e-Health and Web 2.0: Looking to the future with sociable technologies and social software

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Agenda

• What is Web 2.0 or the Social Web?
• The Machine is Us/ing Us (video)
• Web 2.0 is useful for... (some possibilities)
• Geriatric1927 YouTube example (and video)
• Some definitions/concepts: ratings, ‘wisdom of the crowds’, folksonomies, mashups, etc.
• 3D social networking, virtual worlds and the 3D Web (with part of ‘NMC Campus: Seriously Engaging’ video)
• Conclusions
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What is Web 2.0 or the Social Web?

• Compared to ‘Web 1.0’, the traditional, mostly read-only Web we all know, Web 2.0 is the read-write Web *par excellence*.

• In Web 1.0 users follow links to content, while in Web 2.0 they can also rate, comment, annotate, edit, create, mix and share content.
What is Web 2.0 or the Social Web?

• Web 2.0, the ‘people-centric social Web’, thus facilitates social networking, collaboration and a level of participation beyond that associated with traditional online methods of learning and information delivery.

• Greater levels of democratic participation, agency and choice are possible, where users act simultaneously as readers and writers.
Web 2.0 wave starts to take hold

By Ian Hardy
Click’s North America technology correspondent

Whether you use your computer for work or fun, the programs you use generally have one thing in common - they are stored on your PC. Increasingly though, that software is moving online.

The move to put more and more of those familiar programs on to the web has been happening for a while but its latest incarnation has won the name of Web 2.0.

What is it - the definition is imprecise at best, but it loosely describes a category of websites that are known for interactivity, collaboration and community.

Developments in underlying web technology make this all possible and mean that what the sites can do is very new. Simplicity is often the key. Often it is an online application that does one thing and does it well.
The Machine is Us/ing Us

by Michael Wesch
Assistant Professor of Cultural Anthropology
Kansas State University

http://www.youtube.com/watch?v=6gmP4nk0EOE
Web 2.0 is useful for...

• People who use multiple computers in various locations (e.g., the http://del.icio.us/ social bookmarking service, and collaborative document authoring and editing in Google Docs http://docs.google.com/ and in wikis like AskDrWiki.com http://www.askdrwiki.com/);

• Sharing resources with others (e.g., http://www.SlideShare.net/ and http://www.flickr.com/ services);
Web 2.0 is useful for...

- **Discovery** of items (Web links, papers, audio/MP3 clips (podcasts), videos, presentations, photos, etc.) similar to your current selections; and

- **Building communities** and discovering like-minded people and groups (social networking services like [http://myspace.com/](http://myspace.com/)).

*Sermo.com*: ‘The Wisdom of the Medical Crowd’ - a social networking site for physicians
Geriatric1927 YouTube example

• YouTube [http://youtube.com/](http://youtube.com/) is not just a video file repository for online dumping and sharing of (large and bandwidth-intensive) video files that would otherwise be difficult to host and serve to a wide audience, but is also a true Web 2.0 **video community**, where people can meet and discover videos based on interests they have in common, and where they can even **communicate with each other using asynchronous video (video blogs)** and ‘broadcast themselves’.
Geriatric1927 YouTube example

• One such YouTube broadcaster is 79-year-old Peter Oakley known by the nickname Geriatric1927.

• He used a webcam to shoot his videos, and posted them on YouTube, where they have been seen over five million times.

• Geriatric1927 made his YouTube debut in August 2006 with a series of videos about his life entitled ‘Telling It All’.

See: http://en.wikipedia.org/wiki/Geriatric1927
Video station
BBC interview with Geriatric1927

http://news.bbc.co.uk/2/hi/business/6365389.stm
Some definitions/concepts

• **Ratings** (voting): are a feature of Web 2.0, be it users’ ratings of content, services, or other users. Ratings reflect the ‘wisdom of the crowds’* and their experience regarding the rated subject/item (e.g., http://patientopinion.org.uk/).

• **Folksonomies**: collaboratively-/user-generated free-form metadata **tags** that categorise Web 2.0 content. Can be used to discover similar(ly-tagged) items.

* Or ‘collective intelligence’
Some definitions/concepts

• **Remixing/repurposing** of content: content viewed in one online location but originating elsewhere.

• **RSS** XML-based feeds and **mashups** are the main buzzwords here.

• Issues include **copyrights** and **authorship**.
AORTIC BLOOD FLOW VARIATIONS DURING MECHANICAL VENTILATION

Streaming data plotted using KST program (http://kst.kde.org).

Would you like to comment?
'Social' search engines replace computer results with human recommendations

Updated 7/8/2008 4:38 PM ET

By Jeffrey McMurray, Associated Press

Google Co-op
http://www.google.com/coop/
for one introduces social recommendations and tagging (the ‘wisdom of the crowds’) to the search process for better search results.

Yahoo! Pipes
http://pipes.yahoo.com/ is an interactive feed aggregator and manipulator. Using Pipes, you can create feeds that are more powerful, useful and relevant.
New from Google: create and share map mashups with just your mouse (no coding)

Screenshot of HEALTHmap (http://healthmap.org/), a mapping mashup service that overlays health-related news links from multiple sources on maps sourced from Google Maps. (A good example of Web 2.0 content syndication – cf. stickiness of Web 1.0 content, which stays on originating sites.)
More on mashups...

- Mapping mashups could also prove useful in the fields of medical geography, tropical medicine, and parasitology, among others; for example, to communicate and publish geo-tagged field work results and photo/video collections from tropical countries.

