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GICS SECTOR INFORMATION TECHNOLOGY	
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Industry Overview   October 26, 2004

An Update from the Digital World — October 2004

- **Getting news / information when you want it is getting easier and easier**
  Three factors are combining to drive online momentum: 1) rising usage of RSS (Really Simple Syndication) by content providers as a standard distribution platform for online content; 2) ramp in creation of blogs and other user-generated content and 3) Yahoo!'s easy-to-use integration of RSS feeds with My Yahoo!.

- **Google may have set the pace for *searching* information, but Yahoo! may be setting the pace for new ways of *serving* information**
  With Yahoo!s recently redesigned My Yahoo! personal page, it's very easy for users to enhance programming and customization of personalized Web pages with the integration of syndicated information feeds from tens of thousands of sources. The end result for Yahoo! should be increases in user engagement and monetizable advertising inventory.

- **"Next generation content" should gain usage / revenue traction in 2005**
  We see the potential for next-generation content to positively impact Internet leaders including Yahoo!, Google and eBay as they leverage their distribution channels and/or content and services.

- **Internet & PC Applications Software Industry view is Attractive**
  We continue to believe that online is gaining share from offline, at the margin. In our view, this share shift is in its early stages, and Internet leaders could stand to benefit from this transition. We maintain that the depth and breadth of this transition is still underappreciated by investors.

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An Update from the Digital World — October 2004

Summary

Getting news / information when you want it is getting easier and easier…

The Internet has become a leading source for news and information over the past decade, but we believe the emerging acceptance (by users and publishers) of Web content syndication services will drive even broader / deeper usage of the Internet as an increasingly relevant news and information medium. We see three factors that are combining to drive momentum: 1) rising usage of RSS (Really Simple Syndication) by content providers as a standard distribution platform for online content; 2) ramp in the creation of blogs and other user-generated content; and 3) Yahoo!'s easy-to-use integration of RSS feeds (including blogs) that was rolled out in beta to its distribution channel of 25MM+ My Yahoo! users in late September.

While Google's search engine and advertising tools set the pace for new ways of <u>searching</u> information, we believe that Yahoo! may be setting the pace for new ways of <u>serving</u> information…

It usually takes years for new technologies to develop. Then, a very easy-to-use way to use the technology is launched and—seemingly overnight—related products become mainstream. Two recent examples include the Web browser, which brought the Internet to the masses, and the Apple iPod, which is doing the same with digital music. Today, this type of mainstream push for delivering syndicated news and information to consumers may be driven by Yahoo!'s newly redesigned My Yahoo! personal page.

The beauty of My Yahoo! for users has always been that it allows users to program and customize personalized Web pages—before, this personalization was limited mainly to Yahoo! "modules" like weather or news or finance, but now, users can find and access a range of off-Yahoo! syndicated Web content on their My Yahoo! page(s), as noted in Exhibit 1. For example, if one is looking for news / information sources, Yahoo! makes it easy to receive RSS headline feeds from 150K+ popular sources (or channels). (As of 10/16/04, Yahoo!'s six most popular sources were *The New York Times*, Gizmodo, BBC News, Slashdot, Yahoo! News: Top Stories and CNET News.com.) It is very easy for users to search for topics of interest and receive feeds from related sites and blogs (including facts and opinion on topics ranging from the New York Yankees to George Bush to Bruce Springsteen…). The key is that desired information, upon creation, is served to an individual's "always on" personalized Web page and the need to visit source Web sites to see if new articles have been posted is eliminated. All in, thanks to Yahoo!'s aggregation efforts, users get more information, they get it in a way that is organized / efficient, and their satisfaction rises. And, yes, the stickiness of My Yahoo! rises for its users, creating the potential for new revenue streams…

"Next generation content" should gain noticeable usage and revenue traction in 2005…

We believe Internet usage should continue to grow rapidly (20-30% annually for the next few years) as broadband usage continues to grow and as content providers continue to ramp their creativity and increase user engagement. Monetization of the usage—driven by improvements in advertising tools and targeting and integration of online payment systems—should rise at an even faster rate (30%+). We see the potential for next-generation content to positively affect Internet leaders including Yahoo!, Google and eBay as they leverage their distribution channels and/or content and services. In general, we believe ongoing improvements in the following areas will be important to watch: 1) search; 2) personalization; 3) user-generated content (including blogs, reviews, images and audio); 4) music; 5) short- and long-form video; and 6) accessibility (including mobile devices and the PC desktop). Net, we are moving nicely down a path toward every Internet user, in effect, having a personal media server… and if Yahoo! has its way, My Yahoo! will be the front-end to the server.

