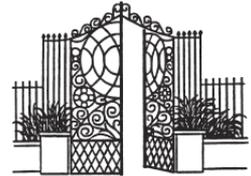




ALEXANDER
STREET PRESS

*“What is the likely shape of the library of the future?
And how do we build collections for it?”*

*Singapore
2013*



15th Fiesole Collection Development Retreat

The Potential of Linked Data
Stephen Rhind-Tutt, President

Singapore, August 2013



Overview

- Some background
- The landscape - challenges facing academic publishing
- What's the role of (open) linking?
- ASP's experience of linking between databases
- Inbound links
- Outbound links
- Are we moving fast enough?
- Where will it end?
- If we have enough time...a couple of exciting projects



Some background



Alexander Street Press

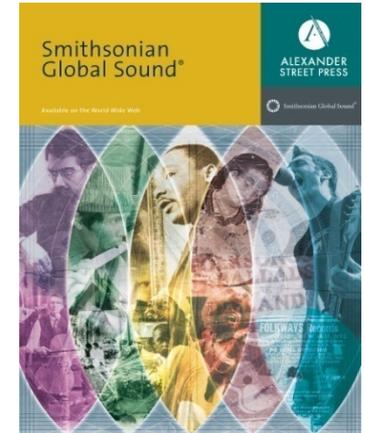
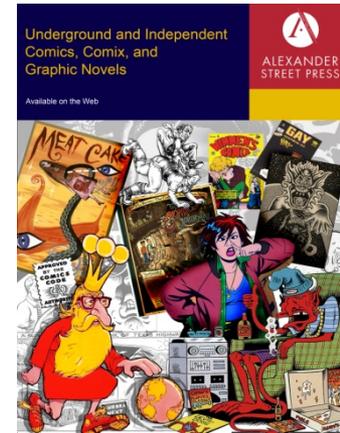
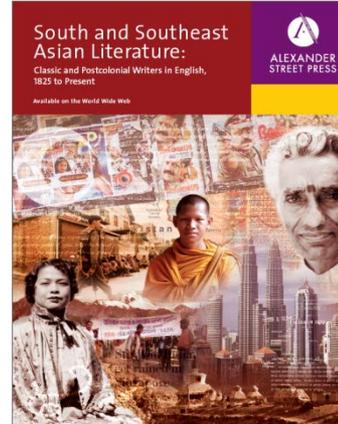
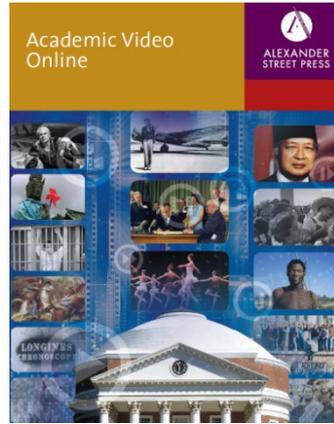
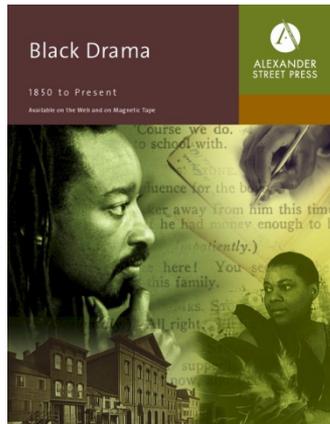


- 13 years old
- 100+ people
- Based in Alexandria, Virginia
- Offices in the UK, ANZ, Kuala Lumpur, Shanghai
- 'Born digital' publisher
- Improve access and utility for learning and research



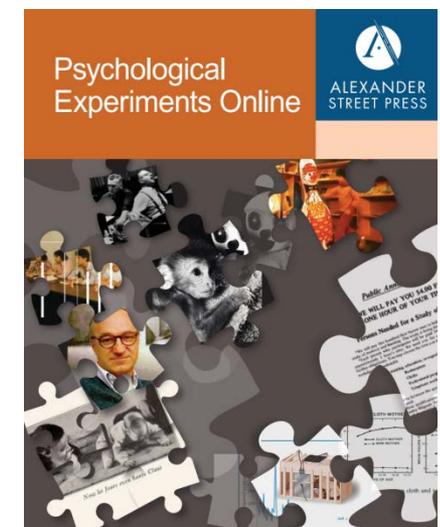
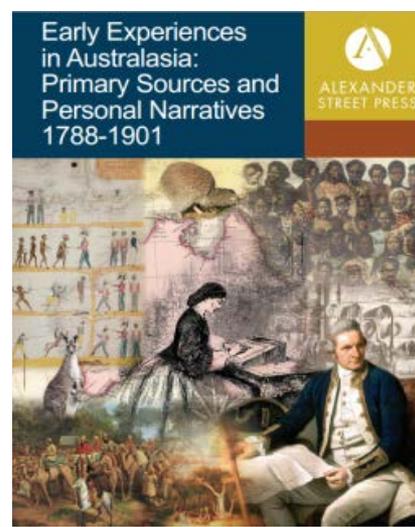
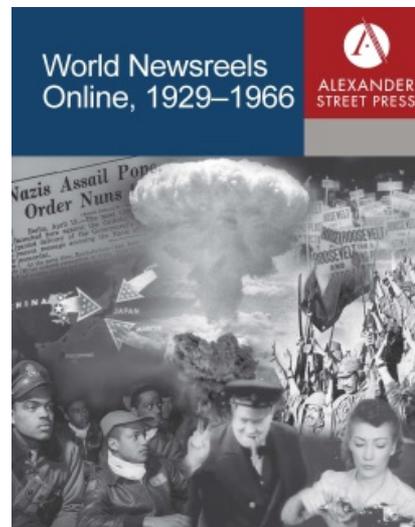
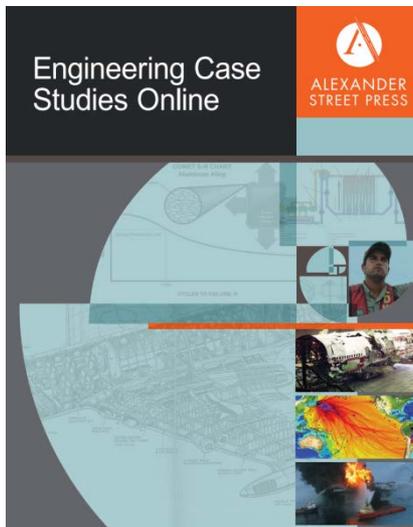
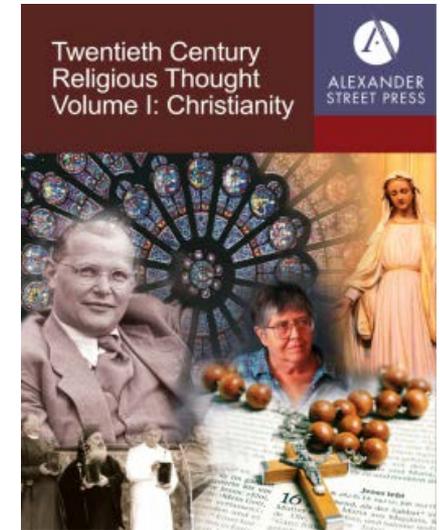
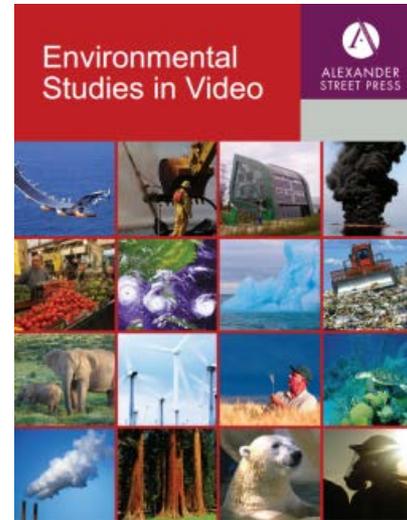
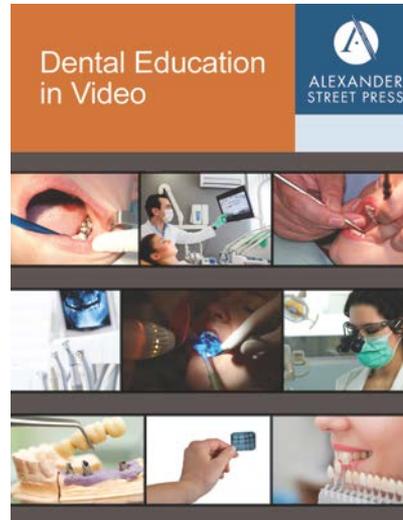
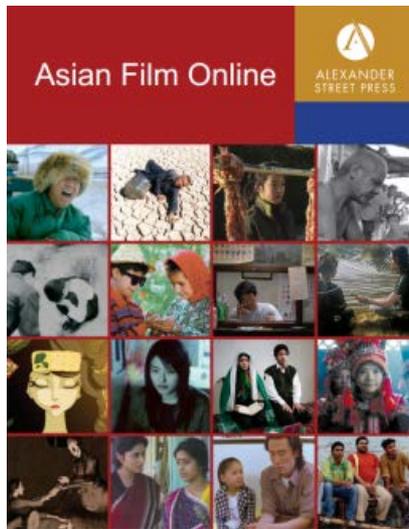
Our Purpose

Make silent voices heard





Some of our publications





The Landscape....challenges facing us



By 2020 the web will contain...?

- 90% of published works prior to 1923
- Majority of works published to 2020
- > 100 billion pages of e-mail, phone logs, databases, blogs, and Web sites (currently 45 billion)
- > 1 Trillion Photos
(As of 1/13 Facebook had 240 Bn photos. 1.1 Bn uploaded over New Years alone)
- > 100 million facsimile pages of manuscripts
- > 30 million published audio files
- > 2.4 Bn video files on YouTube (1 Bn unique users per month)



Exponentially more use...



- >1 billion unique users monthly
- >4 billion hours watched monthly
- 72 hours of video are uploaded every minute
- 70% of YouTube traffic comes from outside the US
- In 2011, YouTube had more than 1 trillion views or around 140 views for every person on Earth

<http://www.youtube.com/yt/press/statistics.html> 4/3/2013

What does this have to do with academic publishing?



Watch out...





We *are* going to need bigger boats





What happens when?

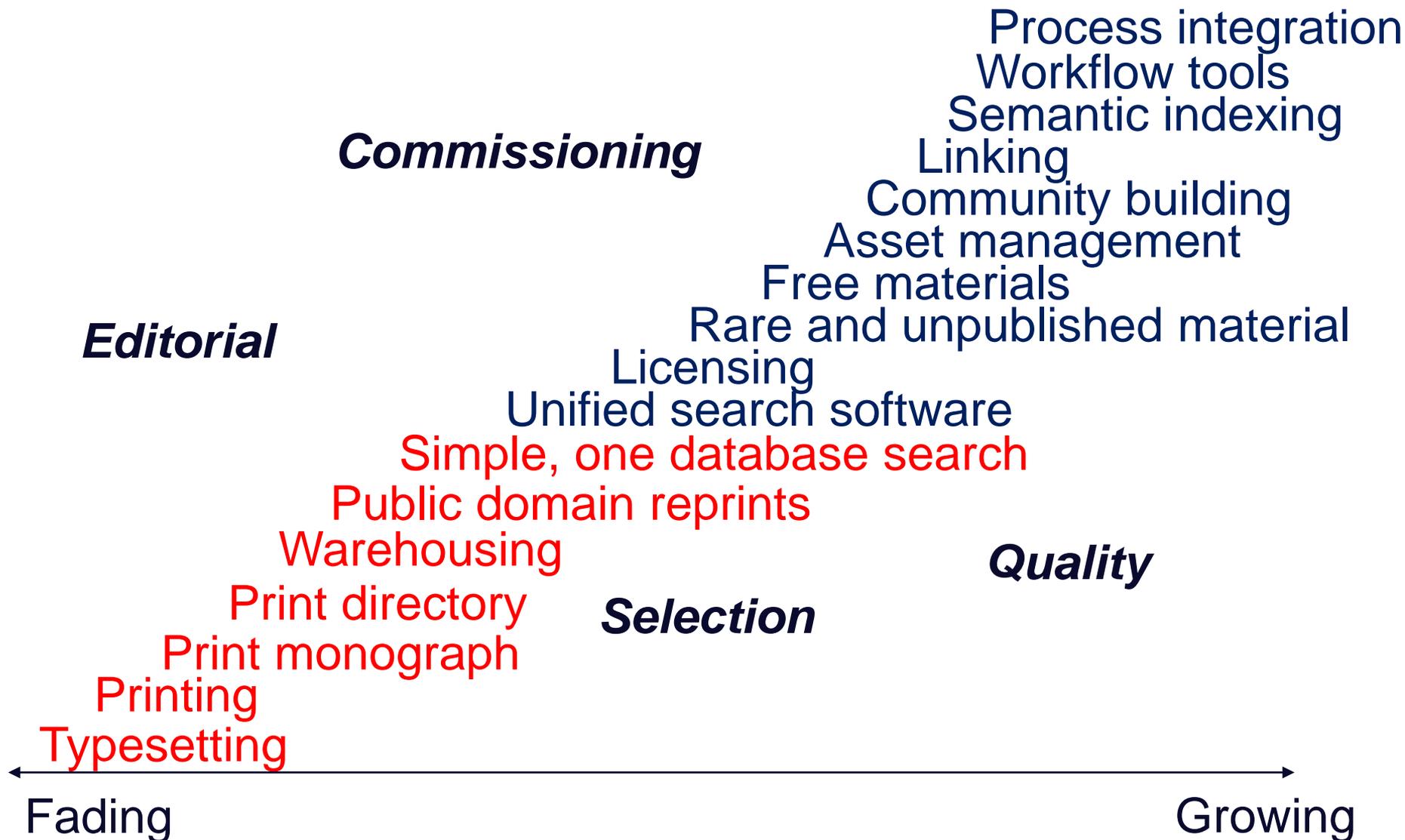
- (Almost) all content is machine readable
- (Almost) everyone can access it instantly
- (Almost) everyone uses it



