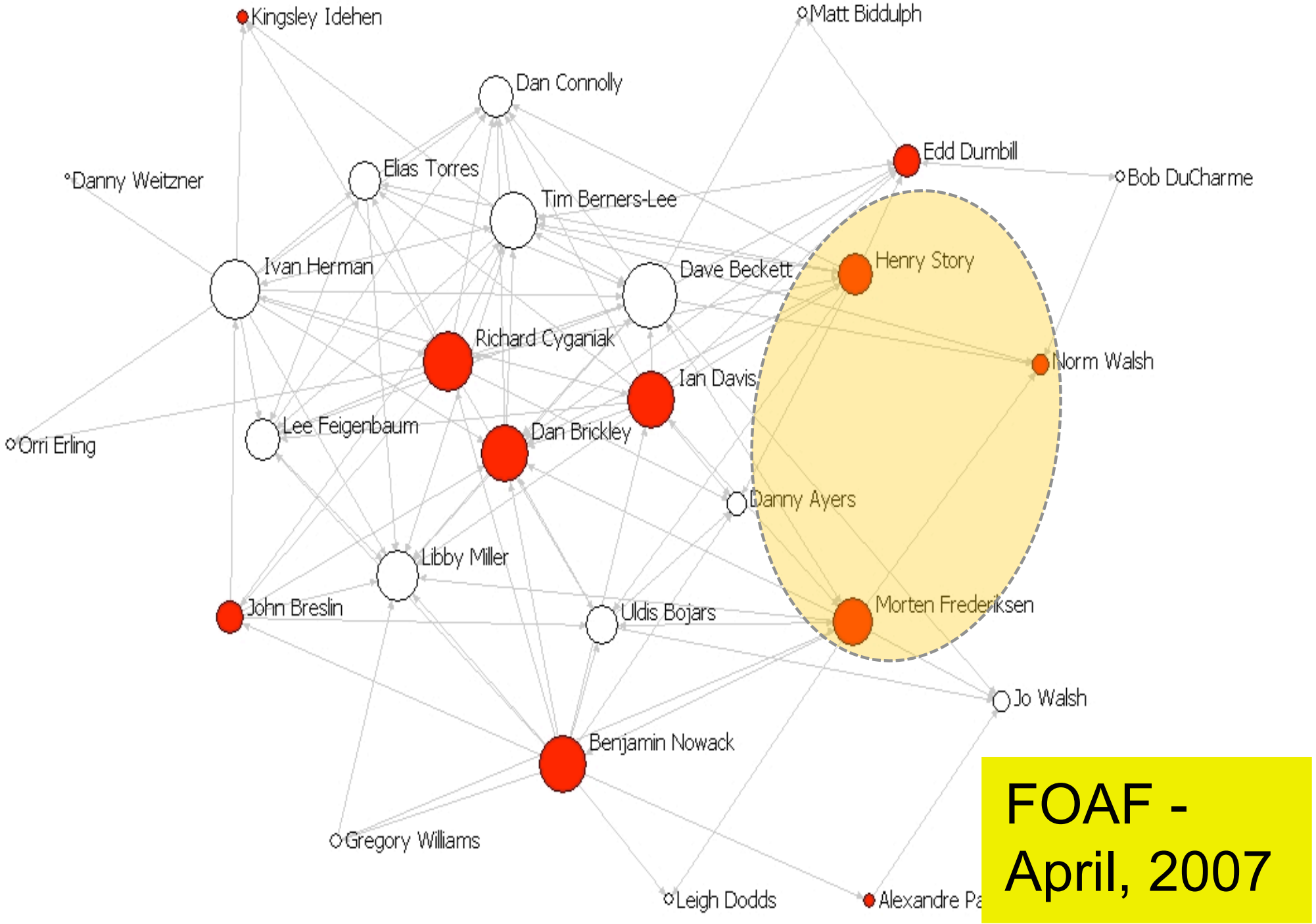



socialsoftware
music
movies
business
structuredblogging
internet
Danny Weitzner
photo
Jamie Pitts
X
food
Alexandre Passant
John Breslin
twitter
web
rss
sweo
Gregory Williams
Henry Story
Leigh Dodds
Frederick Giasson
foaf
sioc
sports
Richard Cyganiak
Ian Davis
webservices
Wing Yung
general
Benjamin Nowack
Alistair Miles
howto
blogging
Lee Feigenbaum
Uldis Bojars
games
semanticweb
web2.
metadata
sparql
friends
Ebiquity UMBC
Morten Frederiksen
screencast
Bob DuCharme
Kingsley Idehen
technology
Ora Lassila
Clark and Parsia
rdf
microsoft
Y
bookss
Elias Torres
Mindswap group UMCP
Orri Erling
Phil Dawes
programming
virtuoso
microformats
Edd Dumbill
ai
Andrew Matthews
xml
openlink
Z
atom
gadgets
database
.net
openid
Norm Walsh
linux
work
software
Dan Brickley
artificialintelligence
photography
travel

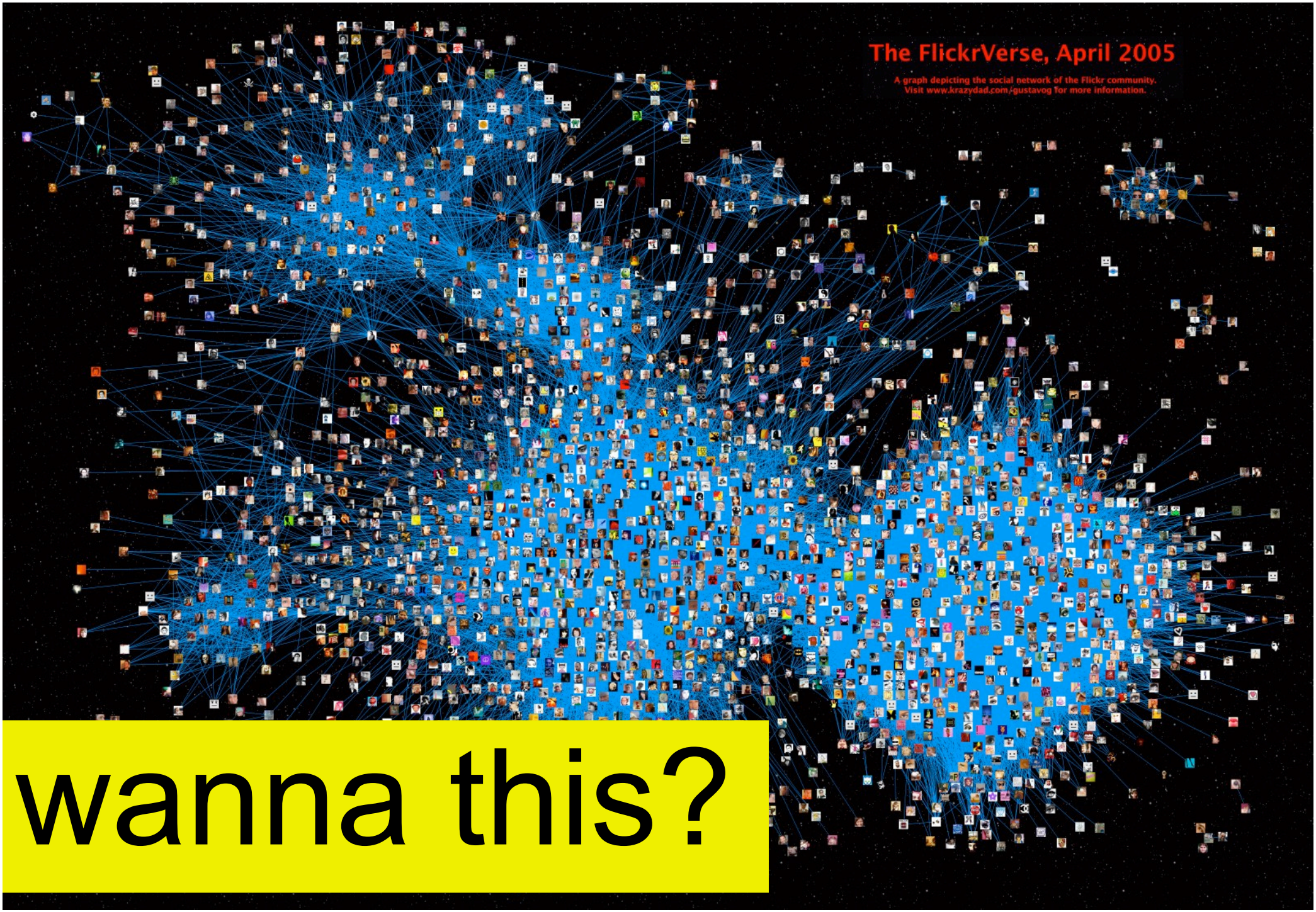
April, 2007


A
B
C
D
Elias Torres
Danny Weitzner
ai
games
social media
blog
privacy
web
google
socialgraphapi
sindice
www2008
Leigh Dodds
Richard Cyganiak
security
projects
Tetherless RPI
ebiquity UMBC
humor
general
technology
John Breslin
data portability
social graph
Jamie Pitts
social network
semanticweb2.0
uncategorized
Ian Davis
Dan Brickley
database
Phil Dawes
xfn
web2.0
Alexandre Passant
business
Clark and Parsia
rss
semantic web
foaf
sioc
owl
rules
Seth Ladd
music
politics
rdf
Peter Mika
Orri Erling
personal
Talis
openid
Shelley Powers
london
wordpress
sparql
history
Henry Story
Kingsley Idehen
ruby
rest
talis
Alistair Miles
Benjamin Nowack
Bob DuCharme
rdfa
programming
Andrew Matthews
Wing Yung
xml
python
Norm Walsh
travel
art
php
mysql
Morten Frederiksen
books
Dave B
firefox
arc
.net

April, 2008


Kingsley Idehen
Matt Biddulph
Dan Connolly
Edd Dumbill
Danny Weitzner
Elias Torres
Bob DuCharme
Tim Berners-Lee
Henry Story
Ivan Herman
Dave Beckett
Richard Cyganiak
Norm Walsh
Ian Davis
Lee Feigenbaum
Orri Erling
Dan Brickley
Danny Ayers
Libby Miller
John Breslin
Uldis Bojars
Morten Frederiksen
Jo Walsh
Benjamin Nowack
Gregory Williams
Leigh Dodds
Alexandre Pa
FOAF -
April, 2007

So What?


The FlickrVerse, April 2005
A graph depicting the social network of the Flickr community.
Visit www.krazydad.com/gustavog for more information.
wanna this?

