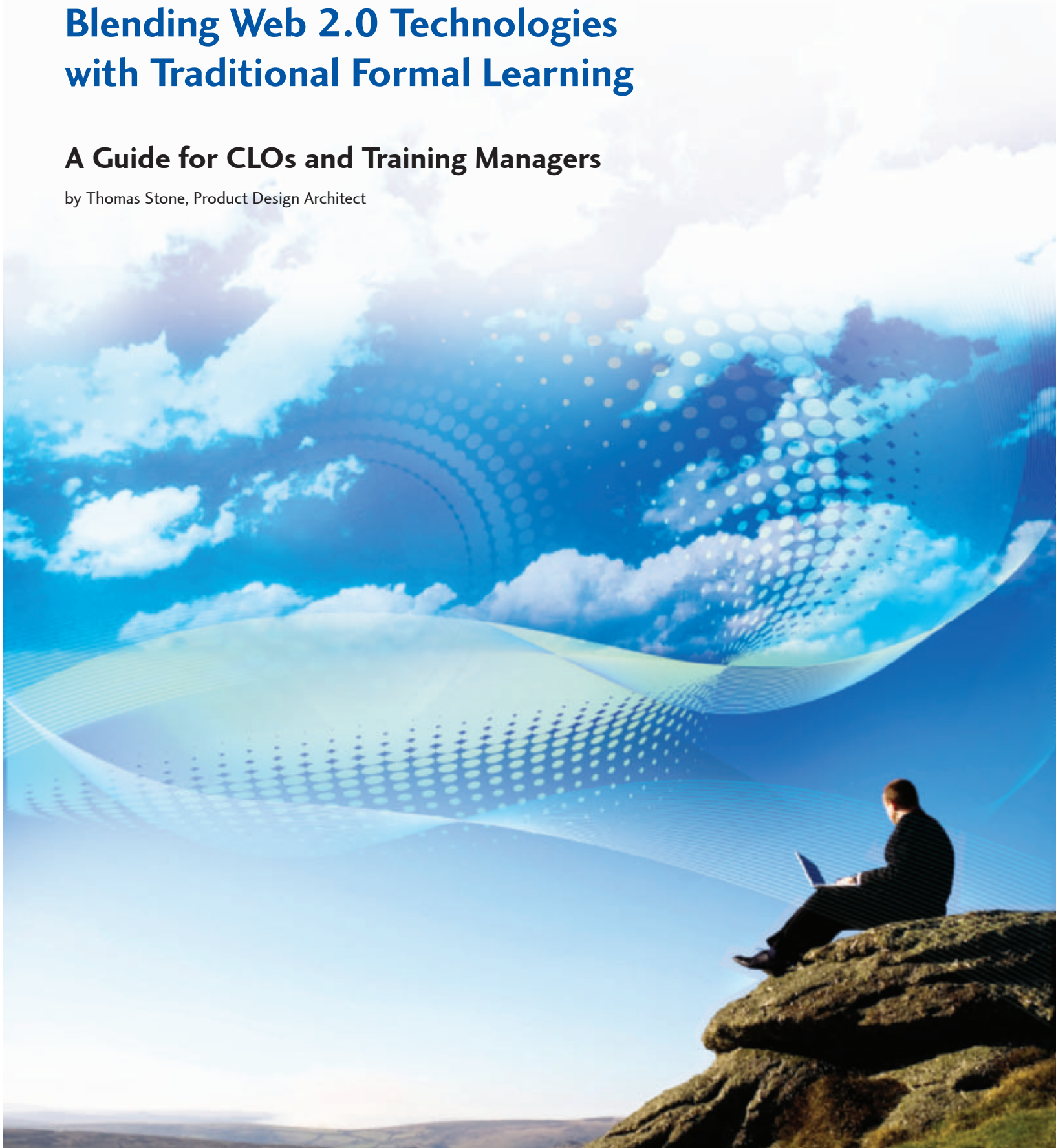


# Blending Web 2.0 Technologies with Traditional Formal Learning

## A Guide for CLOs and Training Managers

by Thomas Stone, Product Design Architect



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Many of us have for years invested in traditional training programs across a multitude of delivery options, *e.g.*, Instructor-Led Training (ILT), self-paced e-Learning courses, synchronous virtual classroom programs. As we all know, these traditional approaches to organizational learning and training have had various levels of effectiveness and we have yet to maximize the value. Many of us have a desire to encourage and enable greater collaborative learning, increase just-in-time support on the job, and enhance the use of the immense knowledge and experience locked up in our subject matter experts.

Meanwhile, in recent years you've no doubt been hearing a lot about Web 2.0 technologies and methods. But how can you use them to maximize the value of your current training programs?<sup>1</sup> More than likely, you have employed Web 2.0 technologies in other contexts, but have found it a challenge to incorporate them into your organization's programs. You don't want to abandon the significant investments you've already made, and the benefits you have gained, from traditional training methods. Fortunately, this isn't a case of replacing the old with the new, but rather supplementing the current with the new to achieve your organization's learning goals in the most efficient and effective manner available to you today.

# Formal Learning, Informal Learning, and Performance Support

## Formal Learning

The dominant methods used in corporate learning and training programs today are formal learning approaches. Formal learning is learning that occurs based on a set curriculum and through a well-defined learning event. Multitasking aside, formal learning generally requires that you stop what you are doing – stop your regular work activities – and dedicate time to the learning experience. The three most familiar approaches are:

- [Instructor-led Training \(ILT\)](#).
- [Self-paced e-Learning](#).
- [Synchronous virtual classroom](#).

The first is very well understood by all, and for the purposes of this whitepaper doesn't require any further explanation. It has obvious benefits (*e.g.*, interaction with an instructor) and obvious downsides (*e.g.*, cost, inflexibility).

Self-paced e-Learning is also fairly well understood at this point. It can vary in the level of instructional design, and the amounts of interactivity, engagement, and multimedia treatment. It can comprise short modules or longer courses, be mostly information, or include interactive business simulations or virtual labs. And such content can be purchased off-the-shelf or be custom-built.

The third approach listed goes by various names: Virtual Classroom, Synchronous E-Learning, and others. Numerous platforms provide features that turn standard conferencing applications into more robust learning experiences.

