Patterns in Web History
FROM WEB 1.0 TO WEB 3.0
Internet Growth - Usage Phases - Tech Events

http://webscience.org/web-observatory/about/tracking-explosive-growth/
Social Web: Producer and Consumer

**Web 1.0:** HTML pages
served up then viewed
using a browser

- Read
- Page
- Static
- Web Coders
- Client/Server
- Web Browser
- Geeks

**Web 2.0:** Web pages plus other
content, shared (interactively) over
the web. More like an application than
a page

- Write & Contribute
- Post
- Dynamic
- Everyone
- Web Services
- Browser, RSS Reader, App
- Mass Amateurisation
From Web 1.0 to Web 2.0

Web 1.0
Producer

Web 2.0
C/P

The Semantic Web
C/P

C/P = Consumer/Producer
WEB 3.0
Men in Black (1997) - IMDb

www.imdb.com/title/tt0119564/

Rating: 7.1/10 - 164,599 votes

Two men who keep an eye on aliens in New York City must try to save the world after the aliens threaten to blow it up.


Full cast and crew

Top Links: trailers and videos, full cast and crew, trivia, official...

Quotes

Men in Black Quotes on IMDb.
Movies, TV, Celebs, and more...

Trivia

Trivia on IMDb: Cameos, Mistakes, Plot Holes and more...

Linda Fiorentino

Linda Fiorentino, Actress: Men in Black.

Parents Guide

User reviews: external reviews, awards, user ratings, etc.

Photo Gallery

HD Trailer Gallery - Browse Videos - Search Videos - Community...
Rich Snippets Testing Tool

Check that Google can correctly parse your structured data markup and display it in search results.

Test your website

Enter a web page URL to see how it may appear in search results:

http://www.imdb.com/title/tt0119654/

Examples:

Applications

Extracted rich snippet data from the page

video.movie
  url = http://www.imdb.com/title/tt0119654/
  title = Men in Black (1997)
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  app_id = 115109575169727

Item
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  name = Men in Black (1997)
  aggregating = Item(1)
  description = Two men who keep an eye on aliens in New York City must try to save the world after the aliens threaten to blow it up.
  director
    text = Barry Sonnenfeld
  href = http://www.imdb.com/name/nm0001755/
  actors
Return on Investment

- BestBuy early adopter
  - Launched Semantic Product Web, augmented with GoodRelations and RDFa,
  - 30% increase in traffic to their pages.
  - (not a scientifically precise experiment!)

- Nick Cox@Yahoo!
  - search results augmented with structured data get 15% higher click-through rate

Massive Collaboration through

**BEYOND WEB 3.0: SOCIAL MACHINES**

Slides adapted from Jim Hendler
de.slideshare.net/jahendler/social-machines-oxford-hendler
“Productive” Social Machines

- It is estimated that 21% of the world’s population uses the World Wide Web
  - And this number is growing as cell phones and mobile Web technologies become increasingly usable as primary browser platforms
- Modern Web sites can handle huge amounts of human time and effort
  - Cf. Facebook reports 4,000,000,000 minutes are spent on the site every day (> 7500 person/years per day!)
  - Note: IBM < 7500 person/years per year...

Can we create technologies that make it possible to harness portions of that time and effort to help solve real-world problems?
Imagine

- Hundreds of millions of people
- Effectively able to network together
- Working with the data archives of science, govts, NGOs, etc.

Working together on the Web to cure disease, to feed the hungry, and to empower the powerless...

Is this Science Fiction?
Idea 1, do this by accident

Being explored, but how do we make this purposeful?
Harnessing this power “unknowingly”

You have likely helped to make Optical Character Recognition better!

Figure 1: ReCAPTCHAs have harnessed the work of 6% of the world's population to identify words from older scanned documents.

Von Ahn et al., 08
Harnessing the power for “fun”
Harnessing human knowledge for problem solving

Raddick et al., 07
With **Duolingo** you learn a language for free while helping to translate the web.
“Computers help if we can use them to create abstract social machines on the Web… the stage is set for an evolutionary growth of new social engines. The ability to create new forms of social process would be given to the world at large”

Berners-Lee Weaving the Web 1999

Verfassung und Verfassungsvertrag
Konstitutionelle Entwicklungsstufen in den USA und der EU

von Karl-Theodor Freiherr zu Guttenberg

Die folglich gekennzeichneten Seiten enthalten nicht ausgewiesene Zitate oder Regale aus anderen Veröffentlichungen. Die dunkelrotten Symbole kennzeichnen Seiten, auf denen Parteien unterschiedlich Quellen gefunden wurden.