In this report, we highlight RSS, user-generated content (with a focus on blogs) and My Yahoo!...

Since our first "Digital World" report, published in 2002, we have used this series to discuss major events and inflection points related to the Internet that we thought were underappreciated. In this report, we begin with blogs, move into RSS, and a discussion of syndicated online content, and follow with thoughts on potential business models and a general outlook.

Exhibit 1
A Sample My Yahoo! RSS Page

Source: My Yahoo!, Morgan Stanley Research.

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Drilldown

From Morse Code to blogs…

In May 1848, ten men representing six highly competitive New York newspapers met to discuss pooling resources to collect the latest news from Europe. The newspapers at that time competed by sending reporters out in rowboats to meet the ships as they arrived in New York harbor. Competition had grown fierce and too expensive—the time for a news cooperative had come. It was named The Associated Press (AP).

The Associated Press cooperative was effective. Its roots quickly spread, from one correspondent in Halifax, Nova Scotia, to correspondents in the United States in Boston, Philadelphia, Washington and later to the Midwest. Using the telegraph and the language of dots and dashes known as Morse Code, the AP grew, and in 1875 became the first news organization to secure a leased telegraph wire. By the end of the century, the AP stood poised to become the largest newsgathering organization in the world during its next fifty years.

- The Associated Press – The First 50 Years (1848-1898)

The Internet is the most important medium since the printing press…When anyone can be a writer, in the largest sense and for a global audience, many of us will be.

- Dan Gillmor, journalist and blogger, *The San Jose Mercury News*, from his book, *We the Media*

User-generated content…

We have come a long way from Morse Code. Going back to the Associated Press in 1848, think what it would have been like if a sailor in New York harbor could have simply posted images, videos and commentary from his ship to the Web. For better or for worse, this and more are one big reality show today…

We were struck last year by just how far user-generated content had come. Our friend Rick Smolan, co-creator of the *Day in the Life* series of books, told us that 25% of the photos used in his 2003 book, *America 24/7*, came from mom-and-pop photographers and not from pros. Thousands of amateurs around the country armed with digital cameras went toe-to-toe with the best of the best. For sure, in any given setting, the pros probably out-shot the amateurs 100% of the time. But the amateurs outnumbered the pros, and they just happened to be in a lot of situations where they captured great images. Smolan and his team made it equally easy for the amateurs and the pros to submit their images to the team of photo editors by posting their shots on the Web — and post them they did. The results can be found at www.america24-7.com.

Web-based user-generated content is at the heart of some of the most relevant and fastest-growing applications we have seen on the Web (including eBay user feedback and message boards, Yahoo! movie reviews, fantasy sports game play, and blogs). For users it has created the opportunities for expression, community, and insight. Note that in just a few weeks, as of 10/25/04, the DreamWorks animated film *Shark Tale* had an impressive 11,500+ Yahoo! user reviews and 13 critic reviews. Here, users have the ability to watch trailers and clips at will…and it's not uncommon for parents and children to gather in front of their PCs to explore these reviews, trailers and clips again and again. For certain companies, user-generated content has created opportunities for increased user engagement, network effects and revenue streams. Parts of the community characteristics that eBay has been able to create on its site—driven in part by constant feedback and trade—have begun to rollout in size across the web. This is still early days on all fronts, but the trends are exciting.

Blogs…

Blogs are not for everyone. There are many gems to be found in blogs, but there is also a lot (like A LOT) of noise. That said, the sheer growth in the usage of blogs is a clear indication that there is significant user demand and that, in general, they are keeping the customer satisfied.

In many ways, blogs are the quintessential form of user-generated content. The word "blog" is an abbreviation of "Web log." A blog is a Web site where users can post their thoughts, typically about specific topics. New postings are at the top, while old postings appear below. Users can set up free blogs at sites like Blogger.com (owned by Google), MovableType.com, and TypePad.com. Blogs are the descendant of personal Web pages, USENET, Web message boards, bookmarks, link collections, and mailing lists. In Exhibit 2 we show an example from Gizmodo, a popular blog about gadgets.

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Blogs are important because they sharply lower the barriers to entry of producing a professional looking and frequently updated Web site. Microsoft, Geocities and Macromedia offer tools to create Web content, but they are often technically complex, and usually require significant training and expertise to use. Blogs, by contrast, are simple—if you know how to surf the Web, you know how to blog. In Exhibit 3, we show how we created a blog on Blogger.com in, literally, five minutes.