Some organizations have been using one or both of the two kinds of e-Learning for many years, while others are only now shifting some of their training programs away from ILT, or blending e-Learning with ILT. But at this point, many organizations are familiar with the pros and cons of each of these “tried and true” formal learning methods.

## Performance Support

Performance support is support provided directly at the time of need to improve on-the-job task performance, as opposed to learning that takes place away from the flow of work (such as most formal learning events). It is usually highly targeted, and in response to a specific task, decision, issue, error, or question that

has arisen. Traditional examples of resources that provide performance support include paper job aids (*e.g.*, checklists, reference cards) or a help desk reachable by phone or email. Electronic Performance Support Systems (EPSS) typically provide online access to a wide range of reference materials and other job aids, and are often integrated either directly with the software applications they are supporting, or with Learning Management Systems (LMS) to provide an integrated formal learning and performance support solution.

## Informal Learning

What is less familiar to many learning professionals is the concept of informal learning, and the important role it plays in their organizations whether they realize, enable, and support it or not. Although many definitions exist, you can generally consider informal learning to be any learning that occurs outside of the planned, and structured formal learning events described above. Consider the following:

- [Searching for information on the Web or in a database](#).
- [Asking questions of experts](#).
- [Brainstorming and collaborating with colleagues](#).
- [Using trial-and-error](#).

None of these involve a pre-arranged curriculum, and they all can easily occur during the normal flow of your work—indeed, they might be required as part of your work before you can continue on. There is often some overlap in people's conceptions of performance support and informal learning, but performance support mechanisms are usually intentionally created and provided to users, often by the same instructional teams that create formal learning content, while informal learning describes learner-generated activity that occurs naturally.

It is often said that 70-80% of learning in a corporation is informal.<sup>2</sup> And yet, the vast majority of resources and funds dedicated to the learning and training function go to the formal learning approaches described earlier. As a result, many in recent years have started to focus on how to better enable and support informal learning. Promoting an environment in which informal learning flourishes can reap significant rewards for an organization. Not only can more informal learning occur, but it can do so in a more transparent way, rather than through less visible mechanisms. One way to do this is with new technologies, and Web 2.0 technologies come into play here.

# What is Web 2.0?

Web 2.0 refers to an evolving collection of trends and technologies that foster user-generated content, user interactivity, collaboration, and information sharing. Common examples of Web 2.0 technologies include wikis, blogs, forums, podcasting, social networking, and social bookmarking (see below for more information on each).

Earlier web paradigms, which in hindsight are referred to now as being “Web 1.0,” almost always involved a website published by individuals or organizations with few opportunities for users to add or modify the content. While discussion groups have existed for a long time, opportunities for information sharing and collaboration were far less common in the early days of the web than they are today. Content was created by an individual “webmaster,” or a group of such people in an organization, and was consumed by visitors to the website. By contrast, Web 2.0 applications can generate explosive growth of content, network effects, and benefits that are variously described as peer production, crowdsourcing, and so on.<sup>3</sup>

## Key Web 2.0 Technologies

Some technologies are paradigms of Web 2.0, some are Web 2.0 features of broader applications, and some that can be rightly described as Web 2.0 actually predate the term and were common during the 1990s.<sup>4</sup>

### Blogs

*Definition:* A blog (contraction of the term “Web log”) is a website that provides regular commentary in the form of postings with the most recent at the top of the page (often referred to as “reverse-chronological order”). Blogs can have a single author or several such as a department, team, or job role in an organization. Blogs can be focused on a particular topic area or can be wide ranging. They are most often text-centric; making them highly searchable, though they can also include embedded static images, animations, or videos. Unlike wikis, readers do not edit blog postings, but rather communicate with the blog author and other readers via comments for each posting. And users can easily keep up with multiple blogs by using RSS feeds (see Web 2.0 Supporting Technologies).

*Learning Applications:* Because blogs can be about any topic, there has been a perception that they are online diaries or journals. While many blogs certainly are of this type, there are many others

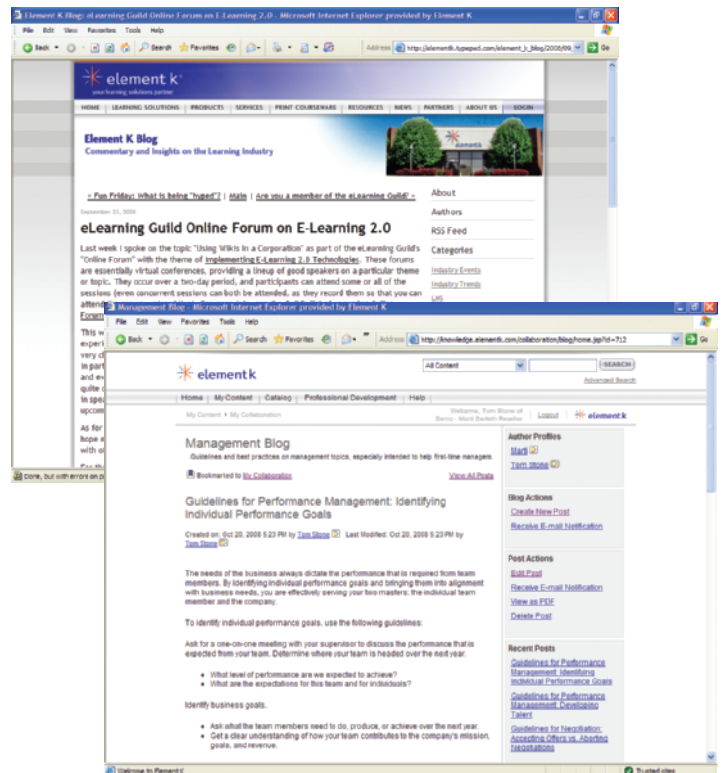


Figure 1: Examples of blogs. At top is Element K Blog (<http://blog.elementk.com>), and at bottom is an example of a blog hosted on Element K’s KnowledgeHub LMS.

that are serious communication vehicles. Many organization leaders, e.g., CEOs and other leaders, use blogs to update employees on the latest thinking, strategy, or direction for the organization. For learning and training contexts, any formal learning event that has duration of several weeks or more (whether traditional ILT or Virtual Classroom) could benefit from having an instructor blog to provide updates and information not in the courseware. Blogs written by Subject Matter Experts can be an excellent means for spreading insights, best practices, and the latest news in a subject area. Blogs are an excellent component of a blended learning program, as an instructor can provide additional information during extended classes or as follow up after the ILT portion has concluded.

