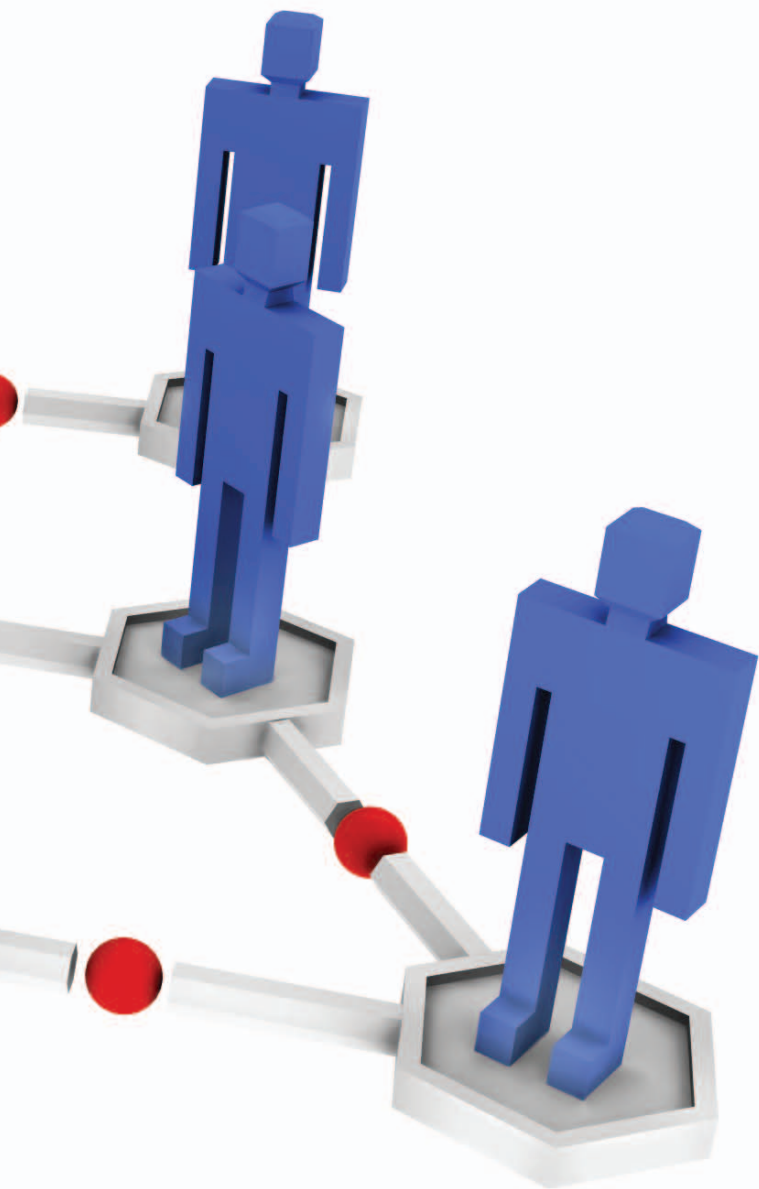


Blogs, Mashups, & Wikis



Oh, My!



Ready or not, Web 2.0, a new generation of web-based services, is changing the way people work and the way records and documents are created, used, and shared.

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The tremendous surge in web-based services and applications, known as “Web 2.0,” and their corresponding influence on how people create, exchange, and use information are producing an array of new challenges for records and information management (RIM) professionals – including how to use these tools effectively and how to manage the creation, integrity, storage, access, and dissemination of such dynamic information.

The term “Web 2.0” originated about three years ago and still lacks a formal, agreed-upon definition. Wikipedia defines it as “a perceived second-generation of web-based services – such as social networking sites, wikis, communication tools, and folksonomies – that emphasize online collaboration and sharing among users.” Web 2.0 is participatory, collaborative, inclusive, creator-/user-centric, unsettled, and very information-intensive. It has these traits:

At the Core **This article**

- ▶ Introduces the term “Web 2.0” and explains its relevance to RIM professionals
- ▶ Provides examples of Web 2.0 applications
- ▶ Discusses Web 2.0 management and RIM issues

- *Workstyle*: a style of collaborative working through online communities that stresses encouraging knowledge workers to be creative and innovative, to contribute to initiatives and projects, and to build on each other’s work toward an outstanding collaborative end product or service

- *Applications*: a set of agile, versatile tools/platforms/applications that support interaction by online communities, such as blogs and wikis
- *Software*: an array of software that connects people and applications to help draw out and organize collective intelligence; some of this software has been produced by small to mid-sized companies, but larger firms such as Microsoft, IBM, and Google also offer new or refined products

