

Web 2.0 and Social Networking for the Enterprise

Guidelines and Examples for Implementation and Management Within Your Organization



Joey Bernal

Foreword by Jeff Shick

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Foreword

Humans are creatures of collaboration. Since the beginning of time, we have sought each other out and wanted to communicate and share. Language finds its very purpose in this. As social beings, and aided by all manner of advancement, our ability to interact has evolved.

Centuries ago, man stood on hilltops separated by miles and communicated through smoke signals. Pony Express riders carried mail across North America. Mail services could deliver documents anywhere in the country overnight. Email allowed a message to be delivered to the other side of the planet in a second.

PROGRESS

Does anyone want to go back to smoke signals?

VALUE

Collaboration represents a journey.

So what new change is upon us?

It used to be hard to publish information. You needed to know HTML or some complex web layout tool. At a corporate level, it was driven through a content management process that involved some workflow. Content that was needed was thoroughly evaluated, processed, formatted, approved, and diced and sliced with the rigors of the Veg-a-Matic.

Today people are publishing information about themselves, their interests, or anything they want to share easier than ever before.

In today's social networks, we can easily publish a picture, discuss the books we have read, the films we did not like, have a conversation, and blog about our day-to-day activities as a public diary. We can find others who have similar interests, skills, and responsibilities.

Social networks are super simple and easy to use. They also make it easy to connect and share with others.

Because people are able to connect with people and share information easier than ever before, there are going to be new ways in which people will interact.

My son forgot his homework one day, so I said to him, “Call up or email your classmate and get the homework—you NEED to DO IT.”

Five minutes later I saw him writing on the kid’s Facebook page. Why was he doing that?

“What are you doing? I thought I told you to call him or email him?”

“DAD, email is for your grandfather, this is the way he’ll get it.”

HUH!

Writing on someone’s Facebook wall is the new way to openly have a discussion with your network.

We turned on a Twitter-like microblogging capability inside of IBM.

I microblog my status everyday at IBM. I won’t give 500,000 people inside of IBM access to my calendar but I am quite willing to share basically what I am doing everyday and some milestones I want to broadly communicate. This river of news about what I am doing becomes part of my Profile.

Because of this, we are connecting with each other in ways we never could before. People inside of IBM can understand what you are working on and where. A sales representative could search and find any executives visiting their region and co-opt their trip to help or see their client. This is a big change in the way people are connecting.

When I started at IBM over twenty years ago, both my grandfather and father were also at IBM. I could look up their Profile on the mainframe through a 3270 EBCDIC Green Screen terminal and find their name and their phone number.

At IBM today, we have a rich view of employees that spans the basic business card type information to what they know and what they do. I can get to this information anytime, anyplace, and through any device.

We are leveraging this information to connect folks around the world and to best leverage our most precious asset—our people.

We are using capabilities like wikis, blogs, and discussion forums to best suit the interaction between people, no longer suffering an impedance match in collaboration requirements.

We are using these technologies in our intranet and extranet to build better relationships and do important work with our colleagues, clients, and partners.

With these new collaboration tools and ways to communicate, it is imperative to ask the question, “What will it do for business?” As I meet clients around the world, they have a lot of questions about the value of social networking to their business. And they ask many other questions as well: “Is there such a thing as Anti-Social Software?” and “If I allow people to use this technology, will they just goof around all day?”

Companies everywhere are using or considering using social software. In their evaluation, deployment, and adoption, they must learn much.

By reading Joey’s book, you will learn about what social software is and how it can help connect people with people and people with information. It provides the details of the value we have seen at IBM in using these capabilities and a deep dive into the technology itself.

Joey’s book will help you learn about the many facets of social software and develop a deep understanding of Web 2.0 technology. In it, you will explore programming models, APIs and standards, how these capabilities can integrate with portals, the ways to mashup information, the role of search, and so much more.

Take your next step in the collaboration journey. Read on.

—Jeffrey Schick
Vice President of Social Software
Lotus
IBM Software Group

Preface

Wow! When I started this journey, I really was not sure where it would lead. In many ways, Web 2.0 and Social Networking are just words, often referred to as buzz words as they gain more popularity within the industry. Behind those words, however, is a litany of patterns, ideas, and technology that can quickly overwhelm anyone who is trying to learn as much as possible. When learning any new technology, there are a couple of approaches one can take.

First you can take a broad approach and try to measure the length and breadth of choices and options that are available within a specific space. While this is an exciting approach, it can also be a bit frustrating (I speak from personal experience here), especially because most of the time technology is constantly evolving. These evolutionary steps can be exposed as small changes, such as a new standard or option, or perhaps new advances can expose themselves as entirely new areas, such as cloud computing.

Alternatively, you can take a “dive deep” approach into one or more of the areas or patterns that are available to try and understand intimate details about what options and concerns you might need to consider. This could, in theory, take you down a path where you can actually implement new products and applications within your organization. However, without a breadth of subject matter, you might initially start down the wrong path. A “dive deep” approach usually comes as a follow-up approach after you have a broader understanding and have determined in which areas you will initially focus.

This book provides a mix of both of these approaches. It definitely takes a broad swipe at many of the technologies and patterns that are available within Web 2.0 and Social Networking today. Almost anyone

who is interested in understanding what is going on in the Web 2.0 space will gain some benefit from this approach. However, in some areas, I “dive deep” into the implementation details that will be helpful in guiding you through some of the many technical decisions that need to be made. Nontechnical readers can ignore these parts; although if you have a somewhat technical background, you can certainly wade through these parts to get a better understanding of some of the details.

While Web 2.0 technologies are not vendor specific, IBM has taken a specific approach in providing the applications and tools to implement good strategies within your own organization. Some of these patterns are not easily implemented within an organization without a product-based approach, such as using IBM Lotus Quickr or IBM Lotus Connections. For this reason, I have focused heavily on some of these products to illustrate the value they can bring both inside and outside the corporate firewall.

Included within most chapters are case studies that show how IBM has approached its own Web 2.0 growth. There are also interviews with IBM and industry experts on where some of the technologies are going and how best to use them. I think you will find this book as interesting to read as it was for me to write. I know you will find it informative. I hope you will find it useful.

Enjoy!

I

Web 2.0 and Social Networking

Web 2.0 and *Social Networking*—what do those two technologies have in common? When looking at them independently, and from a purely technical point of view, you might think they don't have a lot in common. However, merge the concepts of two of the hottest technical advances to come around in a while, and you have the power to change the world. Not all at once, as change happens over time, but they do provide a framework and the opportunities for major change, which is a first step and much of what we discuss in this book.

Initial impressions are important. When you pick up a book like this and start to browse the contents in the bookstore, as the reader, you probably have some high expectations. Education is probably the top requirement that you expect from a technical book like this. However, at what level? Are you looking for an overview, a strategy, a design, or perhaps hands-on, do-it-yourself steps?

I struggle with what makes the most sense and what will provide you with the most value. This book attempts to give you some advice on all these levels; however, there is a fair amount of focus toward a hands-on approach. My hope is that you can use this book as a reference that

provides some concrete guidelines for creating and then implementing a strategy for Web 2.0 and Social Networking integration within your group or organization.

Much of the focus in the Web 2.0 and Social Networking space has been toward customer interaction; that is, how to draw in or collaborate better with customers through blogs, forums, or Facebook and MySpace pages, how to increase brand or product awareness or drive sales with viral marketing campaigns, or how to increase customer satisfaction using Ajax so that pages are updated almost automatically. In this book, we look at these ideas and more. However, we also turn our focus inward to the enterprise to see how we can use new strategies and technologies to increase productivity, collaboration, knowledge management, and creativity of our employees and partners.

