

Utah Valley University

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Fall 2009

Web 2.0 and Other Web Technologies at UVU

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Web 2.0 and Other Web Technologies at UVU (8.25.09)

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This report is broken into eight sections:

- I. Summary
- II. Web 2.0 Described
- III. Web 2.0 at UVU Now
- IV. Overview of Web 2.0 Tools
- V. Web 2.0 in Education
- VI. Risk Analysis
- VII. Recommendations
- IIX. Conclusion and Summary

SUMMARY

Whereas the original Web was more of a one-way medium with content going from the publisher to the reader, **Web 2.0 is a bi-directional medium where people interact with each other and/or with the content.** Basically, it is a change from an environment with a few content authors and many readers to one in which users generate, re-purpose, and consume shared content.

There is a seemingly ever-increasing interest in using Web 2.0 related technologies. Some examples of incoming requests include: Interactive Catalog of Engagement Opportunities, searchable/filterable calendaring and event posting system, E-portfolio system, collaborative communication platform, and podcasting. Equally, there are a number of individual entities and groups on campus using Web 2.0 to enhance their Web sites, communications, *or tools available*. This can be seen in the list of Social Media projects we currently have on campus: <http://www.uvu.edu/visitors/social-media-directory/index.html>.

In this report is an overview of Web 2.0 tools including:

- **Social Bookmarking** (Folksonomy) - communities of users based on their decision to link to, cite, and otherwise reference specific websites, journals, and other resources.
- **Social Networking & Profiles** - building online communities of people who share interests and/or activities, or who are interested in exploring the interests of others.
- **Blogs** - regular entries of commentary, descriptions of events, or other material such as graphics or video. Often end-users can respond directly, and publically, to Blog postings.
- **Collaborative & Interactive Environments** – the user can interact with the site itself, with others, and sometimes with the originators themselves. Wikis are a common example.
- **Open Educational Resources** - freely accessible electronic access to course materials, which also includes open access to books and library materials, and access to modules of educational information instead of complete courses.
- **Open Access Journals & Publications** - scholarly journals publicly available at no cost to the end user.
- **Document Sharing** - allows you to share and collaborate online.
- **Feed Readers, News Aggregators & News Rating** - permit subscription to regular updates, delivered automatically via a web portal, news reader, or in some cases good old email.
- **Microblogging** - allows users to publish brief text updates or micromedia such as photos or audio clips.
- **Community Engagement Tools** - becoming engaged with the community through volunteering, community service, attendance or support of events.
- **Feedback and User Review** - end users can offer feedback and review.
- **Productivity and Research Tools** - help with research and productivity in education.
- **Photo and Video Sharing & Editing** – share images and videos, or even create images or videos.
- **Geomapping & Geospatial Tools** –helpful for applying layers of data to our physical surroundings..

It seems at UVU that there is a need for increased research into Web 2.0 tools and technologies; increased training relating to the same; increased understanding and practice of fundamental project management to include project and scope definition, implementation

planning, communication, resource management, change management, and integration; better communication regarding proposed, upcoming and current projects; and more research into risk analysis, project prioritization, and consistency of projects with institutional strategic directions.

Some recommendations for beginning to address Web 2.0 at UVU:

- **Creation of a social media directory:** The Web Tools group (a subset of the Web 2.0 Task Force) believed strongly enough in this that a social media directory has been implemented at <http://www.uvu.edu/visitors/social-media-directory/index.html> which lists all known implementations of Web 2.0 technologies on campus.
- **Creation of a Web 2.0 Tools information source:** The Web Tools group (a subset of the Web 2.0 Task Force) believed strongly enough in this that a Web Tools Wiki was created at <http://wikilearn.uvu.edu/webtools/> which defines Web Tools generally and offers samples of the many tools available.
- **Development of communication channels:** The Web Tools group believes that communication channels need to be defined and communicated. One example of a communication channel is the Social Media Club of Utah Valley at <http://smcuv.org/>.
- **Creation of a UVU Community Publishing Platform:** The Web Tools group believed strongly enough in this recommendation that a WordPress Multi-User Blog system was implemented on a trial basis. It is recommended that this system be moved beyond the beta-analysis stage and be put into actual production. In relation to Web 2.0 it could be used to communicate about Web 2.0 best practices, trends, current uses, and for communal discussion of Web 2.0 tools generally.
- **Definition of some type of training and research mechanism:** The Web Tools group believes some type of mechanism must be identified for continual research, communication, and training regarding emerging Web technologies, resources, and tools.
- **Resources for understanding project definition and management:** The Web Tools group believes some type of mechanism must be identified to encourage strengthened

UVU, along with other educational institutions, are at a point where we need to address Web 2.0 and what it means to education. At this point there are no clear-cut answers, but there is great need to start the conversations.

WEB 2.0 DESCRIBED

Whereas the original Web was more of a one-way medium with content going from the publisher to the reader, **Web 2.0 is a bi-directional medium where people interact with each other and/or with the content.** Basically, it is a change from an environment with a few content authors and many readers to one in which users generate, re-purpose, and consume shared content. As the Consortium for School Networking (CoSN) notes, “Web 2.0 is defined as an online application that uses the World Wide Web (www) as a platform and allows for participatory involvement, collaboration, and interactions among users. Web 2.0 is also characterized by the creation and sharing of intellectual and social resources by end users” (2009).

| Examples of Web 2.0 applications include items such as web-logs or blogs; online diaries that allow the originator and readers to state ideas and react; wikis, which are topical collections of information that can be edited by multiple individuals within a group; social networking sites where users can create personalized pages of information and interact with others ; or file sharing sites where users can share images, audio, video and more. In addition to these, there are services that allow users to participate in various group activities and to complete, individually or collaboratively, a variety of tasks such as document creation and editing that would previously have relied upon software on a local computer (CoSN, 2009; Albion, 2008).

Web 2.0 applications like online communities, blogs, and wikis should not be thought of as just a passing fad or idle socializing, but as an activity that has embedded itself into the way work gets done (Demski, 2009). As Albion notes in Web 2.0 in Teacher Education, “Web 2.0 represents a more participative and potentially paradigm-changing environment for building and sharing knowledge. Some educators have begun to apply these tools in classrooms but, as their use in society expands, there will be expectations for their wider application in schools.” (2008). He continues, “As Web 2.0 develops, it will not be possible for educators at any level to ignore it. Society, especially employers, will expect education to develop essential skills with the new tools, and learners already familiar with the tools will expect to be able to apply their knowledge and skills while learning” (Albion, 2008).