A 'Massive Phenomenon'

Over the past few years, at least four trends have accelerated the upsurge of Web 2.0:

1. *The development and popularity of online social networks for exchanging personal information, photos, videos, and other information* (e.g., MySpace, YouTube, Flickr, and Second Life).
2. *The broadening availability of easy-to-use software.* This and the first trend, in particular, led *Time* magazine to declare the user to be 2006's "Person of the Year." According to *Time's* cover story, "you control the information age." Jeff Howe's article "Your Web, Your Way" described three types of online collaborative communities:
 - *The toolmakers*: users building and customizing their own tools for convenience and versatility. Examples include Wikipedia (an example of "crowdsourcing"); Google (search engine built around a "social function" – counting links between websites – and adding features like maps); MySpace (120 million users, maximization of individuality); and eBay (online sales; customer ratings weed out dishonesty).
 - *The gatherers*: users gathering, filtering, and commenting on blog posts and photographs and finding an audience for them. Examples include Technorati (searches and ranks topics in the blogosphere); del.icio.us (allows users to share their web-browser bookmarks; digg (the crowd rates news stories); Flickr (sharing photos); and Bloglines (lets users subscribe to various sites and receive updates from them).
 - *The entertainers*: movie, music, book, and videogame industries on the web. Examples include *Amazon.com* (customer reviews/evaluations of books); YouTube (anyone can be in the entertainment field); and Second Life (imaginary world where users interact and can spend real money).
3. *The search for techniques to foster more productive use of information.* A recent study by the research/consulting firm Basex asserts that overwhelming amounts of e-mail and other information frustrate knowledge workers and distract from more productive work. Managers, weary of spam, employee time lost dealing with unneeded or inappropriate e-mail, and other problems, welcome the potential benefits of the new tools' self-organizing, self-policing aspects.

Web 2.0 at Work

Examples of Web 2.0 applications include:

- *Northwestern Mutual*, formerly overly reliant on e-mail and a formal hierarchical structure that inhibited information flow, instituted a blogging system that combines web-based blogging and content management with good security, workflow, and regulatory compliance tools. Security, authentication, and version control are particularly important in this application, according to a *CIO* report. Blogging is better than e-mail, the system's sponsor told *CIO*, because it involves more people: "You're not determining and limiting who your potential audience may be."
- *Proctor & Gamble* adopted a set of desktop applications to foster real-time collaboration among its workforce of more than 100,000 people and with its vast network of customers and suppliers. Collaboration is a strategic priority for P&G and one factor in its recent success and growth. Instant messaging, "live meeting" video conferencing, a document-sharing portal, and other new collaborative tools are designed to "help employees maximize one-to-one communications, create more effective virtual teams, and, ultimately, make faster and better decisions," according to an *Information Week* article entitled "Selling Soap, Razors – and Collaboration."
- *IBM's "WikiCentral,"* initiated two years ago, has grown to about 125,000 users. Last year, the company assembled a worldwide community of 50 IBM experts who used a wiki to develop a new patent policy for the company, according to an article by Rachael King. In 2006, IBM organized InnovationJam, the largest collaborative online brainstorming session ever, involving more than 150,000 people (company employees, business partners, clients, and

others), to identify emerging business opportunities. Participants posted more than 46,000 ideas, which IBM reduced to 10 priorities for funding, citing the wiki-centered work as an example of “the open, collaborative nature of innovation.”

- *Motorola* has more than 2,600 internal blogs, 3,200 internal wikis, and thousands of other project workspaces. The software investment is small, employees like using the tools, they are mostly self-policing, and the productivity pay-back is great. “We just think it’s the way business runs,” *Motorola’s* vice president for IT told *eWeek.com*, “... business is ... human beings talking to each other, trying to get stuff done.” *Motorola* relies on technology but “part of the culture is to look up documents” for precedent and insight, noted *Motorola’s* IT director, but now, “people say, ‘Go look in the wikis.’”
- *Wikipedia*, the free online encyclopedia, continues to serve millions of users with informative articles on thousands of topics. While critics point out an occasional inaccuracy or mistake, champions point to it as a prime example of individual initiative, peer review and error correction, and mass collaboration. A new book, *Wikinomics*, on mass collaboration, concludes with a final chapter that is not actually in the book; it is being written by readers, on a wiki set up by the authors – www.wikinomics.com.
- *BP’s mashup*, called “Hurricane Management System,” was described in a recent article, “Maps Meet Mashups.” It integrates satellite images, weather information, ocean data, and data on platforms, pipelines, buoys, and other resources, to help employees manage hurricane threats.
- *Chicagocrime.org* is a mashup that combines data from the Chicago Police Department website and Google maps. Type in an address to see recent crimes; look up crimes by type, street, date, or view along a particular route.