Web 2.0

By now, many people understand the use of the term *Web 2.0*, but it still requires some explanation in our context. For our purposes, we might define Web 2.0 as a set of enabling technologies that enable us to reach and provide services to end users in exciting new ways. The reality is that much of the hype around Web 2.0 already existed on the Web well before the term became popular with the media and within the industry, but the concept is helping to drive new innovation in the use of this technology toward better user interaction. At the core of these new technologies is the use of Asynchronous JavaScript and XML (Ajax) to provide a richer user experience to end users.

The term Web 2.0 was coined by Tim O'Reilly, founder and CEO of O'Reilly Media, Inc., and the term became better known across the industry after the O'Reilly Media Web 2.0 conference in 2004. The idea of Web 2.0 definitely has some technical aspects, with the implementation and innovation of new technologies and standards within the web platform. However, much of the focus of Web 2.0 is on new business models. Whereas the focus of Web 1.0 was on delivering products, Web 2.0 had created a paradigm shift to delivering services that can be used and combined with other services in new ways. Another key aspect is the growth of interactivity with end users in new ways, enabling users to drive what is important or of the most value.

Figure 1.1 illustrates the concept of Web 1.0, where there is a strict producer/consumer approach to delivering web content. The webmaster or

content creators build and maintain the website for consumption by end users. The relationship is strictly unidirectional in this model, fixed and targeted based on assumptions made by the webmaster and content team.

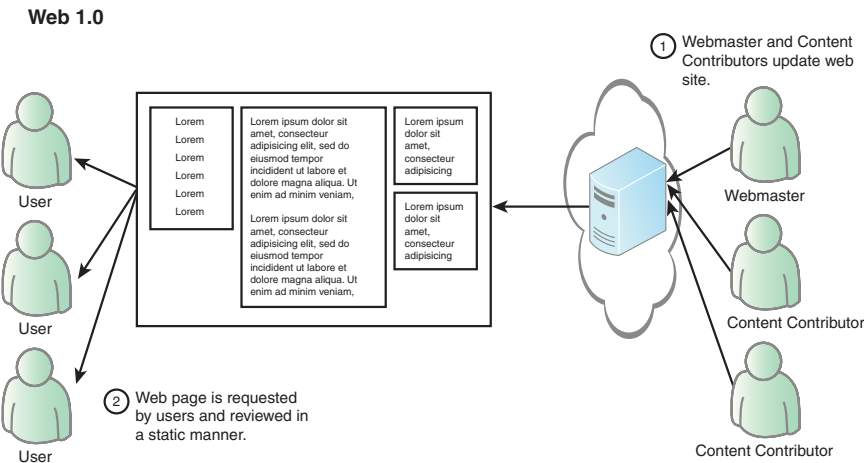


Figure 1.1 Web 1.0 paradigm

In contrast to this approach, in the Web 2.0 model, users actively participate and contribute to a website. This bidirectional approach enables users to interact with the site and each other in ways that provide for and foster a collective community. Users can create, edit, rate, and tag content at will, which provides other users with new information and guides the relevance of what is important to the overall community.

In addition to providing the underlying ability for communities to build momentum, obtain critical mass, and contribute to ongoing collaboration, services can be provided in the form of application programming interfaces (APIs), Representational State Transfer (REST) services, or Really Simple Syndication (RSS) feeds, which enable end users to merge and view data in ways that haven't even been imagined (see Figure 1.2).

Web 2.0 is not only about providing data in new ways, it is also about improving the user interface and enabling end users to view data quicker

Web 2.0

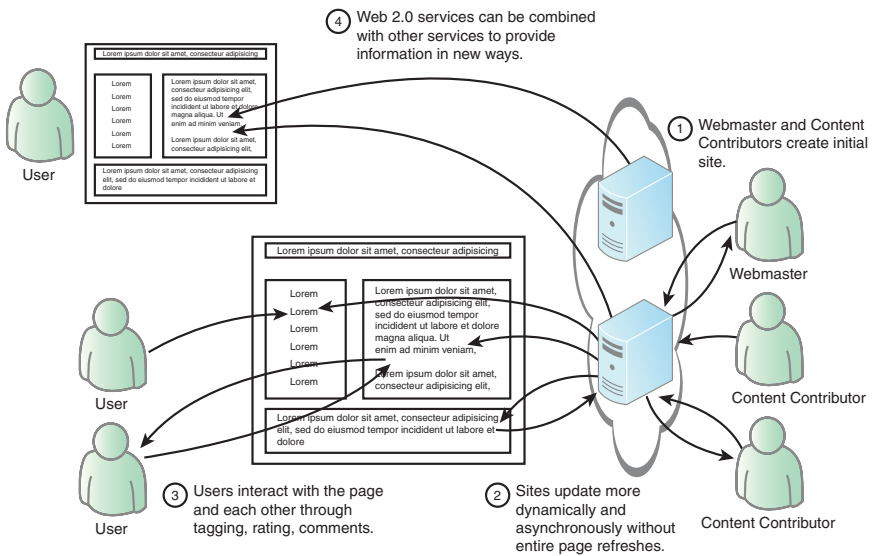


Figure 1.2 Web 2.0 paradigm

and in more dynamic ways through richer user interfaces using Ajax and other technologies.

Rich User Experience within the Browser

Although not always the case, the goal is to take advantage of the browser as the universal client and provide a richer interactive experience to the end user. Two core technologies that help provide this experience are Ajax and REST. There are lots of other frameworks technologies in this category that can also provide a browser-based rich user experience, such as Adobe® Flex® and Macromedia® Flash®. In addition, there are non-browser-based approaches, such as using an Eclipse framework based approach such as Lotus® Expeditor.

AJAX, now known more often as Ajax, has again brought JavaScript™ into vogue by providing a new approach to the language. Now you can leverage JavaScript using eXtensible Markup Language (XML), Representational State Transfer (REST), JavaScript Object Notation (JSON), and other technologies. The term *Ajax* is relatively new; although if you work with web technologies, you have undoubtedly

heard of the term, but the underlying technologies have been around almost as long as the Web itself.

The key in Ajax is the term *asynchronous*, which enables the browser to provide services and features in simple but exciting ways. Ajax provides a new paradigm for interacting with the browser. Essentially, the browser can be updated in an asynchronous manner, which means that there need to be no more full-page refreshes that are so common with the Web. Take, for example, a simple stock ticker or some fluid piece of data. With the pre-Web 2.0 approach, the entire screen needs to be refreshed to update a potentially small piece of data. With Ajax and Web 2.0, that small piece of data can be retrieved behind the scenes at regular intervals and updated while users focus elsewhere on the page (see Figure 1.3).

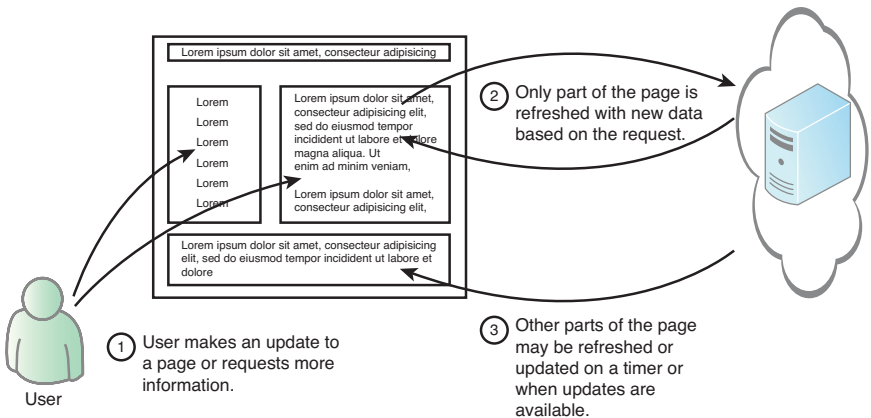


Figure 1.3 Ajax interaction model

The purpose of all of this is to provide much more dynamic web pages that not only respond quicker to user action, but that actually assist the user in working with the web page. Simple Ajax patterns include the following:

- **Type Assist:** This enables a user to type into a text box while the system tries to figure out what word or phrase the user is looking for. As the user types, the text box continues to change with different values that can assist the user in getting the right value.

