10 Communities, the Web and Multimedia

10.1 Evolution of the Web
10.2 Social Networks and Social Media
10.3 Web Content Aggregation and Integration
10.4 Web Technology for Software: Webware
10.5 Virtual Worlds in the Web

Literature:
T. O'Reilly: What isWeb 2.0, www.oreilly.net

Note: Chapters 9 and 10 Switched...

1. Introduction and Motivation
2. Digital Rights Management
3. Cryptographic Techniques
4. Electronic Payment Systems
5. Multimedia Content Description
6. Multimedia Content Production and Management
7. Streaming Architectures
8. Commercial Streaming Systems: An Overview
9. Web Radio and Web TV
10. Communities, the Web and Multimedia
11. Signaling Protocols for Multimedia Communication
12. Multimedia Conferencing

Part I: Content-Oriented Base Technologies
Part II: Multimedia Distribution Services
Part III: Conversational Multimedia Services
The Key Idea of the Web

  “CERN is a model in miniature of the rest of the world in a few years time.”
- Discussions on Mosaic browser, 1993:
  “I ... Made my now-standard case for making the Mosaic browser an editor,
  too. Marc [Andreessen] and Eric [Bina] explained that they had looked at that
  option and concluded that it was just impossible.”
  (Weaving the Web p. 77)
- Tim Berners-Lee on the future of the Web:
  “My hope and faith that we are headed somewhere stem in part from the
  repeatedly proven observation that people seem to be naturally built to
  interact with others as part of a greater system.”
  (Weaving the Web p. 223)

Generations of the Web

- Web 0.5
  - 1988-1995
  - Only predecessors of WWW exist
- Web 1.0
  - 1996
  - Static HTML pages, few publishers - many readers
- Web 1.5
  - 1996-2001
  - Dynamic Web pages, E-Commerce
- Web 2.0
  - 2005?
  - Collaboration, communities
  - Openness, standardisation, liberty
What is the Meaning of „Web 2.0“?

  - Tim O'Reilly, Dale Dougherty
  - Current conferences, e.g.: „Where 2.0“
- Basic question for the conference:
  - Which ideas have survived the burst of the dot-com bubble?
  - Creating the next wave out of the remains of the last
- „Web 2.0“ became a „buzzword“
  - Extremely rapidly...
  - There is no agreed definition
Two Aspects of Web 2.0

- Social Aspect
  - Collaboration
  - User-Generated Content
- Technical Aspect
  - Huge bandwidth, therefore graphics, audio, pictures, videos...
  - Web browser as a universal platform for application software

Comparison by Examples

<table>
<thead>
<tr>
<th>Web 1.0</th>
<th>Web 2.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>- DoubleClick</td>
<td>- Google AdSense</td>
</tr>
<tr>
<td>- Ofo</td>
<td>- Flickr</td>
</tr>
<tr>
<td>- Akamai</td>
<td>- BitTorrent</td>
</tr>
<tr>
<td>- mp3.com</td>
<td>- Napster</td>
</tr>
<tr>
<td>- Britannica Online</td>
<td>- Wikipedia</td>
</tr>
<tr>
<td>- Personal homepage</td>
<td>- Blogging</td>
</tr>
<tr>
<td>- Personal bookmarks</td>
<td>- Del.icio.us</td>
</tr>
<tr>
<td>- Content mgmt</td>
<td>- Wikis</td>
</tr>
<tr>
<td>- Taxonomy</td>
<td>- Folksonomy</td>
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Literature:
Eigner/Leitner/Nausner/Schneider: Online-Communities, Weblogs und die soziale Rückeroberung des Netzes, Nausner & Nausner 2003
C. Stöcker: Die Zeit der Kopfjäger, Spiegel-online.de, 1. August 2006

Social Networks, First Generation

- College traditions:
  - Class listings, alumni listings, freshman listings
  - Personal profiles
  - Keeping in touch (classmate reunions)
- 1995: Classmates.com
  - German version: stayfriends.de
- Many similar platforms
  - E.g. facebook