WEB 2.0 AT UVU NOW

UVU has approximately:

- 23 blogs,
- 80 Facebook groups,
- 4 institutional Flickr accounts,
- 7 LinkedIn groups,
- 12 Twitter feeds,
- 4 wikis,
- 1 yammer account (with over 80 members)
- 5 YouTube accounts, and
- 1 RSS feed
- 2 Podcasts
- 1 Itunes U

Web Related Projects

There is seemingly ever-increasing interest in using Web 2.0 related technologies. For example a Web Task Force was created under the direction of Wayne Mangelson and a Web 2.0 Tools Workgroup as a subset of that which was tasked with creating Web 2.0 suggestions for UVU. More accurately, the intention of the original meeting was to consider interest and feasibility to create a web-based tool that allows individual to search for activities and experiences useful for students to engage (4/9/09). However, by the second meeting (4/23/09) this the discussion move toward Web 2.0 overall and the purpose became: (a) Obtain Consensus for Need of Web 2.0 Tool(s) on Campus; (b) Identify Web Tool Functions Desired/Needed; and (c) Formulate Work Group.

Initial Web 2.0 Task Force Membership: Brigance, Robert; Draper, Ellen; Horns, Danny; Jackson, Bruce; Jones, Cary Boone; Love, Caleb; Mangelson, Wayne; McPhillen, Laurie; Moser, Clint; Tibbitts, Paula; Palfreyman, Matt; Harward, Sherry

Web 2.0 Task Force Membership second meeting: Arendt, Anne; Brigance, Robert; Draper, Ellen; Gerber, Nathan; Horns, Danny; Jackson, Bruce; Love, Caleb; Mangelson, Wayne; Moser, Clint; Palfreyman, Matt; Smith, Jill; Tibbitts, Paula; Walker, Ray; Young, Kirk; Busby, Laura; Christianson, Jack; Jones, Cary Boone; McPhillen, Laurie; Rasmussen, Bob; Waters, Sandi; and Harward, Sherry.

Web 2.0 Tools Workgroup Membership includes: Andreason, Kaitlyn; Arendt, Anne; Cox, Susan; Crane, Mark; Gerber, Nathan; Harward, Sherry; Hill, Jason; Hugentobler, Marc; Kennedy, Jason; Lavange, Don; Love, Caleb; Palfreyman, Matt; Stein, Jared; Taylor, Phil; Walker, Ray; and Waters, Sandi.

Some of the conclusions of the Web 2.0 Tools Workgroup in responding to the Web 2.0 Task Force:

One issue the Web Tools Workgroup came upon is requests for projects with little clear definition of the project goals, objectives, specifications, or requirements. For example there is a desire for a catalog-type database system that could track engagement/involvement opportunities; there is also a desire for a more dynamic and interactive event and news system. However, without knowing more about the intended outcomes of these projects it is

difficult if not impossible to offer possible solutions. For each of the above there are potentially a number of solutions including a wiki, a multi-user blog, a custom built database, an outsourced type of tool, or an open source tool such as Moodle.

A fair amount of conversation has occurred regarding a catalog-type database system but all we have been able to conclude to date is that we believe the purpose/intention to be creation of single, central, online repository of engagement opportunities which is editable by multiple users for UVU and potentially other entities in Utah to make location specific opportunities as easy and seamless as possible for students, faculty, and community members. We assume it would be editable by anyone after a login for tracking purposes; it would be viewable by anyone; and would be searchable/filterable by associated degrees, whether paid or not, by department, by company, by location, by institution, by type, by timeframe, and by needed prerequisites.

However, as noted, many technologies could be used to address this need. Of perhaps greater concern is who would be responsible for maintaining the system once developed. A first priority for this project is to consider it as a separate and distinct project that has an identified project team and project lead, remembering that a project is a sequence of tasks with a definite beginning and end that is limited in duration, resources and expected outcomes. As this project will in some way make use of Information Technology resources on campus it will need an information technology representative on the team. It is recommended that this project be identified as something along the lines of “**Interactive Catalog of Engagement Opportunities**” and not as Web 2.0 specifically.

Another project theme that seemed to occur from the parent Web 2.0 task force was the desire for a **searchable/filterable calendaring and event posting system**. However, it seems most of what is desired is actually fulfilled by the current UVLink Calendaring System; instead one part of the issue is that people may not be aware of its capabilities. If the UVLink Calendaring system cannot fulfill the needs of the users then we need to clearly define why it cannot so it can either be enhanced, altered, or even replaced.

A third distinct project is the desire for some type of **e-portfolio system**. This request appears in the merit grants below as well as via the Center for the Advancement of Leadership. And perhaps a fourth distinct project is the desire for some type of **collaborative communication platform** such as a blog.

To date though the topics that have arisen seem to have more to do with a lack of knowledge or lack of use of the resources that are currently available. It might also be noted that there is, effective early July 2009, a Quality Initiative led by Val Hale and requested by President Holland relating to Communication throughout campus. The calendaring and event system is a critical component of that conversation.

Separately, a number of requests have come in via the Merit Grants, some of which were Web 2.0 related including:

- Podcasting in Basic Composition and ESL
The Department of Basic Composition and ESL is requesting funding for the implementation of podcasting technologies in order to further broaden our ability to better serve students' instructional needs, the literacy needs of the community, and the professional developmental needs of our faculty, particularly adjunct faculty.
- LASSI in Developmental Math Online Courses
The proposal will fund the implementation of the Learning and Study Strategies

Inventory (LASSI) in all developmental math online courses to help students successfully complete their courses in one semester. The 2009 funding will provide the Developmental Math Department with foundational information from which future research may take several directions.

- WikiLearn and E-Portfolios: Student and Faculty Collaboration and Publishing
To support faculty and student collaboration, authoring, and publishing of learning materials and artifacts, we propose the development and implementation of two new campus web services: WikiLearn, a "wiki" for the collaborative authoring; and UVU Portfolios, for students to collect, organize, and publish learning artifacts throughout their academic career.

Along with a number of other technology related Merit-grant requests.

Equally, there are a number of individual entities and groups on campus using Web 2.0 to enhance their Web sites, communications, or tools available. This can be seen in the list of Social Media projects we currently have on campus: <http://www.uvu.edu/visitors/social-media-directory/index.html>.

Lastly, Web Advisory Council (WAC) is looking into Web 2.0 related needs as it defines it's objectives and strategic directions for the upcoming year. Members in that discussion, including a retreat on 5.15.09 and now in bi-monthly WAC meetings, include Anne Arendt, Laura Busby, Colby Callahan, Mark Crane, Jeanie Cranney, Moh El-Saidi, Vince Fordiani, Nathan Gerber, Bob Rasmussen, Tom Rasmussen, Chris Taylor, Trevor Tooke, Ray walker, Ian Wilson, Troy Smith, Sindy Whitehead, Jason Kennedy, Brett Michaelis, Phil Taylor, and Val Hale. The following updated mission and strategic directions were crafted:

UVU Web Mission is to: Provide information, tools, and resources that are accurate, relevant, and consistent with the University's mission.