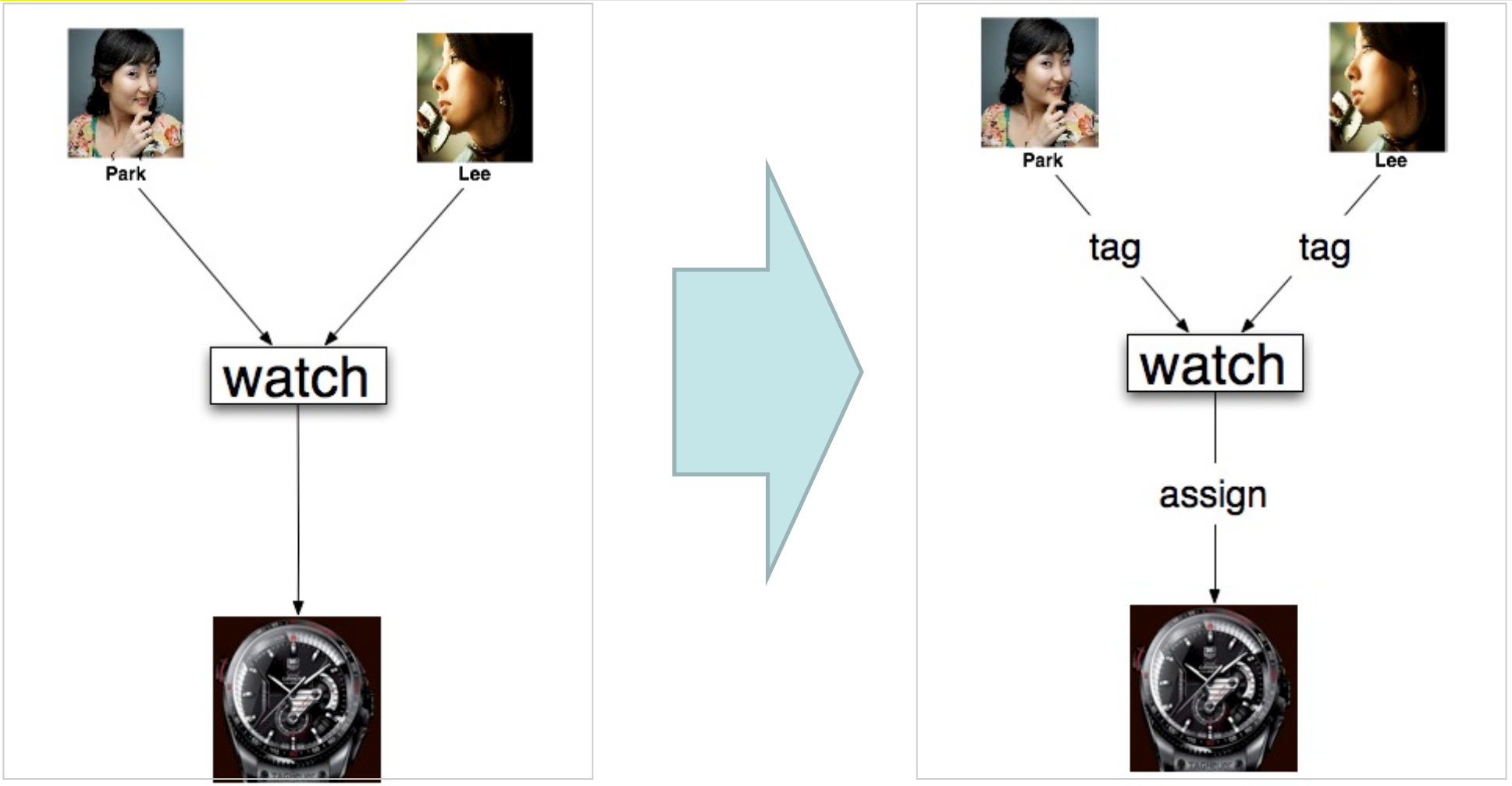
REPRESENTATION

All tagging elements including people, tags, resources have to be described by both machine-processable and human-readable way.

<Person>
John
</Person>

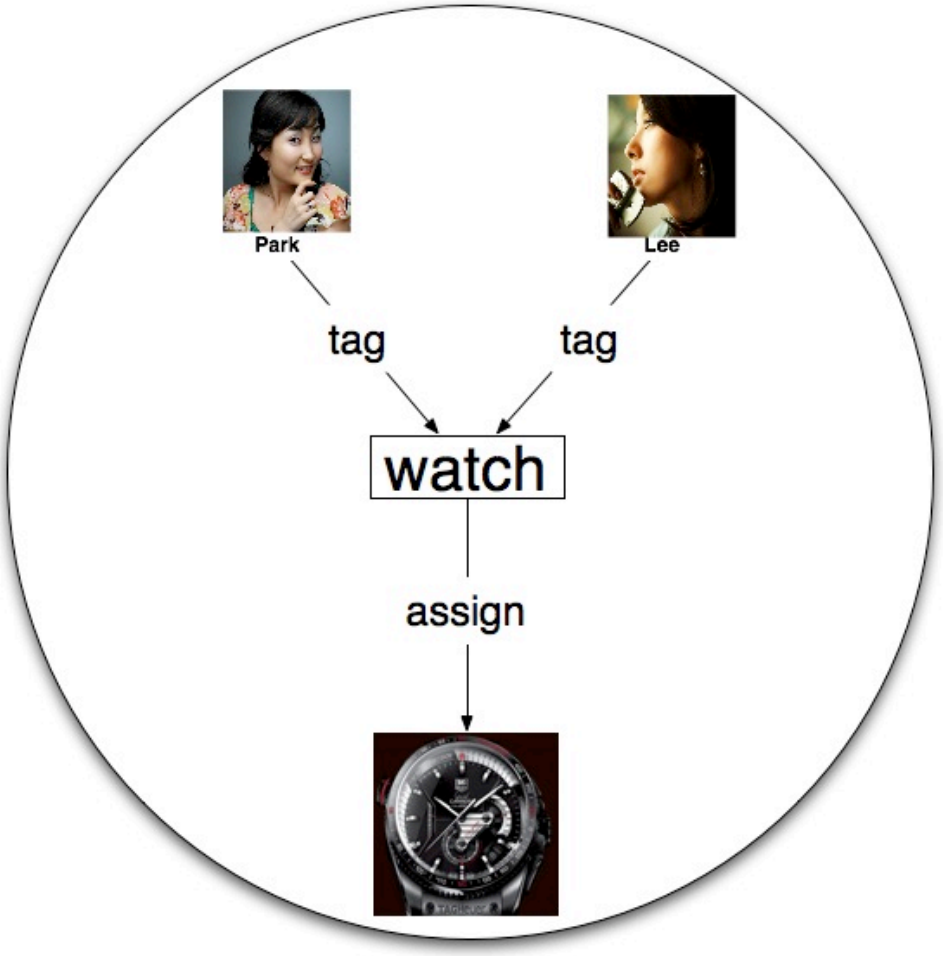
HOW TO TAG

We tag in a specific resource with keywords



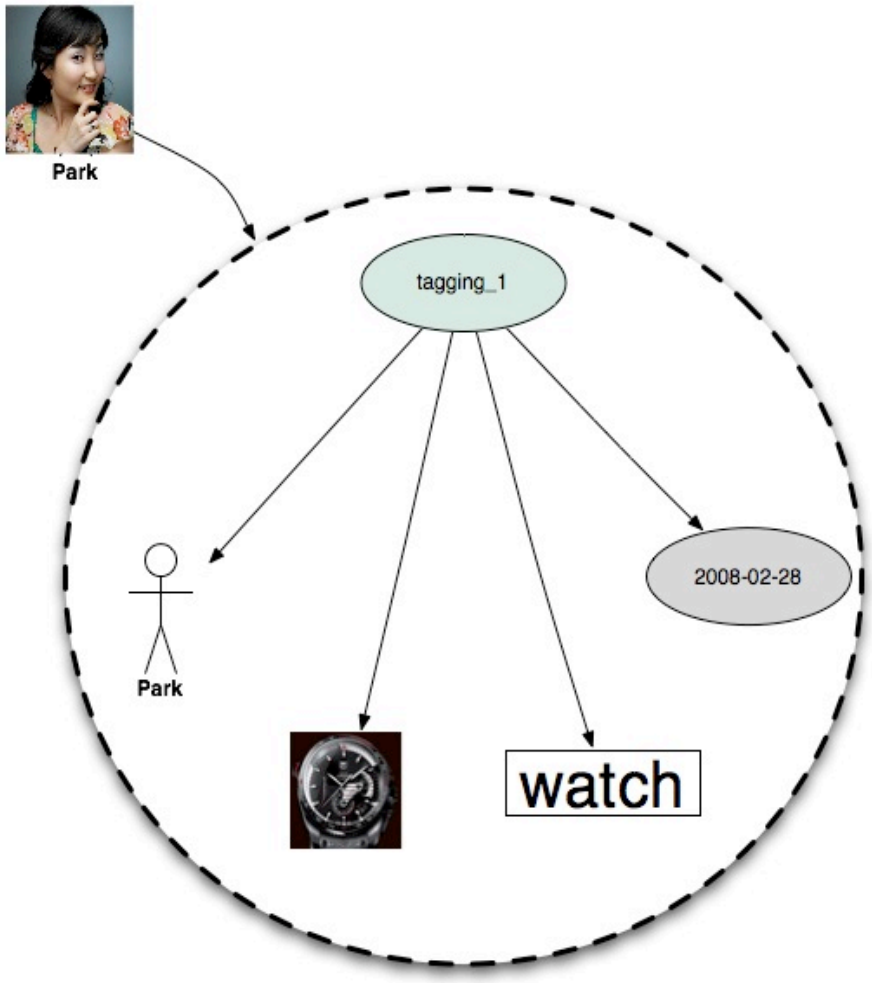
TAGGING MODEL

Tagging is kind of a process



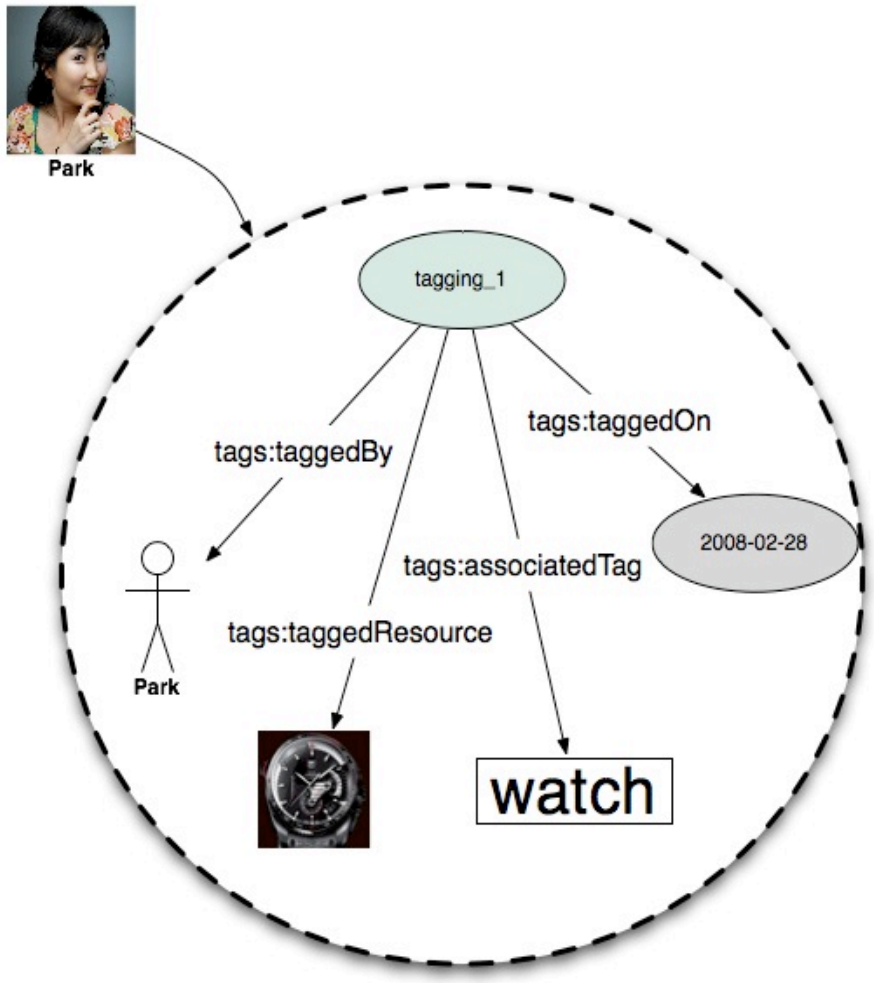
TAGGING

A user assigns a tag in a resource.