- Machines must help us learn, discover, understand
 - Search
 - Publish
 - Analyze
 - Process data
 - Identify patterns
 - Draw conclusions
 - Etc...
 - To do e-science, e-humanities,



Evolution of publisher tasks

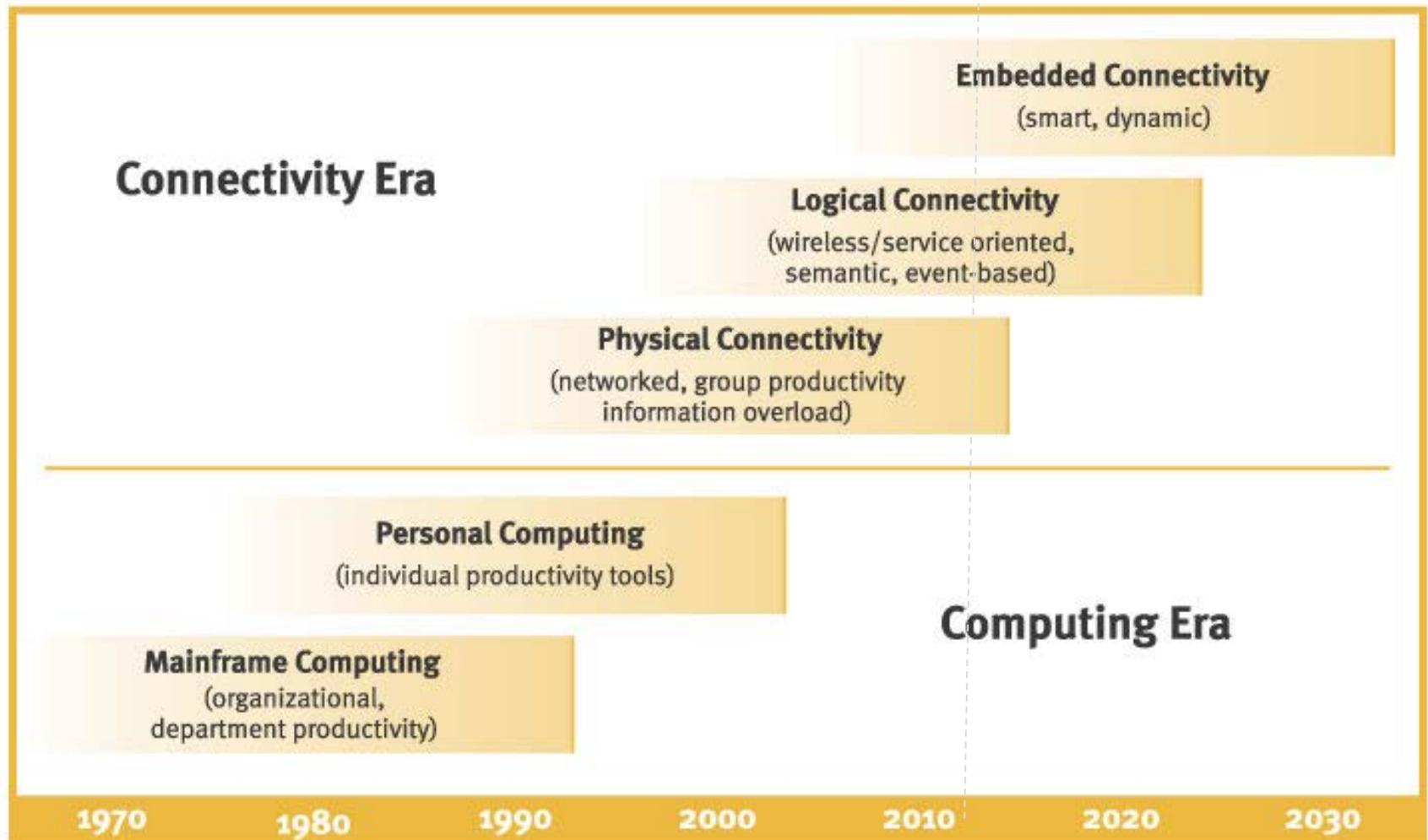




What role does (open) linking have to play?



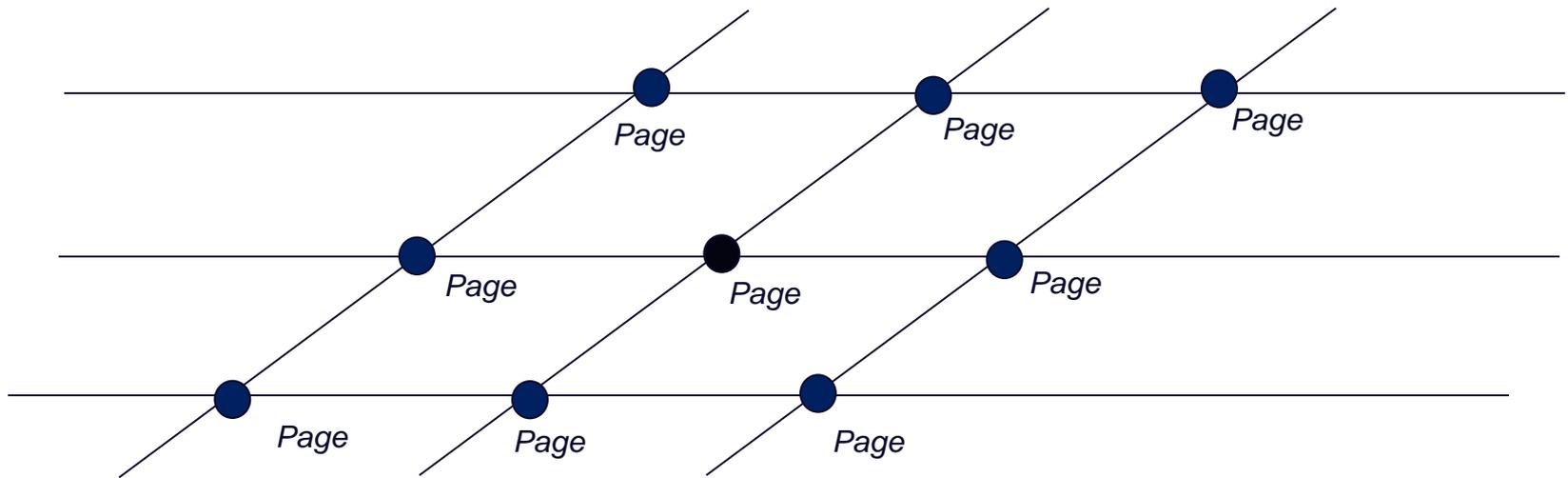
It's the next hurdle



Adapted from Gartner Group research



It's the nature of the *Web*



- Atomic
- Interconnected
- Interdependent
- Value of the Connection = Value of the object
- Pliable
- Constantly evolving
- Practically unlimited in size



Linking

- Speeds research and learning
 - Fewer interfaces to learn and navigate
 - Reduces duplication
 - Increases comprehensiveness
 - Allow unified annotation and
- Lowers costs
 - Libraries don't purchase same content twice
 - Publishers don't need to license and re-sell ubiquitous content
 - Obviates need for updates
- Maximizes usage
 - Content can be part of every search
- Increases functionality
 - Allows machine manipulation of data
 - Linkages not just between content but between apps

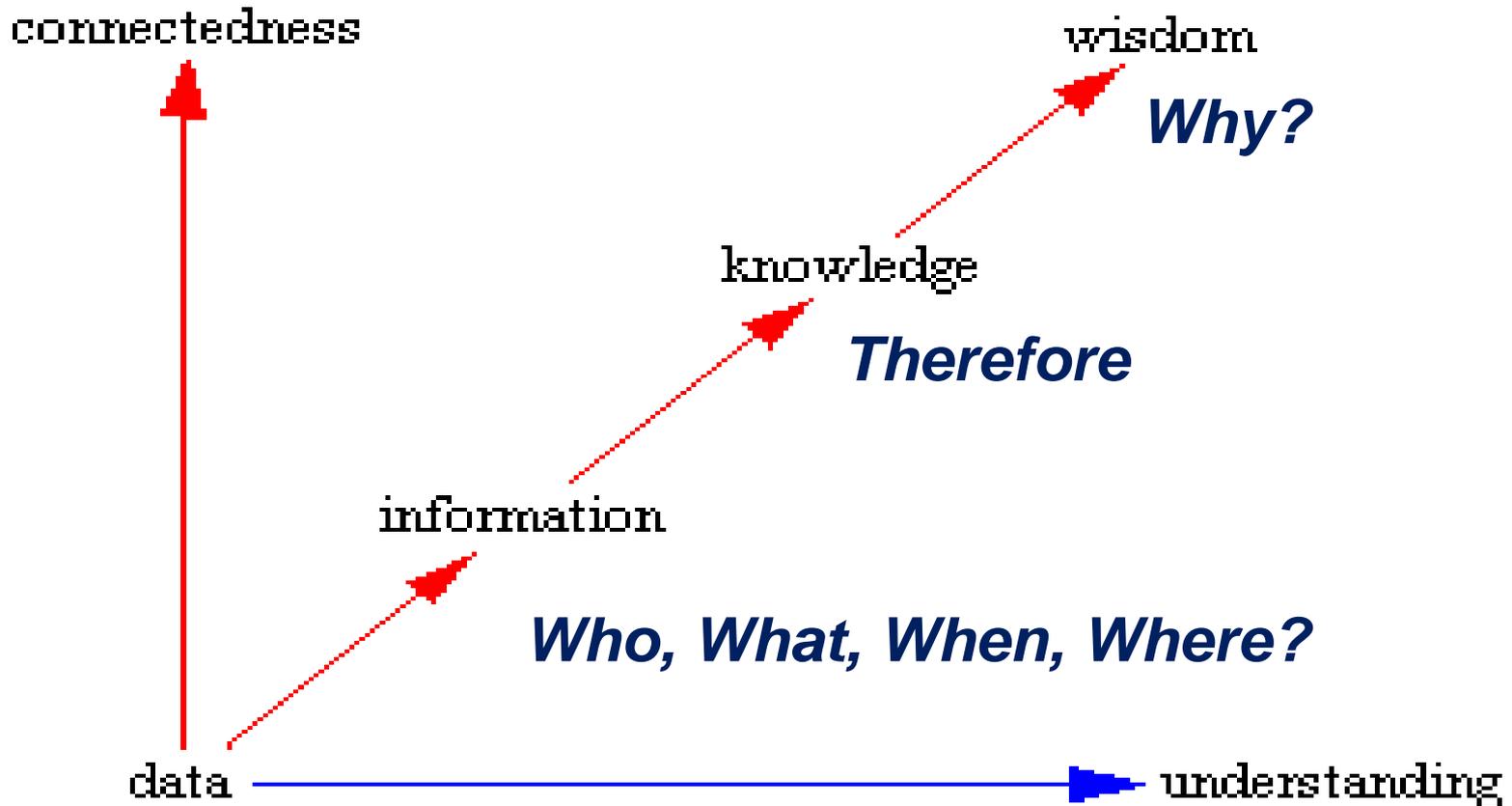


It's the future of academic publishing...

- We seek knowledge and learning, not journals, books and publishers
- Publishers need to deliver the right content, in the right way to the right people.
- In a network a node is less important than the links between the nodes. No one site will have all information
- We need actionable, high quality access to content across different publishers, libraries and websites.



Where we're headed



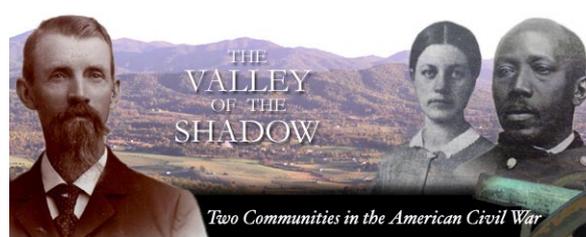
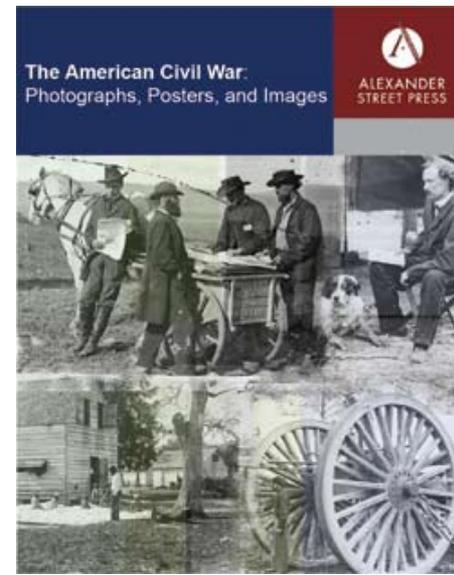
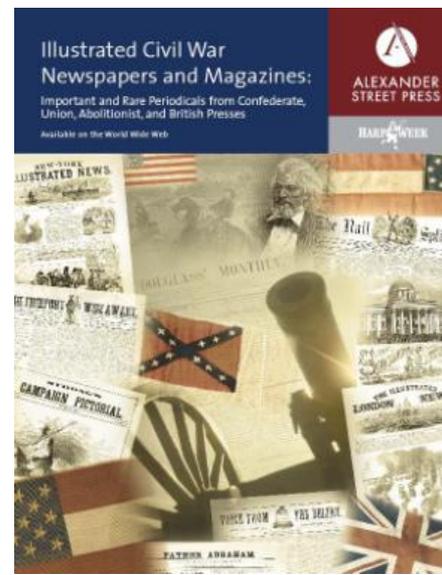
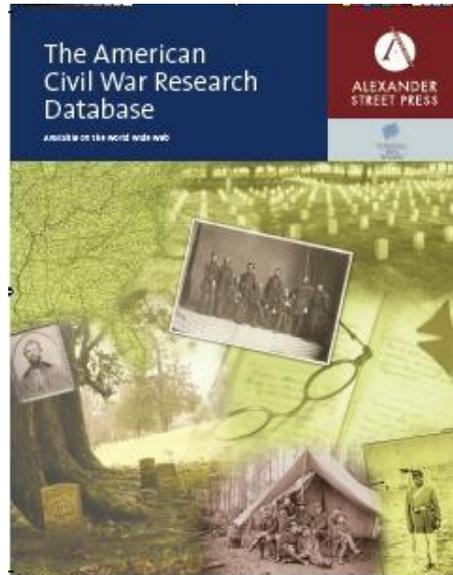
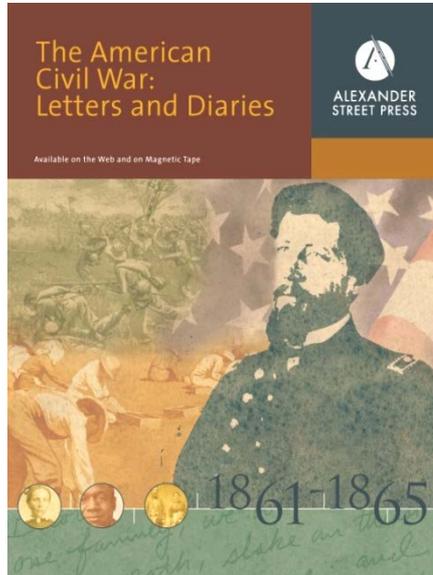
After *Data, Information, Knowledge, and Wisdom*, Gene Bellinger, Durval Castro, Anthony Mills.
<http://www.systems-thinking.org/>