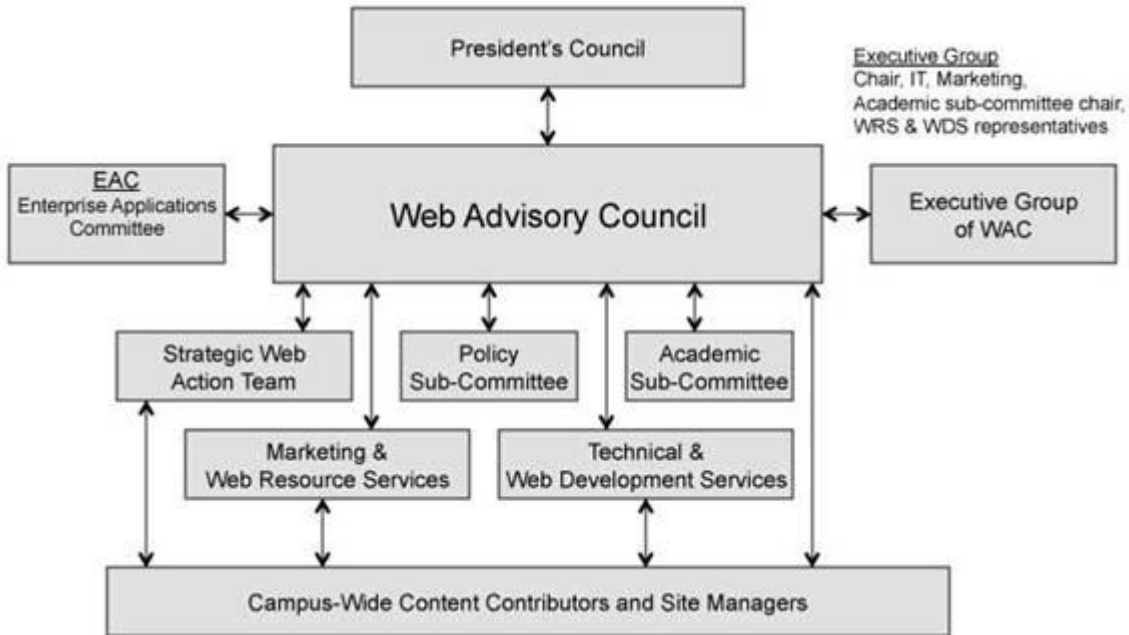
Web Advisory Group Strategic Objectives (Overall):

1. To create and maintain sustainable web sites and systems by implementing a process to regularly review content, tools and infrastructure for relevance, consistency, accuracy and compliance.
2. To pro-actively market, train, and provide support to encourage and enable UVU community self-sufficiency and innovation.
3. To conduct and use research that leads to decisions and actions for websites and use systems that improve end-user satisfaction.
4. To transition our website presence from audience to community focus by seeking out, adopting and providing collaborative tools (e.g., parents' website, UVlink)
5. To review semi-annually our processes and direction in light of our mission and strategic objectives.

Structure of Web Management at UVU

UVU handles its website using a dispersed content management system. **A governing body known as the Web Advisory Council** manages the system, along with an action-oriented team known as the Strategic Web Action Team, the Web Development Services arm of Information Technology, the Web Resource Services arm of Marketing and Communications, and approximately 200 web content contributors throughout campus who enable the website's

success and impact. The individual editors control the content for which they have expertise.



View additional information at Dispersed Web Content Management in Higher Education:
<http://www.educause.edu/EDUCAUSE+Quarterly/EDUCAUSEQuarterlyMagazineVolum/DispersedWebContentManagement/174590>

Current WAC membership: Tom Rasmussen, Ian Wilson, Bob Rasmussen, Colby Callahan, Laura Busby, Mark Crane, Moh El-Saidi, Ray Walker, Chris Taylor, Vince Fordiani, Anne Arendt, Nathan Gerber, Joseph Watkins.

OVERVIEW OF WEB 2.0 TOOLS

Social Bookmarking (Folksonomy)

Social bookmarking sites work to build **communities of users based on their decision to link to, cite, and otherwise reference specific websites, journals, and other resources**. It is a method for Internet users to store, organize, search, and manage bookmarks of web pages on the Internet with the help of metadata, typically in the form of tags that collectively and/or collaboratively become a folksonomy. Folksonomy is also called social tagging and is the process by which many users add metadata in the form of keywords to shared content (Wikipedia). Social bookmarking sites include, but are not limited to Delicious, Digg, Diigo, Stumbleupon, Citeulike, Sitemark, and Trailfire. Visit <http://www.ebizmba.com/articles/social-bookmarking> to see the top 20 most popular social bookmarking Websites for July 2009.

Try a few:

- Delicious: <http://delicious.com/>
- Digg: <http://digg.com/>
- Diigo: <http://www.diigo.com/>
- Stumbleupon: <http://www.stumbleupon.com/>
- Citeulike: <http://www.citeulike.org/>
- Sitemark: <http://www.sitemark.com/>
- Trailfire: <http://www.trailfire.com/>

Here are some ideas of how social bookmarking could be helpful in education:

- Create a set of resources that can be accessed on any computer connected to the Internet
- Conduct research and share that research with your peers
- Track author and book updates
- Groups of students doing a classroom project sharing their bookmarks, a teacher subscribed to their rss feed to see the direction of their research.
- Post research and information bookmarks. All members continuously benefit from this shared resource.
- Rate and review bookmarks to help other students to decide on usefulness of resources
- Setup a group tag in order to share educational resources
- Unintended learning through the discovery of resources and information shared by others through their bookmarks
- Share links to current news items that relate to classroom discussions (D'Souza, 2006)

As Christine Greenhow, the founding chair of the Social Networks Research Collaborative at the University of Minnesota notes, "Several tools, similar to Delicious, allow educators and learners to assemble, annotate, recommend, and share resources, such as books, journal articles, websites, and contacts. Social bibliography sites—also called 'social bookmarking' sites—such as Citeulike and Diigo not only allow students to better document their trajectory on the Web, but also to archive and comment on resources they collect along the way. Social bibliography sites are 'social' in that they allow users to browse other users' online bibliographies and interact with them" (2009).

Social Networking & Profiles

As Wikipedia notes, "A social network service focuses on **building online communities of people who share interests and/or activities, or who are interested in exploring the interests and activities of others**. Most social network services are web based and provide a variety of ways for users to interact, such as e-mail and instant messaging services." It includes sites such as Facebook and MySpace that are open for anyone to subscribe to, or can be more limited/controlled sites such as Ning, Lymabean, or Saywire.

Try a few:

- Facebook: <http://www.facebook.com/>
- MySpace: <http://www.myspace.com/>
- Ning: <http://www.ning.com/>
- Lymabean: <http://www.lymabean.com/>
- Saywire: <http://www.saywire.com/>

Blogs

As Wikipedia notes, "A blog (a contraction of the term "weblog") is a type of website, usually **maintained by an individual with regular entries of commentary, descriptions of events, or other material such as graphics or video. Often end-users can respond directly, and publically, to Blog postings**. Entries are commonly displayed in reverse-chronological order." Students can use blogs to publish their own writings, discuss group assignments, peer review each other's work, collaborate on projects and manage their digital portfolios (Churchill 2009). Popular blogs include Blogger and Wordpress to name a few.