*Considerations:* By their nature, blog postings are usually less formal than other corporate communications. So guidelines can be helpful to strike the balance, and in the case of a group blog, create a consistent tone. Blogs are most successful when postings are frequent, though the definition of frequent can vary (everyday, every 3 days, every 7-10 days). Ending a blog posting with a question is a good way to encourage comments. And most of all, blogs that are successful are those that put their readers first: think of what your readers want to hear, as opposed to an overdose of marketing, sales pitches, or author-centered messages.

## Discussion Forums

**Definition:** A discussion forum (alternately known as groups or boards) is a web application for holding discussions between users. A forum is typically structured as a series of discussion “threads,” which start with an initial posting, followed by replies, and replies to the replies. Such threads can have any number of levels of responses, and thereby promote conversation between many users, not just a dialogue between two. Many forums are meant for Q&A purposes, but others are used for more general discussions. Often one or more people serve as “moderators,” allowing or disallowing each posting before it can be seen by the group. Discussion forums have been available through the Internet since well before the recent surge of Web 2.0 technologies, but they share many of the critical characteristics of Web 2.0 technologies: user interaction and generation of content, collaboration, and so on.<sup>5</sup>

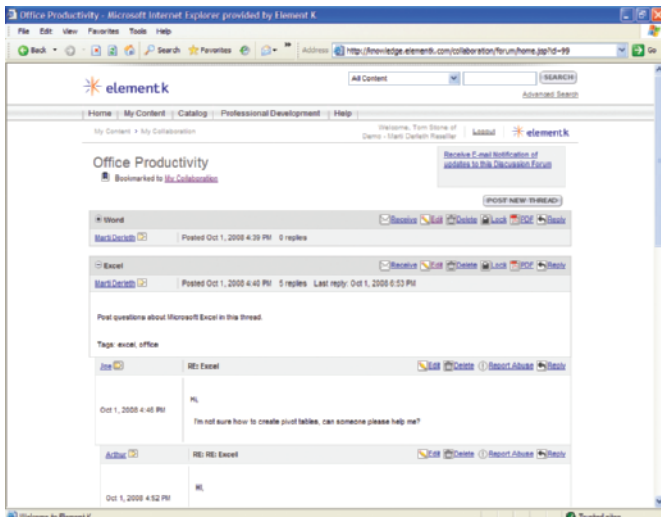


Figure 2: An example of a discussion forum that can provide both performance support and opportunities for informal learning.

**Learning Applications:** Discussion forums have obvious applicability to learning and training programs as a performance support mechanism. They are asynchronous and so do not provide immediate information. But for instances where this is not a strict requirement, users can still get helpful responses to questions or issues in a timely manner. Forums moderated by SMEs can help guarantee that only correct information is given in response to the posted questions. Given enough time, a wealth of valuable information will accumulate, and moderators can gather the best postings to create helpful FAQ pages for posting to a wiki or other resource. Content in forums can also feed back into formal training development, as they can indicate what areas people have the most trouble with on the job and the areas where the current training materials are lacking.<sup>6</sup>

**Considerations:** In most cases, some level of moderation of a forum is advisable, to make sure that postings are appropriate, both in

content and tone. Because they provide performance support, but are asynchronous, proper expectations need to be set for users. When forums become widely used and successful, having multiple, topical forums and strong search capabilities becomes critical.

## Wikis

**Definition:** A wiki<sup>7</sup> is a collection of web pages that users can directly modify by adding new content and editing or deleting existing content. Users often collaborate in creating the content, as one person can start a page and others can add to it later. Wiki pages are often referred to as “living documents,” and common metaphors center on the organic nature of wiki websites (e.g., wikis are often seeded with content, gardeners periodically weed the less desirable contributions, and so on). Wikis invariably have strong history and versioning features, so that content can be easily reverted back to earlier versions if desired. Wikis are usually very text-centric, but allow for static graphics in the pages as well as attached documents. As such, wikis are useful for creating highly searchable knowledge bases, such as the most popular wiki, the large user-generated encyclopedia, Wikipedia™. But they can also be used for less formal collaborations, such as brainstorming sessions where users in diverse locations can all contribute through a common browser interface.

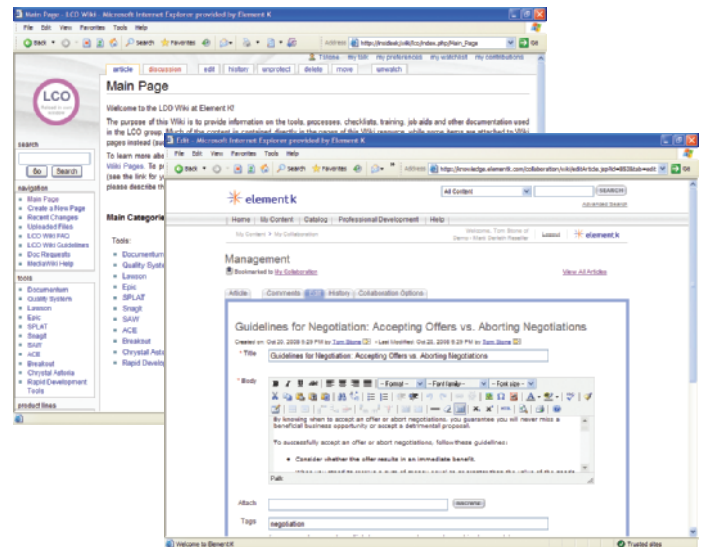


Figure 3: Examples of wikis. At top is an internal wiki used at Element K, and at bottom is an example of a wiki hosted on Element K's KnowledgeHub LMS.

**Learning Applications:** Wikis are perhaps best used in performance support and informal learning contexts. Unlike a traditional knowledge or content management system, wikis enable faster growth of useful content because of the ease with which the content can be created. Wikis promote a democratization of knowledge, allowing staff in an organization to share procedures, checklists, best practices, guidelines, FAQs (Frequently Asked Questions), software error resolutions, and so on. One

common application is to use a wiki to support on-boarding programs, by providing resources such as company history, a glossary of jargon and acronyms, and other information maintained by the staff. Wikis can be used collaboratively at the workgroup, department, division, or organization levels. And they can help provide some protection against “brain drain”—the loss of knowledge when long-time experts leave an organization either for other opportunities or due to retirement.