Exhibit 2
Blog Example – Gizmodo

Source: Gizmodo.

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Exhibit 3

Creating a Blog

Blogger

Create a **blog** in **3 easy steps:**
1 Create an account
2 Name your blog
3 Choose a template

A **blog** is your easy-to-use web site, where you can quickly post thoughts, interact with people, and more. All for **FREE**.

Publish thoughts
Get feedback
Find people
And more...

3 Choose a **template**

1 Create an **account**

Choose a user name — DepressedRedSoxGuy — You'll use this to sign in for future visits.
Enter a password — Must be at least 6 characters long.
Retype password — Enter it again just to be sure.
Display name — DepressedRedSoxFan — The name used to sign

! Creating your blog…

2 Name your blog

Blog title — Depressed Red Sox Fans — Enter a title for your blog.
Blog address (URL) — http://whatcurse — blogspot.com — You and others will use this to read and link to your blog.

OR

Advanced Setup — Want to host your blog somewhere else? Try Advanced Blog Setup. This will

Home | About | Knowledge | Help | Developers | Gear | Privacy | Copyright © 1999 - 2004 Google

! Your **blog** has been created!
We've just created a blog for you. You can now add your posts to it, create your personal profile, or customize how your blog looks.

START POSTING

WHAT CURSE? A RED SOX FAN SITE

SUNDAY, OCTOBER 24, 2004

Why do I get the feeling
…that this team might just might break my…, again, with 4 errors, they did everything they could to… first game of the World Series away, and it still turned out alright. Maybe we can calm down and enjoy the festivities, for what it's worth.

POSTED BY DEPRESSEDREDSOXFAN AT 3:54 PM   0 COMMENTS

SUNDAY, OCTOBER 17, 2004

Saturday's Drubbing
As my friend, Ethan, said, "Manny's b… feet sad." But at least, with a score of 19–8 (How mu… bet the New York Post puts a 1 where that dash should be?), we don't have to kick ourselves for the next sixty years about the bad baserunning, the mental errors, Bronson Arroyo's inaccurate arm, or magical gusts of wind.

Why do I get the feeling…
…that this team might just might break my heart again? Then again, with 4 errors, they did everything they could to give the first game of the World Series away, and it still turned out alright.

PREVIOUS POSTS
Why do I get the feeling…
Saturday's Drubbing

Saturday's Drubbing
As my friend, Ethan, said, "Manny's bad baserunning makes my feet sad." But at least, with a score of 19–8 (How much you wanna bet the New York Post puts a 1 where that dash should be?), we

Source: Blogger.com, Morgan Stanley Research.

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The pervasiveness of blogs…

In our experience, if there is value in something that is also easy / friendly to use, people will use it. Consider iTunes for legal music downloads or TiVo for digital video recordings—in both cases, a clean interface and intuitive controls spurred adoption. The simplification of blogging tools, such as those offered by Blogger.com, has allowed anyone with an opinion and an Internet connection to become a publisher, journalist, and editor (our humble definition of a blogger). And many users have done just that—the number of blogs has been doubling every six months, according to Technorati, a Web site that monitors blogs and reports over 4.1MM blogs as of 10/04. LiveJournal.com had 4.8MM users posting or accessing its site as of 10/04.
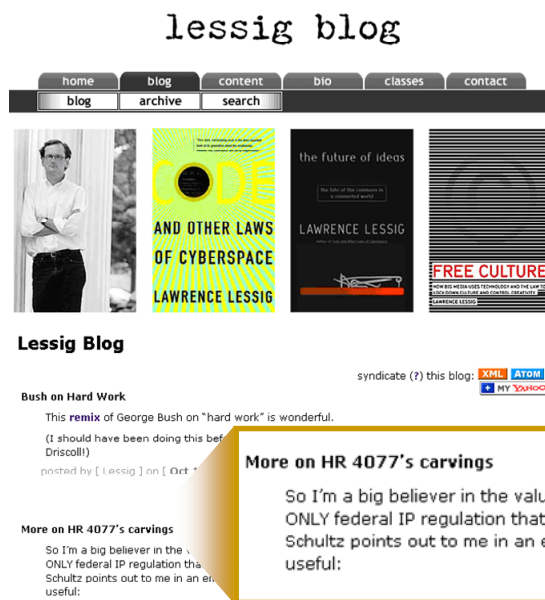
Despite all the noise and random content in blogs, many bloggers have become sources for breaking news, fresh ideas, and expert commentary. For an example of breaking news, consider that blogs had pictures of the 9/9/04 Jakarta bombing before the major news organizations, according to *The San Jose Mercury News* columnist and author Dan Gillmor. As for fresh ideas, bloggers were the first to insist publicly that CBS documents regarding President Bush's National Guard service record may be false—an insistence that ultimately proved true. With this election, blogs have really moved into the mainstream.