4. *The rising importance of knowledge workers, who, according to Tom Davenport in Thinking for a Living, “... have high degrees of expertise, education, or experience, and the primary purpose of their jobs involves the creation, distribution, and application of knowledge.”* Knowledge workers are heavily dependent on information systems and tools to create information and also to access, analyze, exchange, and synthesize the information that is the essential precursor of knowledge.

Three types of Web 2.0 collaborative tools are particularly important:

1. *Blogs*: user-generated web journals that offer opinions and information and that may include text, images, and links to other blogs and web pages. Some blogs are confined to personal expressions, but others make provision for reactions and comments from readers.
2. *Mashups*: websites or other applications that integrate content from more than one source into an integrated application (e.g., combining data on a topic of interest with geographical data).
3. *Wikis*: according to Wikipedia, a wiki “is a website that allows visitors to add, remove, edit, and change content, typically without the need for registration. It also allows for linking among any number of pages. This ease of interaction and operation makes a wiki an effective tool for mass collaborative authoring. The term wiki also can refer to the collaborative software itself... that facilitates the operation of such a site...”

Web 2.0 is important to RIM professionals because it is accelerating and changing the way people work and the way records and documents are created. In fact, Andrew McAfee, an expert on technology trends, and others have suggested an even more dramatic term, “Enterprise 2.0,” to describe platforms that organizations use to “make visible the practices and outputs of their knowledge workers.” A recent *Information Week* survey confirmed the rising popularity of instant messaging, collaborative content tools, wikis, and blogs: “Within a few years, rich, collaborative software platforms that include a slate of technologies like wikis, blogs, integrated search, and unified communications will be the norm... Employees will expect to work that way, and it’ll be up to IT to solve the still-significant problems and deliver.”

An international study by consulting firm Booz Allen called Web 2.0 a “massive phenomenon,” based on interactive and participatory applications such as blogs and virtual meeting places that engage virtual users as content co-developers and urged businesses to adopt the new tools where strategically advantageous. (See the sidebar, “Web 2.0 at Work” to learn how several organizations are using Web 2.0 tools.)

Management Issues

Collaborative, social networking technologies and platforms require appropriate management strategies that balance spontaneity with structure, encourage and reward originality, but also foster pooling of knowledge and information and team approaches. These infor-

mation-sharing devices can promote efficiency, reduce costs, broaden business applications, and provide competitive advantage. In some settings, blogs and wikis are already upstaging e-mail as internal communications, tracking, and management tools, but management needs to ensure that the newer tools work compatibly with the older ones.

Software investment costs may be modest, but metrics for return-on-investment have not been developed. Managers need to be concerned with training and upgrading employees' skills and expertise to make optimal use of the new web tools. Some managers worry that employees need incentives and motivation to use the new Web 2.0 tools. But others assert just the opposite: the tools are so relatively easy to use, the software so relatively easy to get, and the advantages so obvious, that employees may adopt them on their own, download software, share files, and set up collaborative systems outside of the regular business structure if managers delay too long.

Euan Semple, a British consultant on "social computing," writes:

The 100-percent guaranteed easiest way to do Enterprise 2.0? DO NOTHING ... your bright, thoughtful, and energetic staff will do it for you. Trouble is, they will do it outside your firewall on bulletin boards, instant message exchanges, personal blogs ... and you will have lost the ability to understand it, influence it, and integrate it into how you do business.

The second easiest way is to find ways of allowing this to happen inside the firewall, which can be as simple as sticking in some low-cost or free tools and then making sure your existing organisation can GET OUT OF THE WAY [and then] KEEP THE ENERGY LEVELS UP.

Managers prefer to purchase and install a full suite of Web 2.0 tools for entire programs or the enterprise as a whole to having individual employees or groups procure their own, which would introduce the potential for silos and incompatibility. Managers worry about security with so many online participants. Confidential information needs to stay behind the firewall and be used appropriately within the company. There is a broader issue of monitoring content for accuracy and appropriate language. It is useful to require that every entry contain identifying information on the creator, set guidelines, and assign editors to monitor content and weed out inappropriate material when needed.