Leistungen

<table>
<thead>
<tr>
<th>Basis</th>
<th>Gold</th>
</tr>
</thead>
<tbody>
<tr>
<td>Klassenliste einrichten und Mitschüler markieren</td>
<td>☑</td>
</tr>
<tr>
<td>Aktives Auffinden selbst festlegen</td>
<td>☑</td>
</tr>
<tr>
<td>Klassenreffen melden</td>
<td>☑</td>
</tr>
<tr>
<td>Alle Klassenreffeninformationen einsehen</td>
<td>☑</td>
</tr>
<tr>
<td>Mit dem Organisator des Klassenreitens in Kontakt treten</td>
<td>☑</td>
</tr>
<tr>
<td>Mailingliste für Klassenreffen verwalten</td>
<td>☑</td>
</tr>
<tr>
<td>»Eigene Seite« anlegen und Profil erstellen</td>
<td>☑</td>
</tr>
<tr>
<td>Fotos auf »Eigene Seite« hochladen</td>
<td>☑</td>
</tr>
<tr>
<td>»Eigene Seite« von anderen komplett einsehen</td>
<td>☑</td>
</tr>
<tr>
<td>Fotos ansehen</td>
<td>☑</td>
</tr>
<tr>
<td>Nachrichten hinterlegen</td>
<td>☑</td>
</tr>
<tr>
<td>Nachrichten lesen und beantworten</td>
<td>☑</td>
</tr>
<tr>
<td>Kontakttliste anlegen</td>
<td>☑</td>
</tr>
<tr>
<td>Ein Picturesalbum führen</td>
<td>☑</td>
</tr>
<tr>
<td>Jedes Picturesalbum lesen</td>
<td>☑</td>
</tr>
</tbody>
</table>
Social Networks, Second Generation

- From documentation of existing relationships to creation of new relationships
- General platform for self presentation
  - Easy way to personal homepage
- Examples:
  - MySpace.com
  - Friendster.com
  - StudiVZ.de
  - Xing.com (OpenBC)
- Establishment of “friend” link by mutual agreement
- Tracing of social network
  - 2nd degree contacts
  - Former colleagues

Multimedia and Social Networks

- Obvious parts of homepage:
  - Personal photograph
  - Private pictures
  - Background music
- Copyright for all uploaded content owned by the user
  - User-generated (multimedia) content
- Legal trading of copyright-free music and videos
  - MySpace Music
Social Media

- Media consisting of user-generated (multimedia) content
- Classics: Flickr.com (photo), YouTube.com (video)
- Tagging
  - By originator
  - By others
  - Folksonomy
  - Tag clouds
- Comments
  - Discussion
  - Feedback
- Ratings
- Automation
  - Most recent, most popular

Giving, Exchanging, Buying

- Elementary way of exchanging goods
  - Reciprocal needs
- Buying:
  - Exchange is eased by money
- Media products may be different!
  - Artist has a need for being recognized, getting feedback
  - Consumer has a need for being entertained, informed
  - Reciprocal needs exist
- Amateur content producers
  - Do not in the first place expect revenue
  - “Giving” instead of exchanging
  - See Open Source software
- Global medium is more than its parts
  - Automatic creation of new valuable content by aggregation, filtering
  - “Wisdom of the crowd”
Social Bookmarks

- Organizing Web content:
  - Hierarchical directories, taxonomy:
    » Gopher, Yahoo
  - Personal bookmarks
    » Retrieval problem, metadata
  - Sharing platform for links to information in the Web
  - Classics: Del.icio.us, digg.com, spurl.net, furl.net (with archive)
- Tagging:
  - Adds a semantic dimension to Web search
- Browser extensions for keeping personal bookmarks on server
- Digg effect:
  - Small web sites becoming quickly popular – overload situations
- Overview paper (found via del.icio.us...):
  - http://www.dlib.org/dlib/april05/hammond/04hammond.html

Weblog, Blog

- Definition: A collection of chronologically (backwards) ordered, regularly added contributions to an umbrella topic.
  (adapted from Ebner/Baumann/Krcmar)
  Traditionally: Contributions comment on one specific hyperlink
- Technical view:
  - Simple content management system
- History:
  - First online diary by Simon Gisler 1994 (according to Wikipedia)
  - John Barger 1997: Term “Weblog”; Term “Blog” since 1999 (Peter Merholz)
  - Huge popularity since 2002
- Platforms: e.g. Xanga.com, blogger.com
  - Links point to individual contribution and are permanent (“permalink”)
- Variants by media type:
  - Vlog, linklog, photoblog, moblog
- Problematic issues:
  - Borderline between advertisement, propaganda, free speech
  - Law violations, offensive statements
Blog as an “Oscillation Medium”