We believe that some of the best commentary comes from the thought leaders in a given subject matter. Consider Larry Lessig's blog from Stanford Law School. One of the world's foremost experts on cyberlaw, he regularly posts quick opinions and links on a range of topics, mostly centered on his expertise or his personal interests. Because he is considered to be a thought leader in the information flow, one may be able to find your required dose of quick news and opinions on cyberlaw issues more quickly via his blog than you would on a normal mass media site or publication.

Exhibit 4
Blogs and Expert, Specialized Commentary

Source: www.lessig.org.

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And if there are hundreds or thousands of thought leaders and motivated, interested parties on the Internet with the ability to publish news or insights into any number of local or global issues, then it is safe to say that these blogs often become both the first source of news, a vital proving ground for authors and a source of potential community for other interested parties. For example, you're probably going to get far more Boston Red Sox specific-content from a blog about the Red Sox made by a die-hard fan than you will from a random sports page, especially if you're after opinions and community.

The importance of aggregation / syndication for Web-based content…

For years now, a number of sites and tools have been available that help you track and find blogs, but we believe two things are now helping make this mainstream: widespread adoption of RSS and the recently launched and improved My Yahoo!. RSS is an open standard technology, not owned by anybody (like HTML), that allows bloggers to syndicate the articles and postings on their sites. A blog (like the one in Exhibit 5) that is "RSS-enabled" can broadcast feeds of article headlines and the

first few lines to interested users, with embedded links pointing to the content.

Why users are adopting RSS at a rapid clip is clear. Imagine that you want to stay current on a handful of topics and you'd like to receive news flow from a number of Web sites and blogs. Visiting each of these sites daily can take up a significant amount of time. For example, if you are a sports fan, think about how many times you may refresh ESPN.com just to see if "The Sports Guy" (Bill Simmons) has written a new story, or how many times you may have missed an important news story when focusing on other tasks.

The reason why bloggers need RSS is more subtle. Most bloggers want to expand their audience and have a limited or no marketing budget. So how can you draw time-crunched users to visit your site several times a day—especially when there are so many blogs and sites competing for users' attention? It seems to make sense to allow users to read your blog *when* they want it and *where* they want it. As we will show, with blogs surviving on viral marketing or word-of-mouth for the most part, an aggregated rating/feedback system could expand the markets for the most serious bloggers.

Exhibit 5
Blog Syndication

Source: www.lessig.org.

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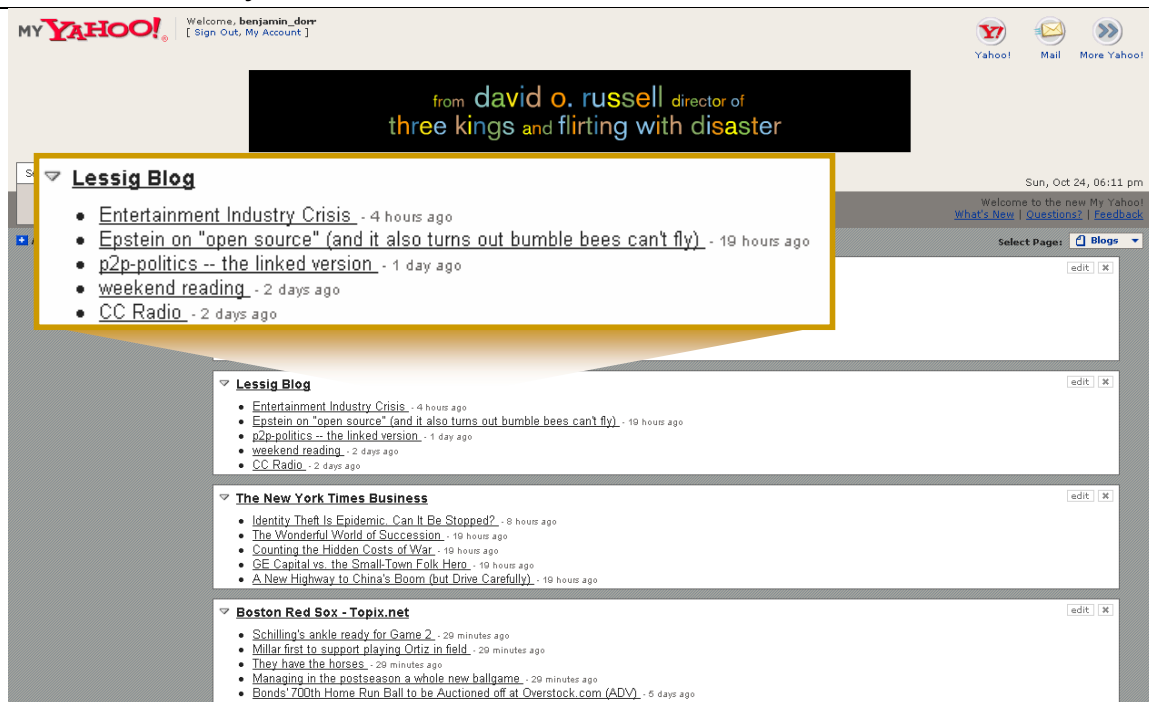***The importance of Web-based applications for syndication…***