*Considerations:* Objections to the use of wikis in corporations are common, but often they arise from false assumptions or comparisons to Wikipedia. For instance, some will argue to lock down a large amount of content in a wiki out of fear that key information will be edited inappropriately. While it is true that poor information can make its way into a corporate wiki, this is actually quite rare. In a corporate environment, edits to a wiki are not anonymous so there is transparency as to who makes each change and therefore a significant disincentive for improper edits (whether intended or not). While an explicit governance policy is a good idea, users often take pride in their contributions, and this promotes largely self-policing communities that greatly reduce the burden of closely “managing” the wiki.

## Social Networking

*Definition:* In this context, the term Social Networking refers to individuals using online communities to stay connected with each other, make new connections, share interests, and explore the interests of others. Users primarily share information about themselves through their “profile page,” choosing which elements to share and with whom. Because Social Networks revolve around a website location that many people visit, they have an advantage over other tools such as email and instant messaging for networking and communicating with large numbers of people. Social Networking websites are typically geared toward particular purposes, such as professional networking (e.g., LinkedIn<sup>TM</sup>)<sup>8</sup>, or a mixture of professional and personal interaction (e.g., Facebook<sup>TM</sup>). Social Networks can help individuals stay connected with each other far better than older methods such as simply exchanging business cards and basic contact information.

*Learning Applications:* Social Networking can provide performance support by allowing users to locate experts in an area where they require assistance. For example, a software engineer in a large organization who is struggling with a particularly difficult programming issue could search his company’s Social Networking platform to locate individuals outside of his workgroup that have the skills necessary to assist. Individuals can also use social networking platforms to form impromptu support groups centered around

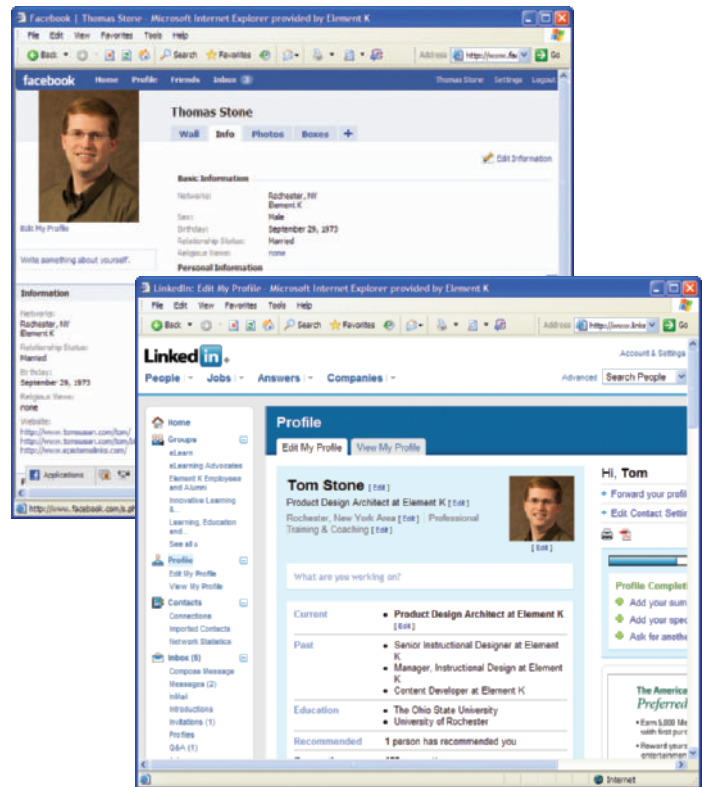


Figure 4: Examples of profile pages at Facebook (top) and LinkedIn (bottom).

their job role, a particular application they use, or a certification exam they are all preparing to take. For formal learning events, students can read the profiles of their classmates and have richer peer-to-peer in-class interactions, and even more easily maintain a connection after the formal event has concluded.

*Considerations:* On average, employees who already use sites such as Facebook (typically younger employees) will readily adopt internal social networking, while others may be skeptical or even resistant to sharing much information. While the value of a social networking platform largely depends on the participation of as many users as possible, a heavy-handed approach will likely not win people over.

## Social Bookmarking

*Definition:* Social Bookmarking platforms provide users a means to publicly store, organize, and share links to web pages. Rather than storing links on your own computer, users add links to a central repository that is shared by many. Typically such applications allow for User Ratings (see Supporting Technologies below) of the links, such that over time the most popular websites will become apparent, and the links provided by particular experts can be quickly found. Social Bookmarking on the Internet is often wide ranging (e.g., Del.icio.us) or can focus on links to news articles (e.g., Digg<sup>TM</sup>). In organizations, social bookmarking can be used to identify resources of relevance to specific workgroups or job functions.

*Learning Applications:* Social Bookmarking platforms can be a useful supplement to a wiki in providing a flexible performance support mechanism. While wiki pages can be used to provide a list of links, features of a dedicated social bookmarking application can make it far easier to add new links, annotate links, and provide user ratings. For example, a large organization with 500 individuals in a particular job role would benefit from enabling those users to share the valuable resources they find, rather than each individual spending time searching for the same information time and again. In a blended learning program, social bookmarking paired with wikis can provide powerful resources for learners. For instance, a group of learners going through a project management blended certification program can share better practices and relevant websites.

*Considerations:* Like wikis, social bookmarking involves user-generated content. While approval work-flows can kill organic growth, some oversight can be needed to keep the bookmarked links focused on business-related areas. User-generated categories can be quite accurate if there is a large enough base of users, but for smaller groups a more structured approach may bring better results. Similarly, user-generated ratings of linked resources can efficiently provide great insight, but do so best when there are many users indicating their preferences.

## Podcasting

*Definition:* A podcast is a series of audio files, typically in MP3 format, distributed over the Internet using subscription feeds. While the files can be played on desktop and laptop computers, the more common intention is to provide information for playback on portable media devices, such as iPods. It is important to realize that providing downloadable audio files is not podcasting: in order for a series of files to be a podcast, the user must be able to subscribe to the series feed, typically through RSS (see below). Although some use the term “podcast” more broadly to include video content, others use terms such as vid-casting, v-casting, or video-casting in such cases.