A. Einleitung

B. Verfassungsverwendung und Verfassungsbestätigung
   I. Schwerpunkte der US-amerikanischen Verfassungsentwicklung
   II. Schwerpunkte und Grundlagen der europäischen Verfassungsentwicklung sowie des Verfassungsverständnisses
   III. Der Einfluss der amerikanischen Verfassung und des Verfassungsverständnisses auf europäische Nachrichtenliteratur, Hoffnungssehe, Offenheit und Verständigung

V. Zweifache Verfassungsprozesse in einem Rechtstaat
Exploring motivation: Online meets offline in an “ad hoc” organization

Better translation: People-Powered Search
"The Human Flesh Search Engine: Democracy, Censorship, and Political Participation in Twenty-First Century China"

Vincent Capone, University of Massachusetts Boston
Graduate student in History
Based on an undergraduate thesis from the University of Massachusetts, Amherst.

http://scholarworks.umb.edu/cgi/viewcontent.cgi?article=1016&context=ghc

Raising questions of legal norms, ethics, psychology,...
What HFS is used for

From http://de.slideshare.net/jahendler/social-machines-oxford-hendler
SOCIO-ECONOMIC DEVELOPMENT
Project: The Web Index

The Web Index is a unique annual ranking of countries on the progress and social utility of the Web. Combining over 80 indicators to evaluate access, affordability, institutional and policy environment and social and economic utility, it will provide an evidence–based tool for national and regional advocacy, intervention, and strategy to strengthen the Web. The 2012 Web Index was published on September 5, 2012.
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Internet Users in the World
Distribution by World Regions - 2011

- Asia: 44.8%
- Europe: 22.1%
- North America: 12.0%
- Lat Am / Caribb: 10.4%
- Africa: 6.2%
- Middle East: 3.4%
- Oceania / Australia: 1.1%

Source: Internet World Stats - www.internetworldstats.com/stats.htm
Basis: 2,267,233,742 Internet users on December 31, 2011
Copyright © 2012, Miniwatts Marketing Group

http://www.internetworldstats.com/stats.htm
Internet Users in the World by Geographic Regions - 2011

Source: Internet World Stats - www.internetworldstats.com/stats.htm
Estimated Internet users are 2,267,233,742 on December 31, 2011
Copyright © 2012, Miniwatts Marketing Group
World Internet Penetration Rates by Geographic Regions - 2011

North America: 78.6%
Oceania / Australia: 67.5%
Europe: 61.3%
Latin America / Caribbean: 39.5%
Middle East: 35.6%
World, Avg.: 32.7%
Asia: 26.2%
Africa: 13.5%

Source: Internet World Stats - www.internetworldstats.com/stats.htm
Penetration Rates are based on a world population of 6,930,055,154 and 2,267,233,742 estimated Internet users on December 31, 2011.
Copyright © 2012, Miniwatts Marketing Group
Project: Web Alliance for Regreening in Africa (W4RA)

Latest News

- **Testing a Voice-Web Radio Platform in Mali**
  - Nov 18, 2011
  - Stéphane Boyera

- **Review of the new Vodafone/Accenture report on Mobile for Agriculture**
  - Oct 28, 2011
  - Stéphane Boyera

- **Trailer for Video on Web-alliance for Regreening in Africa**
  - Jul 27, 2011
  - Steve Bratt

Summary: Train and coordinate local developers to create and maintain Web-based platforms to help local farmers and others in the agricultural ecosystem in the African Sahel to share local innovations for growing vegetation in very harsh environments.

**Partners:** Web Foundation, Vrije Universiteit (VU) in Amsterdam (VU W4RA page), Africa Regreening Initiative.

**Status:** Starting in 2010 (with Workshop on Mobile Web for Rural Development in Burkina Faso 3–4 February), and running through 2012.

**Funding:** VU has committed to fund 3 years of initial work in Burkina Faso to gather requirements and to develop early prototype implementation of several concepts. Additional funding is being sought to work at the farmer, community and agricultural extension agent levels, and to expand this work to other areas, even other continents.

**Challenges & Opportunity**
MODEL FOR TECHNO-SOCIOLOGICAL DEVELOPMENT IN THE WEB
The Web is an engineered space created through formally specified languages and protocols.

Humans are the creators of Web pages and links between them. Their interactions form emergent patterns in the Web at a macroscopic scale.

Human interactions are governed by social conventions and laws.
Example: Email

- Issues
- Idea
- Tech.
- Social
- macro
- micro

- Spam...
- need to communicate
- internet messages
- store and forward SMTP
- friendly community

interconnected academia email

WeST Steffen Staab staab@uni-koblenz.de
Example: WWW

- Need international collaboration
- Editable hypertext mesh
- URI
- HTTP
- HTML
- Share info
- Link to good stuff
- World Wide Web
Example: WWW (2)

Issues \rightarrow Idea \rightarrow Tech. \rightarrow Social \rightarrow macro \rightarrow micro

- can't access info
- can't find stuff
- web explosion
- link incentives
- hypertext + net
- URI, HTTP, HTML

user-client-server-publisher
Example: WWW (3)

Issues ➔ Idea ➔ Tech. ➔ Social ➔ macro ➔ micro ➔ can't find stuff ➔ index + SVM

Google spoofing... ➔ link incentives ➔ Ads ➔ Eigenvector algorithm ➔ Google site ➔ Google phenomenon

WeST

Steffen Staab
staab@uni-koblenz.de

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Motivation: Wiki

- wiki battles
- can't write stuff
- Idea
- use forms to edit content
- Tech.
- anyone can edit; respect
- Social
- micro
- macro
- Wikipedia
- wiki
- form-based editors
- wiki process
Motivation: Blogs

- Issues
- Idea
- Tech.
- Social
- macro
- micro
- blogosphere
- need to write
- column + comments
- authentication, editor, trackback
- Share info
- Link to good stuff
- blog