- **Form Assist:** Another scenario is the concept of updating a list of options based on an earlier choice. Consider, for example, a user trying to fill out a form on the screen. Choosing one option from a list or drop-down box might trigger different options to appear, change, or prefill with additional values based on that choice.
- **Page Fragment Updates:** Again, like in the stock ticker example, data can be retrieved behind the scenes and update small fragments of a page without requiring a full refresh of the page.
- **Sliding Palettes:** This pattern is where a window appears or slides out on top of the page. This allows the user to choose from a picklist or set of displayed options.

More advanced examples of using Ajax are more obvious, where large sections of the page are updated based on options chosen. One example is a customer service type of application where the user can look up customer and order detail information in a single interface. A detailed example of this is in Chapter 3, “Ajax, Portlets, and Patterns.” It has been said that the use of Ajax is nontrivial, which means that although it is simple to add basic examples to your web pages, more advanced works require advanced skills and additional design work to obtain good results. The results of this effort can be impressive as web pages become truly interactive for the end users.

Ajax and the Dojo Toolkit

The Dojo Toolkit is a JavaScript-based collection of libraries (hence the name toolkit) that enable you to build Ajax capabilities into your web pages. The Dojo Toolkit is more than just Ajax, but that is our primary focus in this book. In reality, Dojo is a DHTML toolkit. Because Dojo is open source, it is free to use in your projects, and many large organizations contribute to Dojo itself.

JavaScript, DHTML, and Ajax are complicated. Dojo encapsulates complex JavaScript capability with predefined components and APIs. Of course, Dojo has a learning curve; however, the gains obtained by focusing at a higher level of abstraction can be enormous. In addition, while some optimization can be obtained, using Dojo libraries implies heavier pages in the form of JavaScript libraries that need to be transmitted to the user’s browser to enable all the cool functionality that you will

build. It is worth the tradeoff, but I don't want you to think that you get something for free.

Several Ajax libraries are available on the market today. Many of them are open source. IBM® has opted to support Dojo by contributing to the community and building Dojo into WebSphere® Portal 6.1.

JSON

JSON is designed as a lightweight data-interchange format. Similar to XML but with the advantage of being easier for machines to parse and generate, in many cases, it can be much faster than using XML. JSON is language independent; however, it looks strongly familiar. Similar to pseudocode, JSON is built on the idea of name/value pairs that are often recognized arrays or lists of data. In addition, values are presented as ordered lists that can be recognized as arrays or lists of data.

The main idea is that these name/value pairs and ordered lists of data are universal to all programming languages and are easily translated into the common data structures. The following sample shows how a list of customers might be represented in JSON:

```
{ "customers":  
  { "@uri": "http://myhost/resources/customers",  
    "customer":  
      [  
        { "@uri": "http://localhost/resources/customers/103",  
          "name": "Atelier graphique",  
          "city": "Nantes",  
          "state": "",  
          "zip": "44000"  
        },  
        { "@uri": "http://localhost/resources/customers/124",  
          "name": "Mini Gifts Distributors Ltd.",  
          "city": "San Rafael",  
          "state": "CA",  
          "zip": "97562"  
        },  
        { "@uri": "http://myhost/resources/customers/495",  
          "name": "Diecast Collectables",  
          "city": "Boston",  
          "state": "MA",  
          "zip": "51003"  
        }  
      ]  
    }  
  }  
}
```

Note that an object, which is an unordered set of name/value pairs, is represented by the left and right braces {} within the syntax. An array is

an ordered set of values that are represented by brackets []. With that in mind, you can see that the preceding sample provides an array of customers. Similarly, the following example is the same data set represented with XML:

```
<?xml version="1.0" encoding="UTF-8" ?>

<customers>
<uri>http://myhost/resources/customers
</uri>
<customer>
<uri>http://localhost/resources/customers/103
</uri>
<name>Arelrier graphique
</name>
<city>Nantes
</city>
<state />

<zip>44000
</zip>
</customer>
<customer>
<uri>http://localhost/resources/customers/124
</uri>
<name>MiniGifts Distributors Ltd.
</name>
<city>San Rafael
</city>
<state>CA
</state>
<zip>97562
</zip>
</customer>
<customer>
<uri>http://myhost/resources/customers/495
</uri>
<name>Diecast Collectables
</name>
<city>Boston
</city>
<state>MA
</state>
<zip>51003
</zip>
</customer>
</customers>
```

JSON works particularly well with JavaScript because it is actually a subset of the object literal notation of the JavaScript language. *Object literal* means that objects are created by literally listing a set of name/value pairs within the document. The debate continues to rage as to whether JSON is really the right approach as compared to XML. For work within the browser, it has some definite advantages, such as

quicker parsing and being somewhat more focused on transferring data without worrying about much of the overhead of XML and the structure that it can often involve. The idea behind JSON is to strip down the data to a basic form for transmission to and within the browser.

There is no reason not to use XML, and in many cases, you might have to define XML as a standard in your organization (I'm big on standards) and let JSON be used in the exceptional cases where the application team can explain why JSON is a better fit. Another disadvantage on the JSON side is that it is not as readable as XML. That might be a preference for someone to decide, but the brackets and braces can be confusing, especially if the document is more squished together than what I have laid out here as an example. One big advantage of JSON is that it works well with the Dojo Ajax Toolkit that we use throughout Chapter 3 and other parts of the book.

REST

The term *REST* was first introduced by Roy Fielding in Chapter 5 of his doctoral dissertation titled *Architectural Styles and the Design of Network-Based Software Architectures*. REST focuses on the simplicity and efficiency of the Web as it exists today and leverages that simplicity to represent the state of data and resources within the Web. Like the Web, REST is a stateless protocol and is based on common HTTP verbs of GET, POST, PUT, and DELETE. This means that like many of the other technical aspects of the Web 2.0 approach, there are no additional standards required for providing REST services.

REST-provided services, often called RESTful services, are not based on any new standards, but are more of an architectural style that leverages currently available standards to deliver information and data about existing resources. Uniform Resource Identifiers (URIs) are used to determine what resource you are actually operating on. (Remember REST is resource oriented.) Reformatting data into the form of resources does take some initial effort, and with any design, you want to get as close as possible as soon as you can to the correct format. For our purposes, we look at some simple examples. Consider the following URI:

`http://myhost.com/resources/customers`

In this case, you can expect a list of customers to be returned as an XML stream from the server. Embedded within that data will probably be additional entity URIs so that you can retrieve information about a

specific customer. Many of the URIs that would be used within RESTful services contain a combination of the location of the resource and the actual resource that we need. For example, the following URI should return a data stream with information about a specific customer:

`http://myhost.com/resources/customer/103`

The resulting data stream often takes the form of XML, which is defined to provide an understandable data set; however, other representations can be used such as JSON that we previously discussed.

So, why not use traditional web service technology such as Simple Object Access Protocol (SOAP) and Web Services Description Language (WSDL) to retrieve information? The debates continue about this question, but remember that REST is an architectural style designed to use technologies that are currently available. It can also be useful in simplifying much of the complexity that web services bring to the table. Figure 1.4 illustrates the difference between REST services and traditional web services.