ASP experience in linking



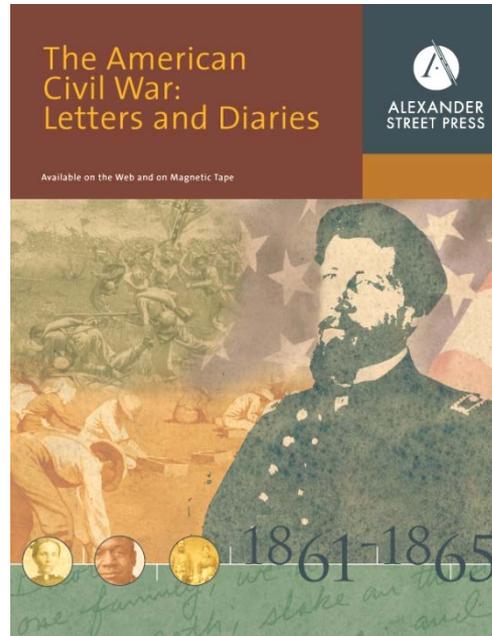
Building *The American Civil War Online*



How to build links between lots of relevant but different files?



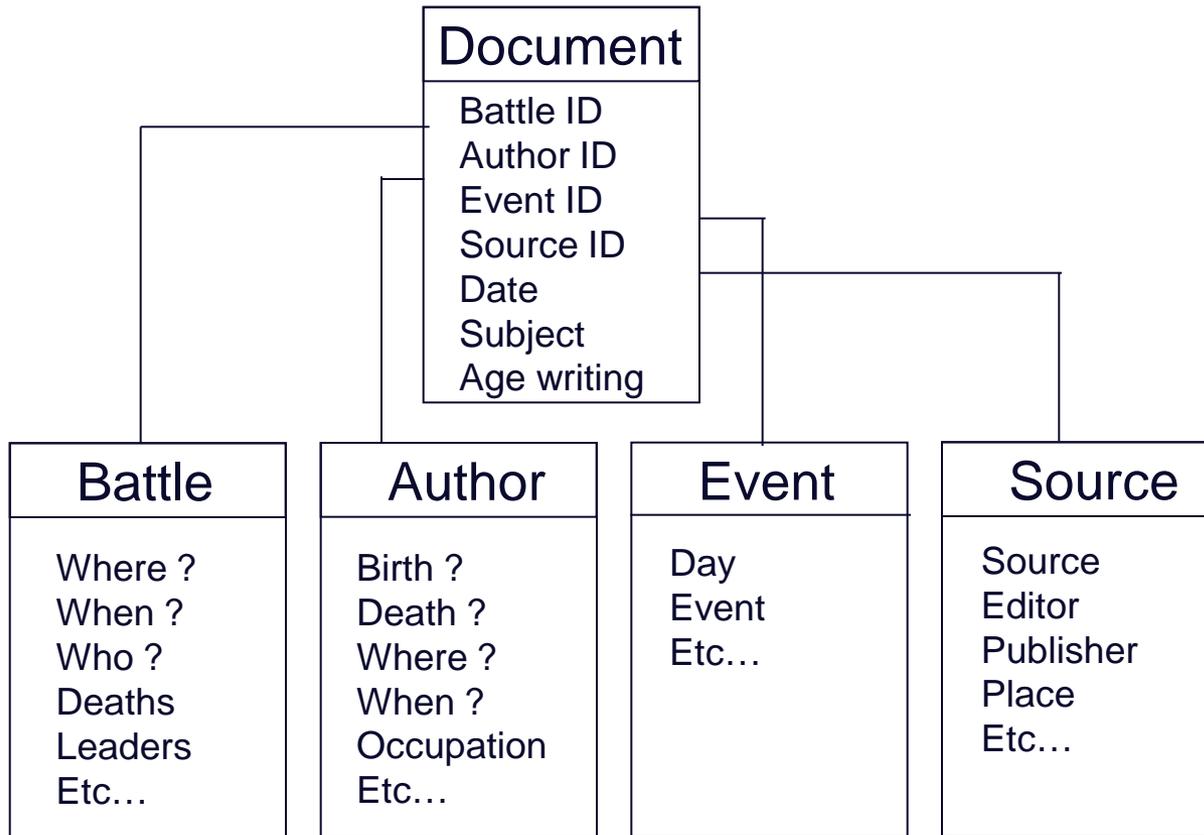
Began with...



100,000+ pages, including previously unpublished manuscripts



Built a structure to capture it...





Find Battles

Use this screen to find battles by specific criteria.

Battle Name:

(e.g., Hill's Plantation)

Battle Location:

(e.g., Virginia)

Battle Description Keyword:

(e.g., McDowell AND failure)

Year:

(e.g., 1864 or 1864-1865)

Month Started:

(e.g., 2 or 2-5)

Day Started:

(e.g., 22 or 22-28)

Day of Week:

(e.g., Monday)

Duration:

Theater:

(e.g., Trans-Mississippi)

Campaign:

(e.g., Grant's Overland Campaign)

Winner:

Leaders:

(e.g., Marmaduke)

Troop Size:

(e.g., 500-2500)

Confederate Troop Size:

(e.g., 1800-10000)

Union Troop Size:

(e.g., 400)

Overall Losses:

(e.g., 1892 or 1000-2000)

Confederate Losses:

(e.g., -50)

Union Losses:

(e.g., 360-)

Confederate Wounded:

(e.g., 800-)

Union Wounded:

(e.g., -721)

Confederate Missing in Action:

(e.g., -30)

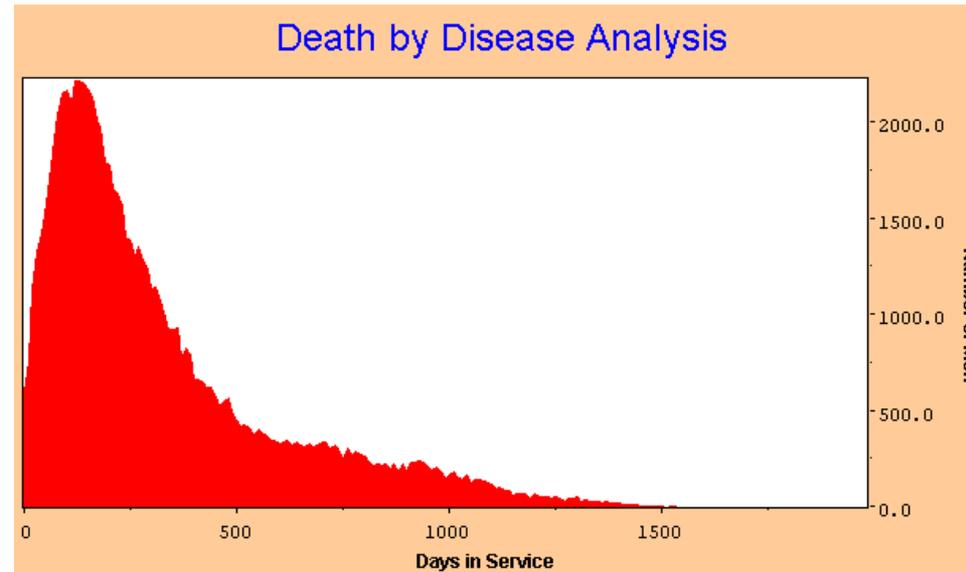
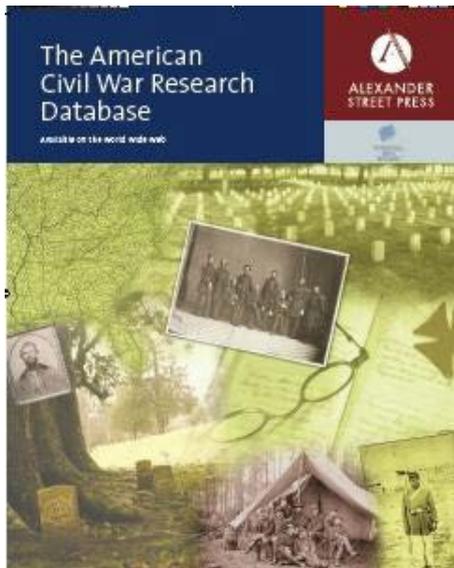
Union Missing in Action:

(e.g., 0-290)

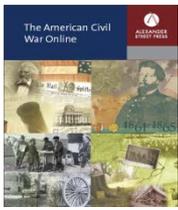




Launched the *Civil War Research Database*



#	Regiment Short Name	Total Men	Combat Pop	Enlist/Comm	Draft	Trans In	Killed/Mortal Wound	Died POW	Died Disease	Disabled	Desert	Disch	Muster Out	Transf Out	???
	Total	118,391	116,721	110,949	2,584	4,609	5,993	1,692	5,642	15,876	8,726	8,186	61,058	8,373	2,278
	Weighted Averages			93.71	2.18	3.89	5.06	1.42	4.77	13.41	7.37	6.91	51.57	7.07	1.91
1	12th MA Light Artillery	291	290	99.65	0.00	0.00	0.00	0.00	8.58	5.16	29.90	1.38	51.55	0.00	1.71
2	13th MA Light Artillery	341	341	87.68	0.00	12.32	0.00	0.00	5.57	5.28	28.74	7.91	44.28	5.57	0.29
3	2nd MA Cavalry	2,588	2,578	99.34	0.04	0.23	3.10	2.16	2.55	6.53	24.15	8.08	38.60	3.35	10.77
4	15th MA Light Artillery	360	360	100.00	0.00	0.00	0.00	0.00	7.50	3.60	23.89	3.60	41.93	17.21	0.28
5	47th MA Infantry	1,141	1,136	99.39	0.00	0.17	0.09	0.00	3.07	4.82	19.62	3.58	67.65	0.60	0.09
6	28th MA Infantry	2,083	2,082	91.07	8.50	0.37	11.38	2.16	3.89	20.30	18.15	7.20	16.89	8.83	10.23
7	11th MA Infantry	2,068	2,055	80.71	8.12	10.54	7.20	1.40	3.43	18.12	17.83	10.10	31.96	5.70	2.37



User wants to cross search and cross link

Charles W. J.—is a member of Company K, One Hundred and Twenty-First New York Regiment, and he has been transferred to this company and regiment from Company F of the Sixteenth New York. He has been thus transferred for the reason that the Sixteenth New York is a two years' regiment, whose time has expired, while he is a three years' recruit, who has a year or two more to serve. Now he claims that pay is due him from November 1, 1862, to August 1, 1864, and

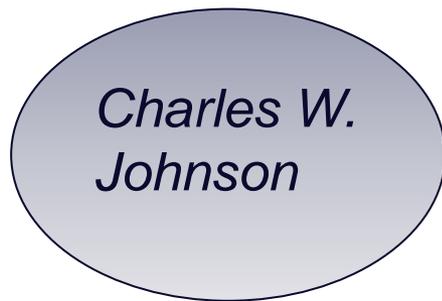
Illustrated Civil War Newspapers

American Civil War Research Database

76	James B Jencks	K	08/23/62	Enlisted	11/10/64	died wounds	
77	Charles W Johnson	K	05/11/63	Transferred	08/24/65	Mustered Out	Hospital, Washington, DC
78	Michael Kellar	K	03/28/65	Enlisted	06/24/65	Transferred	



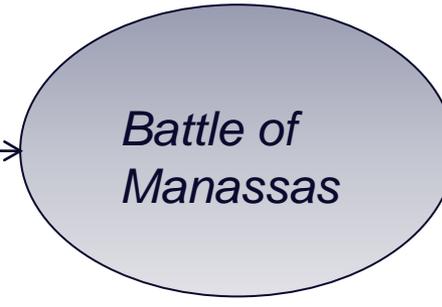
Resource Description Framework (RDF)



Subject
Entity

Fought in

Predicate (Property)



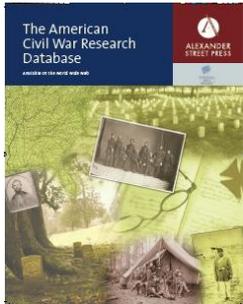
Object
Entity



Make the system understand *how* things are connected



Reconcile the semantic entities



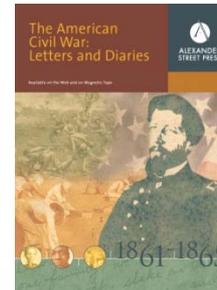
Civil War Research Database

5,441 'battles'

Includes skirmishes, naval encounters

Individual details

July 21st - Bull Run



US National Park Service Database

382 'battles'

Land based only

Major developments

No individual details

July 21st – Manassas

What is a battle?