*Learning Applications:* Podcasts are similar to blogs in that they provide regularly updated content, which users can subscribe to and therefore have “pushed” to them. As with blogs, many CEOs and other organization leaders use podcasts for internal corporate communications. Also similar to blogs, podcasts can be a great mechanism for subject matter experts to regularly provide best practices, tips and tricks, or the latest updates on a topic. Often podcasts of this kind are done in the form of interviews, where a host interviews the expert, or facilitated conversations, where a host moderates a discussion between two or three experts. Because podcast content is audio only, it can be used at times and locations where other Internet content cannot, such

as while driving to work, while shopping, while waiting at airports, etc., thereby creating far more potential learning moments.

*Considerations:* Many of the same considerations for blogs apply to podcasts. In addition, the quality of the audio recording should be considered carefully: the quality need not be studio quality, but it needs to be clear and effective.

## Experts and Expertise

Web 2.0 technologies have many possible uses. One approach considers them in relation to experts and expertise in an organization or a particular user population. This not only can clarify each concept, but can also serve as a handy reference. Consider the following:

Discussion Forums	Ask an expert!
Blogs	The expert writes!
Podcasting	The expert speaks!
Wikis	Experts share and collaborate!
Social Networking	Locate an expert!
Social Bookmarking	Experts share resources!

Considering these technologies from this perspective is helpful in many ways, including explaining and internally marketing the purpose of each in an integrated learning solution.

# Web 2.0 Supporting Technologies

In addition to the six Web 2.0 technologies above, there are several key supporting technologies that are important to understand as they enable other types of technology.

## RSS Feeds

RSS refers to a family of Internet formats used to syndicate content to an audience. The acronym has several commonly used meanings, including Really Simple Syndication and Rich Site Summary. Blogs, podcasts, and other content sources use RSS by providing what's called a "feed" that either provides the entire content or an abstract with a link to the original source. In the case of blogs or other text-based content, the feed is used by software called a "feed reader" or "aggregator". These applications can be web-based (e.g., Google Reader) or desktop-based (the latest email applications now include this functionality). A major benefit of using feeds is so that you can have content "pushed" to you rather than needing to visit the original source to see if anything new is available. Someone who reads many blogs and news sites can literally save hours a month by using RSS instead of visiting each site separately.

## Tagging and Tag Clouds

A "tag" is a keyword applied to content, such as a webpage or image. These keywords are non-hierarchical and each piece of tagged content can have any number of tags applied to it. Such tags are metadata that enable better searching of the content. Tags can be applied to content that is user generated or published from a controlling source. A "tag cloud" is a visual representation of a set of tags. It usually displays the most applicable or most common keywords in a larger font. Websites in which many users tag content are said to create a "folksonomy" — a taxonomy generated by the users of the site as opposed to a hierarchical category scheme from the original publishers of the content.

## User Ratings

The term "user ratings" is a generic name for any function of an application that allows users to rate content, e.g., a wiki page, an image, a video, a blog or forum posting. Rating systems come in many varieties: numeric, qualitative levels (e.g., great, good, fair, poor), "star" systems, and so on. User ratings can be a means to identify expertise or quality based on the views of individuals in a user community, rather than from traditional sources (job title, certifications, and so on). More sophisticated systems allow you to not only see ratings from all users, but also from a subset based on your specifications, e.g., ratings from only your friends or those you trust. In this way, ratings can avoid problems such as popularity contests, rating spam, and so on.

## Twitter and Micro-blogging

A relatively new technology is Twitter, the most popular example of what is sometimes referred to as "micro-blogging". Individuals "follow" each other on Twitter, in order to read their short messages. There is a strict limit of 140 characters per posting, the key difference between Twitter and blogging. Twitter begins by asking the simple question: What are you doing? If people using Twitter answered that question literally, the value of the service would be limited. But people often go well beyond that, by asking questions of the crowd following them, answering the questions of others, describing what they are thinking about, and suggesting good blog or magazine articles they just read. If you follow interesting and smart people, or leaders in your particular field or organization, the learning potential is immense. Twitter and similar micro-blogging tools are still relatively new, but they are growing rapidly. They are often stand-alone services, but they can also be integrated in broader Social Networking platforms (indeed, there is similarity between micro-blogging and the "status updates" provided by users of Facebook). Watch this space, because corporate versions of Twitter (e.g., Yammer) can provide an organization with another tool for people to learn from each other and for knowledge to flow from experts to novices.

## Mashups

Mashups in general can occur in music, video, or other digital content, or between web applications. In the case of content, a mashup is the combining of content from two or more sources to create a unique new object. In the case of applications, a mashup is the combining, usually via Web Services technology, of functionality and/or content from two or more applications. A basic example of a mashup of this kind is the layering of data onto mapping software, such as the locations of restaurants, movie theaters, homes for sale, or crime scenes on top of a map provided by Google Maps. Other mashups take product data from popular sites such as Amazon and Ebay and combine it with related data from other sources (e.g., product reviews or recalls).

# Blending Web 2.0 with Formal Learning

There are many ways to use all of these exciting Web 2.0 technologies in the context of learning and training programs. As always, identifying the learning or training need clearly and defining your goals upfront are the most important steps. But by having as many of the above technologies available as possible, you can make use of each where it makes the most sense and will provide the most value.

Table 1 on page 9 represents a fictional corporation’s primary learning and training needs over a several-year period. Each row is a significant goal for which the learning function is expected to provide a solution. Each column is either a traditional learning modality or one of three significant Web 2.0 technologies (in blue). What follows is a description of the fictional company’s reasoning for each of the choices.

**Table 1. Learning Programs and Learning Modalities at a fictional corporation.**

Learning Program	Traditional Formal Learning			Perf. Support, Informal Learning			
	ILT	E-Learning Self-paced	Virtual Classroom	Job Aids and EPSS	Disc. Forums	Wikis	Blogs
Employee On-boarding	X	X			X	X	X
Sales Readiness		X	X	X		X	
Channel and Franchise Capabilities Development		X	X		X		
High Potential Leadership and Management Transitions	X	X		X	X		X
IT Skills Development and Performance Support		X		X	X		
Desktop Application Productivity		X	X	X	X	X	
Strategic Job Role Development		X					X
Quality Management (Lean, Six-Sigma)	X	X			X		X
Project Management		X		X		X	X
Customer Education		X					X
HR Compliance and Health, Safety, and Environment Training	X	X					
Learning Plans for Individuals and On-Demand Learning	X	X	X	X	X	X	X

Again, the above is just one possible matrix — you could easily mix-and-match these approaches and come up with an equally compelling strategy to meet the learning goals. And you might have additional learning means in your portfolio that you would want to identify separately, such as virtual labs, book abstracts, the other Web 2.0 technologies (podcasting, social networking, social bookmarking), and so on. What follows is a description of the fictional company’s reasoning for each of the above choices.