• Traditional web sites (including online versions of traditional media):
  – Closed content
  – Links mostly internal to web site
  – Plus a few “related links”
• Bookmark collections:
  – Completely open content
  – Only reference to outer location
• Oscillation media:
  – Both closed and open
  – Blog comments on a link and contains external links
  – Reader is “oscillating” between open and closed reading
    » Shall I follow the link?
    » Shall I read on?
  – Hypertextuality as a media creation force
• From Eigner et al p. 119

Reading and Writing

• Traditional cultural techniques: writing and reading
  – Mostly separated activities
• Blogging:
  – Writing as a continuation of reading
  – High motivation to start writing, by external trigger (commented link)
  – Often very short texts
  – Reading as a continuation of writing (e.g. reading comments)
  – Continuous process of sign production
• A new cultural technique?
  – Reading-writing-writing-writing-…
• From Eigner et al p. 122
Blog Search

- Blog search engine
  - Combining information from many blogs
  - Including tagging, rating etc.
  - Examples: Technorati.com, blogsearch.google.com
  - Being expanded towards multimedia
    » Counting links from blogs to music albums, videos, movies etc.

Podcasting

- “History”:
  - Discussed since 2000, massive use since 2003
  - Word of the year of the New Oxford American Dictionary 2005
- Media file distributed by subscription (paid or unpaid)
  - Playback on computers or mobile devices
  - Mainly audio, partly video information, may be any file technically
  - Automation of download by “feeds” (RSS or Atom)
- Often user-generated content:
  - Amateur podcasts
  - Production of audio podcasts has minimal hardware/software requirements
Corporate Blogs and Podcasting

• Companies use blogs and podcasts for:
  – General information on company
  – Brand formation, general public relations
  – Topic blogs
  – Campaign blogs
  – Knowledge distribution and customer service
  – Internal information channels (intranet blogs)
    » Executive blog, team blog
• Problematic issues (for the company):
  – Negative image campaigns (e.g. attac)
  – Confidential or problematic issues discussed openly in internal blogs
    (e.g. cases of mobbing)
  – Danger of emotional escalations
• Peter Wolff: Die Macht der Blogs, Datakontext 2006

Context-Sensitive Advertisement

• Important source of revenue in Web 2.0 sites
  – Advertisement precisely targeted at customer
• Market leader: Google AdSense
  – Ad server operated by Google
  – Websites register with Google
    » Advertisement placed based on analysis of content of page to be shown
      (Javascript)
    » Generate revenue per click or per thousand impressions
  – Selection among relevant ads and order of ads by real-time auction
    » Ads creating highest revenue are shown
    » Using bid price of advertised and quality score of the ad (e.g. Click-Through-Rate)
    » Paid price may be lower than the bid (minimal price to keep position on the list)
  – Advertisers arrange fixed budgets in advance
• See: https://adwords.google.com/select/afc/pricing.html
Lead User Innovation Process with Online Communities

- Traditional Lead User Innovation Process:
  - Workshops with selected users
  - Bring together product developers and end users
  - Discuss ideas for new products and product improvements
  - Create new ideas through creativity techniques
- Closed Online Communities:
  - Lead user community organized through web-based platform
  - Specific software tools in addition to community-platform functions
- Example:
  - TMG München projects with Baluff and Webasto
  - Ideas for automotive products created and tested with large group of Chinese participants

Innovation Community: innocentive

POWERPOINT

VORGESTELLTE
InnoCentive Forschungsaufträge

INNOCENTIVE 4470259
ALS BIBMARKER
DOE 1396
NOV 06, 2018
$130,000 USD

PowerPoint speichert die AutoRecovery-Datei.

Auf der ganzen Welt warten die intelligenten Köpfe darauf, die härtesten wissenschaftlichen Herausforderungen aus ihren Forschungslabors zu lösen. Weitere Informationen.

Führende Unternehmen zahlen bares Geld für die Lösung Ihrer wissenschaftlichen Probleme. Weitere Informationen.