When does a battle begin?

Where is a battle actually fought?

Inference issues: if Johnson was in the 124th regiment and the 124th fought at Bull Run can we assume he fought at Bull Run?

Etc....



Entity matching isn't easy...

Place (geocodes) and Date are

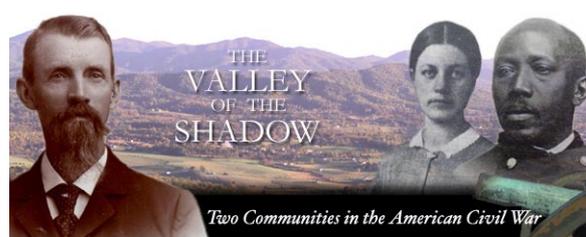
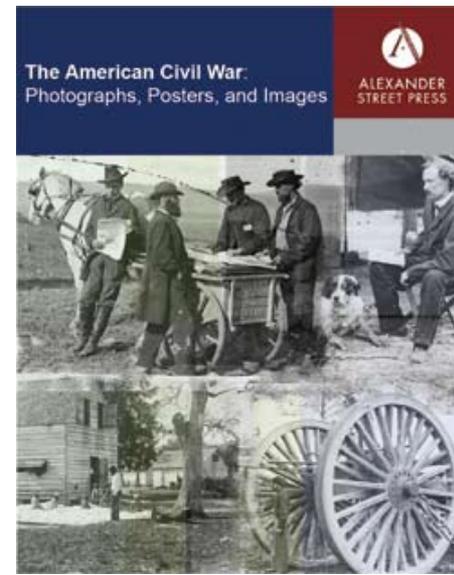
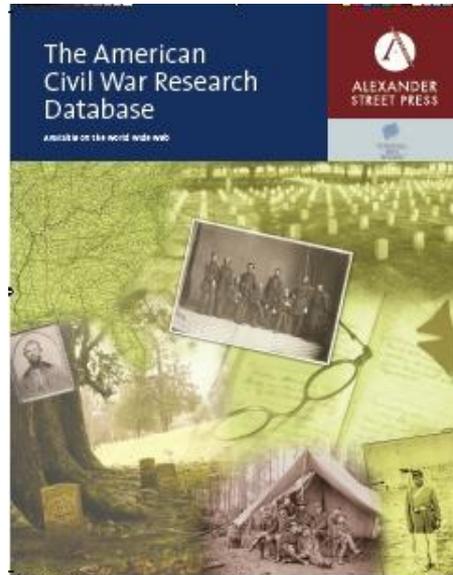
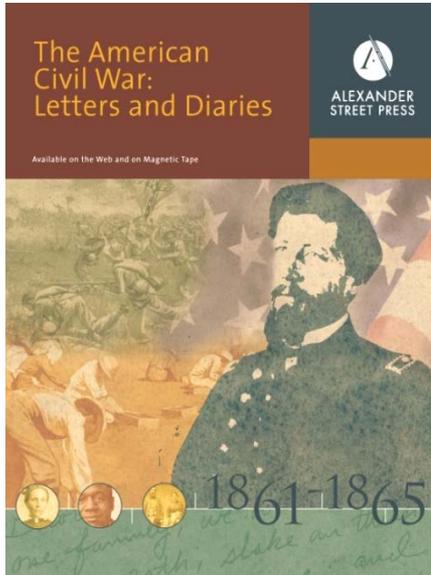
- Universal
- Authoritative
- Comprehensive
- Standardizable

Other vocabularies not so straightforward

- UMLS unifies over 150 medical subjects such as ICD-10, MeSH, SNOMED CT, DSM-IV and more
- Requires Continuous error correction, updating and improvements.



Add lots more dbs and content

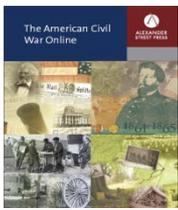


How to build links between lots of relevant but different files?

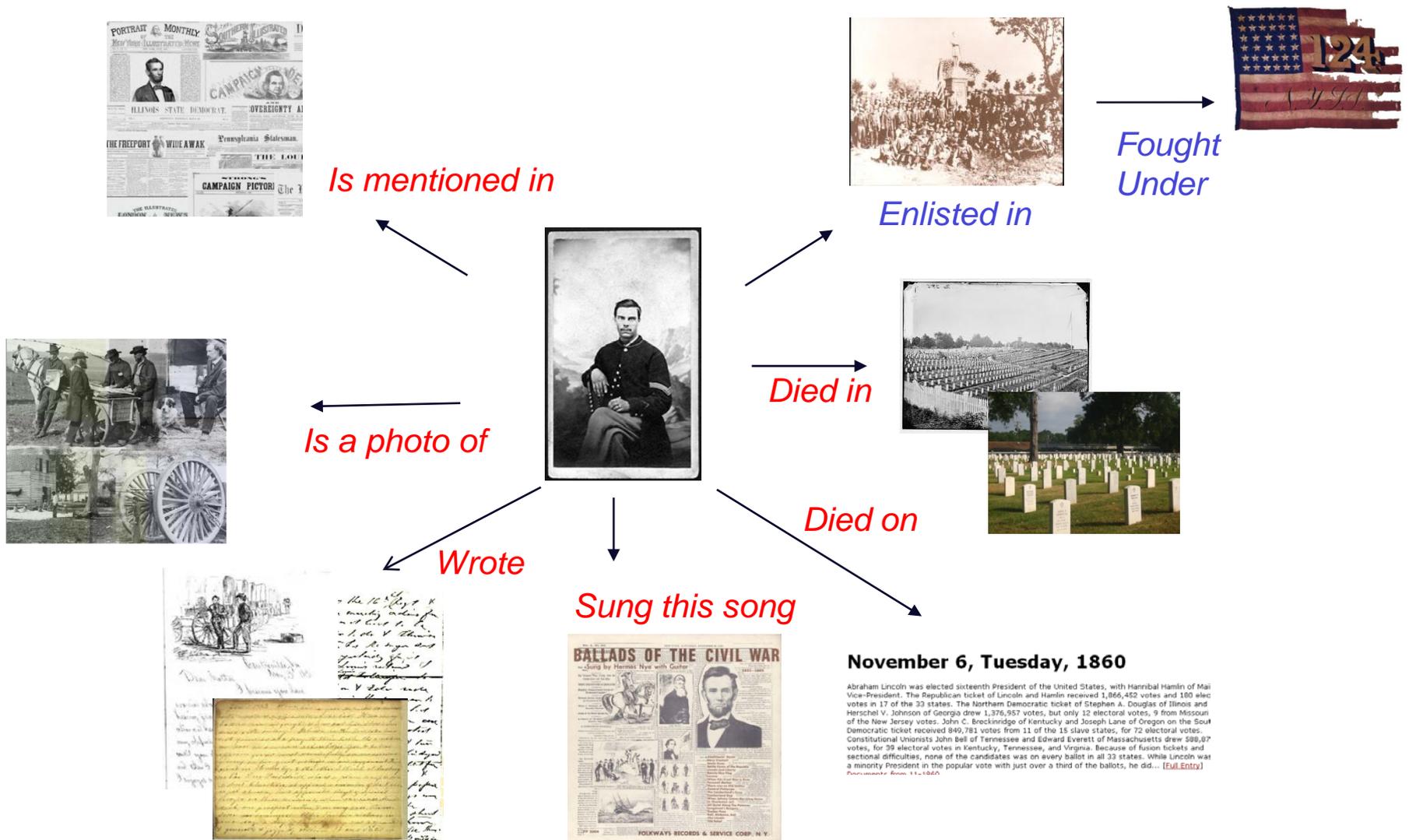


Automated entity/property extraction?

- Machine aided indexing tags subjects, names, places
- Struggles with relationships
- Work has been going on since the 1990's
- Some success, but most had to be done manually

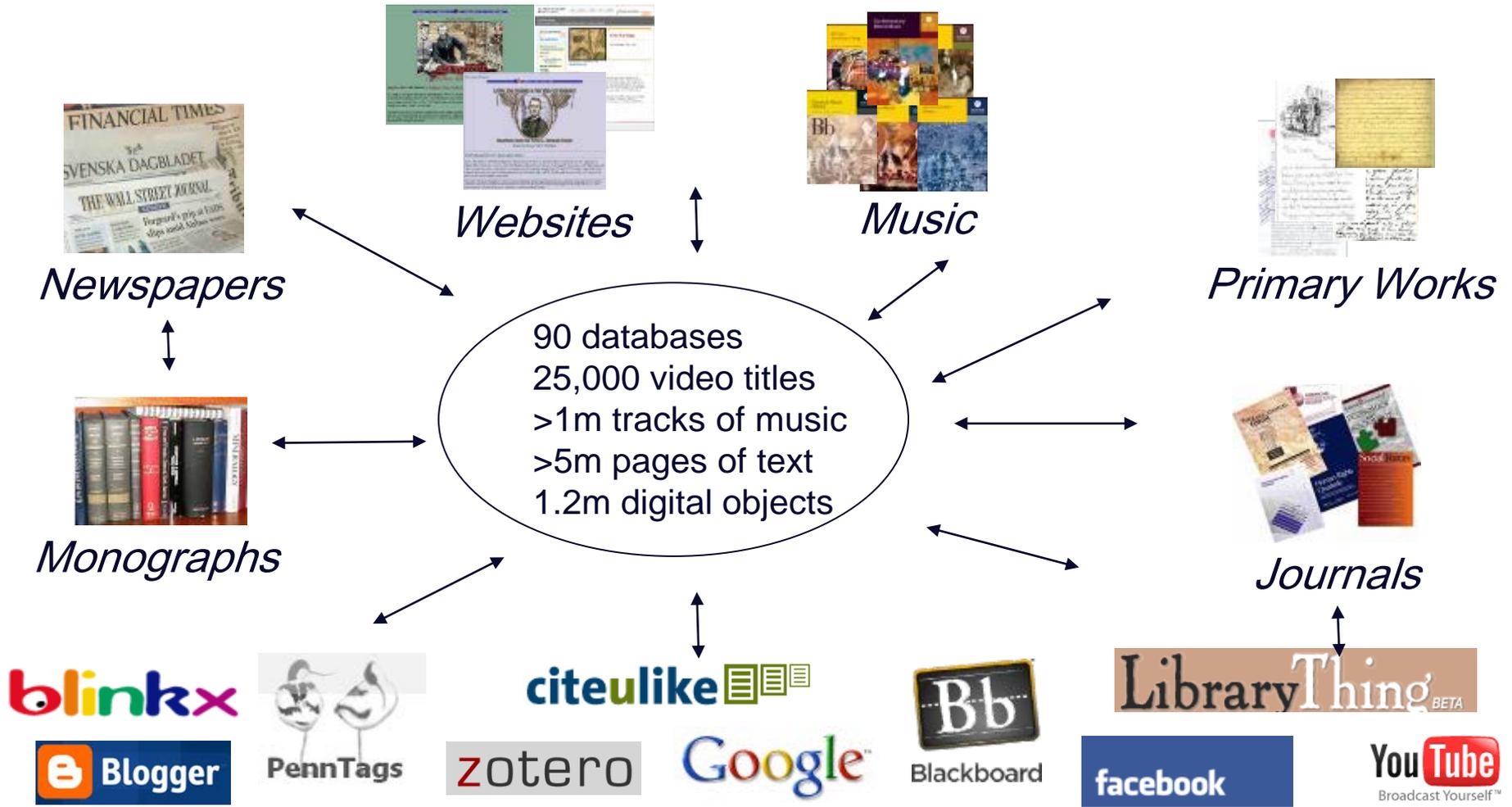


Make relationships linkable (in process)



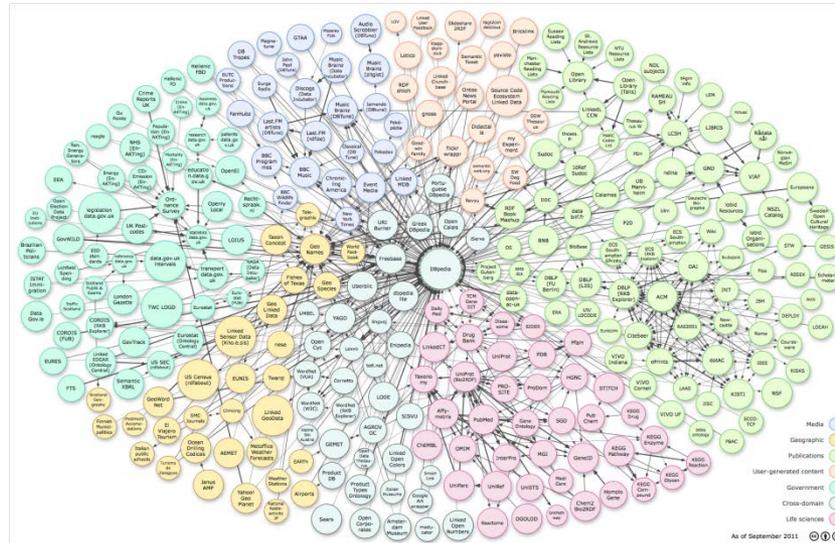


Goal: Inbound and outbound links to all





Steps to integration



All linkable content



All Alexander Street Content



The American Civil War Online



The American Civil War Letters and Diaries

Not to scale ;)



Start with all ASP content on one platform...