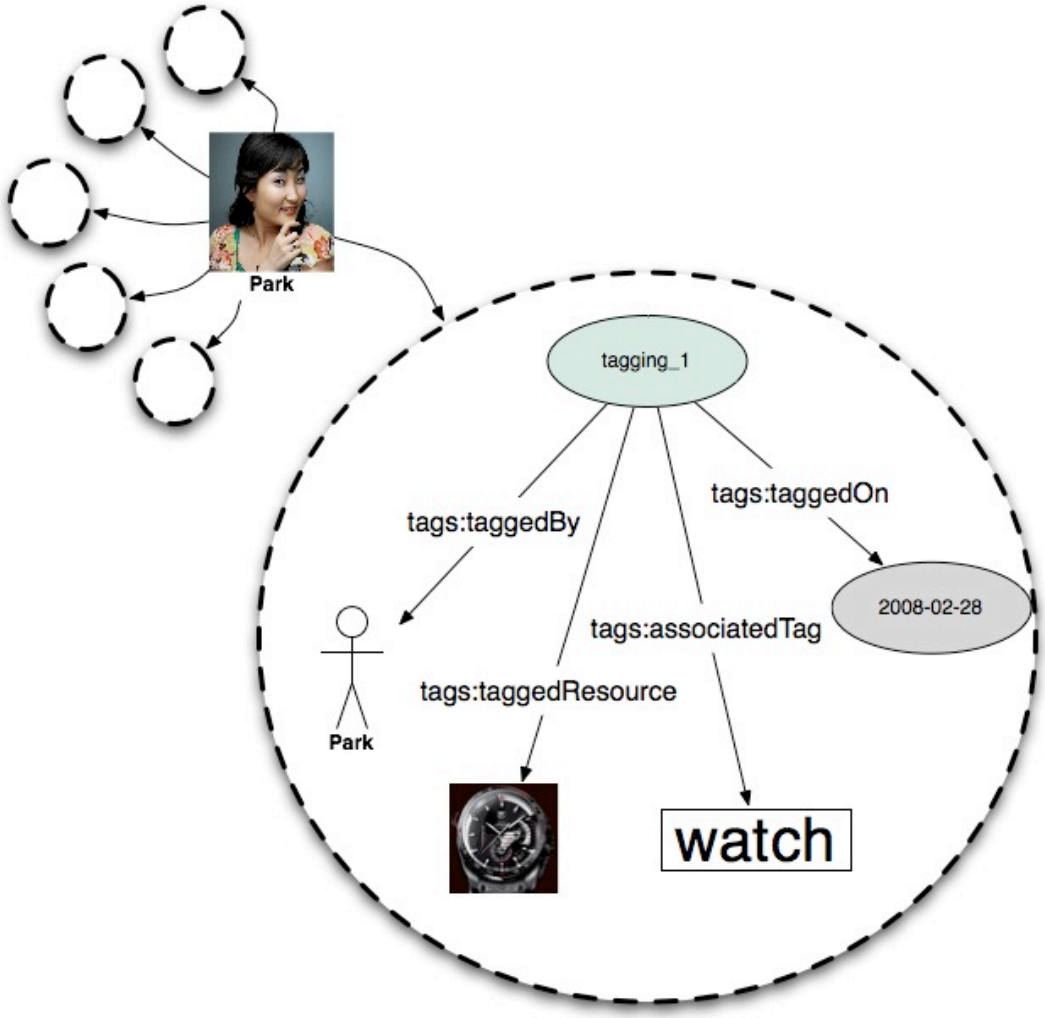
We don't know the ***relationships***

We know the relationships among tagging elements

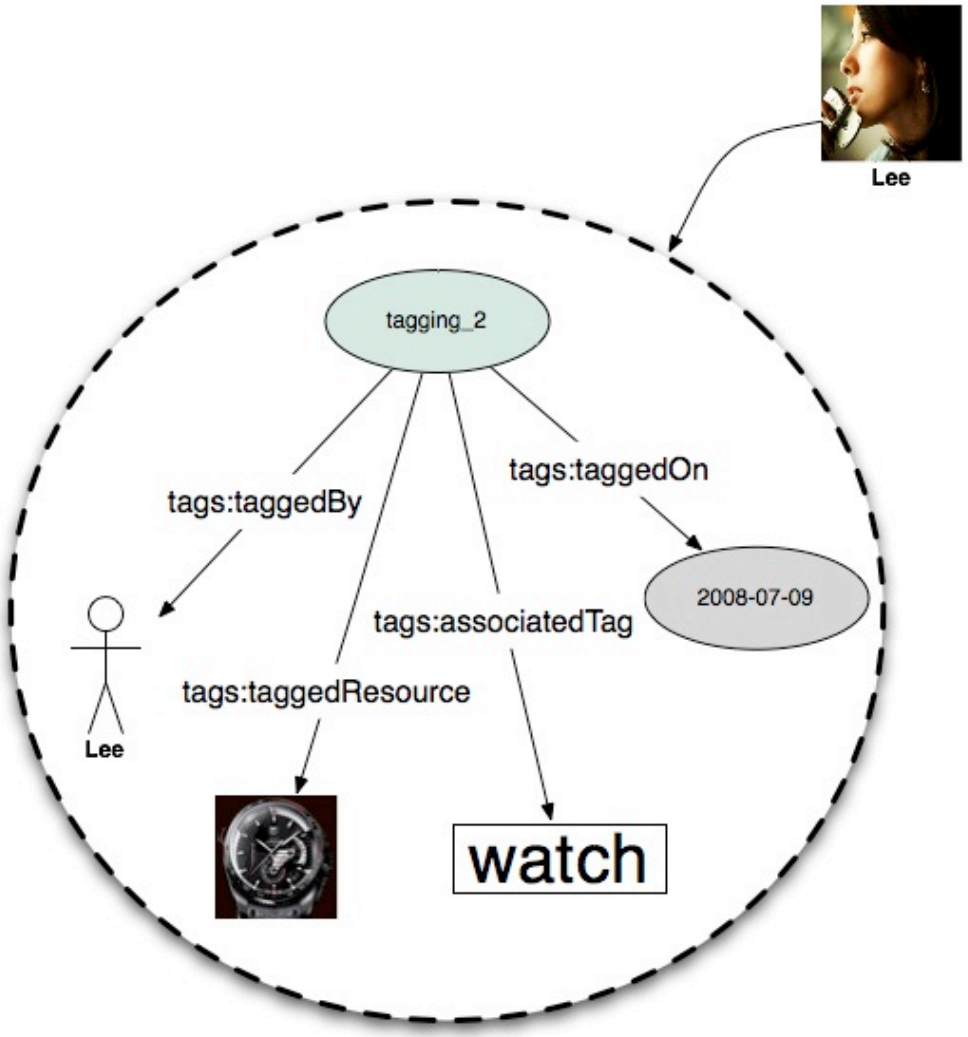


Little semantics goes *LONG*

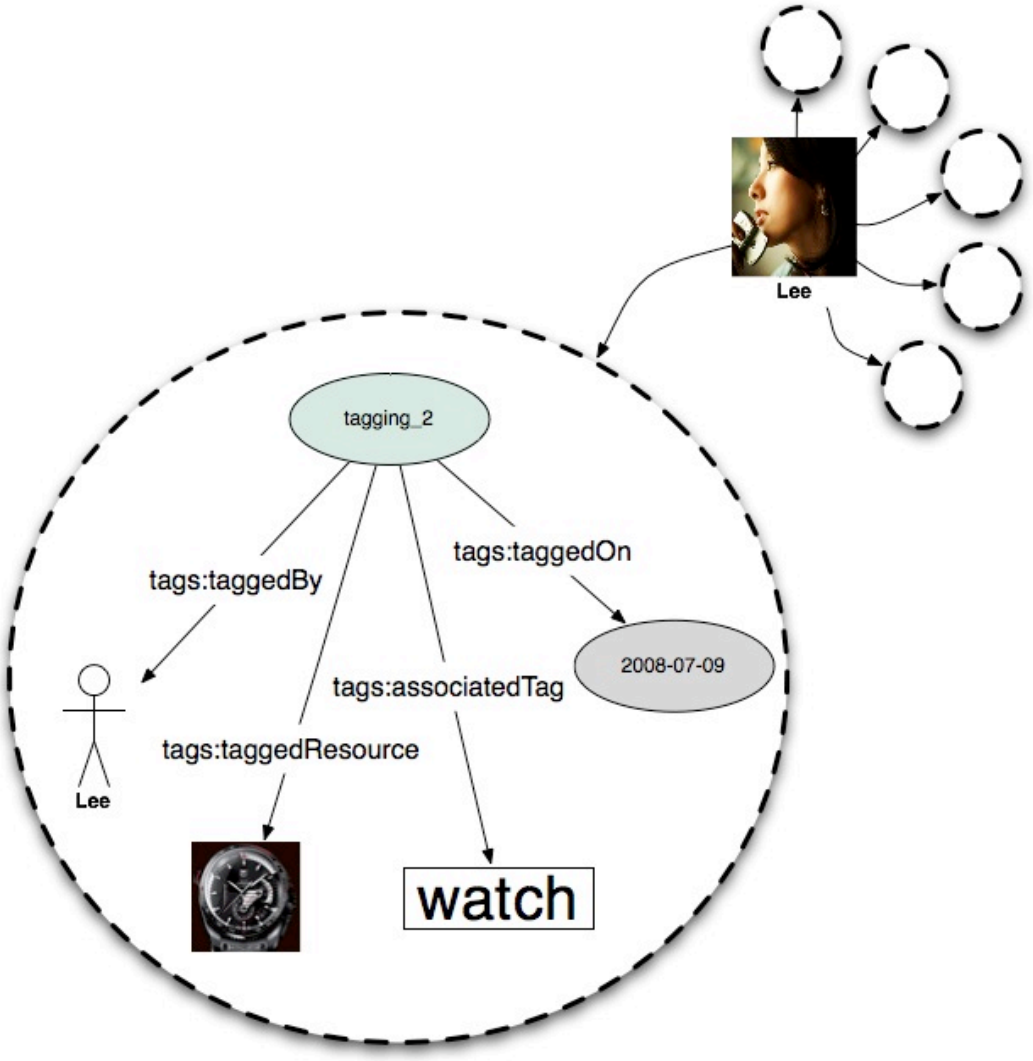
If the user has many tagging instance?