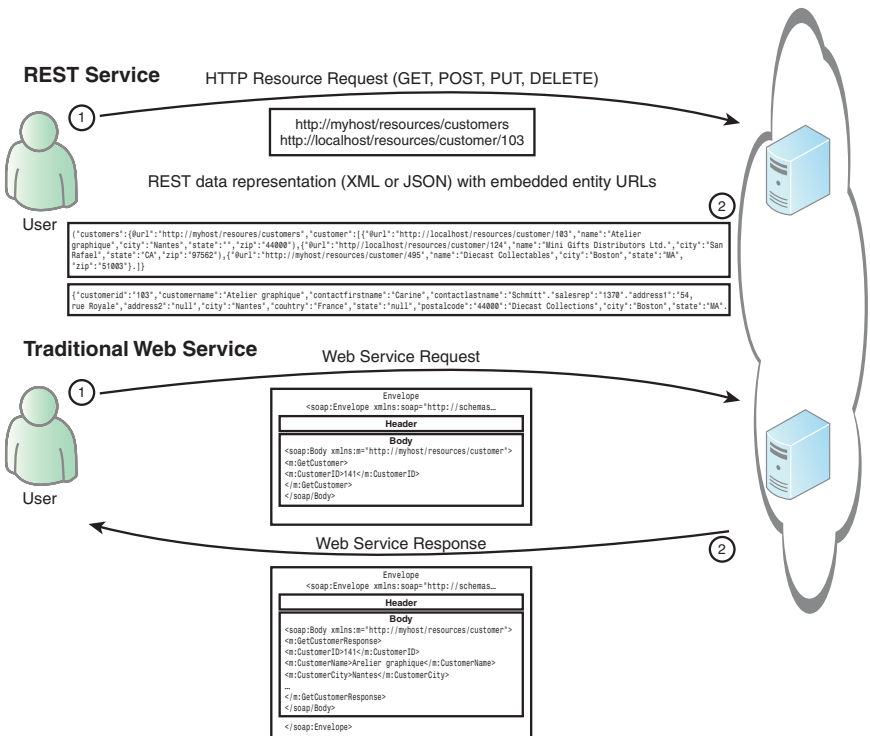


Figure 1.4 REST vs. traditional web services

Traditional web services, on the other hand, are complex because there is a focus on solving complex enterprise problems, which require robust and complex standards to ensure security, performance, and especially interoperability across the Web. Because of this, the standards around traditional web services are more complex and strict because they have to be. The caution here is for you to not think that they are necessarily easily exchanged or that one approach can be a complete replacement for the other.

Atom and RSS

Atom and Really Simple Syndication (RSS), previously known as Rich Site Summary but changed to Really Simple Syndication for version 2.0, might not seem like exciting new technologies. Anyone who has read a blog or news feed should be familiar with the RSS format. These are core technologies in the new Web. The ability to share news and information in a standardized format makes for easy integration in the Web 2.0 world.

Consider the simple case of a set of information around a particular topic. It could be a specific technology, industry, or perhaps political or scientific information. In the Web 1.0 world, readers would have to go to or log in to each website and see whether any information had been updated. As you can imagine, that approach doesn't scale well as users try to add new information sources to their resource pool. Imagine, in my case, where I am lucky to update my blog once a month during busy periods; readers would quickly lose interest in checking for new updates. Data feeds in a standardized format can be accessed and aggregated into a single tool or web page where users can see right away if new information is available. If a new update is available, even from a site where information is not updated as often, it can receive the same attention as the more prolific data sources. RSS is one such format for delivering content. Online news, blogs, products, and catalogs can be syndicated and delivered in a standardized way that enables readers to stay informed of existing and new information without the effort of constantly looking for new data.

Atom is another set of standards for providing the same capability. The Atom Syndication Format is an XML language that is used to provide web feeds similar to RSS. Atom provides the Atom Publishing Protocol (APP) as a way to update or publish to web resources.

Both of these services are readily available on many if not most websites. Usually they are offered together to enable consumers to choose the format that best fits their needs. You have probably seen the icons shown in Figure 1.5 embedded in many of the websites that you visit.

Rich Site Summary Logo



Atom Logo



Figure 1.5 RSS and Atom icons

When you click on one of these icons, you will probably see an XML-based representation of the content that is available on the site. Using a feed reader, you can import the URL of either feed to incorporate that data feed into your syndication tool.

Deciding upon a syndication strategy can be important to enabling the sharing of libraries and new content repositories in your organization. This strategy can help you understand how you want to expose information to other systems and end users. Let's face it, no organization has a single source of knowledge. Knowledge management experts have been working for years on trying to collect, organize, and share information and collective knowledge within the enterprise with limited success. The reality is that it is hard to keep up with everything going on in large organizations, and new knowledge sources seem to spring from the ground. Even beyond document repositories, which might be tightly controlled, blogs, industry news, and research, information can come from widely varied sources. Adopting a syndication strategy can help you avoid trying to control the knowledge and simply acknowledge that you can benefit from these new sources.

Situation Applications and Mashups

Another item at the heart of Web 2.0 is the concept of situational applications or a mashup. These are not the same thing exactly, but they are very closely related. The idea is that end users want to take control,

to combine data and data displays to build new views that show information in new ways. Putting the user in control can drive many new ideas for how information can be delivered and used within your website. We typically think of situational applications as a short-term integration that will enable some growth or new understanding by the users.

There are several types of situational applications. IBM's WebSphere Portal comes to mind as a leader in this type of approach by building on the idea of composite applications. Composite applications are one of the core benefits that a portal can bring to an organization. The ability to combine portlets on a page displaying complementary data can allow you to provide a huge benefit to the end user. Composite applications can often be taken a step further and be combined with a business process engine to enable a workflow-type process around the use of these portlets.

Mashups are similar to composite applications, where data from multiple sources is combined into an integrated view. The most common example of this that you might find is data that is displayed on a map view, showing location information about a particular data set. These common types of mashups generally consist of a couple of views: one to help choose a particular item from the data set and a second view or section that actually plots the chosen data on the map. One example of this might be plotting customer locations, or sales reps, into a map of a specific area. You often see websites that display the closest store locations within a specific area, such as a ZIP code, or close to a specific address (see Figure 1.6).

Mashups can take several forms. Mostly the difference is around who actually creates the mashup. The enterprise can provide specific mashups to end users by combining business data from different sources into a unified interface. This type of mashup can also include data sources from external or public sources or APIs. Additional end users or consumers design their own mashups based on information of interest to them. From a business perspective, the idea of allowing end users to build their own mashups can be a powerful force. Technically, there are still governance, performance, and security issues to consider when allowing end users control to mash company data.

One of the key components in mashups is the idea that the user interface is separated from the data or service itself. This is what makes this type of situation application reusable, allowing fine-grained access to data through these reusable services. The idea is that reusability makes

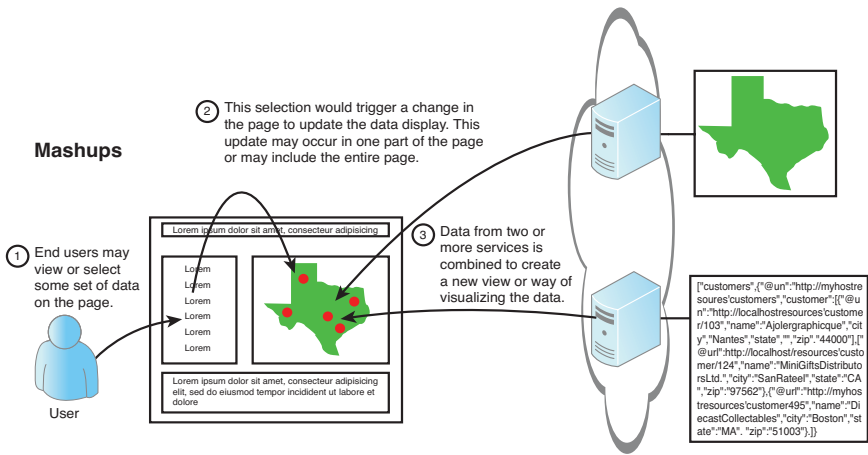


Figure 1.6 Using mashups

the business more agile and capable of building situation applications as required to respond to business criteria or questions.