searching 78 collections containing 1,234,567 items Sign In

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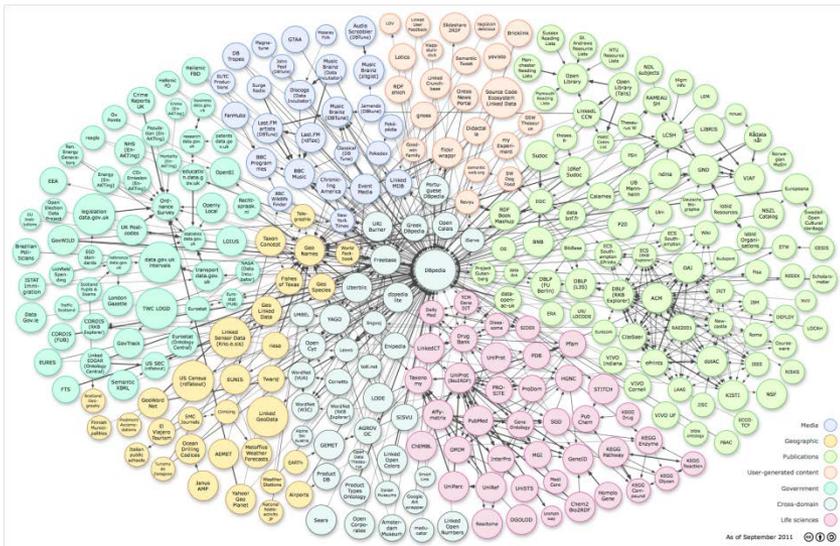
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- Unified, multi-database, multi-discipline cross-search
- Preserving and opening controlled vocabularies
- Single Open API for third-party access
- Launched in July 2013



Inbound linking

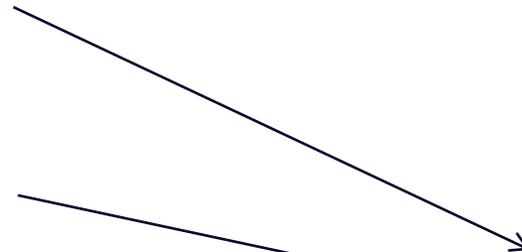




Inbound links



Mobile



Embeds



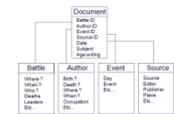
Search Engines



Discovery Services



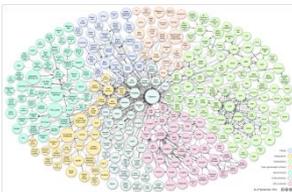
MARC



RDF



?





Challenges to building semantic links

Philosophical issues

- Many don't want to link to 'for fee' objects
- Charge for traffic generated or to generate traffic?
- Building links is expensive. Who pays?
- When things change who's responsible?
- Vested interests

Technical

- Authentication
- Permissions
- Automated tools lacking

1,445 Results First | **1-10** | 11-20 | 21-30 | 31-40 | 41-50 | Next

- 1. Book Chapter Add to marked items
Day/Night Pattern of **Myocardial** Infarction and Sudden Cardiac Death
Interacting Roles of the Endogenous Circadian System and Behavioral Triggers
Steven A. Shea, Michael F. Hilton and James E. Muller
...randomly across the day. This chapter reviews the considerable epidemiological evidence that **myocardial** infarction (MI), ventricular tachyarrhythmias, and sudden cardiac death (SCD) exhibit prominent day...
Clinical Hypertension and Vascular Diseases, Blood Pressure Monitoring in Cardiovascular Medicine and Therapeutics,
 PDF (268.2 KB)

- 2. Book Chapter Add to marked items
Acute **Myocardial** Infarction and Postinfarct Remodeling
David C. Isbell and Christopher M. Kramer
In the wake of an acute **myocardial** infarction (AMI), accurate assessment of the left ventricle (LV) is of paramount...
Contemporary Cardiology, Cardiovascular Magnetic Resonance Imaging
 PDF (1.4 MB)

- 3. Book Chapter Add to marked items
Intramyocardial Ejection of Basic Fibroblast Growth Factor Increased Regional **Myocardial** Blood Flow Andsalvaged Infarcted Myocardium in Dogs
Masaru Miyataka, Kinji Ishikawa, Iwao Ogawa, Hironari Koka, Shoji Nakai, Hirofumi Kino, Masahiko Inagaki, Akio Kimura, Takaya Hasegawa, Koji Kitayama and Ryo Katori
...the infarcted myocardium. We conclude bFGF was effective in limiting **infarct** size in acute **myocardial** infarction
Progress in Experimental Cardiology, The Ischemic Heart
 PDF (820.1 KB)

- 4. Book Chapter Add to marked items

Starts With

Go
a b c d e f g h i j k l m
n o p q r s t u v w x y z
space more

Date

- In the last week (14)
- In the last two weeks (18)
- In the last month (19)
- In the last six months (172)
- In the last year (292)

Language

- Dutch (8)
- English (1,365)
- French (6)
- German (63)
- Italian (3)

Subject

- Artificial Intelligence (incl. Robotics) (37)
- Computer Science (34)
- Software Engineering (34)
- Computer Communication Networks (34)
- Data Encryption (34)
- Algorithm Analysis and Problem Complexity (34)
- Database Management (33)
- Computation by Abstract Device (32)
- Chemistry and Materials Science (9)
- Chemistry (5)

Copyright

- 2000 - 2009 (1,365)

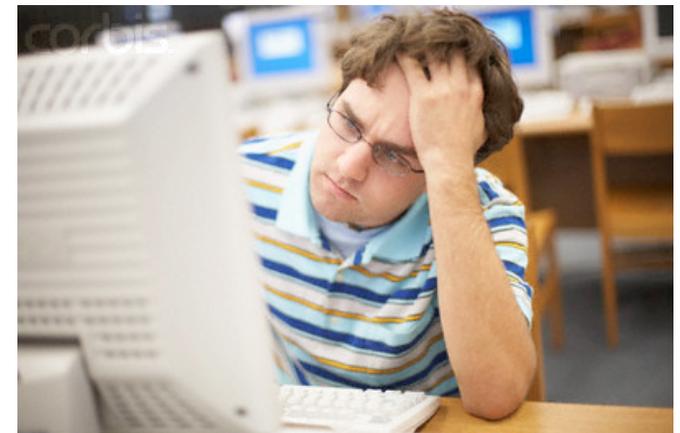
If the data isn't there



Not that useful



Unhappy Students...





If the data is there...

3 search examples keyed into one box...

'Churchill'

Narrow your search

- Content Type**
 - Documentary (255)
 - Newsreel (178)
 - Interview (28)
 - [More...](#)
- Topic / Theme**
 - Depression & World War II (1929–1945) (138)
 - Post-war Era (1945–1960) (134)
 - 20th Century in World History (1914-2000) (82)
 - [More...](#)
- Speaker / Narrator**
 - Robert Powell (16)
 - Winston Churchill (8)
 - Stan Watt (7)
 - [More...](#)
- Date Written / Recorded**

150

before 2000: 195 hits

'Mozart'

Narrow your search

- Time Period**
 - Classical (623)
 - Romantic (26)
 - 20th century (23)
 - [More...](#)
- Composer**
 - Mozart, Wolfgang Amadeus (826)
 - Beethoven, Ludwig van (30)
 - Bach, Johann Sebastian (15)
 - [More...](#)
- Composition**
 - Don Giovanni, K. 527 (74)
 - Le Nozze di Figaro, K. 492 (68)
 - Die Zauberflöte, K. 620 (64)
 - [More...](#)
- Soloist / Performer**
 - Various Artists (81)

'Child Therapy'

Narrow your search

- Therapist / Psychologist**
 - Christine A. Nelson (11)
 - Allen E. Ivey (10)
 - Derald Wing Sue (8)
 - [More...](#)
- Presenting Condition**
 - Anxiety (21)
 - Anger (17)
 - Depression (emotion) (14)
 - [More...](#)
- Therapeutic Approach**
 - Role play (29)
 - Multicultural counseling (22)
 - Crisis intervention (16)
 - [More...](#)
- Health Subject**
 - Populations (133)
 - Diagnosis (119)



If the data's there and the usage is there...

schema.org

Search

Home

Schemas

Documentation

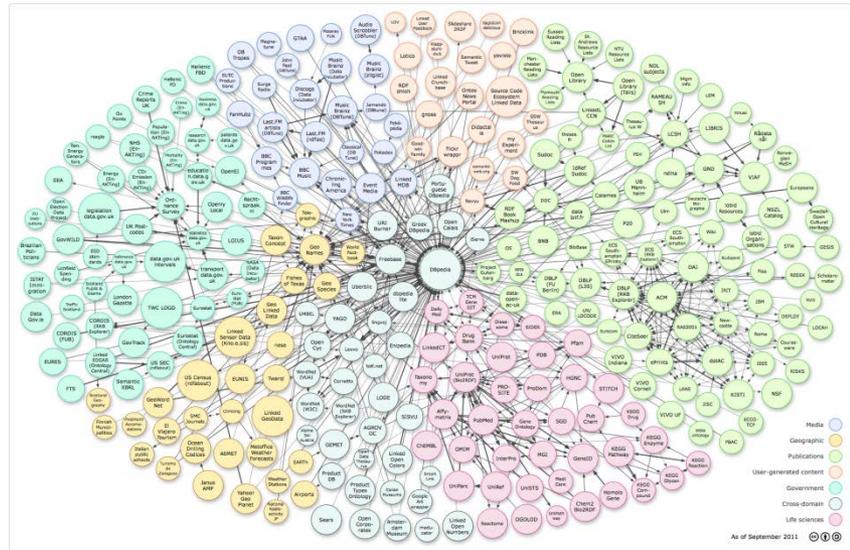
Thing > Intangible > JobPosting

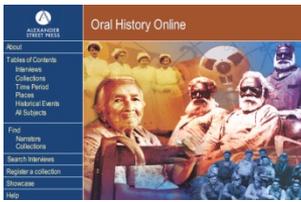
A listing that describes a job opening in a certain organization.

Property	Expected Type	Description
Properties from Thing		
additionalType	URL	An additional type for the item, typically used for adding more specific types from external vocabularies in microdata syntax. This is a relationship between something and a class that the thing is in. In RDFa syntax, it is better to use the native RDFa syntax – the 'typeof' attribute – for multiple types. Schema.org tools may have only weaker understanding of extra types, in particular those defined externally.
description	Text	A short description of the item.
image	URL	URL of an image of the item.
name	Text	The name of the item.
sameAs	URL	URL of a reference Web page that unambiguously indicates the item's identity. E.g. the URL of the item's Wikipedia page, Freebase page, or official website.
url	URL	URL of the item.
Properties from JobPosting		
baseSalary	Number	The base salary of the job.
benefits	Text	Description of benefits associated with the job.
datePosted	Date	Publication date for the job posting.
educationRequirements	Text	Educational background needed for the position.
employmentType	Text	Type of employment (e.g. full-time, part-time, contract, temporary, seasonal, internship).

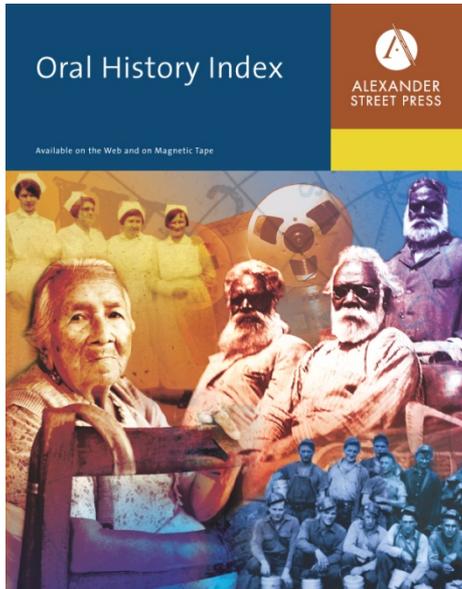


Outbound links





Experience so far Oral History Online



- Higher value links
- Semantic indexing and keyword searching of more than 3,000 oral history collections
- Represents the personal histories of some 300,000 people
- Value:
 - Context
 - Selection
 - Search power
 - Licensed material
 - Integration



Browsing value...

Oral History Online Table of Contents - Places											
Home Page	About	Table of Contents						Find Collections	Search Interviews	Help	
		Repositories	Collections	Interviews	Date	Places	Historical Events	All Subjects			

Table of Contents: Geographical Terms (Interviews)

[View Collections by Geographical Terms] [View Interviews by Geographical Terms]

Expand	Term	Place Discussed	Place of Birth
	Africa	65	19
	Asia	1448	206
	Atlantic Ocean	30	
	Europe	1462	1020
	North America	7549	3075
	Bahamas	1	
	Barbados	4	6
	Canada	91	58
	Cayman Islands		1

Oral History Online Table of Contents - Interview Date											
Home Page	About	Table of Contents						Find Collections	Search Interviews	Help	
		Repositories	Collections	Interviews	Date	Places	Historical Events	All Subjects			

Table of Contents: Interview Date

Expand	Term	All	Fulltext	Audio	Video
	1930s	228	228		
	1930	11	11		
	1934	1	1		
	1936	24	24		
	1937	167	167		
	1938	25	25		
	1940s	59	4	1	1
	1950s	864	18	2	
	1960s	1861	208	8	
	1970s	2558	713	190	
	1980s	2144	1140	268	37
	1990s	3178	2755	360	91
	2000s	1307	1132	213	144
	Undated	1508	833	516	81

Oral History Online Table of Contents - Historical Events											
Home Page	About	Table of Contents						Find Collections	Search Interviews	Help	
		Repositories	Collections	Interviews	Date	Places	Historical Events	All Subjects			

Table of Contents: Historical Events (Interviews)

[View Collections by Historical Events] [View Interviews by Historical Events]

Term	All	Text	Audio	Video
Protestant Reformation, 1500-1650	1	1		1
Sand Creek Massacre, CO, 1864	2	2		
Armenian Massacre, 1894-1896	4	4		
Russo-Japanese War, 1904-1905	1	1		
Mexican Revolution, 1910-1920	1	1		
Titanic sinks, April 1912	2	2		
Balkan Wars, 1912-1913	3	3		
World War I, 1914-1918	272	238	27	
Armenian Massacre, 1915-1916	11	10		
Easter Uprising, April 14, 1916	1	1		
Russian Revolution, 1917-1921	35	35		1
Prohibition, 1919-1933	3	3		
Harlem Renaissance, 1920-1939	4	4		
Great Depression, 1929-1941	505	445	5	
Spanish Civil War, 1936-1939	1	1		
Assassination of John F. Kennedy, November 22, 1963	9	9	2	
Sino-Japanese War, 1937-1945	1	1		
Holocaust, 1938-1945	93	85	70	15
Kristallnacht, November 9-10, 1938	1	1		
World War II, 1939-1945	1023	901	157	33
Winter War, 1939-1940	4	4		



Search Power

		Oral History Online										
		Search Interviews										
Home Page	About	Table of Contents							Find	Search	Help	
		Repositories	Collections	Interviews	Date	Places	Historical Events	All Subjects	Collections	Interviews		

Search Interviews

This screen searches all interviews in the database by specific criteria.