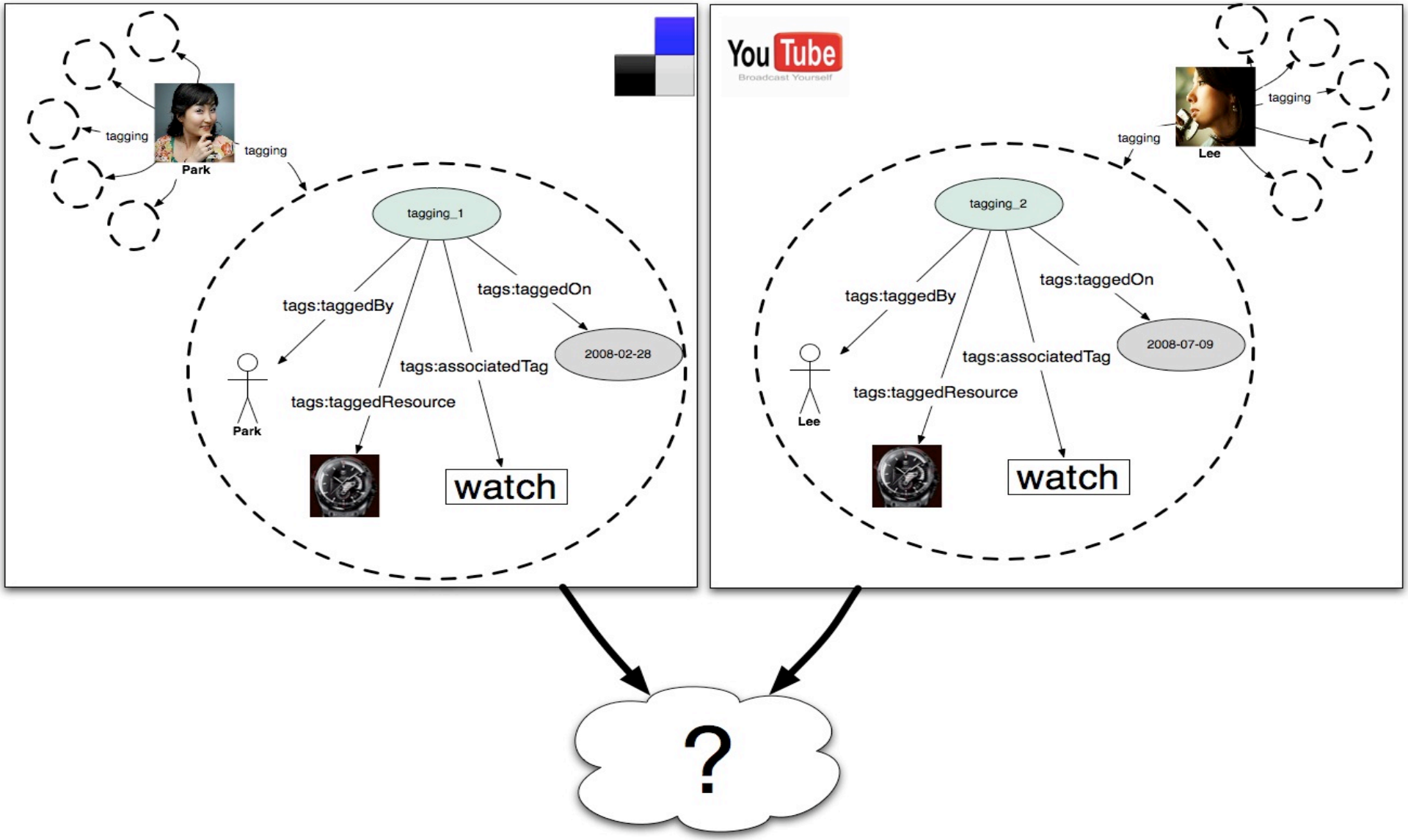
Even, another user has also similar tagging activities with you?



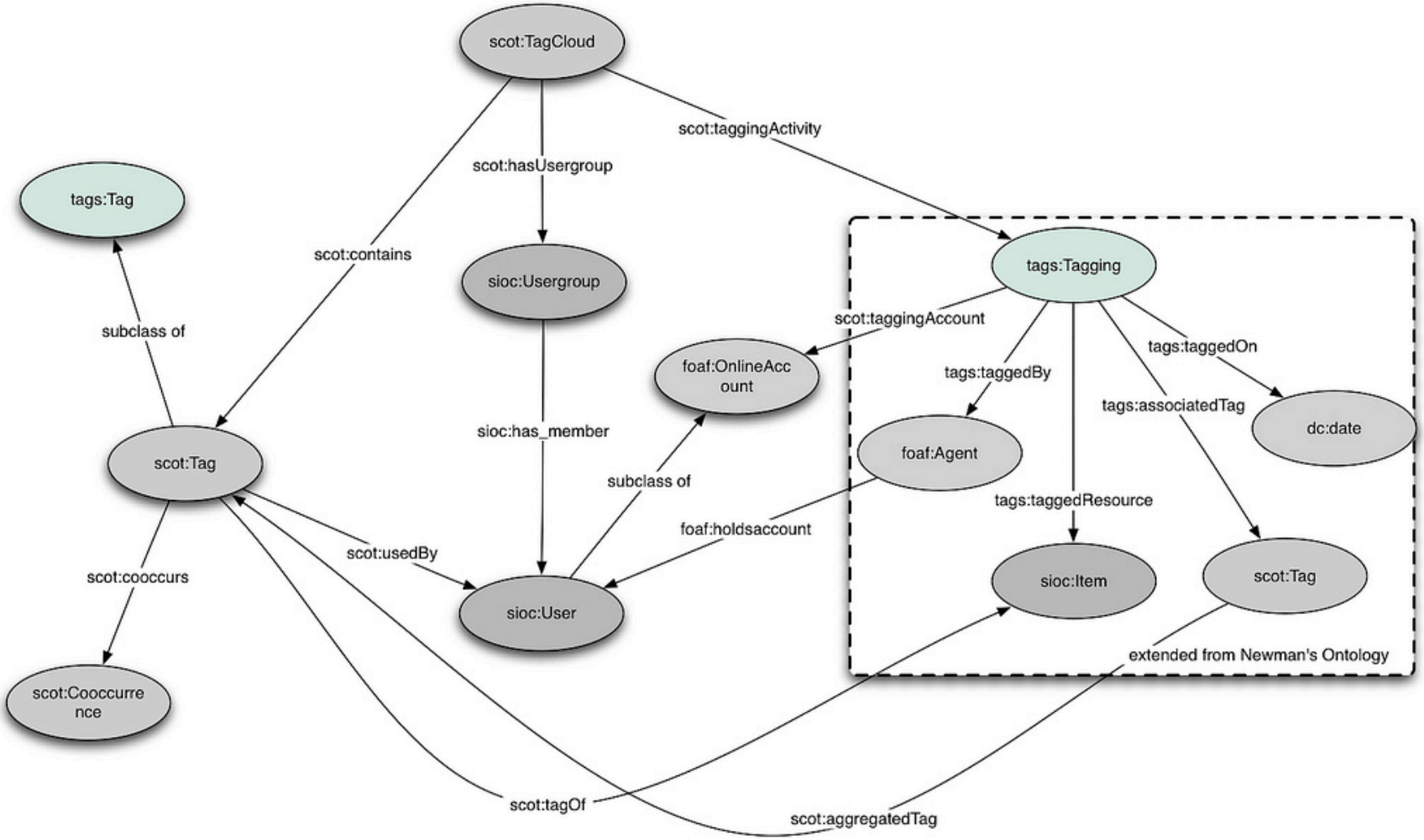
And, she has many tagging instances as well.....



Could we interlink between them and integrate, share, and reuse their tagging data across sites?



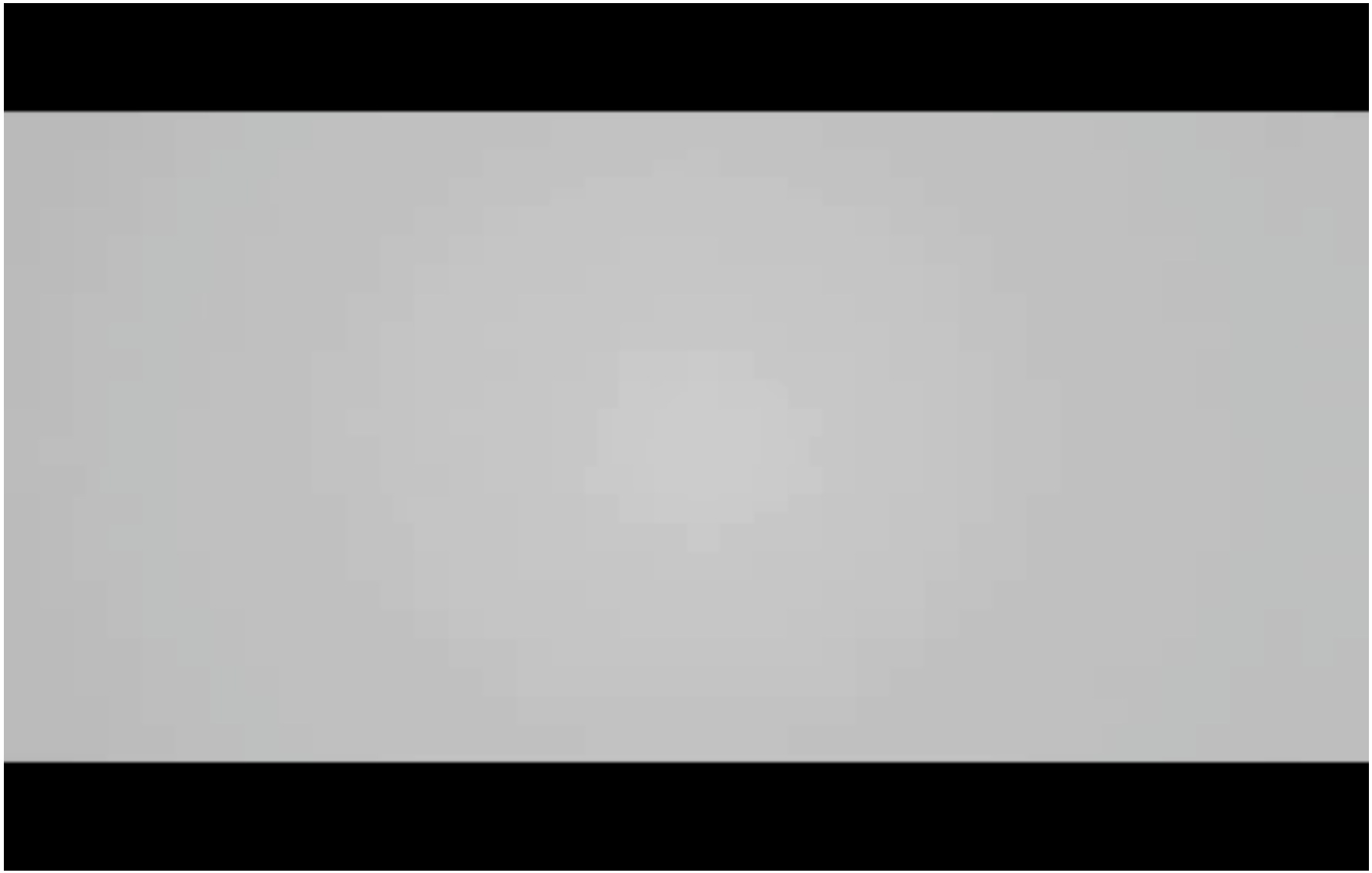
YES. SCOT CAN..


scot:TagCloud
scot:taggingActivity
scot:hasUsergroup
tags:Tag
scot:contains
sioc:Usergroup
tags:Tagging
subclass of
scot:taggingAccount
foaf:OnlineAcc
ount
tags:taggedOn
tags:taggedBy
tags:associatedTag
dc:date
sioc:has_member
scot:Tag
foaf:Agent
subclass of
tags:taggedResource
foaf:holdsaccount
scot:usedBy
scot:cooccurs
sioc:Item
scot:Tag
sioc:User
extended from Newman's Ontology
scot:Cooccurre
nce
scot:tagOf
scot:aggregatedTag