According to a study of blog uses that was conducted in a class of postgraduate students over the period of one semester:

"Briefly, data from the questionnaire suggests that the participating students from the group under study agreed that blogging facilitated and contributed to their learning and that due to the use of blogs the facilitator appeared to be more involved in their learning. Further, the students appeared to agree that the facilitator's blogging activity encouraged them to blog. Aspects of blogging that contributed most to the students' learning were accessing and reading blogs of others, both those of other students and the facilitator, receiving comments and previewing completed tasks of students, and reading personal feedback. When asked during the interviews to indicate what they liked most about blogging, the participating students specified viewing the work of others (eg, in students' terms to 'learn new things from others' perspectives' or 'see progress of others') and receiving comments on their work. In relation to reasons for blogging, it appeared that tasks that required them to use blogs to present final outcomes were of key importance ...

This study demonstrated that blogs can be effective educational technology and useful blog-based activities for learning are: (1) reading blogs of others, (2) receiving comments and (3) previewing tasks of others and reading feedback received in relation to these. Encouragement for students to blog were: (1) regular learning tasks which require students to present outcomes in their blogs, (2) blogs being an assessment requirement and (3) regular blogging of a teacher. Through blogs, a teacher can create an ambience in which students feel themselves to be important parts of the classroom community and that their needs and opinions are recognized and addressed.

In order to maximize opportunities, a blog system can be expanded through other Web 2.0 applications. RSS technology might be useful in helping teachers and students to manage access to information. Folksonomy or user tagging can also be useful. Students and teachers can tag their own posts and posts of others and these tags could provide meta-information about the content of the posts. Web 2.0 digital repositories (such as Youtube, Flickr or Slideshare) can also be useful additions to the blogsphere. Teachers and students can deposit resources in these repositories and display them in their blogs. Developers of new generations of learning managing systems are beginning to explore ways of integrating Web 2.0 ideas in order to provide systems that leverage technological developments” (Churchill, 2009).

View full report at <http://www3.interscience.wiley.com/cgi-bin/fulltext/121521504/HTMLSTART>.

Try a few:

- Blogger/Blogspot: <http://www.blogger.com/>
- Wordpress: <http://www.wordpress.com/>

Collaborative & Interactive Environments

A collaborative and/or interactive environment is just that – **the user can interact with the site itself, with others, and sometimes with the originators themselves.** Perhaps the most common type of collaborative/interactive environment is the wiki.

As Knobel and Lankshear describe, “A **wiki is a collection of webpages whose content is typically organized around a specific purpose or topic. Content can be collaboratively written, added to, deleted, and modified by users.** Wikis are not like static webpages whose content is controlled by the website owner or webmaster. They are more like a shared, online writing space supporting embedded links to other pages internal or external to the wiki. Along with text and hyperlinks, wiki pages may include embedded images, audio, and video. Many wikis also have a built-in discussion space for each page. Because wikis are fully searchable they are ideal go-to spaces for accessing useful and current resources. The best-known example of a wiki is, of course, the massively collaborative online encyclopedia Wikipedia (www.wikipedia.org)” (2009).

At UVU we have an three active wikis: (a) http://wikilearn.uvu.edu/wikis/Main_Page which is used for classroom purposes, (b) http://wikilearn.uvu.edu/webtools/Main_Page which is used to define Web 2.0 tools generally, and (c) <http://uvuadvisortraining.pbworks.com/> which is used for advisor training.

Other collaborative and interactive environments include: [Zunal](#), [Thinkature](#), Web Conferencing tools such as [Webex](#), [Yugma](#), [gotomeeting](#), or [livemeeting](#); Instant Messaging such as ICQ, Yahoo messenger, MSN messenger or AIM; Virtual Worlds such as [Second Life](#), [ConceptShare](#), [Mebeam](#), [Tokbox](#),

Try a few:

- Zunal: <http://www.zunal.com/>
- Thinkature: <http://www.thinkature.com/>
- Yugma: <https://www.yugma.com/>
- Gotomeeting: <http://www.gotomeeting.com/>

- ConceptShare: <http://www.conceptshare.com/>
- Mebeam: <http://www.mebeam.com/>
- Tokbox: <http://www.tokbox.com/>

Open Educational Resources

Open educational resources are growing in prevalence in the United States as well as globally and include OpenCourseWare (OCW) as well as other learning initiatives. Institutions involved in OCW initiatives in the United States included founder Massachusetts Institute of Technology (MIT), Johns Hopkins Bloomberg School of Public Health, Carnegie Mellon, Tufts University, University of California—Irvine, University of Norte Dame, and Utah State University among others nationally and globally (OCW Consortium, 2009; OCW Finder, 2007). There are other initiatives as well that combine resources from various institutions such as Sharing of Free Intellectual Assets (Sofia), Connexions, Multimedia Educational Resource for Learning and Online Teaching (Merlot), or Academic Earth. Other resources aimed at opening access to books and other print materials such as the Internet Archive Open Content Alliance (OCA) are also available. A good place to start for open educational resources is <http://oerrecommender.org/>.

The open educational resources movement consists of **freely accessible electronic access to course materials, but it also involves other aspects such as open access to books and library materials, and access to modules of educational information instead of complete courses**. It may also include educational communication tools or implementation resources as well (International Institute for Education and Planning, 2005). Essentially, it is teaching, learning, and research resources, content or otherwise, which reside in the public domain or have been released under an intellectual-property license that permits their free use or repurposing by others. This may include learning content, tools such as software, or implementation resources such as methods or principles (Smith & Casserly, 2006; Stover, 2005; Trenin, 2007). Their intention, overall, is to foster learning and the acquisition of competencies in both teachers and learners (Open eLearning, 2007).

One aspect of OER are learning objects. Learning objects are small, reusable pieces of instructional material that can be used to facilitate student learning. They are components that are reusable either in multiple classes or in multiple learning environments or locations and are generally housed on the Internet. Examples of learning objects include images, short video or audio clips, tutorials, case studies, simulations, and the like. Learning object portals aid locating resources and include Multimedia Educational Resource for Learning and Teaching Online otherwise known as MERLOT, Connexions, National Science Digital Library, and many more (Cramer, 2007). Wiley summarizes, “learning objects are generally defined as educationally useful, completely self-contained chunks of content. The most popular operationalization of this definition is a three-part structure comprised of an educational objective, instructional materials that teach the objective, and an assessment of student mastery of the objective” (Wiley, 2005).

Try a few:

- OER Recommender: <http://oerrecommender.org/>
- Academic Earth: <http://academicearth.org/>
- Connexions: <http://cnx.org/>
- Merlot: <http://www.merlot.org/>
- Internet Archive: <http://www.archive.org/>

OpenCourseWare

The OpenCourseWare (OCW) aspect of the open learning initiative was dedicated to the development of **freely available, stand-alone college-level online course and teaching materials** informed by the best current research. OCW includes items such as lecture notes, reading lists, course assignments, syllabi, study materials, tests, samples, simulations, and the like (Educause Learning, 2006; Vest, 2004).