- Users can even overlay on the same maps their own position on Earth, and also view the position of their colleagues (or clinical cases/surveyed households) in real-time over the Web, if they have a USB GPS mouse receiver or similar connected to their laptop.

GPS-enabled mobile phones (GPS-enabled cameras and other gadgets also exist) will enable millions of people to collectively annotate the Earth in ways never done before!*

* See [http://tinyurl.com/yoyr6h](http://tinyurl.com/yoyr6h) and [http://tinyurl.com/36gjx](http://tinyurl.com/36gjx)

A ‘Google Books and Maps’ mashup
Some definitions/concepts

- **Social networks** are online social structures made of nodes, which are individuals linked together through common interests or some common theme.
- Individuals belonging to a social network usually post an online **profile** detailing their interests. Using these profiles, the social network can then facilitate the discovery of **like-minded people**, and support their **online meetings and conversations** with each other (IM, chatting, blog posts, etc.).
Some definitions/concepts

• Three-dimensional (3D) virtual worlds like Second Life [http://secondlife.com/] and There.com can also be considered as 3D social networks, where people can collaboratively create and edit objects in the virtual world, besides meeting each other and interacting with existing objects.

• Issues include Internet addiction, gambling and pornography, trust/identity/privacy issues, and potential 3D navigation/user interface issues with older people.

The 3D Web is more natural and engaging!
The US CDC places in **Second Life**. Inset: Two persons communicating with each other through their **avatars**. Second Life will have **voice chat** capabilities later this year (2007).
Video station
Part of ‘NMC Campus: Seriously Engaging’ clip

http://media.nmc.org/sl/video/seriously-engaging.wmv
Virtual worlds – The 3D Web

• Offer novel, intuitive ways to:
  – **navigate** streaming audio/video/TV collections;
  – **browse** information spaces/document collections/virtual libraries (see, for example, Second Life Medical and Consumer Health Libraries in Healthinfo Island);
  – **relax, visit new places**, and sample new cultures (virtual tourism, e.g., visit virtual Morocco in Second Life, or virtual Egypt in There.com);
  – **play** multi-player games in the virtual world;

In virtual worlds, you can stand/sit, move and walk through, **fly/swim**, ride virtual vehicles, and get **teleport**ed to various places and spaces.
Virtual worlds – The 3D Web

• Offer novel, intuitive ways to (cont’d):
  – buy, sell and advertise virtual and real-life goods and services;
  – develop social (and even clinical) skills/socialise and interact with other people via customisable, realistic, 3D, fully-textured and animated avatars (3D social networking);
  – attend and participate in live events like SL lectures, conferences, festivals, and concerts; and
  – build communities, including learners’ communities, among many other things.

= SL + Moodle  http://sloodle.com/
The possibilities are virtually **endless**... For example, turning **Google Earth** into a virtual (“real”?) social world *a la Second Life!*


http://www.youtube.com/watch?v=L4CjjeSTV78
A genetics lab/museum and learning area, **The Gene Pool**, in SL’s Immaculate


Read more: [http://slnn.com/article/genepool/](http://slnn.com/article/genepool/)
The possibilities are virtually endless...

New interaction/navigation interfaces in virtual worlds

The latest Second Life client is voice-enabled, featuring 3D-mapped voice and ‘audio focusing’ capabilities. Walk around someone who is speaking to you in SL to hear the voice move around in 3D, based on where you are relative to that avatar. If you turn toward someone and move closer, for example, their voice will be louder. As you move away, their voices will become softer until you won’t be able to hear them at all. If you speak while walking around someone else, they too will hear your voice tracking your position. Also, each speaker’s volume is attenuated/boosted by their distance from your camera position. Second Life camera controls can thus be used to create a momentary ‘audio focus’ on a given speaker. A voice changing software driver http://www.screamingbee.com/ can be optionally used to hide speaker’s identity, or just for some added fun!

Wii and Second Life are expected to very soon merge in different ways, and there will be many more exciting opportunities, especially given the suitability of Wii’s ‘motion-sensitive controller’ (Wiimote) for use by older people.
Conclusions

• Social software has the potential to advance online learning and knowledge databases beyond traditional methods of delivery, toward a user-centred form of information management and retrieval through the collaborative creation and indexing (tagging) of digital knowledge repositories.

• Web 2.0 offers great potential to creative medical and health educators, but many of the associated possibilities still need to be fully identified, explored in various settings/scenarios, and carefully researched and evaluated to document best practices and pitfalls to avoid, before they can be used in daily teaching and learning activities.
Conclusions

• The more popular Web 2.0 applications in common use today in education like wikis, blogs, podcasts, document sharing services, and RSS feeds, are but the tip of the social software iceberg.

• There are still many exciting sociable technologies and usage scenarios for educators to explore, like mapping mashups and virtual worlds.

• Mashups are an excellent example of remixing, reusing and repurposing information in Web 2.0 to produce value-added content.
Conclusions

• Virtual worlds like Second Life are **not mere** three-dimensional multiplayer games. The immersive, rich experience that such environments offer combines many of the features of Web 2.0 like instant messaging/voice chat, profiles, users’ ratings, and social networking, and a unique form of online social interaction that involves sharing various objects and creative collaboration on building and running places and services in the virtual world (user-generated content).

• Virtual medical/health libraries, access to remote librarians, and other medical and health-related educational applications through such worlds are not remote possibilities.

Recommended bibliography


Thanks!

- You may download an electronic copy of this PowerPoint at [http://healthcybermap.org/sl.htm](http://healthcybermap.org/sl.htm)