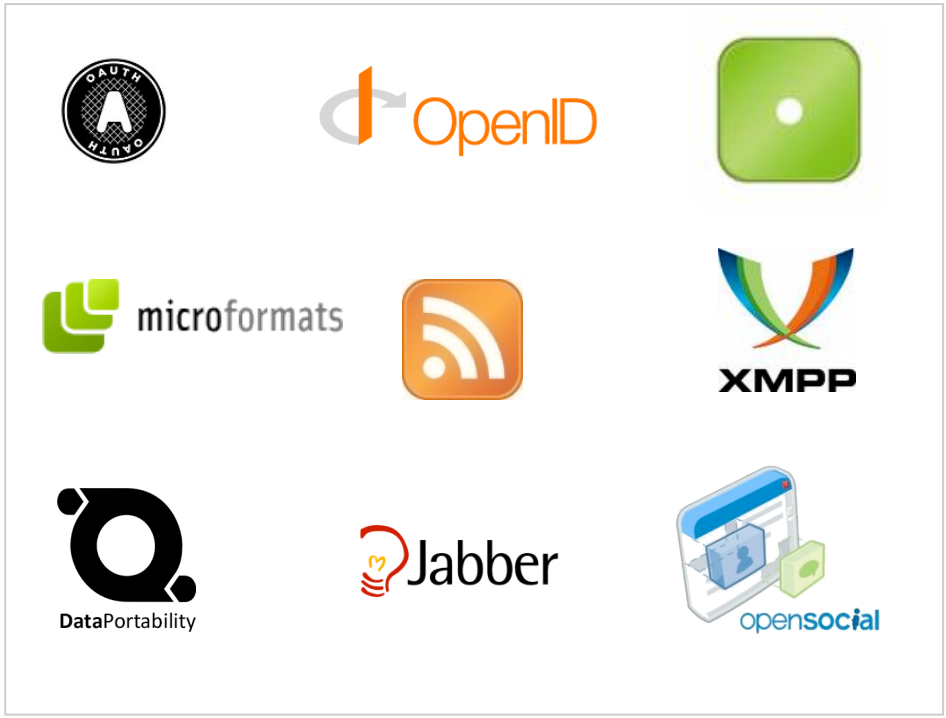
Part 3:

Linked Data Data Portability

Web 2.0 is *broken*.



http://kr.youtube.com/watch?v=nZ3DndUFHEI



DATA PORTABILITY

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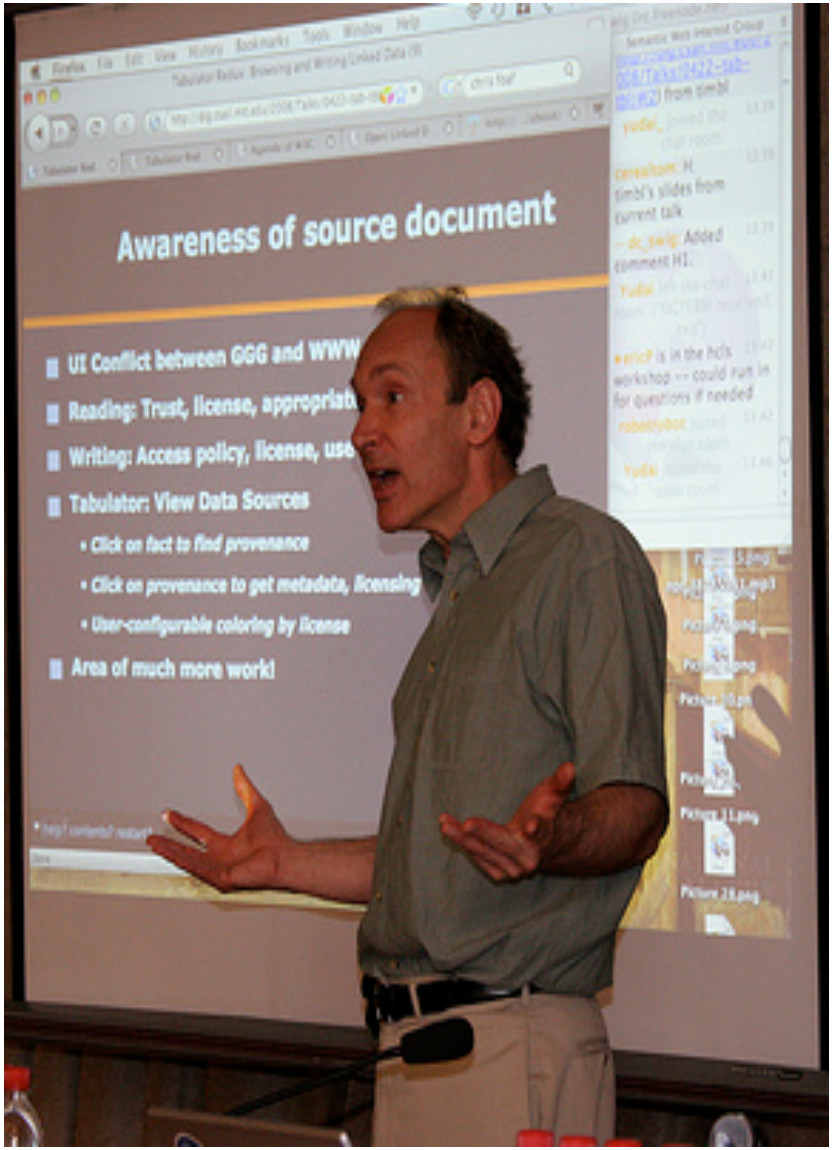
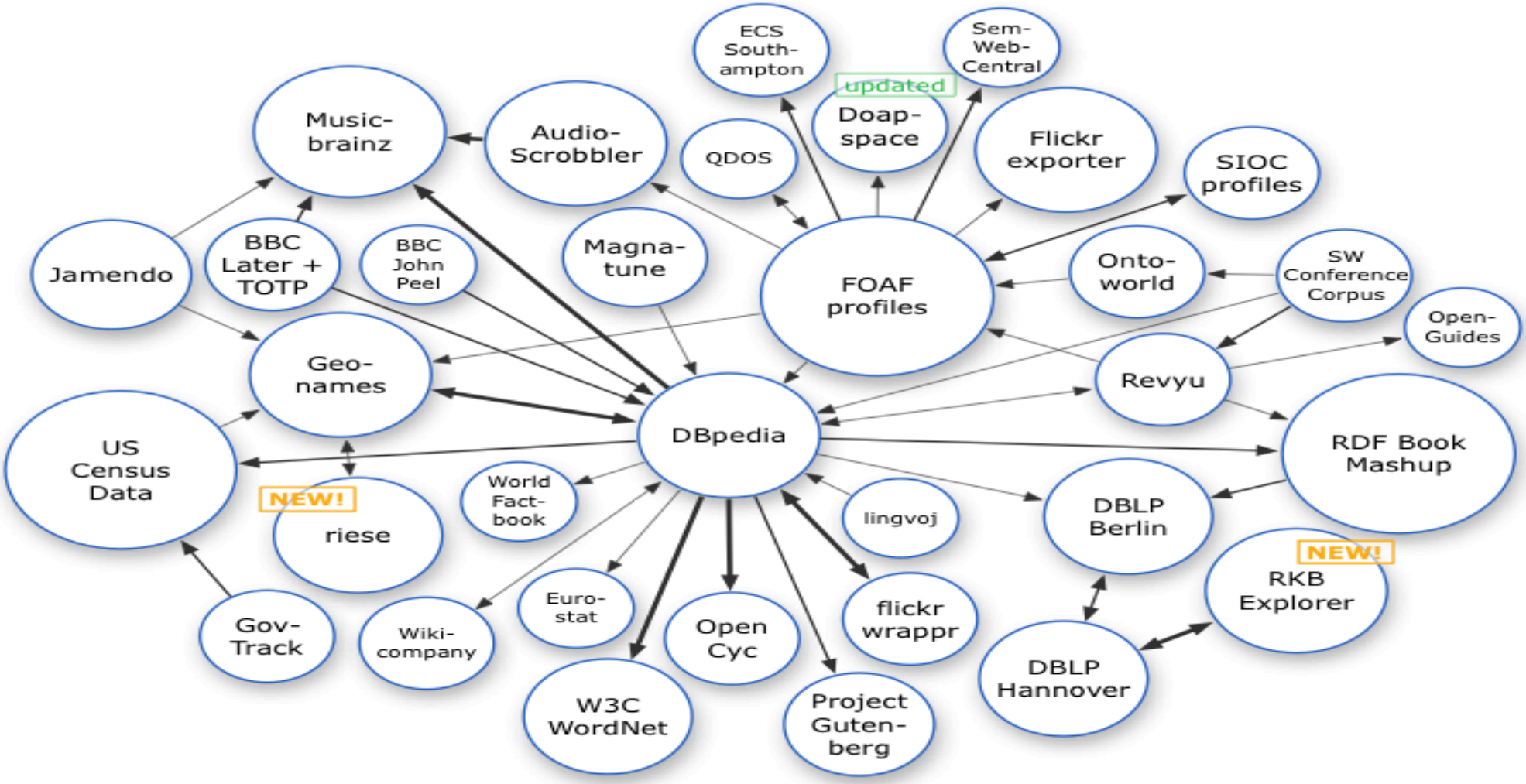


LINKED DATA

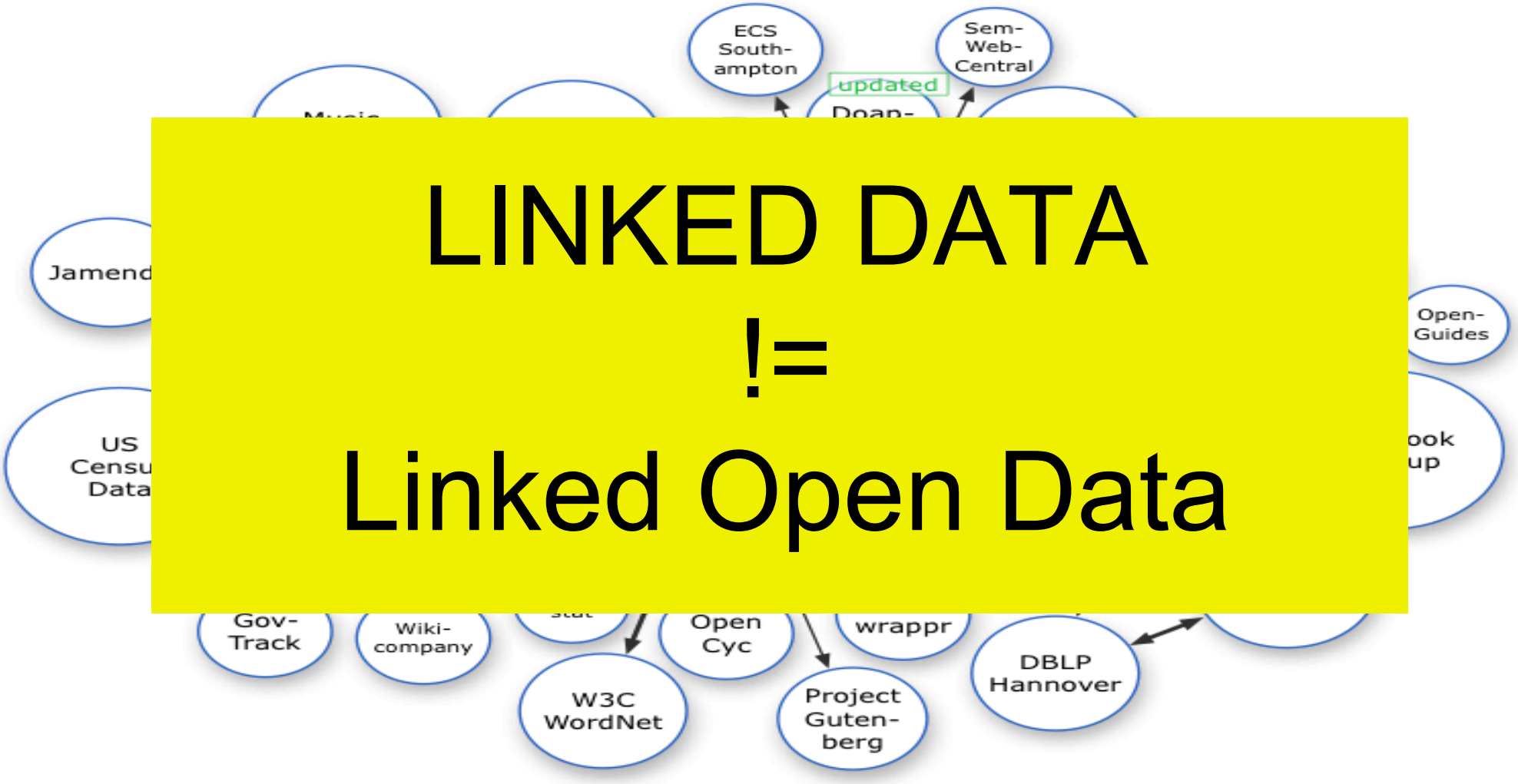
Linked Data is here today, doable today, and pragmatic today