MIT has perhaps the most well known OCW project known to date at <http://ocw.mit.edu/> and has been creating OCW materials for longer than most. It began publication of its courseware for public consumption in 2002. The MIT OCW initiative has made content from all of their approximately 1800 courses available on the Internet at no cost for noncommercial purposes (Carson, 2006; Matkin, 2005).

An OCW consortium is found at <http://www.ocwconsortium.org/> and has been formed to develop shared mission, goals, priorities, visibility, and search ability. Currently over 200 other OCW projects have been launched in countries including Brazil, China, France, India, Japan, Portugal, Spain, United States, and Vietnam, offering combined access to more than 2,500 courses (OCW Consortium, 2009; Smith & Casserly, 2006; Vest, 2006). From within the U.S. this includes projects such as the Utah State University OCW and Carnegie Mellon Open Learning Initiative to name a few. From outside the United States many initiatives are strong and growing. For example, the China Open Resources for Education otherwise known as CORE has over 1,100 courses available now (China Open Resources for Education, 2007), and the United Kingdom Open University aims to have 5,400 hours of learning content available by April 2008 (The Open University, 2007). OCW is truly global in scale and reach.

Try a few:

- OCW Finder: <http://www.ocwfinder.com/>
- MIT OCW: <http://ocw.mit.edu/>
- Yale OCW: <http://oyc.yale.edu/>
- Berkeley OCW: <http://webcast.berkeley.edu/>
- OCW at UVU: <https://open.uvu.edu>
- OCW Consortium: <http://www.ocwconsortium.org/>

Open Access Journals & Publications

Although open access journals are not Web 2.0 per se, they are relevant when it comes to topics such as Digital Repositories or Self-Archiving Systems. Open access journals are those that are **scholarly journals publicly available at no cost to the end user**. A full list of open access journals can be found at the directory of open access journals at the Directory of Open Access Journals (<http://www.doaj.org/>).

Try a few:

- Directory of Open Access Journals: <http://www.doaj.org/>

Document Sharing

Document sharing sites **allow you to share and collaborate online**. In some cases you simply post your work and can share it publically and obtain commentary on it , such as in digital repositories such as Mendeley or MIT's DSpace. In some cases you may do this through a person or entity or you might use a self-archiving site. In other sites you can actually co-edit or co-author documents such as in Google Docs, Slideshare, or 280 Slides.

Currently at UVU we do not have true document sharing, but we do have a more manual method of sharing documents. This is managed by Catherine McIntyre of the Library and can be found at <http://www.uvu.edu/library/digitalcollection.html>. That said, the decision was recently made (July 31, 2009) to subscribe to SelectedWorks and create a branded institutional repository. Catherine McIntyre can be contacted for more information.

Try a few:

- Mendeley: <http://www.mendeley.com/>
- DSpace: <http://dspace.mit.edu/>
- SelectedWorks: <http://works.bepress.com/>
- Google Docs: <http://docs.google.com/>

Feed Readers, News Aggregators & News Raters

Feeds are a way for websites large and small to distribute their content well beyond just visitors using browsers. **Feeds permit subscription to regular updates, delivered automatically via a web portal, news reader, or in some cases good old email**. Aggregators can sort, search, and even re-appropriate blog content. With an aggregator, users can stop visiting several individual blogs and websites, and instead access and read everything in one searchable, modifiable place.

Some examples of RSS readers and news aggregators include: Google Feedfetcher, Firefox Live Bookmarks, NetVibes, NewsGator Online, NewsFire Mac OS X RSS Reader, Google Reader, and Bloglines. Examples of sites where users rate and highlight news are Digg, Feed Chronicle, Yahoo Buzz, Mixx, and Propeller.

Try a few:

- Feedfetcher: <http://www.google.com/feedfetcher.html>
- Live bookmarks: <http://www.mozilla.com/en-US/firefox/livebookmarks.html>
- Digg: <http://www.digg.com/>
- Feed Chronicle: <http://www.feedchronicle.com/>

Microblogging

As Wikipedia notes, "Micro blogging is a form of multimedia blogging that **allows users to send brief text updates or micromedia such as photos or audio clips and publish them**, either to be viewed by anyone or by a restricted group which can be chosen by the user. These messages can be submitted by a variety of means, including text messaging, instant messaging, email, digital audio or the web." It includes tools such as Twitter, Yammer, Plurk, and Jaiku.

Right now UVU has a Yammer account which is restricted to those at UVU. It has over 85 members from all areas of campus. UVU has even recently been mentioned in an article for its innovative use of Yammer, “A number of tech-savvy early adopters latched on first here, naturally, but it has expanded in the past month or two and has proven extremely beneficial for exchanging ideas across a diverse and often very segmented campus,” says Erin Spurgeon, UVU’s communications manager. “This is where Yammer comes into play. My coworker Vegor Pedersen I think states it best in his blog post, ‘Yes We Yam.’” (Smith, 2009)

Plugins such as Yammerfox are strongly recommended for following the Yammer discussions.

Try a few:

- Twitter: <http://www.twitter.com/>
- Yammer: <http://www.yammer.com/>
- Jiaku: <http://www.jiaku.com/>

Community Engagement Tools

A number of tools exist that assist in **becoming engaged with the community through volunteering, community service, or attendance or support of events**. Some examples include VolunteerMatch and Upcoming. UVU may want to entertain how engagement opportunities are communicated and disseminated at UVU as well as throughout the community.

Try a few:

- VolunteerMatch: <http://www.volunteermatch.org/>
- Upcoming: <http://upcoming.yahoo.com/>

Feedback and User Review

A number of sites exist where end users can offer **feedback and review**. Most are familiar with this type of capability through sites like Amazon.com or Epinions. However, there are also sites where users can rate their instructors or even their institutions. Examples of these include Rate My Professors, Communiversy, Unigo, StuVu, and The University Review.

Try a few:

- RateMyProfessors: <http://ratemyprofessors.com/>
- Communiversy: <http://www.communiversity.com/>
- Unigo: <http://www.unigo.com/>
- StuVu: <http://www.stuvu.com/>
- The University Review: <http://www.theuniversityreview.com/>

Productivity and Research Tools

There are also many tools available that **help with research and productivity in education**. This may range from sites that help you take notes on things you have found such as with Evernote, Bookqoo, or Awesome Highlighter; or it may be sites that help you gather, organize, and analyze sources and then share the results of your research like Zotero.

Try a few:

- Evernote: <http://www.evernote.com/>
- Book Goo: <http://www.bookgoo.com/>
- Awesome Highlighter: <http://www.awesomehighlighter.com/>
- Zotero: <http://www.zotero.org/>

Photo and Video Sharing & Editing

There are a multitude of sites that permit you to **share images**. This includes sites such as [Flickr](#), [Picnik](#), [Picasa](#) (Google), [Webshots](#), [Photobucket](#), or [YouPublish](#) to name a few. There is also a multitude of sites that permit you to **share videos**. This includes site such as [Youtube](#), [Vimeo](#), [Viddler](#), [Ustream](#), [Teachertube](#), [Yahoo Video](#), or [Graspr](#). There are even sites that help you **create** the pictures or videos such as [Jing](#).