	<input type="button" value="SEARCH"/>	<input type="button" value="CLEAR"/>			
Keyword(s) in Interview:	<input type="text"/>	(e.g., <i>frighten*</i>)			
	<input type="checkbox"/> Full-Text	<input type="checkbox"/> Audio	<input type="checkbox"/> Video		
Narrator:	<input type="text"/>	<input type="button" value="Terms"/>	(e.g., Thomas)		
Age at Interview:	<input type="text"/>		(e.g., 42-65)		
Year of Birth:	<input type="text"/>		(e.g., 1850-1920)		
Place of Birth:	<input type="text"/>	<input type="button" value="Terms"/>	(e.g., Vietnam)		
Gender:	<input type="text" value="ALL"/>				
Occupation:	<input type="text"/>	<input type="button" value="Terms"/>	(e.g., Teacher)		
Race:	<input type="text"/>	<input type="button" value="Terms"/>	(e.g., Black)		
All Subjects:	<input type="text"/>	<input type="button" value="Terms"/>	(e.g., Labor)		
Years Discussed:	<input type="text"/>		(e.g., 1920)		
Places Discussed:	<input type="text"/>	<input type="button" value="Terms"/>	(e.g., Kiev)		
People Discussed:	<input type="text"/>	<input type="button" value="Terms"/>	(e.g., Clinton, Bill)		
Historical Events Discussed:	<input type="text"/>	<input type="button" value="Terms"/>	(e.g., World War II)		
Organizations Discussed:	<input type="text"/>	<input type="button" value="Terms"/>	(e.g., IBM Corporation)		
Interviewer:	<input type="text"/>	<input type="button" value="Terms"/>	(e.g., Raeff, Marc)		
Date of Interview:	From Year <input type="text"/>	Month <input type="text" value="ALL"/>	To Year <input type="text"/>	Month <input type="text" value="ALL"/>	<input type="checkbox"/> Include Undated
Place of Interview:	<input type="text"/>	<input type="button" value="Terms"/>	(e.g., Bethesda, MD)		
Previously Unpublished:	<input type="text" value="ALL"/>				
Collection Name:	<input type="text"/>	<input type="button" value="Terms"/>	(e.g., Cold War)		
Repository Name:	<input type="text"/>	<input type="button" value="Terms"/>	(e.g., Nunavut Arctic College)		



Context for results

		Oral History Online										
		Results										
Home Page	About	Table of Contents							Find	Search	Help	
		Repositories	Collections	Interviews	Date	Places	Historical Events	All Subjects	Collections	Interviews		

Results for Text Search

Search results: Found **298** paragraphs.

Search string: word=castro

Sort By: **Context** | [Line by Line](#) | [Narrator](#) | [Interview Date](#) | [Summary by Collection](#)

298 results | page **1** » [2](#) » [3](#) [jump to page](#)

1. Interview of Miller, John G. 26-Jun-2004 in *Adams Center (VMI) Cold War History Project* [[Interview Details](#)][[Collection Details](#)][[Link to Text](#)]

These are nations that have no desire at all to hook into a global network because if they did, that they would lose control of their people; these are controlled by dictators and despots who need absolute control of their people, like **Castro**, Saddam Hussein, Kim Jong Il and Korea. And they have to keep them backward and in the dark to maintain control. A good part of this non-Core nation is the radical Islamic movement, the Wahabis, in Saudi Arabia is a great example, who keep screaming, "Death to infidels" and keep trying to carry it out. Professor Barnett argues that the only way to bring the non-Core nations into the Core and into fruitful exchange with the rest of the world is to depose that leadership and look for some alternative that can start to hook them into the world.

2. Interview of Arceneaux, Grace Palacio, 1920- 01-Jun-1977 in *Agricultural History Santa Cruz County* [[Interview Details](#)][[Collection Details](#)][[Link to Text](#)]

After that he settled with Julia **Castro**, who was just the salt of the earth. She raised him for three years. She was very good to him. Leo . . . there's nothing to say bad about him. When he was in town he visited me often. He was there every Sunday, every Wednesday, some evenings. Knaster: Did he help support the baby? Arceneaux: Oh yes. He supported him. He paid people to take care of him. Knaster: When you got out of the hospital where did you go? Arceneaux: Back . . . Knaster: You came back to town and lived here with the baby? Arceneaux: Well no. They wanted me to have a home that had two bedrooms.

3. Interview of Arceneaux, Grace Palacio, 1920- 01-Jun-1977 in *Agricultural History Santa Cruz County* [[Interview Details](#)][[Collection Details](#)][[Link to Text](#)]

" You don't write, "White kills wife," or Englishman stabs . . ." things like that. It was an effort to stand up for themselves. I joined that and I felt pretty good about it. I didn't have anything to do with the Mexicans. I didn't know where to begin, because I still had the child that was half-Filipino. I didn't know where to go so I stayed and it was nice. Very, very nice. They were gentle with me and very kind, and it was easy to raise Lenny with people like that that had watched him being raised in the community in many foster homes and then they knew that he ended up at Julia **Castro's** house, the lady that raised him the last three years.

4. Interview of Soto, Joe, 1937- 25-Jan-1994 in *Barrios Oral History Project* [[Interview Details](#)][[Collection Details](#)][[Link to Text](#)]



Done by linking alone



Oral History Online - Web Link

[Home](#)[About](#)[Report Bad Link](#)[Back to Results](#)[Remove Frame](#)

Below is the text of interview **Walter Cronkite** in collection **Cold War Oral History** at **George Washington University. National Security Archives ...**

Episode 10 CUBA

INTERVIEWS:

[Brugioni](#)[Dino](#)[Walter
Cronkite](#)[Halpern
Samuel](#)[McNamara](#)

INTERVIEW WITH WALTER CRONKITE

(Preliminary talk not transcribed)

INTERVIEWER: Mr Cronkite, can I ask you first off: at the beginning of the Sixties, how do you think America perceived Russia, the Soviet Union?

WALTER CRONKITE: Well, at the beginning of the Sixties we were long past any thought of the Russians as being allies. The Soviet Union as one of



Challenge - Linking behaviors

Rather than...

- Change links constantly
- Forbid others to link to you
- Refuse to license for crawlers
- Insist on one interface

Do the following...

- Have permanent links
- Invite others to link to you
- Exchange links in batch through protocols like OpenURIs/URLs
- Make citations visible to the outside world
- If necessary charge for links/crawlers/APIs
- Engineer for multiple interfaces
- Ask others (e.g. Google) to do the same!



Challenge - Library Perceptions

- ‘We want full-text content, not indexes’
- ‘Why should we pay for content that’s free?’
- ‘It’s not our job to index content we don’t own’
- ‘Should it be in the OPAC?’
- Not sure what to do about MARC records...

- Metrics and development funds prioritized towards
 1. Content (look what we own)
 2. Usage (look how much it’s being used)
 3. Utility (look how much is learned/discovered)



Business Issues

- Who pays for the links?
 - Connections don't lend themselves to advertising
 - Utility is largely in the background
 - OCLC aside, discovery services don't pay for metadata
- Permissions control is complex
 - Authentication
 - Determining ownership before providing access
- Competitive forces
 - Major players (e.g. Google) won't allow data mining
 - Discovery services

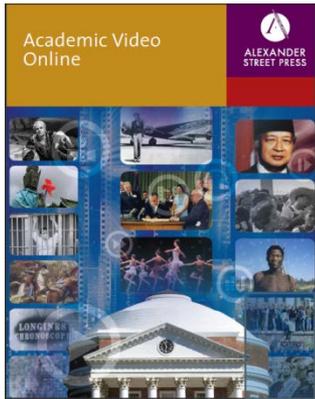


Room for improvement?

Feature	ASP	Discovery Service	Google
Quality content	Y	Y	N
Discipline relevance: comprehensive, covers rare, small sites	Y	N	N
Stability: automated re-directs and indicators of broken links	Y	Some	Some
Integration – playlist integration, easy citation, annotation.	Y	Some	Some
Usage statistics	Y	Y	N
Broken link user alerting	Y	?	N
Deep integration of selected items – semantic indexing	Y	N	N



Adding discovery to Academic Video Online



Target Sites for Connectors

Source	# of Titles	What is it?	Level
C-Span	400,000	News broadcasts since 1983.	Cross-searched
TED Talks	700	Unique lectures	Cross-searched
WGBH Open Vault	1,025	Interviews with famous people	Title by title
Annenberg Media	300	Scientific Videos	Title by title
Science Cinema	250	Experimental Videos	Title by title
Civil Rights Movement	125	Oral Histories	Title by title
Total	50 Sites, over 500k titles		



Are publishers and librarians making progress quickly enough?



Some great sites...

[About](#) | [Get Involved](#) | [For Developers](#) | [Help](#) | [Follow](#) | [Contact](#) | [Login](#) | [Sign Up](#)

D P L A DIGITAL PUBLIC LIBRARY OF AMERICA

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A Wealth of Knowledge

explore 2,511,056 items from libraries, archives, and museums

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Explore by Place

[Map »](#)

Explore by Date

[Timeline »](#)

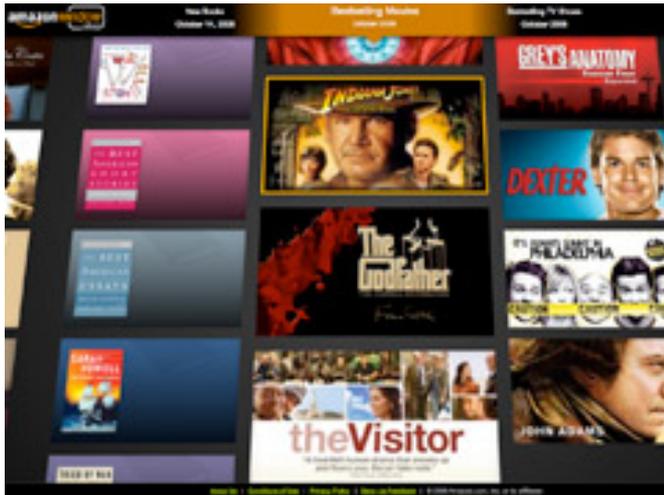
1946 | 1947 | 1948 | **1949** | 1950 | 1951 | 1952

[Announcements](#)

[News](#)



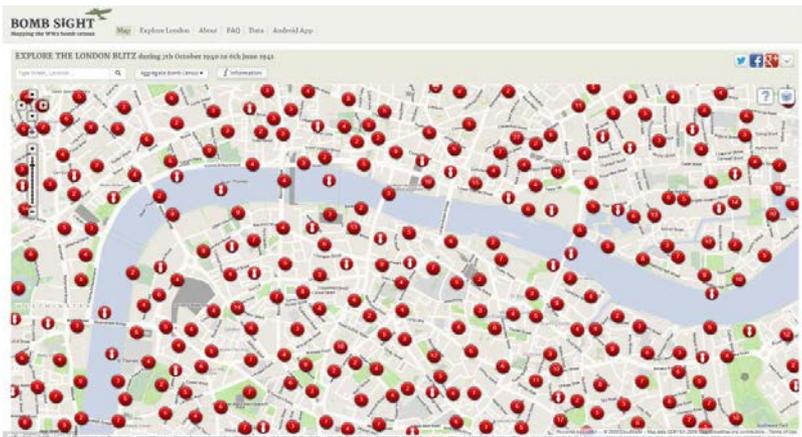
Too many Mash-ups to mention...



Trendsmap
New York, United States on Twitter
Popular & breaking twitter trends in New York, United States

arquette RISING

- David Arquette in Head-On Car Accident Mip Jive lytMCojA NYC
- Published: Arquette 'OK' after Beverly Hills crash (AP) Mip Jpoo g8tUAgf TT New York, New York
- @robertkookey GT @WPIX David Arquette okay after car crash - WPIX Mip J8il jtgCooTn Local, National, US



CREDOreference
Smart Research Starts Here

UNIVERSITY OF DENVER
START FROM A HIGHER PLACE

Library Catalog | Databases | Electronic Journals | Ask Us

Search | Find Topic Pages | Find a Book | Advanced Search | Concept Map | Saved Results | Gadgets | Help | Logout

Search for: _____ in All Subjects SEARCH

Topic Page:
coffee

A tree, its seeds, and the beverage made from them. The coffee tree, a small evergreen of the genus *Coffea*, has smooth, ovate leaves and clusters of fragrant white flowers that mature into deep red fruits about 1/2 in. (1.27 cm) long. The fruit usually contains two seeds, the coffee beans. *C. arabica* yields the highest-quality beans and provides the bulk of the world's coffee, including c.80% of the coffee imported into the United States. The species is thought to be native to Ethiopia, where it was known before A.D. 1000.

Read Complete Article

Did you find this article helpful?