- Use URIs as names for things
- Use HTTP URIs so that people can look up those names
- Provide useful RDF information for a search
- Include RDF statements that link to other URIs

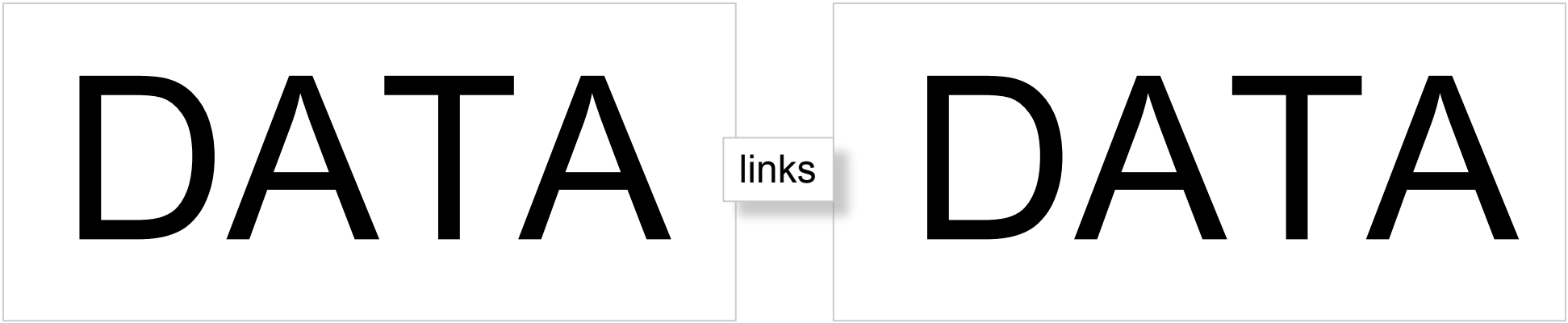
Linked Data Cloud (present)



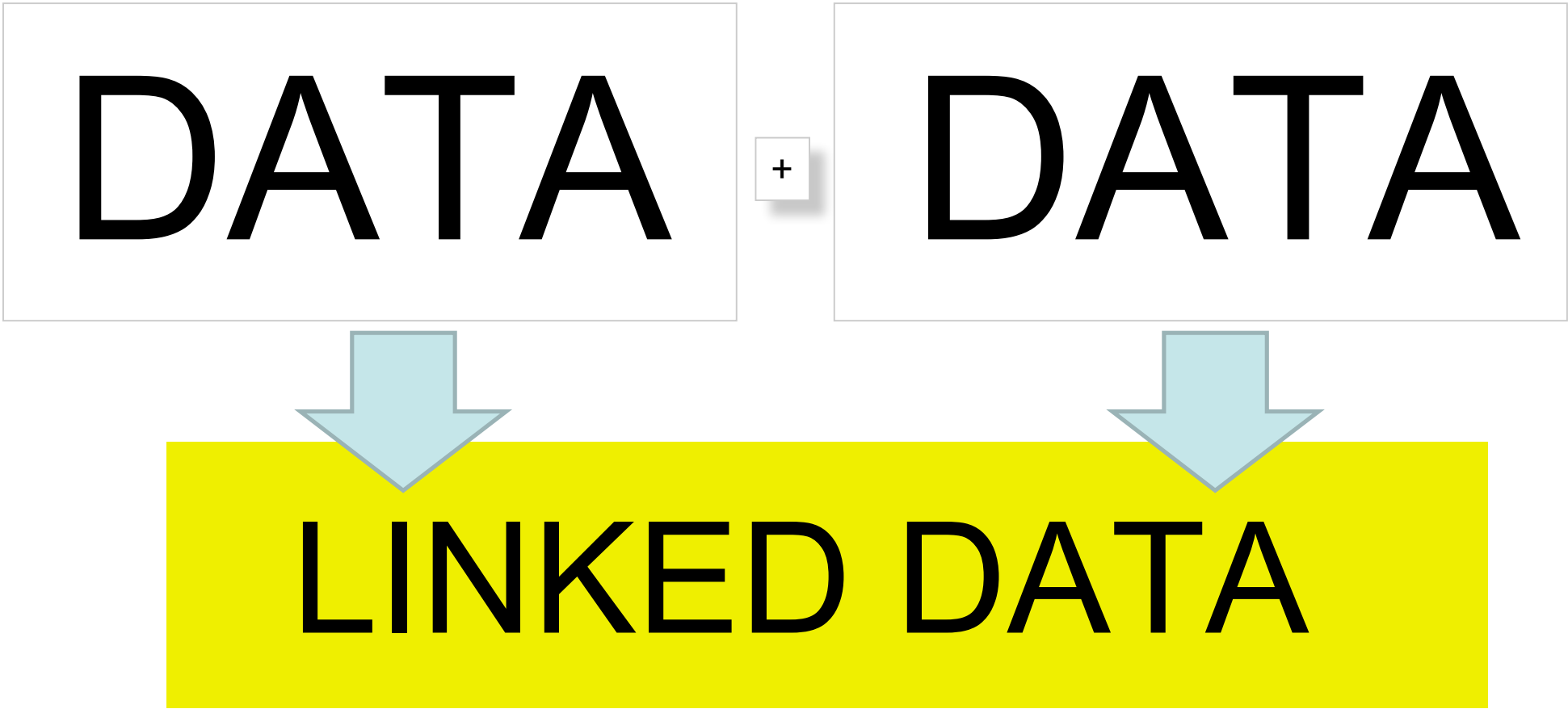
Linked Data Cloud (present)



YET, HOW COULD WE CONNECT HETEROGENEOUS DATA ON THE WEB?



YET, HOW COULD WE CONNECTS HETEROGENEOUS DATA ON THE WEB?



THE END IS NEAR

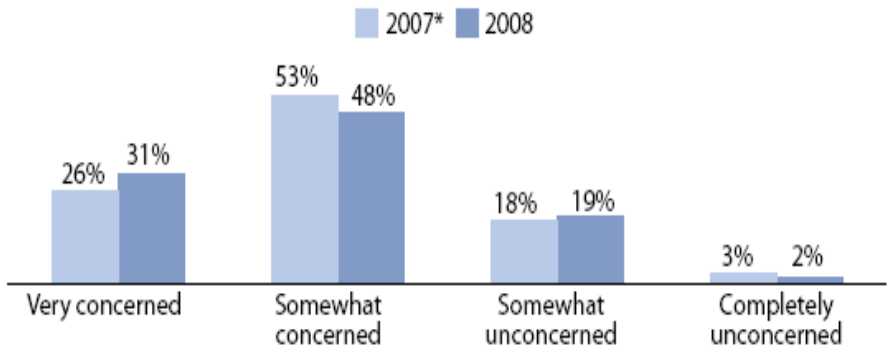
CHOICE

IS A PROBLEM OF CHOICE BETWEEN WEB 2.0 AND SEMANTIC WEB?

Figure 1 IT Professional Familiarity With Specific Web 2.0 Technologies Varies Widely (Cont.)

1-3 Employee-driven Web 2.0 remains a major concern for IT

"To what extent is your IT organization concerned about the risks of employee-driven, unsanctioned use of Web 2.0 tools and technologies?"



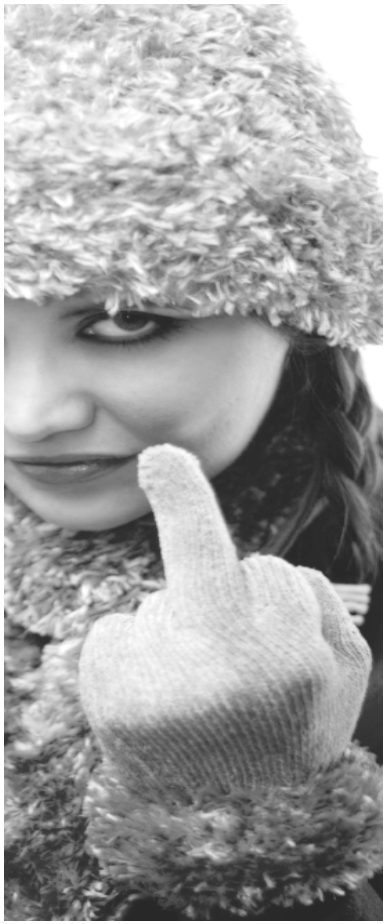
Base: 265 US IT decision-makers at companies with 500 or more employees
*Base: 242 US IT decision-makers at companies with 500 or more employees

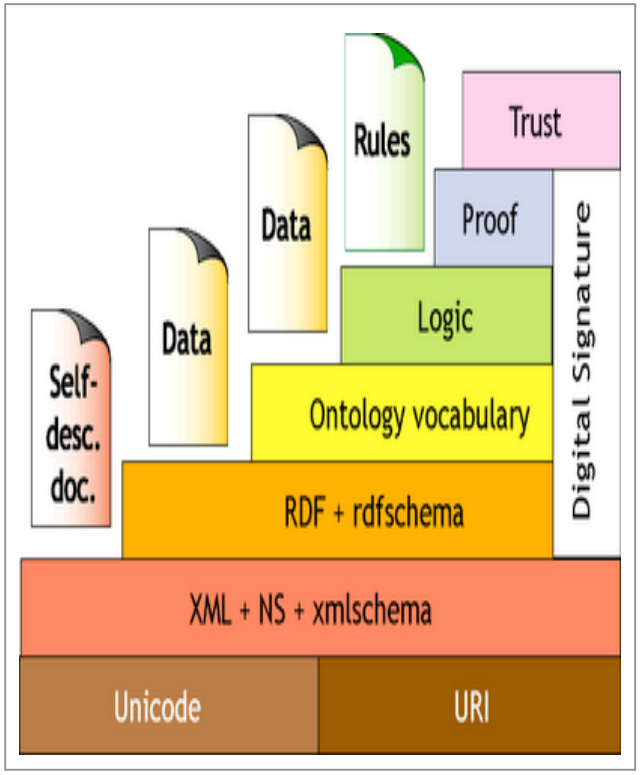
Source: June 2008 US Web 2.0 Online Survey
*Source: June 2007 US Web 2.0 Online Survey