We have to take some care when enabling end users to create situational applications or create their own mashups. Again, security, performance, and manageability concerns come to mind as end users take more control over how resources are used within the website. From an IT perspective that is responsible for the reliability of the site, it is important that these items not be compromised while trying to deliver new capability.

Social Networking

The lines between Web 2.0 and Social Networking are easy to blur here in the real world. We make a distinction, however, because much of the technology can be categorized within one of the two, although the end result is often due to a combination of both. For example, many of the Web 2.0 technologies that we have discussed so far assist in the delivery of Social Networking capability.

Social Networking involves the creation of a virtual community where users can share, discuss, collaborate, and even argue about topics of common interest. Within your organization the topics and nature of these communities can vary widely, providing the ability to collaborate on items such as technology, industry, or even product- or service-based

topics. For the most part, communities are also self-establishing because the enterprise cannot always predict what will be important to their users. Allowing communities to be self-forming ensures greater acceptance by users and helps ad-hoc communities grow to critical mass.

File Sharing and Content Collaboration

File-sharing activities can be distinctly different depending on whether you focus within the boundaries of the enterprise or focus on public collaboration and access. Often, the two spheres utilize different types of files and information. The popular video-sharing site YouTube is a perfect example. A repository in an enterprise might not be able to reach critical mass when limited only to an employee base, but then again, it just might. In IBM, a system has been launched called BlueTube, which is designed to allow for the upload and sharing of internal video material. Although as of this writing, BlueTube is still in the trial stages of development and has not reached critical mass, IBM is uniquely situated to benefit from this type of repository. With more than 300,000 IBMers worldwide, many of whom are engaged in creating and sharing videos that illustrate new technologies, product demos, or video recordings of the dozens or hundreds of presentations that happen every day, there is a likely chance for overwhelming success.

Document-based content is probably a more common type of collateral that should be contributed to content repositories as much as possible. Every company struggles with the idea of reusability of assets and the sharing of expertise (e.g., proposals, estimates, presentations, design items, price lists, and offerings of services or products). In addition to the actual content is the meta information that comes along with this content. Such meta information includes categorization of content as formal or informal, and the tagging of content with specific keywords defined by end users.

Bookmarking and Tagging

A key benefit to gaining critical mass is to obtain large numbers of contributors to your site or application. A knowledge repository or application becomes more useful as it gains new information, and it is exactly this accumulation of information or knowledge that you are looking for. Of course, knowledge itself doesn't always have to be new content. It can also consist of identifying and tagging existing content

to help separate the most useful information in the site. This is why it is important to enable users to add value in seemingly small ways, such as tagging, bookmarking, ranking, and leaving comments.

Tagging enables users to define content. People like to share, and they are opinionated about what they think is important and how content should be categorized. Making it easy for them to identify and categorize content can be a powerful way for others to better understand where things might fit or what other users consider important. This is a powerful for organizations that can then start to understand and react to tagged content in meaningful ways.

Tagging is a simple, yet extremely powerful concept. Tagging an item on the Web means to simply categorize that item with one or more category names. Ideally, people use similar names so that as more items are tagged, patterns can emerge based on these categories. Figure 1.7 shows one such pattern, commonly known as a tag cloud.

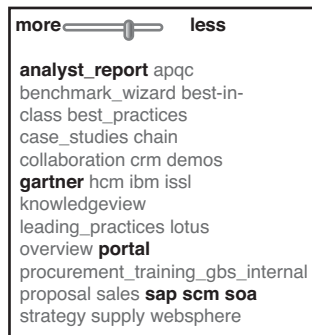


Figure 1.7 Sample tag cloud

A tag cloud is a list of categories that show variation on the tags based on popularity. The most popular tags become larger and darker in the list. Most tag clouds follow the power law curve, which results in the proportional scaling of a few large tags and many small ones. Other clouds follow a more linear scaling approach that smoothes out the power law curve. This type of list is often called a folksonomy. This is a true taxonomy of the content in the repository; however, instead of being defined by the knowledge management librarian, the structure is defined by common folks in the community.

The idea of knowledge management (KM) has taken some hard knocks during the past ten or so years. During the rise of the Internet in

the mid-1990s, KM became a popular and important topic as sharing documents and organization knowledge became cheaper and easier to manage. With this increase, interest in document and content management within organizations and across the Web, identifying, tagging, and managing that content fell into the domain of KM. It made a lot of sense for organizations and industry domains to build what we call a taxonomy; within which documents and content can be stored to enable easier search and retrieval of that content.

Bloggng and Wikis

Some of the more popular patterns in the Web 2.0 space are the blog and the wiki. This has been seen in the explosion of blogs and wikis (both internal- and external-facing) across the Internet. A blog, short for web log, is a personal log or journal shared with readers on the Web (see the Figure 1.8). Blogs typically focus on a certain area (e.g., technology, political, social).

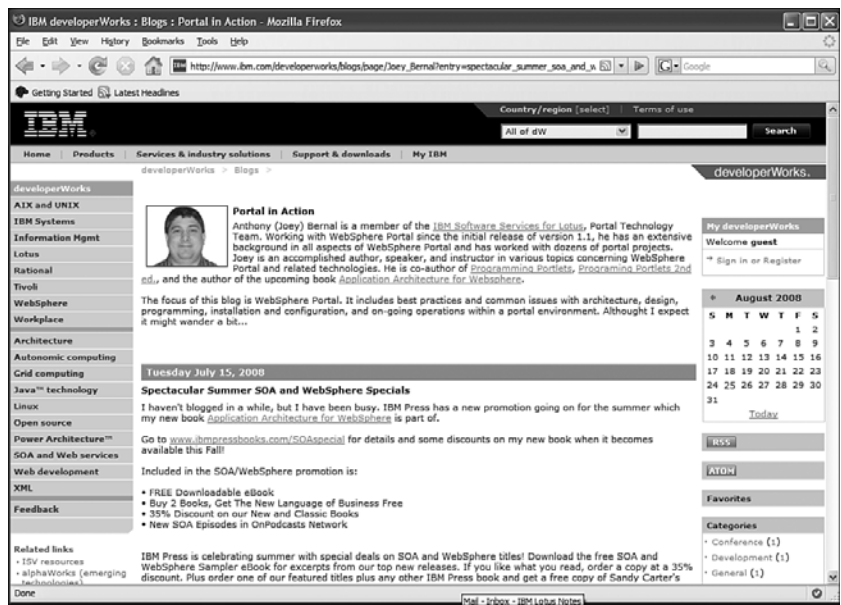


Figure 1.8 Author's WebSphere Portal blog

A blog can be a one-way mechanism to simply distribute information to an audience. However, the more powerful and popular blogs are those that elicit interaction between the blogger (the person posting the blog

entries) and the readers. Reader feedback helps bloggers understand what readers really want from a blog author.

In many cases, internal blogging can be just as valuable to an organization as externally facing blogs. Internal blogging can help to drive innovation within the organization. At IBM, hundreds of ongoing blogs have been created for the technical force to share their knowledge and experiences. Many managers have blogs to post topics that interest them.

Whereas a blog is mostly a way for one person or a small group of people to share information, a wiki is much more collaborative. A wiki is a website designed for users to add, remove, or change content directly. In fact, most wikis are generally text-based content that is continually being added to or changed by the community of users who manage and use that wiki. This content is made directly available to end users who have the ability to update or add their own content to the site (see Figure 1.9).