## Employee On-boarding

The company regularly hires new employees, and the on-boarding learning program provides organizational history and structures, company culture, benefits, overview of offerings, and other proprietary information. By using new technologies, the company sees higher levels of engagement and interest for new employees who are of the Gen Y/Millennial generation.

- A blended program of **ILT** and **self-paced e-Learning**, tracked with learning paths, provides the core concepts and processes. This approach maximizes the expensive in-classroom time by delivering introductory material as pre-class e-Learning modules and job-role specific content as post-class e-Learning modules.
- The informal learning elements include a **discussion forum** where the new employees can ask questions, a **wiki** where company glossary, history, etc., are maintained by the entire organization, and a **blog** where key leaders and trainers in the company post information specifically intended for newcomers, to help provide context.

## Blending Methods

There have long been several approaches you can take to blending learning modalities. Traditional blends of ILT and e-learning have included:

- **Pre-class prep work.** You can save both time and money by having learners review the prerequisites or the basics of a subject area ahead of time. This can even make the time spent in the classroom more productive and valuable.
- **Post-class follow-up.** You can increase retention by following an ILT event with self-paced e-learning modules that review key concepts or ask application-level questions now that learners are back on the job.
- **Post-class topics.** You can limit time spent in the classroom by separating advanced topics or job-role specific topics, and providing the training on those via targeted self-paced e-learning modules immediately following the ILT event. This way no one's time is wasted learning irrelevant material or tasks.

But the introduction of Web 2.0 technologies to your blend of learning modalities allows for many more methods of integration:

- **Links from course outlines.** Letting a learner know what related resources are available, Web 2.0 and otherwise, before they enter an e-learning module is a great way to raise their confidence before diving into challenging new material. Knowing that you can get additional information from experts (blogs) or peers (wikis), or have the opportunity to ask questions (forums), can sometimes make all the difference.
- **Link from within e-learning courses.** Linking to Web 2.0 supporting resources directly from e-learning courses makes them available at the moment of need. For instance, when a learner has a question about a new concept in an e-learning module, then a standard link in the e-learning's shell to "Discuss" or "Ask a Question" would be ideal.

## Sales Readiness

The company has a large, distributed sales team, and this poses challenges for traditional ILT programs. After many years of blending ILT with various kinds of e-Learning, the company has switched to a blend of:

- **Self-paced e-Learning** modules that provide the fundamentals of the sales philosophy and method that the organization follows.
- **Virtual classroom, synchronous e-Learning** with top-notch trainers, which allows for the flexibility required by regularly updated product and service offerings.
- Traditional **job aids**, such as quick reference guides on products, services offerings, and pricing models.
- A **wiki**, where veteran team members share their best practices for closing the deal and maintaining partnerships, and all can share their top strategies, what it took to win each account, and why certain deals were not won. In this way, much of each individual's experiential knowledge becomes shared knowledge.

- **Pre-class use.** Social Networking platforms can be a great way for students to learn more about each other prior to arriving to the ILT or virtual classroom.
- **In-class use.** Wikis in particular can be used in an ILT or virtual classroom setting to enable students to brainstorm in response to questions or challenges posed by the instructor. You can also easily separate the students into groups to collaborate separately in the wiki, and then compare their results.
- **Integration with extended formal learning events.** For ILT sessions that are longer than a single day, and especially for any that span several weeks, it can be a real improvement to have an instructor blog, a Q&A discussion forum, or a wiki for students to collaborate and brainstorm. The same holds for any virtual classroom sessions that span days or weeks.
- **Post-class follow-up.** Learning doesn't end when students leave the classroom or log-off from a virtual classroom session. For instance, they're bound to have questions in the days and weeks ahead, so giving them a forum to ask the instructor or any other SMEs available can be a great addition. A social bookmarking platform allows students in the class to share resources as they find them after the formal event is over. And an instructor blog can provide increased retention by providing review of key points, additional examples, and applications of the concepts learned.
- **Performance support and informal learning.** Perhaps the most obvious use of Web 2.0 technologies isn't to complement formal learning at all, but rather to provide performance support in an on-going way. All of the Web 2.0 technologies can do this: wikis can be used as organic knowledge bases, blogs and podcasts can provide the latest insights from SMEs, forums can provide direct answers to questions, social networking allows you to find experts on a topic, and social bookmarking lets you discover great resources above and beyond what training provides.

## Channel and Franchise Capabilities Development

A good channel learning solution drives revenue throughout your channel and enables it to operate as a self-sustaining ecosystem—an organic extension of your business enterprise. Because new products inevitably mean lots of questions from the organization's extended channel, the company has elected to use a combination of approaches that maximize information transfer, flexibility, interactivity, and enthusiasm. This combination provides key information, doesn't involve travel to physical classrooms, allows for multiple opportunities to ask questions, and creates buzz through multiple modalities being leveraged over a short period of time.

- Short, **self-paced e-Learning** modules convey basic product information.
- For more complicated product rollouts, additional information is provided during **virtual classroom** sessions, where the team can ask questions of the product experts.
- A **discussion forum** is available for questions or concerns that arise after the virtual classroom sessions. In some cases, a general products forum is used, but for larger or more complicated products, a dedicated forum is created.

## High Potential Leadership and Management Transitions

At all levels of leadership there are key competencies required for success. Whenever possible, the company prefers to develop its leaders from within, so strong leadership development programs are critical. And this challenge will only increase, as a generation of baby boomers is now retiring and less experienced employees need to step up.