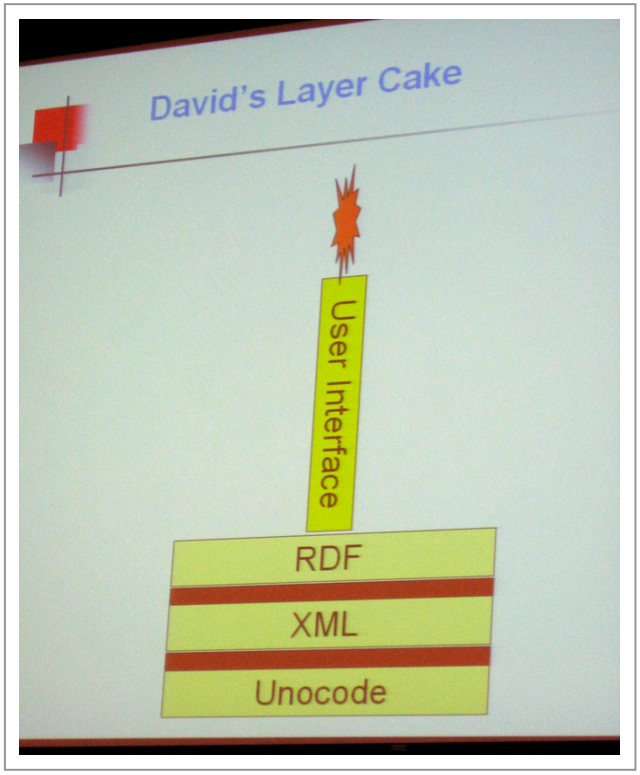
46380 Source: Forrester Research, Inc.

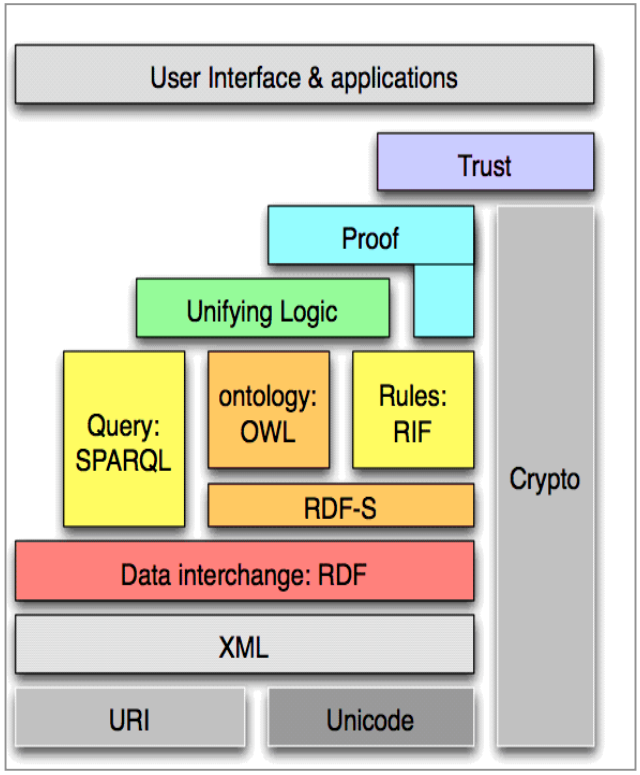
63% Of IT Depts Say Web 2.0 Will Impact Their Business

WHAT ABOUT the ***SEMANTIC WEB***?

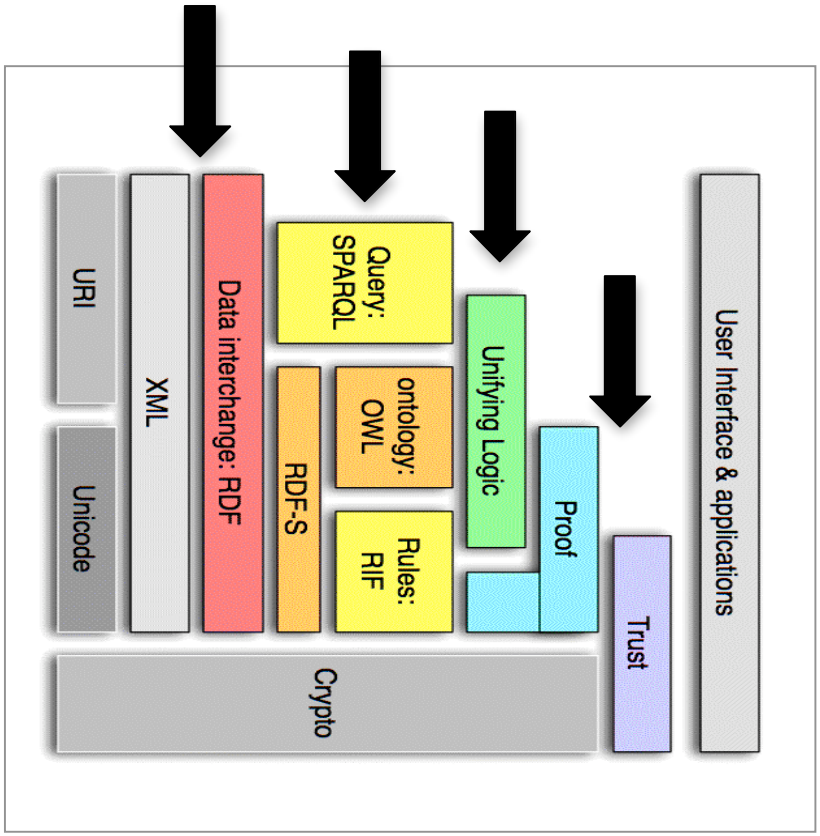


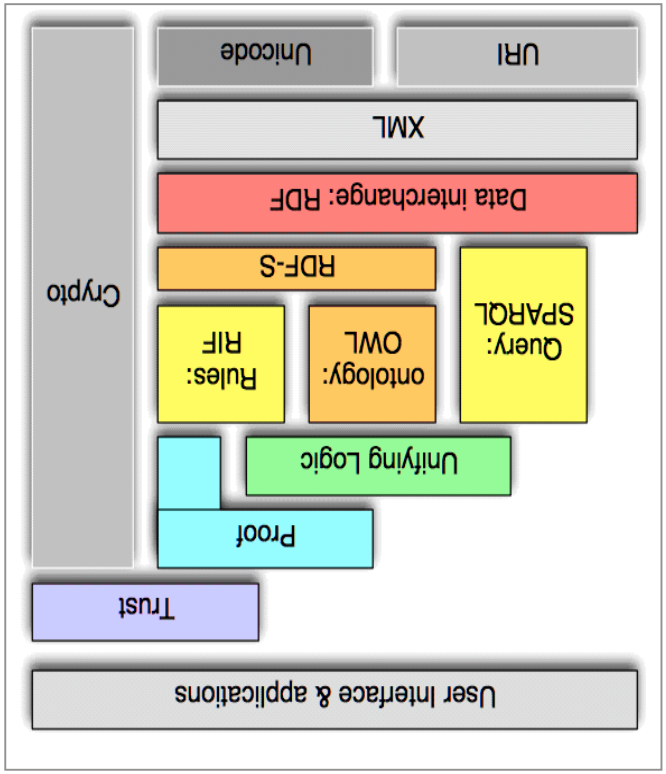






Semantic Web is *BOTTOM-UP* approach.





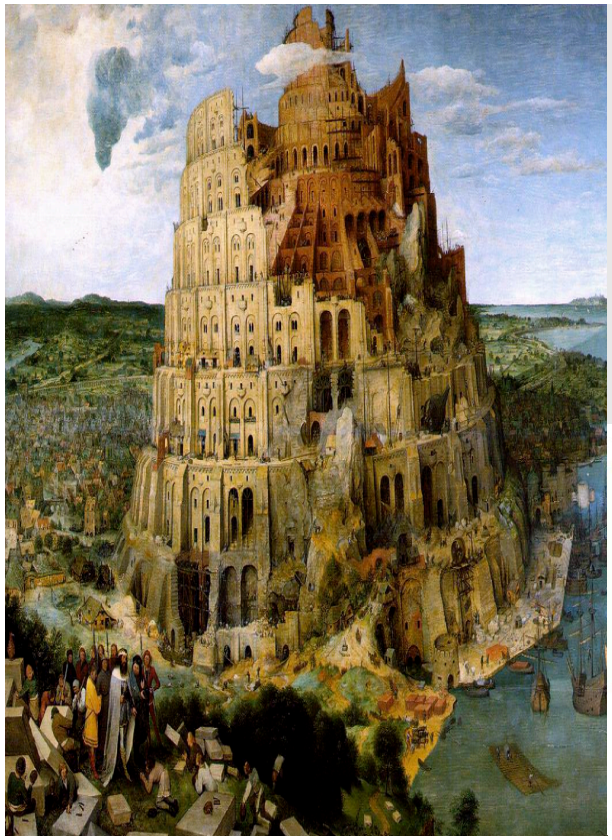
Semantic Web < Semantic Web

It's a web of data, not just data on the web!