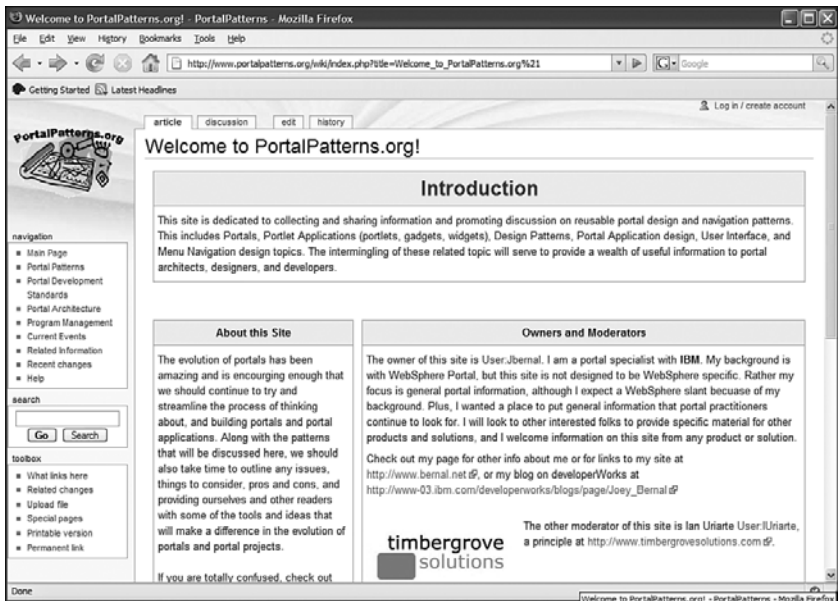


Figure 1.9 PortalPatterns wiki

Wikis are based on the concept that it should be easy to collaborate on content in real time and participate in the ongoing evolution of the material. Usually, you become a registered user of the site, and then you can add or edit content directly. Sometimes this content is reviewed by a

moderator, which helps to ensure some continuity to the site; however, care should be taken to ensure that the moderators do not stifle the creativity and input from the field. I can think of at least one popular wiki where the moderators do sometimes take things a little too seriously. Wikis can be one of the most cost-effective ways for a community to collaborate, with the main requirement being people's time and willingness to participate in the effort.

Expert Location and Instant Messaging

Instant messaging (IM) has been around for awhile, both inside and outside the enterprise. Popular IM sites include AOL Instant Messaging (AIM), Yahoo! Messenger, and Microsoft® Windows® Live Messenger. For use within the enterprise, IBM's Lotus Sametime® provides full-featured IM and collaboration capability on the desktop. Figure 1.10 shows IM in action on the author's desktop.

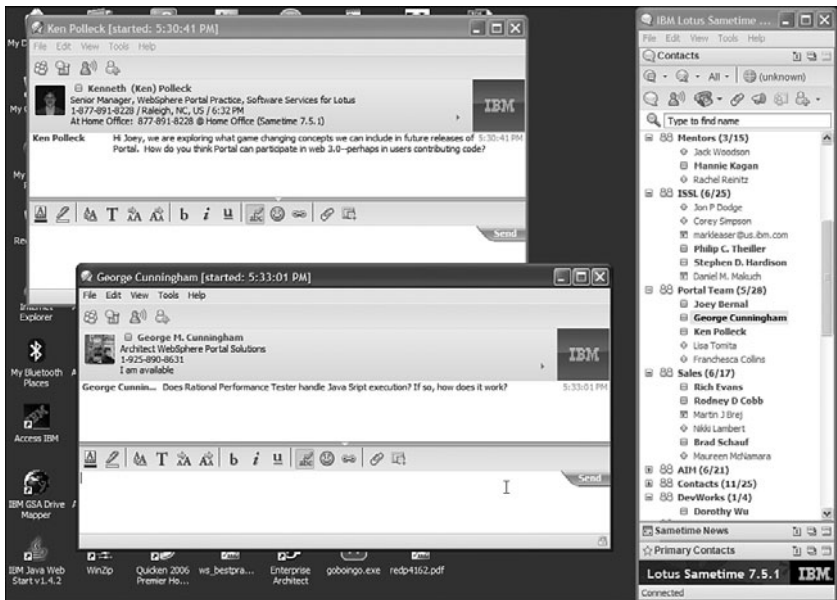


Figure 1.10 IBM Lotus Sametime in action

The ability to reach out and talk to other employees within your organization directly and instantly can certainly encourage and facilitate real-time collaboration within the enterprise. Instant Messaging has

been around for several years and continues to grow in use as the technology gains wider adoption. Just as it is important to talk in real time with other colleagues, it is important to find the right person when you need to ask a question. Who are the experts for the particular question that I want to ask? This need to find an expert goes beyond the business and can reach into IT or even human resources questions as employees who need answers quickly, try to reach out and resolve problems. Recent advances in Instant Messaging, at least in the IBM realm, include the ability to embed IM awareness into web pages themselves. This ability extends the concept of expert location, or finding who the experts are, into the daily activities of end users. Consider, for example, the utility of a list of documents that contains an IM link to the author of each document. That same concept can be integrated into web page content to bring links within the web page to life, allowing you to trigger an IM to a content author directly from within a web page.

A Case Study: GBS Practitioner Portal

The GBS Practitioner Portal is shaping how IBM's Global Business Services (GBS) continues to evolve with their knowledge management needs. GBS makes up nearly half of IBM's global work force, with more than 150,000 practitioners worldwide. Delivering the right tools, templates, and practical information is a monumental task. The GBS Practitioner Portal team, in partnership with several other teams within GBS, is looking to leverage the latest in Web 2.0 and Social Networking technologies to try to address that challenge.

KM is nothing new to the GBS organization. An organization of this size has to be good at creating, capturing, and sharing information in order to streamline processes and obtain the repeatability required for effective delivery. KnowledgeView is GBS's worldwide knowledge-sharing solution and contains business solutions, engagement experiences, proposals, marketing materials, deliverables, practice aids, and thought leadership materials.

Even with a well-defined repository of documents and information, the Learning and Knowledge Management (L&K) team knew that they had to do more. Other repositories and libraries of information existed that needed to be tapped, searches needed to be federated across these other sources of information as well as within the primary source of KnowledgeView, and information needed to be tagged as to relevance and value it might bring to another user. From this was born

KnowledgeView Lite, or the GBS Practitioner Portal, which has several simple but wide-reaching goals. The primary goal of the portal is to improve the ability to find relevant, quality content and experts by

- Providing a simplified user interface.
- Utilizing a Google-like search functionality that includes content from all relevant IBM sources.
- Improving the culture of participation and leveraging the power of the organization via the integration of key social computing and expertise location tools.
- Proactively pushing content via available RSS feeds.
- Highlighting key practice content in business-driven portlets and providing a palette of available portlets to customize the user experience.

Beyond that, however, there are even higher goals to increase the search effectiveness by leveraging user feedback and applying social tagging, ratings, and bookmarks to items. This allows the portal to

- Promote quality content.
- Highlight key content within search results.
- Apply user interaction data to the content lifecycle to promote top quality and automated archiving.

GBS understands that the individual practitioner is one of IBM's greatest assets. The knowledge and collaboration capability that can be provided by each individual is essential in moving the art and science of service delivery forward. The GBS Practitioner Portal is a major step in making achieving that goal (see Figure 1.11).