The Columbia Encyclopedia, © Columbia University Press 2008

APA | Chicago | Harvard | MLA Save citation to My saved results GO

coffee. (2008). In *The Columbia Encyclopedia*. Retrieved from <http://www.credoreference.com/entry/columency/coffee>

DEFINITION

coffee from Chambers 21st Century Dictionary

coffee (ˈkɒfi) *n* (countable)
1. an evergreen tree or shrub which has oval leaves, white fragrant flowers and red fleshy fruits
2. the seeds of this plant, called beans, roasted whole or ground to a powder
3. a popular drink, usually containing caffeine, which is prepared from the roasted and ground beans of the coffee plant
4. the brown colour of the drink when mixed with

MORE ENTRIES FROM CREDO

coffee
The Macmillan Encyclopedia
The seeds (called beans) of certain tropical evergreen trees of the genus *Coffea*, which—when roasted, ground, and brewed in hot.

coffee
The Crystal Reference Encyclopedia
An evergreen shrub, leaves oval, in opposite pairs; flowers white, fragrant; 5-petaled, in axils of leaves; cherry-like fruits, red, fleshy...

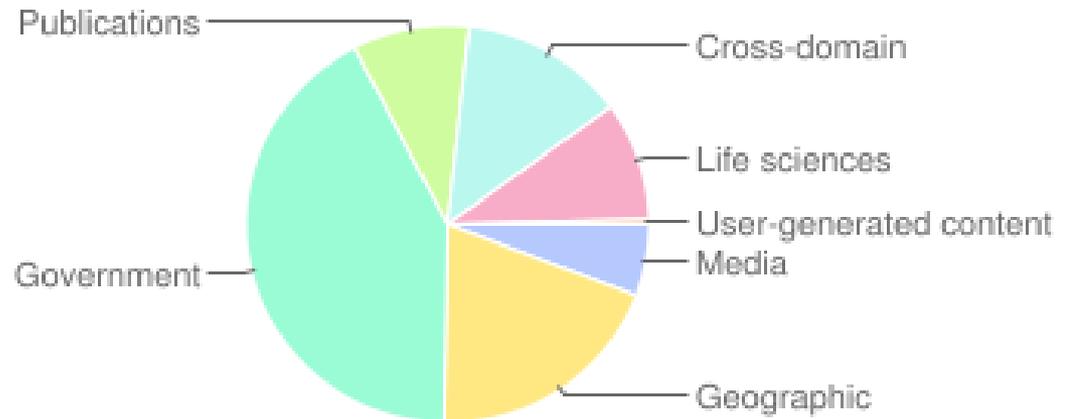
RELATED TOPICS RECENTLY VISITED

scarcia Agriculture Alcohol bean Beech Brazil Cameroon chocolate oak Colombia Costa Rica Cotton Deer French revolution Guatemala Haiti Hemingway, Ernest Java Jefferson, Thomas maple Marbrique New Orleans Nicaragua Oak oil Peru rose sugar tea tobacco White yellow wax

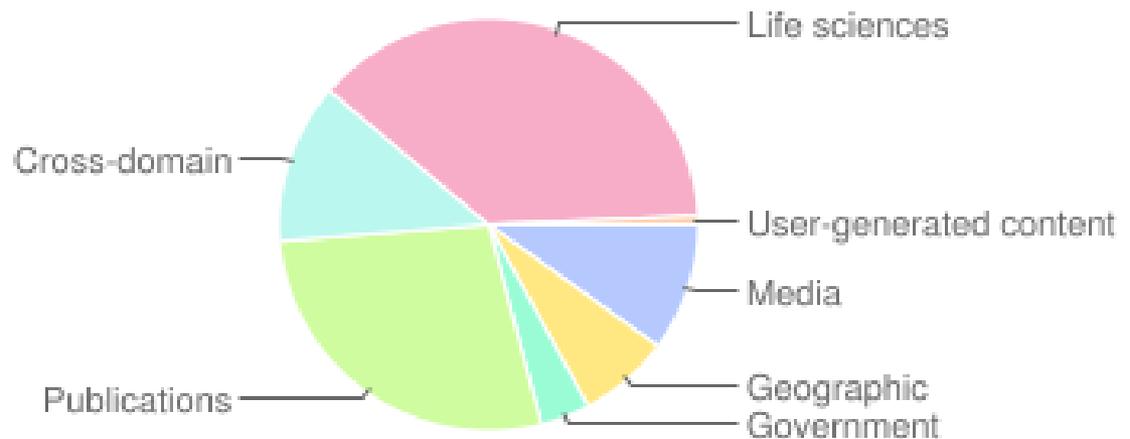


Growing number of targets...

Distribution of triples by domain



Distribution of links by domain



<http://lod-cloud.net/state>



Freebase – entity definitions

The screenshot shows the Freebase website interface. At the top, there's a navigation bar with 'Freebase' logo, a search bar, and links for 'Browse', 'Query', and 'Help'. A large banner displays '1,922,804,550 Facts (and counting)' and the tagline 'A community-curated database of well-known people, places, and things'. Below this is a menu with 'Data' highlighted. The main content area features a table titled 'Explore Freebase Data' with columns for 'Domain', 'ID', 'Topics', and 'Facts'. A sidebar on the right contains sections for 'How can you get started?', 'Learn how it works', 'Use Freebase data', and 'Join the Community'. The footer includes 'Terms of Service', 'How to Attribute to Freebase', 'Feedback', and copyright information for 2013 Google.

Domain	ID	Topics	Facts
Music	/music	26M	173M
Media	/media_common	7M	21M
Books	/book	6M	32M
People	/people	3M	15M
TV	/tv	2M	16M
Film	/film	1M	15M
Location	/location	1M	17M
Organization	/organization	789K	4M
Fictional Universes	/fictional_universe	743K	1M
Business	/business	733K	3M
Sports	/sports	371K	3M



Knowledge Graph Search for Singapore...

Google:– 715 million hits

About 715,000,000 results (0.23 seconds)

[Singapore](#) - Wikipedia, the free encyclopedia
en.wikipedia.org/wiki/Singapore

Singapore Listen/ˈsɪŋəpɔːr/, officially the Republic of **Singapore**, is a Southeast Asian island city-state off the southern tip of the Malay Peninsula, 137 ...
Four Asian Tigers - World's busiest port - City-state - Financial centre

[Official Singapore Tourism Website - YourSingapore.com](#)
www.yoursingapore.com/

Find tourist information and create your travel guide for events and attractions in **Singapore**. The official website by the **Singapore** Tourism Board.

[Welcome To Singapore Airlines](#)
www.singaporeair.com/

National flight carrier which includes online booking, sites and offices, schedules and route maps.

[gov.sg: Singapore Government Information](#)
www.gov.sg/

The official website of the Government of **Singapore**.

News for **singapore**



[Singapore Cuts Export Forecast as China Slowdown Damps Recovery](#)

Businessweek - 36 minutes ago

Singapore lowered its forecast for exports this year as a slowing expansion in China crimps demand for the nation's goods, even as services ...

Channel Ne...

[Singapore's medical risk takers](#)

BBC News - 2 days ago

[Singapore Stocks - Factors to watch on August 12](#)

Reuters UK - 2 hours ago



Singapore

Country

Singapore, officially the Republic of Singapore, is a Southeast Asian island city-state off the southern tip of the Malay Peninsula, 137 kilometres north of the equator. [Wikipedia](#)

Dialing code: 65

Weather: 29°C, Wind S at 11 km/h, 79% Humidity

Local time: Monday 11:28 AM

Currency: Singapore dollar

Official languages: English Language, Malay Language, Tamil, Standard Mandarin

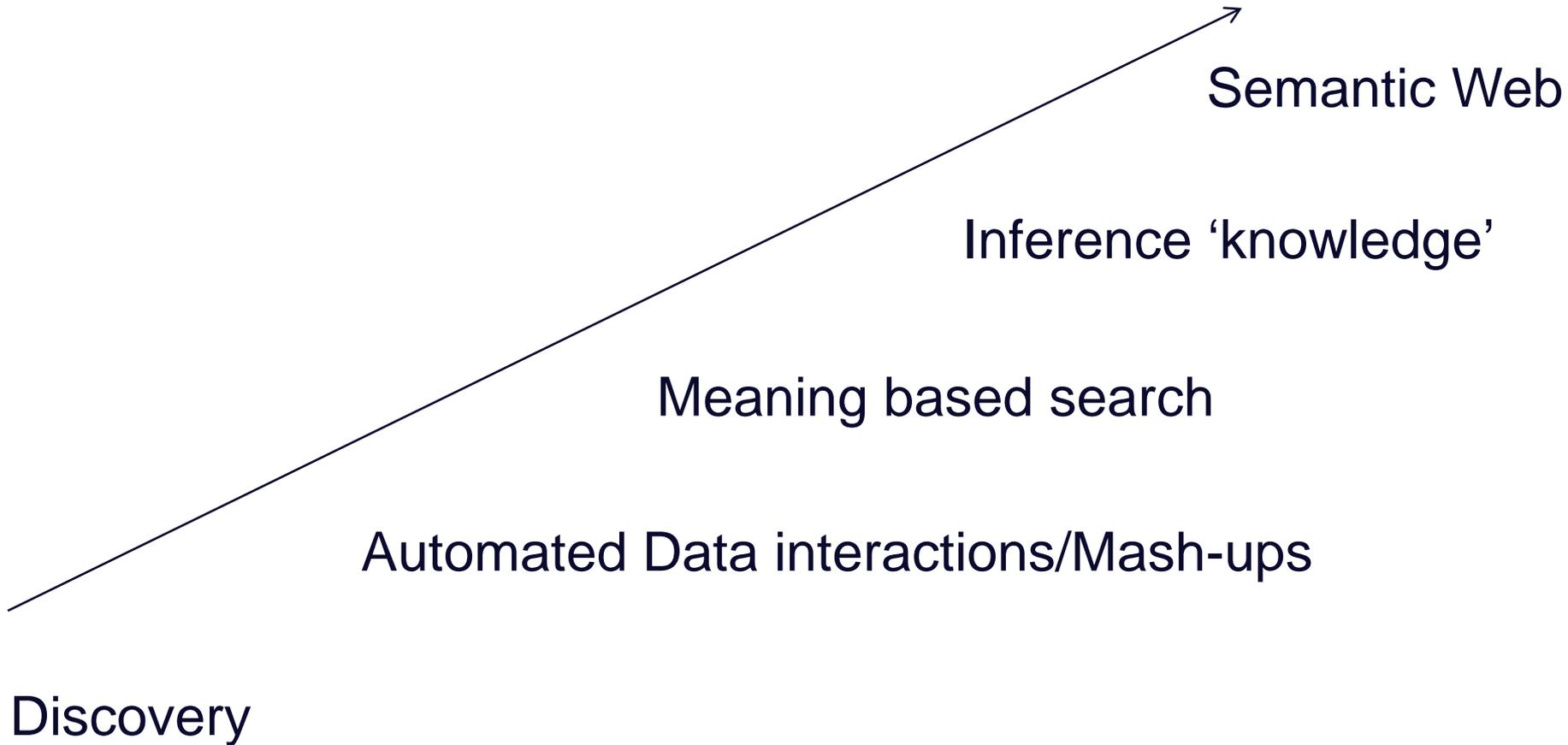
Government: Unitary state, Constitutional republic, Parliamentary republic

Points of interest





Progress could be faster...





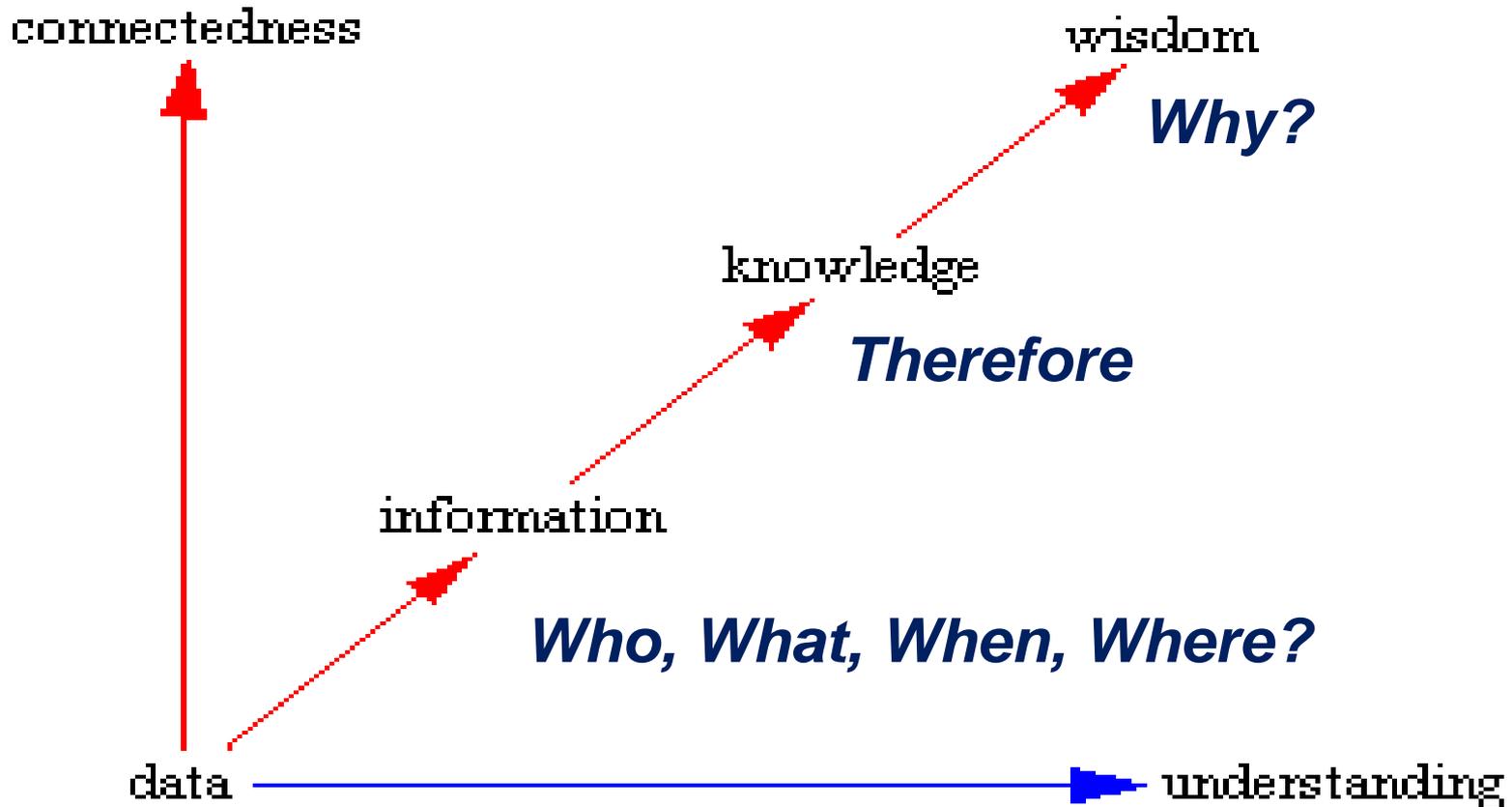
Goes slower than you think...