Tim Berners-Lee

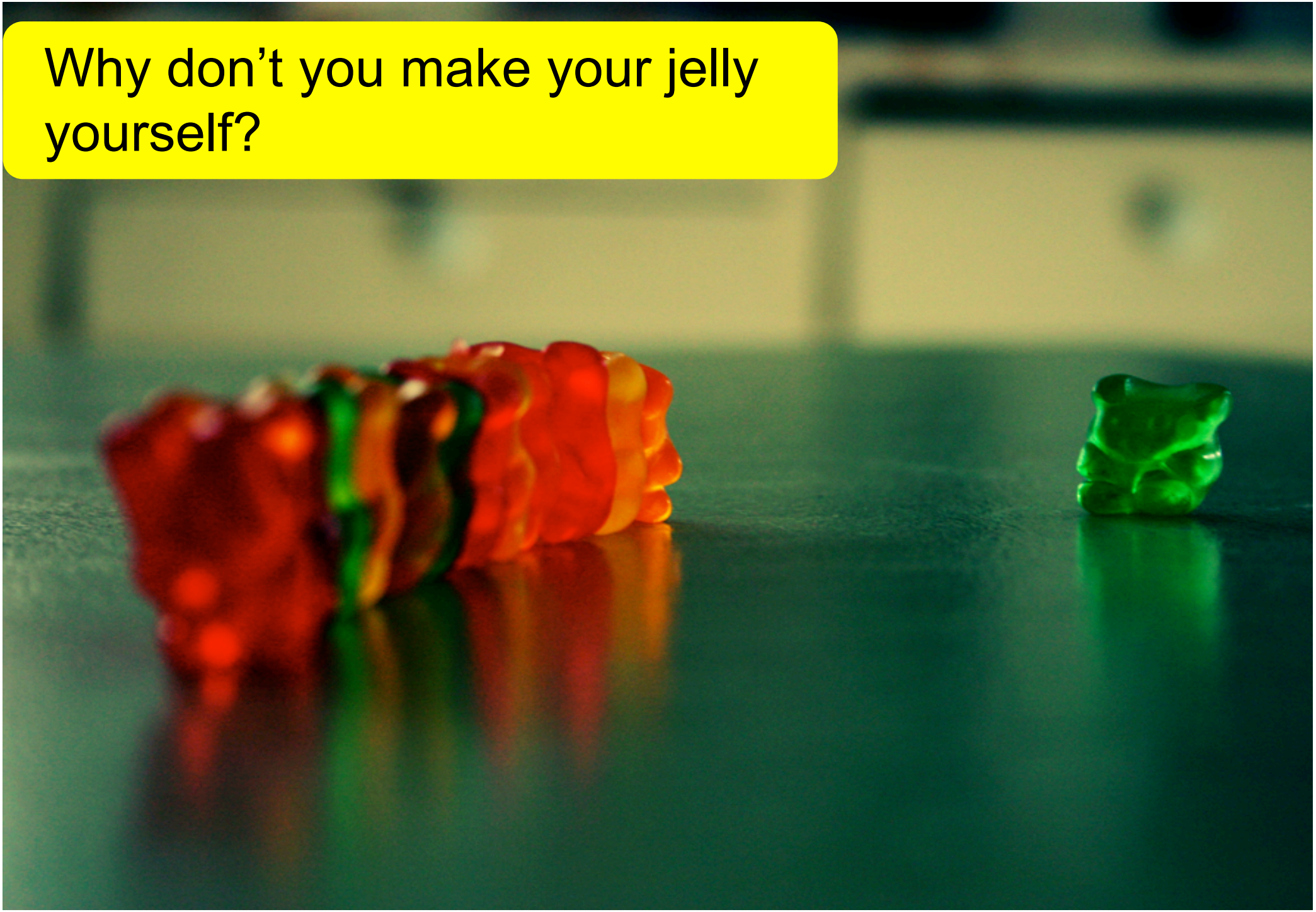
Making Semantic Web

Real



Semantic Web
is not sweet…

Semantic Web
is not honey…


Why don’t you make your jelly yourself?

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2008년 07월 16일 (수)
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로그인 | 회원가입

(주)에어키 IRQUAY
Voice 및 유무선 분석솔루션
와일드패킷 총판 에어키
WildPackets
프로모션 행사 진행중 2008.5.1 ~ 7.31
OmniPeek P
or OmniPeek
+ 무료패키지
(Cisco AP11
콘카드 + Le

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Security

"시맨틱 웹의 현실적 방안을 제시하다"

등록일 : 2008.07.03
작성자 : 김나연 기자

인쇄하기
이메일 보내기

최근 소셜 북마크(social bookmarks), 소셜 네트워킹(social networkings), 포크소노미(folksonomy) 등과 같은 새롭고 다양한 웹 기술과 응용 도구의 결합이 전세계적으로 주목을 받고 있다. 이러한 흐름에 힘입어, 이의 근본 기술인 시맨틱 웹(Semantic Web)도 주목을 받고 있다.

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이에 IT 세미나 전문업체 기묘에서는, 시맨틱 웹의 핵심 기술에 대한 다양한 연구를 진행하고 있는 서울대 의생명지식공학연구소(BIKE Lab)와 공동으로 시맨틱 웹에 대한 연속 세미나를 진행할 예정이다. 학계의 리서치와 현업의 서비스 모델이 잘 결합될 수 있는 말판을 마련하고자 하는 것이 시맨틱 웹 세미나 시리즈 기획의 목표이다.

그 첫번째 세미나가 오는 7월 16일(수) 오후 1시에 개최된다. 첫 세미나의 주제는 'Data Link'이다. 웹에 존재하는 모든 정보는 링크(link)를 통해 연결되며 사람들의 관계는 사회적 네트워크를 통해 유기적으로 연결된다. 이것을 데이터 링크라고 정의할 수 있다. 이번 세미나에서는 웹의 연결성, 즉 링크(link)의 관점에서 다양한 데이터를 연결하는 방안과 사례, 그리고 향후 연구 및 적용 방안을 검토하고자 한다.

이번 세미나에는 서울대 의생명지식공학연구실 김홍기 교수를 비롯해, 아일랜드 DERI 연구소의 김학래 연구원, NHN기술연구센터의 김광섭 씨, NC소프트 오픈마루스튜디오의 정지웅 씨 등 시맨틱 웹에 대한 연구자와 실제 서비스 개발 분야 전문가들이 직접 발표자로 나선다.

이번 세미나는 현재 시맨틱 웹을 연구하고 있거나 기업에 활용하는 것을 고려하고 있는 관심자들을 주요 대상으로 하며, 7월 16일 오후 1시부터 6시까지 역삼동 포스텔타워 3층 이벤트홀에서 진행될 예정이다.

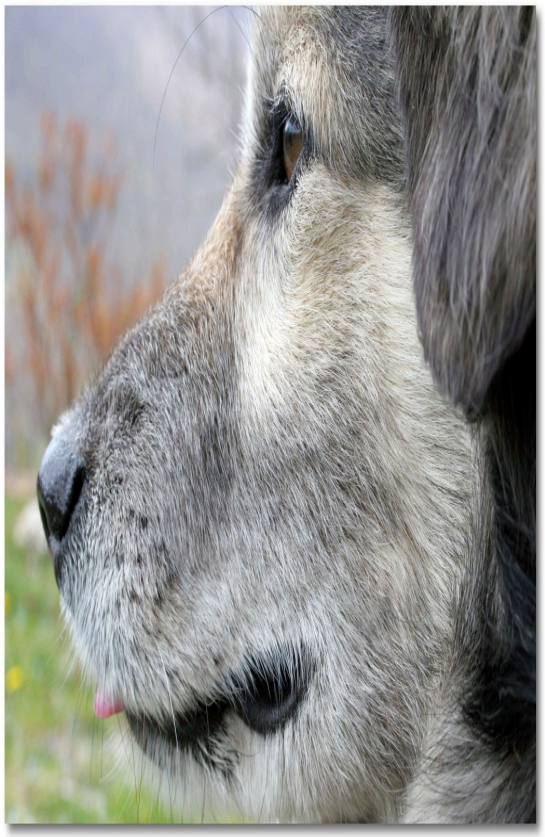
source data point: http://www.datanet.co.kr/news/read.html?cd=36329&N_cate1=0&N_cate2=8

시맨틱웹의 현실적 방안을 제시하다

source data point: http://www.datanet.co.kr/news/read.html?cd=36329&N_cate1=0&N_cate2=8

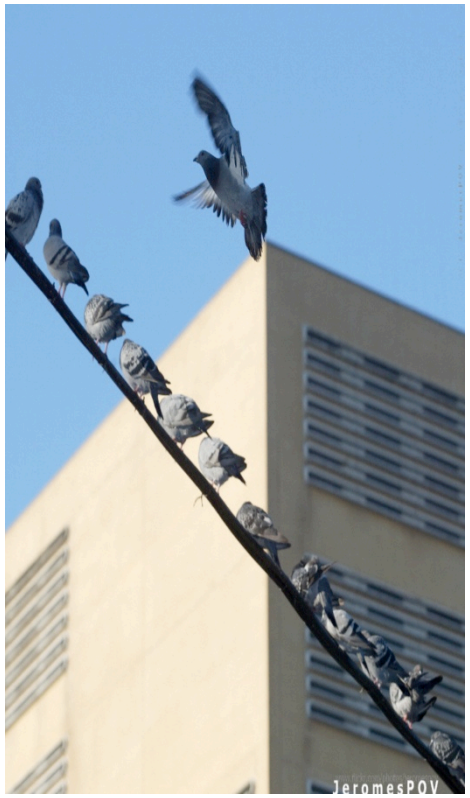
Let’s do it:

DON’T PREY AND WAIT A KILLER APPLICATION.



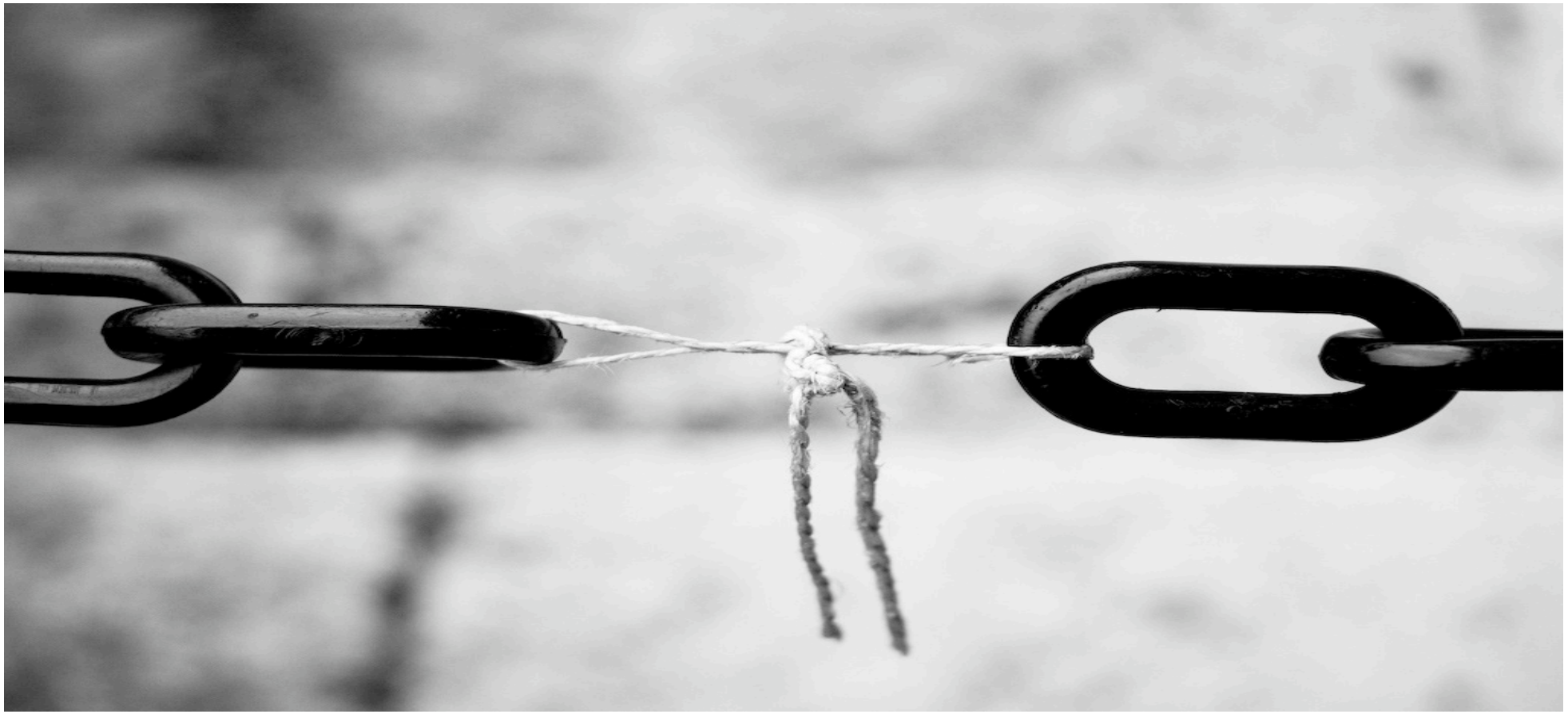
Let's do it:

WE LIVE IN AN ERA OF PARTICIPATION



Let’s do it:

MAKE YOUR CONNNECTIONS AND KEEP THEM



When people talk, listen completely.
Most people never listen
Ernest Hemingway (1899 – 1961)

making the world wide web truly world wide!
with web standards

I HOPE IT IS *NOT* JUST MY DREAM.

communicate with me….

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