Try a few:

- Flickr: <http://www.flickr.com> (log in as 'uvumarketing' and password 'gogreen')
- Picnik: <http://www.picnik.com/>
- Webshots: <http://www.webshots.com/>
- Photobucket: <http://photobucket.com/>
- YouPublish: <http://www.youpublish.com/>
- Youtube: <http://www.youtube.com/>
- Vimeo: <http://www.vimeo.com/>
- Viddler: <http://www.viddler.com/>
- Ustream: <http://www.ustream.tv/>
- Teachertube: <http://www.teachertube.com/>
- Yahoo Video: <http://video.yahoo.com/>
- Graspr: <http://www.graspr.com/>
- Jing: <http://www.jingproject.com/>

Geomapping & Geospatial Tools

These tools, simply put, help you find things geographically. They include interactive tools such as [Google Maps](#), [Google Earth](#), [Mapquest](#), or [MapMyEvent](#).

Try a few:

Google Maps: <http://maps.google.com/>
Google Earth: <http://earth.google.com/>
Mapquest: <http://www.mapquest.com/>
MapMyEvent: <http://www.mapmyevent.com/>

Mashups

In discussing Web 2.0 we should probably at least mention what a mashup is. As Wikipedia notes, "In web development, a mashup is a web page or application that combines data or functionality from two or more external sources to create a new service." Some examples of mashups are [MapMyEvent](#) or [Flickrvision](#).

WEB 2.0 IN EDUCATION

Now that we have described some of the many tools that are available (see <http://www.go2web20.net/> for a far longer and more detailed list of Web 2.0 tools), we need to consider how Web 2.0 may be affecting education. As the Consortium for School Networking (CoSN) notes, "Web 2.0 tools can provide highly interactive and participatory environments that establish communities, open a myriad of communication channels, and ensure each individual and group a voice. In fact, there is a growing body of evidence that the collaboration inherent in the participatory nature of Web 2.0 tools can be leveraged to deepen student learning through authentic, real-world learning" (CoSN, 2009).

Here are some ways in which Web 2.0 tools can be useful in the classroom:

- Move students from searching for information to using and creating it
- Incorporate multiple learning styles into student projects and research
- Integrate 21st century skills into the curriculum
- Teach information literacy and participate in a networked public culture
- Foster more collaboration with teachers, other students, and community
- Share information (and labor) with colleagues
- Encouraging creative expression, gain authentic audiences, and get useful feedback
- Showcase or promote activities (Baumbach, 2009)

According to Vadim Lavrusik, in the Mashable Social Media Guide, here are 10 ways universities share information using social media:

1. Gathering and Sharing Information
2. Showcasing Student and Faculty Work
3. Providing a Platform to Broadcast Events
4. Emergency Notification
5. Connecting People
6. Producing, Not Just Promoting
7. Creating a Dialogue and Communicating to Students
8. Facebook Office Hours
9. Coaching for the Spotlight
10. Getting Wired Via Mobile (2009).

If students are to be the next inventors, entrepreneurs and leaders in the global economy, we must see to it that our young people have the innovative tools they need to be successful in the 21st century, particularly in the classroom (Cummings, 2009).

Below is some summary information from a report done by Consortium for School Networking (CoSN) and funded by the John D. and Catherine T. MacArthur Foundation, and with cooperation from ASCD and Common Sense Media, CoSN commissioned the Metiri Group to conduct the study. The information is based on the surveys from nearly 1200 district administrators, including 389 superintendents, 441 technology directors, and 359 curriculum directors.

Nearly three-quarters of respondents (superintendents and curriculum directors) said that Web 2.0 technologies had been a positive or highly positive force in students' communication skills and the quality of their schoolwork. Over 50% of those same administrators believe that Web 2.0 has had a positive or highly positive impact on students' interest in school (67%), interests

outside of school (70%), self-direction in learning (65%), sense of community and culture (65%), peer relationships (58%), relationships with parents and family (56%), and homework habits (55%). On the flip side, nearly half of these district administrators said that Web 2.0 had a negative or highly negative influence on exercise/physical conditioning. In addition, some district administrators (26%) said Web 2.0 negatively impacted homework habits.

Over 77% of district administrators who responded to this question (superintendents and curriculum directors) agreed or strongly agreed with the statement "Web 2.0 has value for teaching and learning." When asked about the impact that Web 2.0 will have on teacher-parent communication, student-teacher relationships, and student-to-student relationships, most anticipated that Web 2.0 would have a positive impact.

The seven highest-ranking priorities for Web 2.0 use by district administrators were:

1. Keep students interested and engaged in school
2. Meet the needs of different kinds of learners
3. Develop critical thinking skills
4. Develop capabilities in students that can't be acquired through traditional methods
5. Provide alternative learning environments for students
6. Extend learning beyond the school day
7. Prepare students to be lifelong learners (CoSN, 2009).

The full report is at

<http://www.CoSN.org/Portals/7/docs/Web%202.0/CoSN%20Report%20042809Final%20w-cover.pdf>

An executive summary is at

<http://www.CoSN.org/Portals/7/docs/Web%202.0/ExecSummaryCoSN%20Report042809Final.pdf>

RISK ANALYSIS

A good document to review:

<http://www.vp.is.ed.ac.uk/content/1/c4/12/45/GuidelinesForUsingExternalWeb2.0Services-20070823.pdf>

Here is the viewpoint from the Webmaster at Oregon State University:

Most social media sites that we use have enforced terms and conditions. So we don't have special policies or roles; we'll just work with those guidelines. If questionable or copyrighted material is uploaded to Facebook or YouTube, or if off-color commentary is made, it can be reported and removed. The communities at both of those sites are good at helping police content.

We've not had many questionable issues. And in many cases, when questionable comments arrive, others rise to our defense. That shows spirit and engagement, when your constituents rally behind you.

It takes a certain amount of giving up control. One thing to keep in mind is that these comments and these exchanges are happening out there anyway...if you don't engage with your perspective, you're giving up on the discussion. So we try to embrace controversy and show confidence that we're willing to engage with an audience in the social media space. It's a reality of communications today.

One great feature of social media is the ability to do quick polls and surveys and get immediate feedback. With press releases and static pages, you only can track web statistics. But with social media, you can actually hear what people are thinking. So we ask questions: what did you think of this year's commencement? What do you think of this marketing campaign? What was your favorite event at OSU this year? And then we can collect real-time results.

Finally, social media sites are essential because that's where the eyeballs are. You can have wonderful videos on your web site, but nobody will see them. YouTube accounts for 1/3 of all web searches...most of the video viewing users are going there first to look for videos. If you only allow students or fans in the football stadiums to upload cell-phone videos on YouTube, then you're allowing that content to speak for you on YouTube. So it's better for you to find your best content and put it in that space so you can get your message out there (Personal Communication July 1, 2009).