- Ted Nelson outlined Hypertext in 1963.
- Berners-Lee wrote/published on a Hypertext project - The World Wide Web - in 1989/1990.
- In 1999 Ted Nelson opined

“HTML is precisely what we were trying to PREVENT— ever-breaking links, links going outward only, quotes you can't follow to their origins, no version management, no rights management”

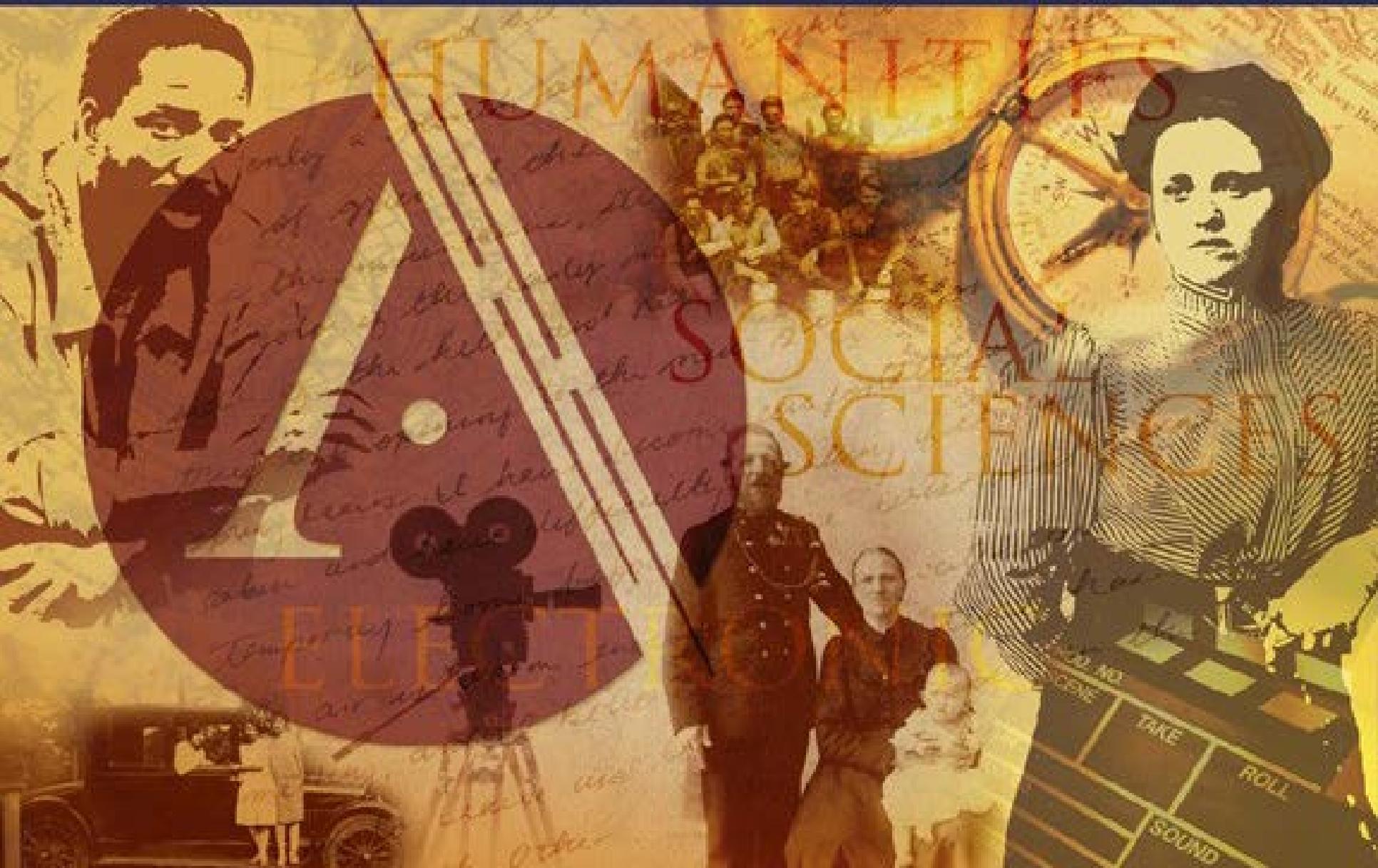


Where we're headed



After *Data, Information, Knowledge, and Wisdom*, Gene Bellinger, Durval Castro, Anthony Mills. <http://www.systems-thinking.org/>

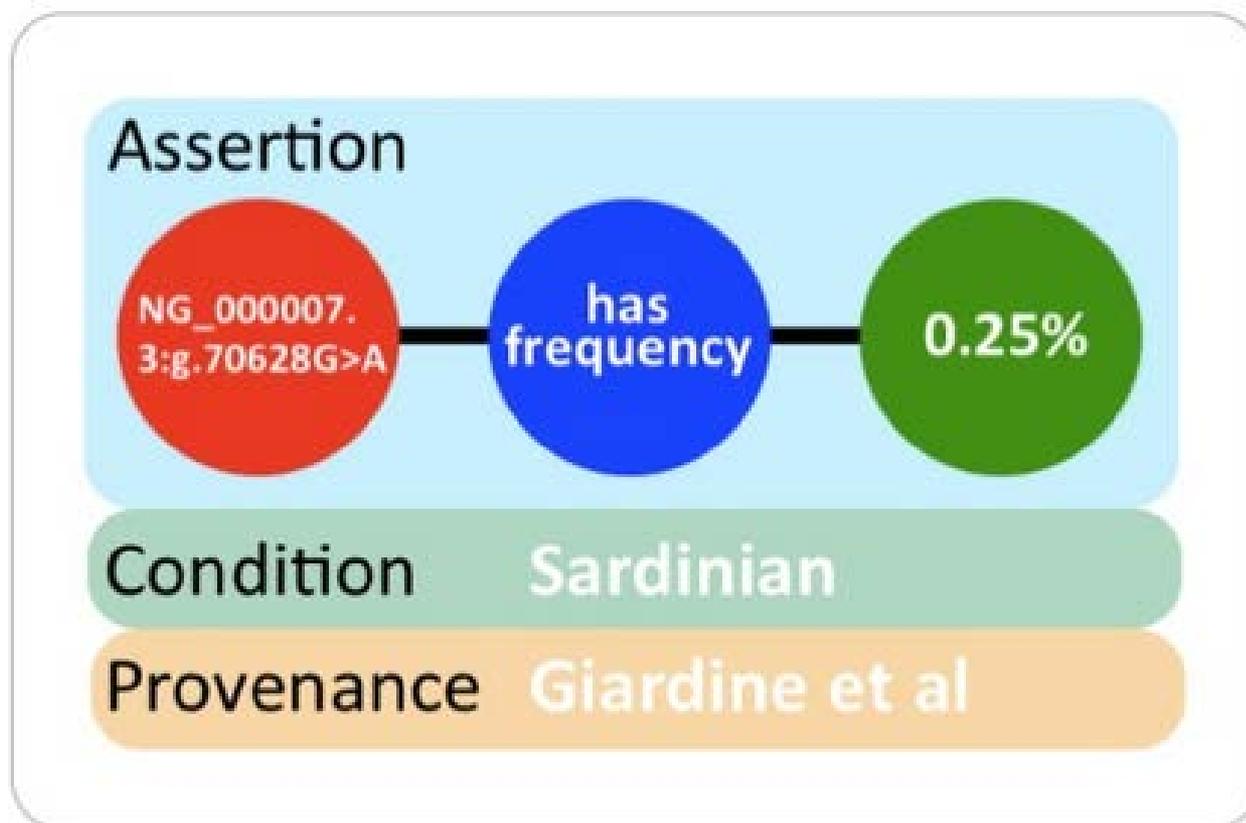
www.alexanderstreet.com





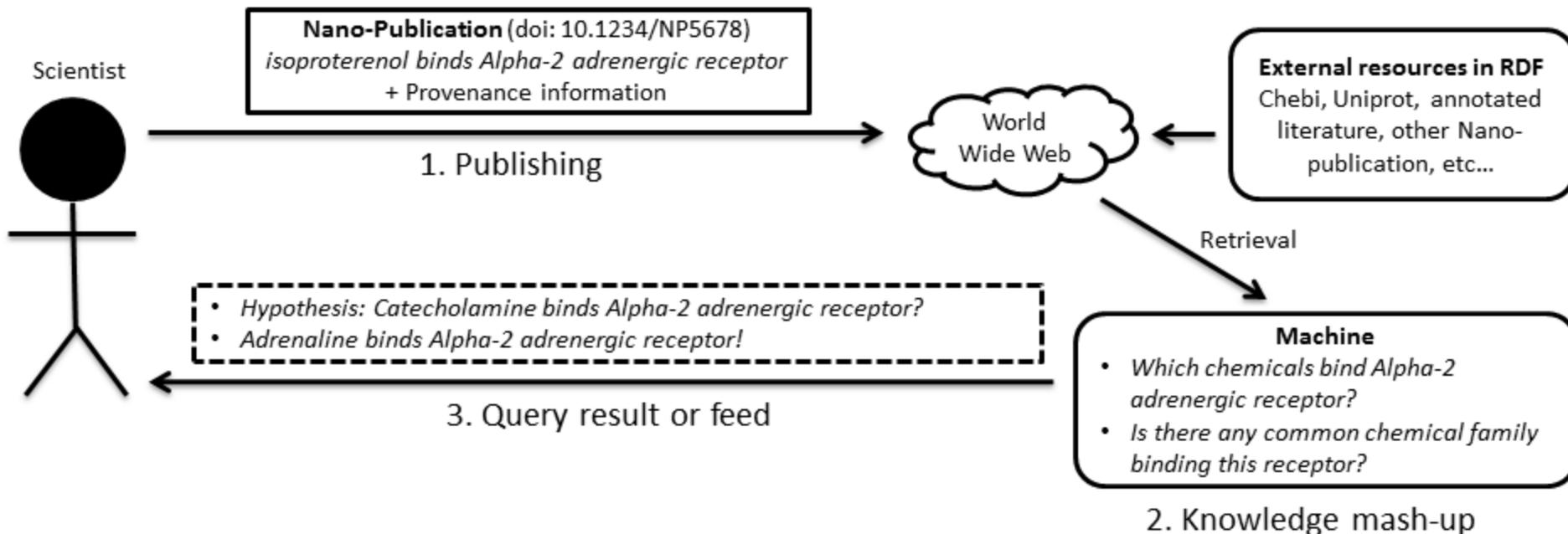
New ideas...

Nano-publication...





Nano-publication...





Elsevier's Executable Article Challenge

- Equations, tables and graphs interactive so reviewers, readers and machines can check, manipulate and explore the result space
- Long term technical compatibility
- Data and code validated easily and automatically
- Balances author rights, institutional rights, and open access.
- Registration and tracking of actions for provenance
- Viruses and code contamination, plagiarism proof
- Open API to enable automated queries by outsiders



Utopia Suite – selected tools

Search
Tool

PRECIS results with citations

The screenshot displays three overlapping windows from the Utopia Suite. The top-left window, 'Find-O-Matic', shows search results for 'opsd' in a table. The top-right window, 'PRECIS', displays search results for 'Rhodopsin' with a list of citations. The bottom window, 'untitled alignment', shows a sequence alignment editor with a multi-colored sequence alignment.

ID	Description	UniProt
OPSD1_ANGAN	Rhodopsin, deep-sea form	UniProt
OPSD1_PATYE	Rhodopsin, GQ-coupled (GQ-rhodopsin)	UniProt
OPSD2_ANGAN	Rhodopsin, freshwater form	UniProt
OPSD2_PATYE	Rhodopsin, GQ-coupled (GQ-rhodopsin)	UniProt
OPSD_ABYKD	Rhodopsin (fragment)	UniProt
OPSD_ALLMI	Rhodopsin	UniProt
OPSD_AMBTI	Rhodopsin	UniProt
OPSD_ANDCA	Rhodopsin	UniProt

Search complete, 141 results

PRECIS Results:

Rhodopsin
PRINTS: PR00237 CPCRRHQ
PROSITE: P500237 C_PROTEI
G_PROTEIN_RECIP_F1_2
PFAM: PF00001 7tm_1
INTERPRO: IPR000276 :IPRO
HSSP: 1BQ; 1EDS; 1EDV; 1E
MIM: 180380; 268000; 6106

1. HUNT, D.M., FITZGIBBON, K.S.
Molecular evolution of the c
nuclear DNA evidence.
[MOL. PHYLOGENET. EVOL. 8 4](#)
2. HISATOMI, O., IWASA, T.,
Isolation and characterizatio
[BIOCHEM. BIOPHYS. RES. COM](#)

3D Structure Tool

Sequences alignment editor