Chemie  Biologie

Weitere Forschungsaufträge:
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E. van der Vlist et al.: Professional Web 2.0 Programming.
Wrox 2006

Content Aggregation

- Combination of content on specific topics from various sources
  - Technically mostly based on RSS
- Creation of an individualized information offer:
  - Information from various sources
  - Adaptable to personal preferences
  - Selected by community processes (voting, tagging)
- Examples:
  - wikio.com
  - Netvibes.com
    » Extremely easy configuration of feed modules
  - Daylife
    » Focus on multimedia: E.g. photo covers
Example 1: Netvibes

Example 2: Daylife
Mashups

- Automatic syndication of content with high degree of integration
  - Often using Web APIs and Web Services
  - Active calls TO other Web sites to obtain information
- Technologies:
  - SOAP (Simple Object Access Protocol)
    » XML-based syntax for invoking Web Services over HTTP
    » Offered from e.g. Amazon, eBay (until 2006: Google)
  - XML-RPC
    » Similar to SOAP (its predecessor)
    » Simpler and easier to understand
  - REST (Representational State Transfer)
    » Thomas Roy Fielding 2000 (Dissertation)
    » Very simple: PUT, GET, POST, DELETE
    » Most popular (e.g. Amazon: 85% use REST instead of SOAP)

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Example: Alkemis Local

- local.alkemis.com
- NYC live traffic cams
- Yahoo Traffic News
- Flickr images
- Del.icio.us links
- A9 Blockview photos
- APIs:
  - Amazon A9
  - [OpenSearch](http://www.amazon.com/gp/help/customer/display.html/ref=sw_dev_sw_aps_dev?nodeId=100012450)
  - del.icio.us
  - Flickr
  - Google Maps
  - Yahoo Traffic
- [See programmableweb.com](http://www.programmableweb.com)
Example: MusicPortl (1)

Bruce Springsteen

Bruce Frederick Springsteen (born September 23, 1949) is an American rock and folk singer, songwriter, and guitarist. Springsteen has frequently recorded and toured with the E Street Band, in addition to recording and performing as a solo artist and with other musicians. An heir to Bob Dylan, John Lee Hooker, John Hammond, Pete Seeger, Eddie Cochrane and Bob Dylan, but also influenced by early 1940s rock and R&B, Springsteen is most widely known for his brand of heartland rock infused with pop hooks, poetic lyrics, and American sentiments centered around his native New Jersey. His eloquence in expressing ordinary, everyday problems has earned him numerous awards, including several Grammy Awards, an Academy Award, and induction into the Rock and Roll Hall of Fame, along with a very large, devoted, and long-lasting fan base. His most famous album, Born to Run and Born in the USA, epitomizes his penchant for finding grandeur in the struggles of daily life.

Genres

- rock
- new jersey
- classic
- rock
- seen live
- singer-songwriter

Example: MusicPortl (2)

Amazon E-commerce + Flickr + Last.fm + MusicBrainz + Ontok + Technorati + YouTube

Ludwig-Maximilians-Universität München

Prof. Hußmann

Multimedia im Netz – 10 - 32
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Webware

- Web Browser as an execution platform for software
  - E.g. JavaScript, Flash
- Application software run in browser
  - Local execution guarantees short response times
  - No waiting for loaded pages
- Business model:
  - Free software and advertisements or bundling with other services
  - Pay-per-use
- Storage of documents on server as part of service
- Problems:
  - Difficult to develop
  - Dependency on browser software
AJAX Technology

- AJAX = „Asynchronous Javascript + XML“
- Local JavaScript application
- Loading of information from server in XML format
  - In asynchronous manner, i.e. in advance - not waiting
- Best known example: Google gmail
- Other examples:
  - Google Docs & Spreadsheets
  - Dabbledb.com
  - Zohowriter.com
  - Adobe Acrobat Connect (former Macromedia Breeze)

AJAX and Traditional Web Applications

Source: javalobby.org
Example: Google Docs

Example: Dabble DB
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Virtual Worlds

- Online communities and online games are merging
  - Example World of Warcraft
- Non-Game online communities with virtual world
  - Old idea, see
    » Gibson: Neuromancer
    » Stephenson: Snow Crash
  - Was tried several times, but this time successful...
- Secondlife.com
  - Created and run by Linden Labs
  - Two million accounts, twenty thousand concurrent users
  - Full virtual environment, avatars, extensive creative tools
- Many simpler virtual worlds
  - E.g. www.habbo.de
    » Virtual hotel for kids
Example: Habbo.de

Second Life

http://video.google.com/videoplay?docid=-5182759758975402950
Second Life and Business

- Large companies are using Second Life
  - For meetings, conferences, customer care
  - As sales channel

Web Two Point Oh

Web Two Point Oh!
Create your own Web 2.0 Company

Below you will find a pre-created VC friendly Web 2.0 company just for you!
Hit reload to create another potential million dollar idea

Your company name:
Zimodiorb
Your company product:
ad-supported bookmarks via api mashups

http://www.andrewwooldridge.com/myapps/webtwopointoh.html