How do you deliver targeted content to 150,000 service practitioners? No portal can be everything to everyone. No single portal instance, at least. GBS has more than 100 service lines ranging across multiple technologies and industries. Not every service line can be profiled as a top-level page and still maintain some sense of importance within the overall structure. The obvious approach is to attempt some form of personalization to target information to specific users based on job role, project, or position. However, that can have a tremendous performance and management impact on the portal. In addition, many practitioners might be assigned to a specific service line, but work on projects using a

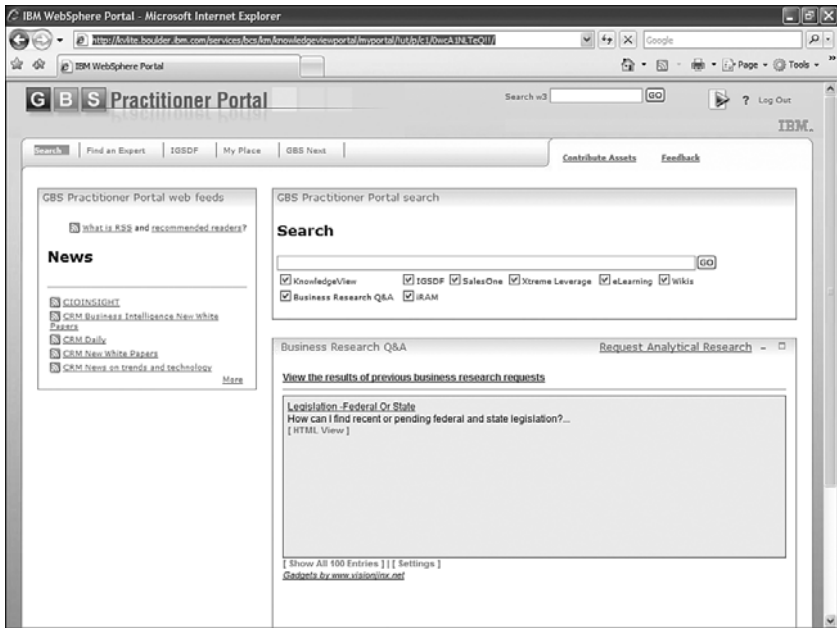


Figure 1.11 GBS Practitioner Portal

different technology or within an industry different from where they are usually assigned. The approach the portal uses to provide relevant information needs to be flexible depending upon practitioners' current needs.

The answer is to allow the end user to determine what is important by providing a palette of portlets that provide the targeted content based on service line. Users can drag and drop portlets that are important to their current needs to stay up-to-date with any particular service line (see Figure 1.12).

A portlet palette is a predefined feature within WebSphere Portal that allows end users to add portlets and customized the portal pages. The use of the palette is a classic approach for meeting the needs of such a large and diverse community of users. Practitioners in the automotive sector don't always care what is going on within the energy or HR practices, for instance. Users can customize their page using the dozens of predefined portlets that target information only to those who really want it.

Another useful feature for end users looking for qualified content is the Business Research Q/A portlet. Behind this portlet is a group of research librarians who are continually mining for important data and performing analysis based on information from research sources across

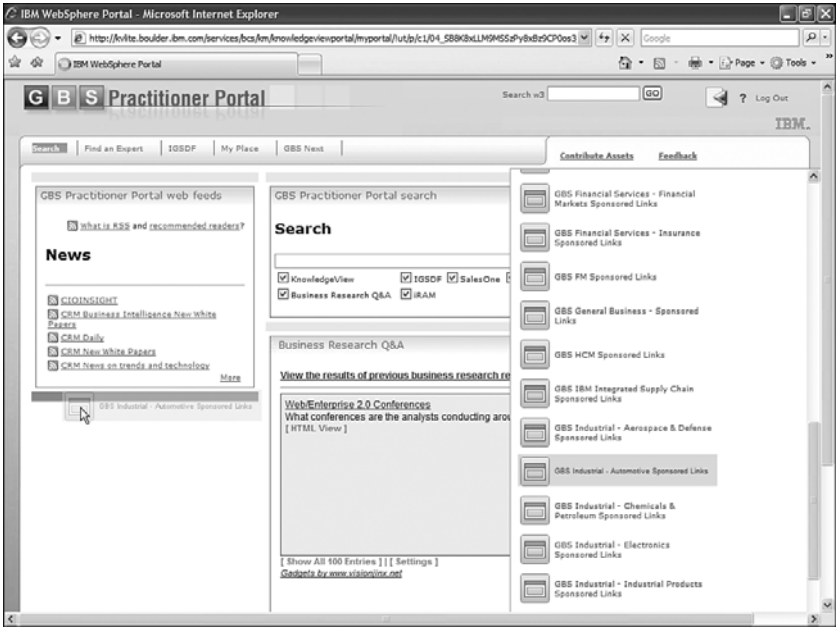


Figure 1.12 Using the portlet palette to manage service lines

multiple technologies and industries. User requests to librarians are usually conducted via email; however, by integrating the Business Research portlet into the information already stored by librarians as it becomes available, it becomes much easier for end users to understand what information is readily available. Most of this information is stored in IBM Lotus Quickr and document libraries, which are fully discussed in Chapter 5, “Team Collaboration and Content Sharing.” Research librarians use Quickr libraries to answer once and save data for everyone. End users can follow these links directly into the Quickr libraries to view information that has been mined by the librarians. In addition, when additional information is needed, research requests can now be initiated via the portal.

One real star of the site is the ability to run a faceted search against a number of existing repositories within the organization. This consists of a federated or simultaneous search against a number of repositories. One major problem with federated searches across multiple repositories is that each repository has its own structure and taxonomy. Therefore, search terms run against one repository might not get similar results when run against a different repository. KVLite uses a different approach that allows multiple classifications to be defined against content as it is

indexed. This provides much more consistent results when running the federated search. Figure 1.13 shows the search form with multiple repositories available for the federated result.

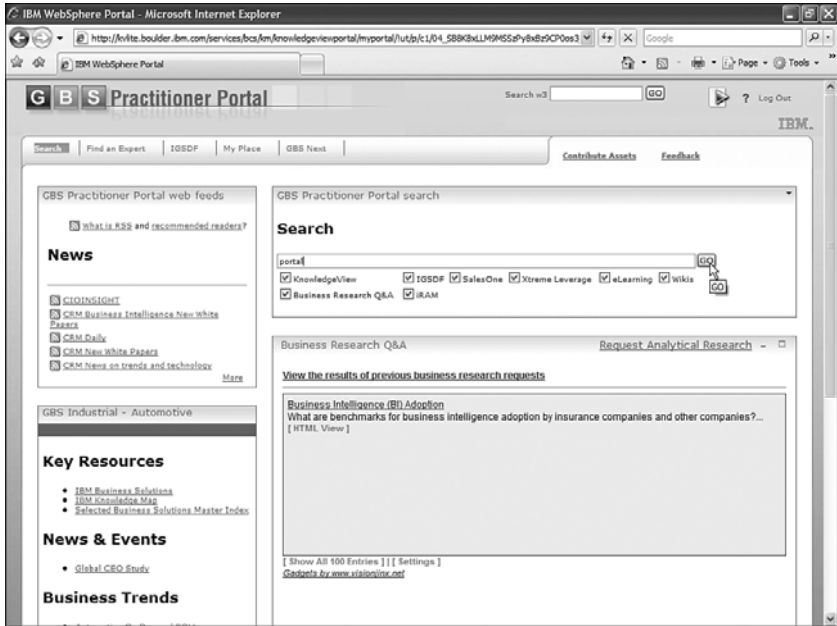


Figure 1.13 Federated search

The search results consist of a powerful interface that integrates the results from the federated search against eight defined knowledge repositories. These results go above and beyond the provided Google-like search interface. Figure 1.14 shows some sample results that integrate sorting results by end-user ratings, tagging counts, title, author, and relevance to the search criteria.

In addition, the search results are integrated within a tag cloud from IBM's Dogear technology. This tag cloud allows the search results to be refined based on the tags submitted by other users of the site.