- Existing leadership **ILT** programs are supplemented with highly focused, **self-paced e-Learning** video modules with content from top industry leaders.
- The experts also participate in a **discussion forum** for several months after the synchronous session, providing advice and answers to questions that arise as the new leaders apply what they have learned in the first few months in their new roles.
- Traditional **job aids** are used to reinforce what they have learned, **book abstracts** provide the latest thinking from industry gurus, and several current leaders in the organization write **blogs** and record **podcasts** specifically on the subject of leadership, sharing anecdotes about their experiences.

## IT Skills Development and Performance Support

IT professionals face on-the-job technical challenges every day, but have very little time to devote to formal training. However, providing employees with training on the latest technologies and that leads to valued IT certifications and ongoing professional development is good for both the organization and its IT professionals.

- A large library of **self-paced e-Learning** courses and **virtual labs** is provided, including authorized content mapped to relevant certifications, that cost-effectively covers all of the skill areas needed by the various technical groups in the organization.
- Traditional quick reference cards are provided as **job aids** to both help prep for certification exams and provide just-in-time reference in areas such as programming, database administration, and IT hardware and software support.
- A large library of **technical reference books** provides further on-the-job performance support.
- To help with troubleshooting those hard-to-figure problems that inevitably arise, **discussion forums** are provided in a range of technical areas, allowing workers to ask questions and share their expertise.
- And the true gurus in the organization are given the opportunity to teach the junior-level team members via **blogs** where they post their views on the latest developments in their areas of expertise.

## Desktop Application Productivity

The many knowledge-workers in the company appear in a wide range of job roles. Office productivity training in applications such as Microsoft Word, Excel, Access, PowerPoint, and Outlook, provides them with the skills necessary to efficiently accomplish their fundamental business tasks. And over time, rollouts of upgraded versions require learning initiatives to teach even veteran employees the new features.

- As they did in the area of IT, the company uses a large library of **self-paced e-Learning** modules that provide foundational concepts and interactive software simulations.
- Regular synchronous **virtual classroom** sessions led by experts allow for demonstrations of best practices, while also affording time for question and answer on immediate concerns. The development of each employee via self-paced and synchronous e-Learning is tracked through the company's LMS.
- Traditional quick reference cards are provided as **job aids** for performance support, covering the essential concepts, software procedures, and keyboard shortcuts.

- When an answer is needed before the next virtual classroom session is scheduled, a **discussion forum** is available that provides answers within 24 hours.
- Unlike IT, where SMEs have blogs in their areas of expertise, to support office software training the company elected to create a **wiki** where the entire user population can share templates and add their favorite tips and tricks.

### Strategic Job Role Development

In recent years the company has focused heavily on developing the competencies critical to their success. For each job role, this requires not only determining those competencies, but then developing or procuring the learning content needed, delivering it, and tracking the certification of each employee.

- **Self-paced e-Learning**, complete with scenario-driven simulations, provides much of the critical training. Off-the-shelf e-Learning was mapped to the required competencies, and in a few cases custom e-Learning modules were created.
- Expert **blogs** are written by individuals who already excel in each role. This less formal learning content provides both relevant day-to-day insights and the ability for learners to ask questions of the experts via the blog comments.

### Quality Management (Lean, Six Sigma)

Learning in the area of Quality Management is vital to improving the quality and performance of the organization's manufacturing operations. But the company's many quality leaders are dispersed geographically, so training towards certification (White, Yellow, Green, or Black Belt) is at times costly. Each year, the organization shifts more and more of its Lean, Six Sigma, Statistics, and Statistical Process Control training from the classroom to e-Learning. Either way, however, the LMS provides learning paths to track the progress of each learner from beginning through to certification.

- Top-notch **ILT** instructors continue to provide some of the core training.
- **Self-paced e-Learning** courses supplement the ILT classes, and in some cases are starting to replace them.
- **Discussion forums** and **blogs** are used by the learners going through the training as they progress from one level of certification to the next. In this case the Web 2.0 technologies are used both as a peer-to-peer support mechanism and as a means for the more experienced to act as mentors.

### Project Management

The entire organization has what seems like a never-ending need for more top-quality project managers. While hiring and retaining

## Strategies for Blending Web 2.0

In addition to the “when” and “how” of blending Web 2.0 technologies with formal learning modalities (see “Blending Methods”), you should also consider the following strategies for focusing your users on usage themes and making the most of the resources you have available.

- **All-Star SMEs.** If you have one or more top-notch Subject Matter Experts or senior job-role practitioners available, then having them produce periodic blog posts or podcasts (audio or video) can be a great way of getting them to share their knowledge with the less-experienced. With blogs, readers can comment and ask follow-up questions, thereby generating some valuable interaction with the SMEs.
- **Ask the experts.** Forums are obviously a means for staff to ask questions of experts, and social networking platforms let users locate experts for other questions as needed.
- **Expert exchange.** Getting your experts to talk with each other—publicly—can be a great way for others to learn. This can be done with podcast interviews or group blogs.
- **Lessons-learned.** No one wants to make the same mistakes twice, so record what you've learned in a wiki or blog postings. This can be individual-driven, or more of a group activity as in the case of sales post-mortem scenarios.
- **Invitation-only groups.** Setting up a blog or wiki with limited access can encourage participation from those who typically only “lurk” on the sidelines. Or have such groups use a temporary wiki for a specific, short-range learning purpose.
- **Directed conversation.** Extend the power of a group of bloggers by having one blog direct the conversation of the others. ASTD's Learning Circuits blog is an excellent example of this, as it posts a monthly “Big Question” and asks other bloggers to share their thoughts.
- **Early adopters.** Early adopters of a software upgrade or business process ask questions in a dedicated forum or share their initial reactions in a group blog.
- **Tips and Tricks.** A group blog can be a great way to share top tips, tricks, workarounds, and more. Wikis can be even better if the volume of information becomes quite large.
- **Learn together.** Let newcomers to your organization or department form a sense of community (“Class of 2009”) by giving them their own blog to share initial impressions and forum to ask questions of key veterans. A wiki full of key resources and a social networking platform can also make the new hire phase less stressful.
- **FAQs.** The very notion of a Frequently Asked Questions resource almost begs for Web 2.0 involvement. You can harvest the top questions (and answers) from your discussion forum, blast them out to RSS subscribers via your blog, and then archive them and let them organically grow further in your wiki.

them is critical, developing them internally can be just as effective. In some cases only basic competency is needed, or training in the use of a particular tool such as Microsoft Project. For others, either new or updated CAPM or PMP certification is required.