Web 2.0 Challenges for RIM

Web 2.0 poses several issues in the area of records and information management. Records are created in the course of business, document transactions, decisions, or legal obligations, and have other traits, regardless of format. But applying these and other records criteria to the applications of Web 2.0, with its population of "live," organic documents, is a challenge. Records management focuses on retention/disposition, classification, and appraisal issues – all are a challenge in this volatile environment. Some issues require the creative application of traditional RIM techniques; others may occasion the invention of new approaches. Eight of these issues are

discussed below.

1. *Assigning responsibility for managing and being custodian of the information.* Web 2.0 applications are multimedia and infor-

Blogging Guidelines

Unlike some elements of Web 2.0, blogging has been around long enough that a number of companies have developed guidelines for their employees. Most of these pertain to external blogs – available to anyone on the web – but some also are relevant for internal blogs. For example:

- Electronic Frontier Foundation
Legal Guide for Bloggers
www.eff.org/bloggers/lg
- Hill & Knowlton
Blogging Policies and Guidelines
<http://blogs.hillandknowlton.com/blogs/niallcook/archive/2005/05/19/279.aspx>
- IBM
Blogging Guidelines
www.ibm.com/blogs/zz/en/guidelines.html
- Robert Scoble
The Corporate Weblog Manifesto
www.changethis.com/2.CorporateWeblog
- Sun Microsystems
Sun's Blogging Guidelines
www.sun.com/aboutsun/media/blogs/BloggingGuidelines.pdf
- Thomas Nelson
Blogging Guidelines
<http://blogs.thomasnelson.com/pages/BloggingGuidelines.htm>
- Debbie Weil
BlogWrite for CEOs
www.blogwriteforceos.com
- Yahoo!
Personal Blog Guidelines
<http://jeremy.zawodny.com/yahoo/yahoo-blog-guidelines.pdf>

mation-intensive; they may demand unprecedented bandwidth and storage space on servers. Their products have multiple creators from across the enterprise and even beyond, when customers and users are involved, necessitating a policy on custodianship of the information when the work is complete. There is a broader set of responsibilities involving integrating the Web 2.0 work into enterprise information policies and the organization's strategies, developing performance measures to assess return on investment, and developing debriefing and assessment procedures to learn from both successes and failures. All this involves, at minimum, close cooperation among the organization's program offices, the chief information or technology officer, and the records management office.

2. *Managing the creation, collection, storage, and dissemination of vast amounts of unstructured and constantly changing information.* Web 2.0 applications such as wikis and blogs encourage creativity and innovation, including using multiple formats, platforms, and media. Changes to a wiki over the course of a couple of hours, for instance, might include a text posting, additions to that posting, edits of the posting and its additions, links to multiple websites, excerpts from books and journal articles, links to sites on YouTube or MySpace, and a mashup involving, for instance, customer and geographical data. Policies must be developed to determine

- How much of this is a "record" and how to accommodate that information in a recordkeeping system
- How much metadata or other detail should be captured for retrospective analysis of who-contributed-what
- Whether there is a need to refer back to the information in the application as it was on a specific date in the past
- How to deal with copyrighted material
- How to deal with hyperlinks (including the situation where the website linked to changes or becomes defunct)
- How long to retain the information

3. *Controlling access to particular levels and types of information.* The spirit of Web 2.0 is diverse and inclusive; the strengths of its applications come, to a large degree, from willing contributions of people's knowledge and insights. The posting and pooling of ideas generate sparks of creativity as others react, reflect, have their insights deepened or changed and, in turn, contribute something new. This process necessitates broad, easy information availability. But that, in turn, imposes the need for policies about making available sensitive internal documents and proprietary information.

4. *Protecting the security and integrity of the information.* This is a related issue: ensuring that the information is not

Web 2.0: Peering into the Future

Several knowledgeable people maintain blogs on Web 2.0 topics, including:

| Expert | Affiliation | Blog Title | Emphasis | URL |
|------------------------------|--------------------|--------------------------------------------------------------------------|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Nicholas Carr | Harvard University | Rough Type | Role of IT in business | www.roughtype.com |
| Adam Carson | Morgan Stanley | Enterprise 2.0 Teaching, Learning, Sharing, Collaborating | Linking to other sources | http://enterprisetwopointo.com/tag/enterprise-20-content-management |
| Tom Davenport & Larry Prusak | Babson College | Knowledge Work, Management & Productivity | Knowledge workers | www.babsonknowledge.org |
| Dion Hinchcliffe | ZDNet | Enterprise Web 2.0 | Analysis of trends | http://blogs.zdnet.com/Hinchcliffe/?p=102 |
| Charlene Li | Forrester Research | Groundswell: How People With Social Technologies are Changing Everything | Social networking, knowledge | http://blogs.forrester.managementcom/charleneli |
| Andrew McAfee | Harvard University | The Impact of IT on Businesses & Their Leaders | Management of IT and "Enterprise 2.0" | http://blog.hbs.edu/faculty/amcafee |
| Tim O'Reilly | O'Reilly Research | O'Reilly Radar Web 2.0 | Emerging trends in IT | http://radar.oreilly.com/web2 |
| Robert Scoble | PodTech.net | Scobleizer | New technology; IT company strategies | http://scobleizer.com |