There is a lot more to the KVLite portal than we can cover here. For example, the sites tried to distinguish between searching and finding. Suppose, for example, that you are searching for some briefing documents on a particular topic. There are 21 documents available on that topic within the various search repositories. It is unlikely that you could structure a query such that you would see all 21 briefing documents in a

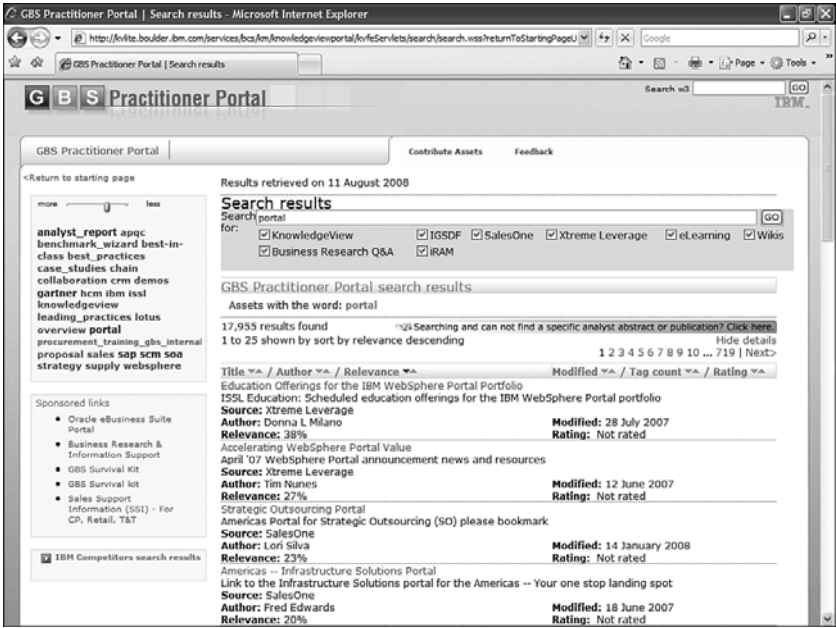


Figure 1.14 Federated search results

single search result. Much work is being done to help bring related information together into drill-down types of search. Dashboards are being created that illustrate industry and technology sectors where information can be *looked at* rather than *searched for*. All this is taking place in real time while end users continue to refine the quality of the content and enhance its value to the business.

Another consideration in the Web 2.0 world is the concept of continuous beta. Because KnowledgeView Lite runs on WebSphere Portal, the team can update, add, and test new features and functionality quickly and easily. In fact, one area of the site is strictly devoted to the delivery and testing of new functionality and ideas. This idea of the constant beta is pervasive throughout IBM, as you will see in additional case studies throughout this book.

External Social Networking Sites

Commercial Social Networking sites abound. These are not typically focused on the enterprise, but instead focus on end users or commercial activities themselves. However, they are important to the way that our

user community views or expects to view and use technology. Some of these are discussed in the following sections.

Facebook

For many people, Facebook is the central Social Networking tool in their Internet lives. Facebook enables you to connect with people in new ways and interact on levels that normally would not occur in the real world. Consider my situation with using Facebook. As a consultant, I do some hardcore travel at times throughout the year. Most of my colleagues do the same. When we are not traveling, we work from our home offices. Depending on which city they call home, some people do go into a local office. The point is that I am lucky if I see some of my coworkers or even my manager in person once a year.

Facebook helps to bridge that gap of not working in a traditional office. I can see when my colleague Julia is running another triathlon or where other coworkers happen to be traveling to this week. This perspective fills a gap in the social fabric of our workplace that many people didn't even know existed. It enables us to get a new perspective on the daily lives that traditional office workers take for granted. It's our version of chatting around the water cooler and provides an insight into the human side of our business colleagues. At the same time, I can keep up with what is going on with my two sons in college, other friends, family members, and previous coworkers from around the globe.

Although Facebook allows us to network and connect in an organizational context, it is not the place to conduct internal corporate business. One would not (or perhaps should not) use this application to try to move up the corporate ladder. Unless you are actually trying to interact with the general public, there should be limits to what your employees are discussing on a public site. Chapter 9, "Managing a Changing Social World," goes into more detail on this topic. You can try to re-create Facebook within the confines of your organizational firewall, but you probably do not want an exact duplicate. There are features of Facebook that can be emulated, and the building and collection of profiles has benefits within most business organizations; however, the lure of Facebook is not confined to those areas, and there are other approaches to building a social network that can add direct business value.

In addition, Facebook's status as an external application adds to its appeal. Having the people I enjoy connecting to within a single place provides me a direct benefit in terms of the time and effort that would normally be

involved with maintaining contact with such a diverse group of people. Were I to have to choose between connecting internally or externally, or worse have to manage several different systems based on multiple sets of users, I would have to carefully consider how much effort I wanted to expand on each system. This is an important factor in deciding to build a Social Networking application within the enterprise. If you build it, will they really come?

Flickr

Several months before writing this chapter, I was a presenter at a conference in Sydney, Australia. This was a small internal IBM conference that included participants from across the Asia Pacific (AP). Several of my U.S. colleagues and I had flown over for the event to help train our coworkers from Australia, Japan, Malaysia, India, and other countries. More important, it was an event designed to make connections with experts from all across the world that would enable us to communicate and collaborate better in the future.

As you might expect, everyone had a camera and was taking pictures (e.g., of event happenings and group photos with new friends). As the week progressed, it became apparent that everyone had photos that needed to be shared with the larger community. Thumb drives and SD cards were flying around between participants. However, the main issue was knowing what each person had and figuring out which photos we wanted.

Flickr to the rescue! By posting those photos on a shared community site, access to the greater community was easily provided, something that never could have been accomplished by this diverse of a team using other methods. The community was just too geographically dispersed, and trying to set up a custom site, communicating the information to access the site, and keeping it up and running would have been logistically problematic. Flickr is a well-known, easy-to-use, free service that met all those needs with minimal setup.

Conclusion

We have talked a little about some of the business aspects of how Web 2.0 might be leveraged within a business organization, but the reality is that in most cases, a business case must be used to determine and drive all aspects of IT. It does not make sense for the development team to

start building new interfaces unless there is some business driver and a known return on investment. Defining the business goals and requirements should be a first step with any approach. Some amount of learning and testing new technologies should be encouraged within any IT organization; however, business drivers outweigh resumé building by the development team.

In contrast, one of the goals that should be set is to fully acknowledge the feedback gathered from our users as they interact with the tools we provide. Without a complete feedback loop, much of the effort might be wasted. One significant benefit of Web 2.0 and Social Networking is that it is now so easy to find content that is interesting, relevant, or just popular. Tagging and rating allow “good” content to rise to the top of any list, and comments allow us to understand whether other users have found things useful. This aspect is changing the way we work with the Web and others.

References

O'Reilly, Tim (September 30, 2005), “What Is Web 2.0, Design Patterns and Business Models for the Next Generation of Software,” at <http://www.oreillynet.com/pub/a/oreilly/tim/news/2005/09/30/what-is-web-20.html>.

ECMA-262 (December 1999), ECMAScript Language, at <http://www.ecma-international.org/publications/files/ECMA-ST/Ecma-262.pdf>.

Fielding, Roy T. (2000), “Architectural Styles and the Design of Network-Based Software Architectures,” at <http://www.ics.uci.edu/~fielding/pubs/dissertation/top.htm>.

Smith, Gene (2008). *Tagging: People-Powered Metadata for the Social Web*. New Riders Press.

developerWorks Links

Thinking XML: Using the Atom format for syndicating news and more, Uche Ogbuji, <http://www.ibm.com/developerworks/xml/library/x-think24.html>.

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