## The Architecture of the Web

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# **Wkipedia:** The Web is a system of interlinked hypertext documents accessed via the Internet.

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This definition is now outdated!

**Modern Version:** The Web is a system of data, people and software connected via the Internet and mobile networks.

#### Brief Tour to Web Standards

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#### 2 Conceptual Stuff

#### Brief Tour to Web Standards





#### Ongoing Project: Better Online Marketing

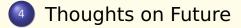
#### Brief Tour to Web Standards



Conceptual Stuff



Ongoing Project: Better Online Marketing



## 1

## Brief Tour to Web Standards

#### W3C Standards

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- URI (URL, URN)
- HTTP, SOAP
- HTML, XHTML
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### OpenId



- Glossary: identity provider, relying party
- 2005: Started by Brad Fitzpatrick in LiveJournal project
- 2007: OpenID Foundation

RSS



#### Full name

#### RSS



#### Full name

Really Simple Syndication RDF Site Summary

### RSS



#### Full name

Really Simple Syndication RDF Site Summary

- Started in 1999 by Ramanathan V. Guha
- List of feeds: OPML
- Attention profile: APML
- Challenges: filtering, discovery

### OAuth



- Open standard for access delegation
- Started in November 2006, first draft in October 2007
- Glossary: User, Consumer, Service Provider, Protected Resources
- Challenges: phishing attack, DoS attack

### FOAF



- Mission: creating machine-readable pages describing people, the links between them and the things they create and do
- Started in 2000 by Libby Miller and Dan Brickley
- Tim Berners-Lee: FOAF is a basis for Global Giant Graph

#### **Microformats**



- Grassroots approach to Semantic Web
- Notable microformats: hCalendar, hCard, hReview, hResume, XFN, XOXO

http://tantek.com/presentations/2006/07/what-are-microformats/

#### Social Graph API

#### Brad Fitzpatrick presents Social Graph API:

http://www.youtube.com/watch?v=LabCylbapuM

### Facebook Platform

- A framework for creating third-party applications that interact with core Facebook features. Launched in May 2007
- Interface (API), Query (FQL), Markup (FBML)
- Anatomy: about, left nav, Facebook canvas pages, profile box, profile action links, privacy settings, news feed, alerts, message attachments, requests
- AppFactory funding program

#### Other Standards and APIs

- OpenSocial
- Firefox extensions, userscripts
- iPhone OS
- iGoogle, Netwibes, Yahoo Pipes
- Wordpress & Drupal, Salesforce.com,
- Yelp API
- Yahoo Search API, Yandex XML
- OASIS standards: XRI, XDI

## **2** Conceptual Stuff

- Web office: Google Docs, Zoho
- Social platforms: Facebook, OpenSocial
- DesktopTwo, Netvibes, iGoogle, myYahoo
- Firefox Gran Paradiso
- CMS as Web OS?

## DataPortability.org



- Participants: Google, Facebook, Plaxo, Drupal, Netvibes, Mystrands, LinkedIn, Flickr, Six Apart, Twitter, Digg, Microsoft
- Started: November 2007
- Standards involved: APML, FOAF, hCard, OAuth, OpenID, OPML, RDF, RSS, SIOC, XFN, XRI, and XDI.
- Next goal: DataPortability reference design



## Ongoing Project: Better Online Marketing

### Market Graph

## **Market Graph** is a graph of relations between people, businesses and products.

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Market Graph is a graph of relations between people, businesses and products.

- What is the right business model for Market Graph?
- What are the incentives for consumers, companies and web developers?
- Who is responsible for maintaining Market Graph?
- Data reliability: How duplication and misinformation are handled?
- Can two identities from different providers create a relation?
- What will be the killer app for Market Graph?
- What interesting stuff can we do in market computing?

## Open Advertising Platform

Open alternative to Google AdSense:

- A publisher installs an ad frame
- Every page visit send a request with context variables (page content, information about user) to advertising engine
- Engine performs an auction between applications and the winner takes the spot

## **Enterprise Web Programming**

#### Workflow:

- Create userbase
- Provide API for identity space and graph of relations
- Define clear rules for application distribution

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### Thoughts on Future

#### Emerging Technologies in the Web

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- Augmented reality, Geoweb
- Vector graphics, 3D
- Internet TV, video
- Ubiquitious computing
- Semantic web
- Artificial intelligence, question answering
- Machine translation
- Intelligent agents
- New interfaces (HCI)

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- Reflection web

#### **Research Challenges**

- Semantic publishing
- Protection mechanisms
- Search (crawling, sorting)
- Identity re-integration

## Links

## Homepage http://yury.name Minicourse page: http://yury.name/newweb.html

http://businessconsumer.net/files/marketing-agenda.pdf
Research Agenda in Online Marketing [Working paper]

http://yury.name/reputation.html Tutorial on Reputation Systems

http://businessconsumer.net

Our research project in online marketing

### References

**Conferences:** WWW, WSDM, EC, Web 2.0 Expo, Web 2.0 Summit, The Next Web, Techcrunch50, ETech, TED

- **Videos:** Brad Fitzpatrick (Socil Graph API), Jeff Bezos (TED), OpenSocial Launch Event, Mark Zuckerberg (F8 Keynote)
- **Blogs:** Techcrunch, ReadWriteWeb, Mashable!, Valleywag, Techmeme, VentureBeat, Greg Linden

**People:** Kevin Marks, Brad Fitzpatrick, Tantek Celik, David Recordon, Joseph Smarr, Matt Mullenweg, Mark Zuckerberg, Kevin Rose, Dries Buytaert, Chris Messina, Nova Spivack, Dick Hardt, Chris Saad



## Thanks for your attention! Questions?