changed (either inadvertently or deliberately) so it becomes inaccurate or misleading or destroyed through human action or natural or manmade disaster such as arson or terrorist attack. Organizations need well-worked-out policies to determine who can access systems and change information and means of tracking who changed or added what, if appropriate. Web 2.0 applications not only embody critical information, they are also a platform for everyday work in many settings, so downtime means not only potential information loss but also interruption in enterprise work. There need to be secure, robust servers with offsite backup and other security measures as part of an overall disaster prevention/preparedness/response plan that covers all critical information, not just Web 2.0 applications. All this must be embodied in a plan with clear assignment of responsibilities.

5. **Providing access tools.** Web 2.0 platforms are useful – and used – only if they are easily accessed. A versatile, sophisticated search engine is essential. Generating access terms that flow out of the information, rather than being imposed on it as in traditional indexing and taxonomies, is another challenge. The new-style access term sets are called “folksonomies” – literally, taxonomies generated by the “folks” who collaborate in the Wikipedia, which defines a folksonomy (at the time of this writing) as “a user-generated taxonomy used to categorize and retrieve web pages, photographs, and web links, using open-ended labels called tags. Typically, folksonomies are Internet-based, but their use may occur in other contexts. The folksonomic tagging is intended to make a body of information increasingly easy to search, discover, and navigate over time. A well-developed folksonomy is ideally accessible as a shared vocabulary that is both originated by, and familiar to, its primary users.”
- 6 **Assessing the legal implications of vast amounts of information in scattered systems and databases.** RIM professionals recognize the critical nature of this because they are attuned to the issue of the use of information in litigation, particularly during the early or discovery phase when, under court rules, opponents in litigation are required to turn over to each other documents and other information pertinent to the issue at hand. Precedent-setting court cases over the past few years and new guidelines (e.g., the December 2006 amendments to the U.S. Federal Rules of Civil Procedure) provide for broad discoverability of electronically stored information but with a counterbalancing provision for exclusion of material that can be shown not to be reasonably accessible because of undue burden or cost. The new rules were developed through a careful, deliberative process, but their development process time approximately parallels the upsurge of Web 2.0 with all the attendant complexities of its applications. Legal implications need to be considered as applications are planned; consultation among organization counsel, IT experts, and records managers is essential. How much of the information in Web 2.0 applications such as blogs and wikis

is discoverable in litigation? It will require court cases over the years to answer this question.

7. **Deciding how much information to make public.** This issue arises, for instance, with blogs: some are internal, for project management, information exchange, and other purposes, but some may be public, meant to share information about the company’s products and strategies, explain policies, enlist assistance with particular research/development initiatives, demonstrate thought leadership, contribute to professional dialog and forums, or for other purposes. Allowing, or even encouraging, creative employees to have a public blog can be a positive factor when recruiting new staff and a motivating factor for existing staff. Encouraging a dialog and openness is laudatory, but protecting the organization’s secrets and shielding it from public embarrassment are also worthy goals. Many large corporations, consulting firms, and news media companies now have public blog sites – IBM, Sun Microsystems, Microsoft, and General Motors are outstanding examples.
8. **Using the tools and techniques for RIM programs.** Web 2.0 tools boost productivity and efficiency. RIM professionals should find ways of using them for their own programs. A blog may be a useful way for a program director to share and receive information. A wiki may be a versatile tool to keep track of a records management project or initiative, develop a retention schedule, or draft new policy guidelines.

Familiar Challenges

RIM professionals will recognize in the Web 2.0 phenomenon some familiar challenges:

- Hype sometimes overshadowing reality
- Technology outdistancing policy
- Defining a “record” in a complex electronic environment
- Putting information to work for the enterprise
- Getting the right information to the right people when they need it
- Deriving measures of efficiency and return on investment
- Gauging legal responsibilities
- Cooperating with other offices to get things done

Addressing these challenges and capitalizing on the benefits of Web 2.0 will add one more dimension to the excitement of RIM work in the years ahead. ■

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