- **Self-paced e-Learning** courses are used to both train on key project management applications and prepare employees for certification.
- A comprehensive **reference library** is at the fingertips of the organization's many professional project managers.
- This library is supplemented by several **wikis** where key best practices, templates, and other resources are shared.
- Because the organization has a couple of project management gurus, they've tapped them to write less formally in a **blog** to share their years of experience and best advice with novice project managers.

## Customer Education

Recognizing that not all of its critical learning programs are internal, the company has long considered customer education to be vital to retaining loyal customers as new products and services are introduced.

- Short but media-rich **self-paced e-Learning** modules are provided that differentiate the company's offerings from their competition and teach in a way that promotes enthusiasm for the products. The goal was to produce lasting, loyal relationships, so the WIIFMs (What's In It For Me) in the modules were a key component.
- Key product experts author **blogs** that go beyond the information in the e-Learning modules. These blogs have the moderated comments feature enabled—an excellent way for the company to directly interact with their customers.

## HR Compliance and Health, Safety, and Environment Training

The company wants to provide a safe and healthy work environment for all of its employees, as well as mitigate legal risks while reducing administrative costs. It requires training in areas such as anti-harassment, safety, data security, and privacy measures that meet both its own HR policies as well as relevant state and federal requirements.

- The company developed both **ILT** and **self-paced e-Learning** modules, depending on the subject area, the availability of experts, and the number of employees who required the training. In either case, however, tracking and reporting for all employees who took the courses was provided through a central LMS.
- This was the one area that the company elected not to use any Web 2.0 technologies, due to the high sensitivity of some of the subject matter.

## Individual Learning Plans and On-Demand Learning

One last learning initiative is a bit different than the others, in that it cuts across many of them by demanding both robust individual learning plans as well as learning available on-demand.

In order to have full learning plans for every individual employee, and especially the organization's leadership levels, all of the learning events and assets are tracked on a single system, including both the formal learning events as well as all of the informal learning and performance support mechanisms. The learning plans therefore include not only ILT classes or self-paced e-learning courses, but also the provisioning of traditional job aids and the tracking of the use of blogs, wikis, and forums for learning. In order to encourage use of the Web 2.0 tools, heavy-handed monitoring is avoided. Rather, simple access tracking is employed and metrics included in appropriate individual learning plans.

The on-demand nature of self-paced e-learning, online reference libraries, and the Web 2.0 technologies allows for the majority of the learning to occur when it is needed and most convenient for the learner. The nature of on-demand learning helps reduce cost and inflexibility, generates immediate impact on job performance, and ensures training resources are kept current to support new technologies and applications.

## Conclusion

Your organization likely has some of these same training and learning needs, but with significant variance in the details. The important point to take away from the examples just given is that by having a broad range of formal learning and performance support approaches and technologies in your portfolio, you can mix-and-match them as appropriate for optimal results. Appropriately blending Web 2.0 technologies and concepts can play a big part in this solution portfolio, by both supplementing existing formal learning programs and by better enabling informal learning that might otherwise go unseen in the organization.

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## Resources

All of the key terms defined and described above have their own entries at Wikipedia that provide greater detail and examples. Additional valuable resources include:

- Element K Blog, located at <http://blog.elementk.com/>
- Videos from CommonCraft (<http://www.commoncraft.com/>) provide non-technical introductions on topics including wikis, RSS, podcasting, blogs, social bookmarking, social networking, and others.
- *Informal Learning: Rediscovering the Natural Pathways That Inspire Innovation and Performance*, by Jay Cross (2007, John Wiley & Sons, Inc.)
- *E-Learning 2.0: Learning in a Web 2.0 World*, by Steve Wexler, et al. (September 2008, eLearning Guild)
- *E-Learning 2.0: How to Create and Implement a Real-World E-Learning Strategy*, by Janet Cleary (August 2008, Brandon Hall Research)
- *Social Networks for Enterprise Learning and Talent Management: A Primer*, by David Mallon (June 2008, Bersin & Associates)
- “Lexicon Update”, T+D Magazine, October 2008. A handy glossary for the learning and development industry.
- Geekipedia, from Wired Magazine (<http://www.wired.com/wired/issue/geekipedia>). A handy glossary of “People, Places, Ideas, and Trends You Need to Know Now”.

## Endnotes

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<sup>1</sup> This whitepaper will avoid using fashionable terms such as “Learning 2.0” or “E-Learning 2.0”. These are common in the industry, but can be confusing for those not yet clear on what “Web 2.0” means.

<sup>2</sup> See Appendix B in *Informal Learning*, by Jay Cross, for a discussion of this common view and some of the studies that support it.

<sup>3</sup> It is worth noting that the term “Web 2.0” doesn’t have a universally accepted definition, and so some will argue whether any particular technology qualifies. Further, some use “Web 2.0” to describe the underlying concepts and specifications that have enabled the growth of these collaboration-promoting technologies such as Web Services, AJAX (Asynchronous JavaScript and XML), RSS feeds, and others. For the purposes of this whitepaper, these underlying technologies will not be addressed; thus, the more common definition provided above will be employed.

<sup>4</sup> See also the four technologies described in the sidebar “Web 2.0 Supporting Technologies”. There are still other technologies that many would consider Web 2.0, but that won’t be covered in this whitepaper. For instance, 3D Immersive Worlds such as Second Life (sometimes referred to as an example of Web 3.0), are very social platforms, but they also have requirements that make them more difficult to incorporate widely in many enterprise organizations.

<sup>5</sup> Note that blogs often generate robust discussions in the comments that users add to each posting. Nonetheless, it is important to not confuse the two technologies.

<sup>6</sup> Within the training cycle, output from discussion forums can provide data for gap analyses that drive needs analysis. In addition, discussion threads within forums can provide subjective job impact data. That is, a learner’s perception of their ability to perform on-the-job post training can be mined within discussion forums.

<sup>7</sup> The name “wiki” comes from the Hawaiian word for “fast.”

<sup>8</sup> Additionally, in the learning industry, a popular Social Network is Elliott Maise’s LearningTown! ([www.learningtown.com](http://www.learningtown.com)). At LearningTown!, the moderator (Elliott Masie) will post thought provoking questions for the users to ponder and offer a response. Users can also communicate among themselves, post industry-related comments, photos, videos, etc.

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