Oregon State, it seems, has already spent considerable time assessing their views on Web technologies and their associated risks. UVU needs to assess its own risk tolerance and what it sees as the most significant or relevant risk factors.

Areas we need to address as an institution include:

1. Security and confidentiality issues (Sensitive and protected information such as social security numbers, protected identities, etc)
2. Protection of data 'controlled' by UVU (having access to our data like budget information; or posting of otherwise private information)
3. Privacy issues (the institution will have to work within the contexts of the technology being used)
4. Slander and libel, copyright infringement, etc (Controllable by community culture, however, the potential does pose liability to the institution)

5. Who is able to edit or alter (understanding who and what)
6. Ownership of data issues (Was [blank] created by the institution or a third party editor or originator, etc.)
7. Performance and reliability (Stability of system, if the services moves out of beta format and begins to charge for the service, then what?)
8. Support offered (how users of systems get help)
9. Single sign-in capabilities (or not)
10. Becoming 'locked into' a system (If necessary. Can we freely extract our information from the service?)
11. Longevity of system (need to retain information and how, system popularity, etc)
12. Accessibility issues (Does the service have usability alternatives to prevent discrimination based on ability?)
13. Training relating to potential risks versus benefits
14. Accountability and administrative control issues (Who is responsible for what; who has access to what; moderation)
15. Control and monitoring issues (Do supervisors need to approve web 2.0 related activities during work hours?)
16. Mandated versus optional (or recommended) use
17. Duplication issues—several departments already recruiting students to their blogs, Facebook group, etc.
18. Student and audience preferences (Just because we build or endorse a tool it doesn't mean they come)

In looking at the risks we should identify: (a) description as in "there is a risk that X may happen, caused by Y, resulting in Z", (b) probability, (c) impact, (d) timescale, (e) response if it occurs (f) risk mitigation (preventative actions), and (g) warning signs. The Web Tools group (a subset of the Web Task Force) believes a separate sub-committee, or possibly standing committee, should be developed to look into technology related risk analysis. Equally, the results of this sub-committee need to be widely distributed across campus.

RECOMMENDATIONS

Project Definition, Situational Research, Training, and Communication

A critical factor to successful project implementation is beginning with sufficient understanding of the project expectations and scope in the planning stage. Project success is usually based on satisfying customer needs/desires in a timely manner using limited resources and with quality results; a key factor to this is successfully defining the project goals, scope, and requirements early on and ensuring all stakeholders are in agreement. For the many Web 2.0 initiatives, formal and informal, occurring throughout campus we need to ensure best project management practices are being incorporated. Although no single entity or even entities can 'manage' something like Web 2.0 -- which is actually not just tools and resources but a paradigm shift which necessitates liberty granted to the end users -- below are some suggestions that may prove helpful as we address Web 2.0 related needs and concerns.

It seems there is a need for increased research into Web 2.0 tools and technologies: increased training relating to the same: increased understanding and practice of fundamental project management to include project and scope definition, implementation planning, communication, resource management, change management, and integration; better communication regarding proposed, upcoming and current projects; and more research into risk analysis, project prioritization, and consistency of projects with institutional strategic directions.

One potential partial solution is to re-define the Web Resource Services department of Marketing and Communications to incorporate usability research; Web 2.0 tools research and implementation; Web 2.0 training and communication; and/or web consulting. Now would perhaps be a good time for the transition since the rollover has been completed and had been the primary focus of Web Resource Services up to this point. Potentially other areas of campus, such as Web Development Services of Information Technology; Center for Advancement of Leadership of the School of Business; Center for Engagement of the President's Office; or Instructional Design, Delivery, and Distance Education of Academic Affairs could also play this role.

Generally there is a felt need to find a means of training and offering assistance across campus in regard to project management to include:

- Project assessment including needs analysis to determine project goals and objectives.
- Specifications and requirements gathering
- Project management providing guidance and oversight for all stages of your project.

Research, advice, and training should also be continued for Web 2.0 tools and technologies on an ongoing basis. This could be done by a sub-committee of the Web Advisory Council (WAC) which functions similarly to Strategic Web Action Team (SWAT) -- for example a Web Technologies Team. [Note: See "Structure of Web Management at UVU" for more information on WAC or SWAT]. It could also be done by creating a new position (part time or full time) that assists in research and training relating to Web 2.0 and/or by creating a new position that assists in basic project management and scope definition. Either of these positions could report to any number of areas on campus. It is important to note that the individuals or groups would not 'control' Web 2.0 tools and technologies on campus, but would offer guidance, advice, and training.

When it comes to specific institution-wide or cross-department projects like the desired 'online repository of engagement opportunities', it is strongly recommended that this project be identified as something along the lines of "Interactive Catalog of Engagement Opportunities" and not as Web 2.0 generally. A project assessment team should be created that assesses needs, project scope, and alternatives. At least one member of this team should be from Web Development Services or Information Technology. This team should then work in cooperation with the Web Advisory Council (WAC) [Note: See "Structure of Web Management at UVU" for more information on WAC]. Equally, it may be helpful to this group to look at similar projects on the Web to help determine the project scope and needs. Some examples include:

- Volunteer Match (<http://www.volunteermatch.org/>)
- Network for Good (<http://www.networkforgood.org/volunteer/>)
- MIT Outreach Database (<http://mitpsc.mit.edu/outreach/>)
- MapMyEvent (<http://www.mapmyevent.com/>)
- Upcoming (<http://upcoming.yahoo.com/>)

It is also recommended that the Communication Quality Initiative team led by Val Hale look specifically at communication relating to (a) engagement/involvement opportunities, (b) event and activity communications, (c) announcement communications, and (d) project information dissemination.

Diffusion of Innovations

Everett Rogers's is perhaps one of the best known in regard defining the diffusion of innovation and its attributes. Getting new ideas, technologies, products, or processes adopted on a wide scale is difficult. Rogers defines an innovation as "an idea, practice, or object that is perceived as new by an individual or other unit of adoption" (2003, 12). He refers to the spread of an innovation as its diffusion, "the process in which an innovation is communicated through certain channels over time among the members of a social system" (2003, 5). This does not assume however that the adoption of an innovation is necessarily good for all participants nor does it assume they will accept all aspects of an innovation. Equally it does not assume all potential participants will adopt at the same rate. Instead, Rogers identifies varying adopter categories including (a) innovators who are the first to adopt, (b) early adopters, (c) early majority, (d) late majority, and (e) laggards (2003, 282-285).

Rogers writes, potential adopters go through a systematic decision making process. First knowledge must occur where an individual is exposed to an innovation's existence. Next, persuasion must occur where the individual forms a positive or negative viewpoint toward the innovation. A decision is then made by the individual to adopt or reject the innovation. Implementation of the decision then occurs by the individual, and finally confirmation occurs when the individual seeks reinforcement of the decision that had been made (2003, 169). Before potential users can be persuaded positively or negatively toward an innovation they must be informed about its existence. According to Rogers there are key communication channels that are used. Mass media is useful for rapid awareness communication to wide audiences, but interpersonal channels involving face-to-face exchanges are often more effective. Often innovations, particularly those in social systems that favor change, will have opinion leaders who effectively influence other individual's attitudes both for and against adoption and who carry information across boundaries between groups. Equally innovations will have change agents who influence individual's innovation decisions by either encouraging a particular change or by mediating the diffusion process to ensure its success (2003, 366).

Users who potentially may adopt an innovation tend toward particular attributes when making their decision. These include (a) relative advantage, (b) compatibility, (c) complexity, (d), trialability, and (e) observability. Rogers notes that between 49 and 87 percent of variance in the rate of adoption of innovations can be attributed to five perceived attributes: (a) relative advantage, (b) compatibility, (c) complexity, (d) trialability, and (e) observability (Rogers, 2003).

- Relative advantage is “the degree to which an innovation is perceived as being better than the idea it supersedes” (Rogers, 2003, 229). An individual’s assessment of relative advantage could include many aspects, such as social prestige, convenience, satisfaction, or economic improvement (Allard, 2003).
- Compatibility is “the degree to which an innovation is perceived as consistent with the existing values, past experiences, and needs of potential adopters” (Rogers, 2003, 240). If the innovation is a logical extension of the environment, or matches existing values or experiences, then it is likely to be adopted more readily (Allard, 2003).
- Complexity is “the degree to which an innovation is perceived as relatively difficult to understand and use” (Rogers, 2003). Those that are easier to understand and do not require attainment of new skills will be more readily adopted.
- Trialability is “the degree to which an innovation may be experimented with on a limited basis” (Rogers, 2003, 257). New ideas that can be used in a trial basis are generally more accepted and adopted, in part because they help dispel uncertainty (Rogers, 2003, 258).
- Observability is “the degree to which the results of an innovation are visible to others” (Rogers, 2003, 258). Innovations that are more visible and observable are likely to have greater acceptance and adoption.

In order to communicate and make informed decisions about Web 2.0 we must first ensure all those in the conversation have ample knowledge of the resources, after which persuasion (for or against), decision-making, and implementation can occur. Web Advisory Council should play an active role in both the short-term and long-term discussion and planning.

Knowledge

First knowledge must occur where an individual is exposed to an innovation’s existence. In this case we must create methods for informing UVU participants of Web 2.0 tools. Some ways in which we can do this:

- **Creation of a social media directory:** The Web Tools group (a subset of the Web 2.0 Task Force) believed strongly enough in this that a social media directory has been implemented at <http://www.uvu.edu/visitors/social-media-directory/index.html> which lists all known implementations of Web 2.0 technologies on campus.
- **Creation of a Web 2.0 Tools information source:** The Web Tools group (a subset of the Web 2.0 Task Force) believed strongly enough in this that a Web Tools Wiki was created at <http://wikilearn.uvu.edu/webtools/> which defines Web Tools generally and offers samples of the many tools available.
- **Development of communication channels:** The Web Tools group believes that communication channels need to be defined and communicated. One example of a communication channel is the Social Media Club of Utah Valley at <http://smcuv.org/>.

- **Creation of a UVU Community Publishing Platform:** The Web Tools group believed strongly enough in this recommendation that a WordPress Multi-User Blog system was implemented on a trial basis at <http://my.uvu.edu>. It is recommended that this system be moved beyond the beta-analysis stage and be put into actual production. In relation to Web 2.0 it could be used to communicate about Web 2.0 best practices, trends, current uses, and for communal discussion of Web 2.0 tools generally.

Description of project: my.uvu.edu is a campus-wide community publishing platform that helps UVU faculty, students, staff, and clubs share and aggregate academic, professional, personal, or community content on their own sites. My.uvu.edu is perfect for publishing portfolios, columns, articles, papers, events, discussions, blogs, and learning materials. My.uvu.edu is powered by the popular WPmu platform, and leverages Atom/RSS feeds, open APIs, and plug-ins to bring in content from other systems, including Web 2.0 sites like Twitter, Facebook, and more. The project is currently in a limited "alpha" testing phase.

- **Definition of some type of training and research mechanism:** The Web Tools group believes some type of mechanism must be identified for continual research, communication, and training regarding emerging Web technologies, resources, and tools.
- **Resources for understanding project definition and management:** The Web Tools group believes some type of mechanism must be identified to encourage strengthened project needs analysis, project scope definition, and overall project management.

Persuasion

After knowledge is disseminated, persuasion must occur where the individual forms a positive or negative viewpoint toward the innovation. This should include all areas of campus. In an effort to market specific Web 2.0 tools, we should follow the key attributes of an innovation that affect users decisions as based on Everett Rogers. Thus, for each identified innovation (Web 2.0 tool) that we want to research or promote, we should make sure we market its advantages and disadvantages compared to currently existing resources/tools, compatibility with user needs/values, complexity, trialability and offer observable examples of the tool in use.

Decision

A decision is then made by the individual to adopt or reject the innovation. The decisions of professors, staff, and students must occur on a case by case basis not forced

Implementation

Implementation of the decision then occurs by the individual, and finally confirmation occurs when the individual seeks reinforcement of the decision that had been made (2003, 169).

Long Term Plans

The goal is not to limit access to Web 2.0 tools, but instead to promote the use of tools we see as having the greatest potential strengths and benefits as compared to its weaknesses and costs. A second goal is to offer information, training, and examples of tools in use.

CONCLUSION AND SUMMARY

Richardson, in his book *Blogs, wikis, podcasts, and other powerful Web tools for classrooms*, notes that "in his view, the technologies are driving 10 major shifts in education, which he described as open content, multiple teachers and 24/7 learning, social and collaborative construction of knowledge, conversation rather than lecture, know "where" learning, more active readers, Web as notebook, writing beyond simple text, working toward mastery rather than the test, and striving for contribution rather than completion" (Albion, 2008).

Graham Attwell, Director at Pontydysgu, a Welsh educational research institute, identifies three aspects of dysfunction are evident in secondary schools which may also be applicable to higher education:

1. use of educational technologies in ways that limit the potential by replicating traditional forms of organization rather than adopting the networking and creativity that learners are likely to experience outside of formal education.
2. rigid focus on developing and assessing individual attainment in a world where networked activity is increasingly important.
3. assessing learning only against a narrow curriculum despite the variety of networked informal learning in which young people are engaged.

Attwell's prescription for reform is to "end the isolation of school from wider forms of community and knowledge sharing through such means as community learning centers, project-based learning, open educational resources, personal learning environments, mixed age learning, and assessment for learning as a tool for enhancing learning rather than assessment of learning as a final measure of outcomes. Many, if not most, of these reforms would benefit from the application of Web 2.0 tools and would equip learners to make more effective use of such tools" (Albion, 2008; Atwell, 2007).

UVU, along with other educational institutions, are at a point where we need to address Web 2.0 and what it means to education. At this point there are no clear-cut answers, but there is great need to start the conversations.

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