We believe the propagation of syndicated Web content will be driven, in part, by Web-based applications. For example, while desktop applications like NetNewsWire and NewsGator provide powerful tools for organizing and reading RSS feeds, a universally available platform such as My Yahoo! provides for greater portability from computer to computer or from computer to other devices, without the need to deal with locally saved profiles. There will more likely be a market for both, but for syndicated content to overcome a "techie" stigma and reach the mainstream, it will most likely do so via the Web. Moreover, RSS

technology may not necessarily be the future standard for syndication; simply, we feel that RSS has become shorthand for syndication, in the same way that MP3 was shorthand for digital audio for the longest time. We believe that the simplicity of RSS is reminiscent of the simple user experience popularized by Google Search.

As shown below, My Yahoo! allows a user to keep track of the Lessig blog in a centralized location, along with other blogs and web site feeds of interest. RSS allows My Yahoo! to display the headlines and first few lines of the article or posting in a concise module on the page, similar to a sports or weather module (see Exhibit 6).

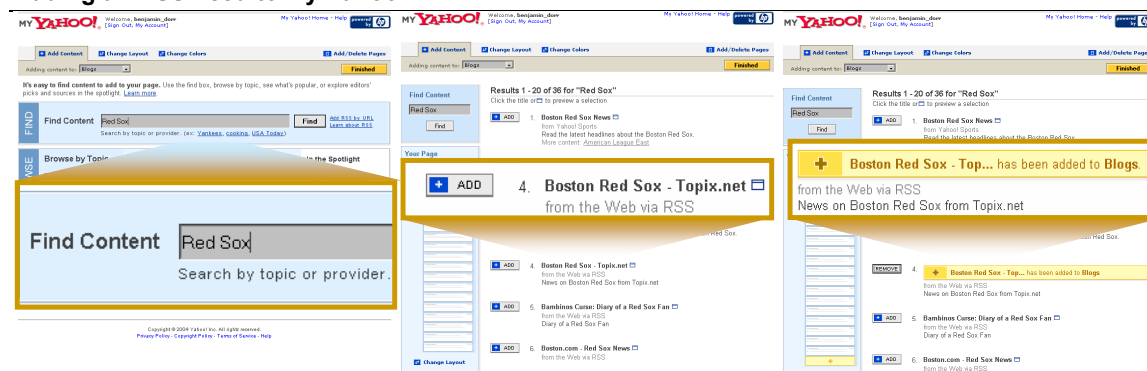Exhibit 6
Example of an RSS Feed on My Yahoo!

Source: My Yahoo!, Morgan Stanley Research.

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Although the My Yahoo! implementation is excellent, the technology is less interesting for us here than the prominence Yahoo! gave to RSS on the highly-trafficked My Yahoo! page, the #1 personal media page, according to Yahoo! reports as of 10/04. For example, Yahoo! allows users to find syndicated content through a My Yahoo! search (Exhibit 7), or through Yahoo! Search itself (Exhibit 8). When a search result for a user's query happens to be a syndicated blog, Yahoo! allows the user to add that blog to the user's My Yahoo! page. By integrating blogs with search, and by making it easy for end-users to find and add blogs, Yahoo! is playing a key role in driving blog readership and RSS usage among end-users.
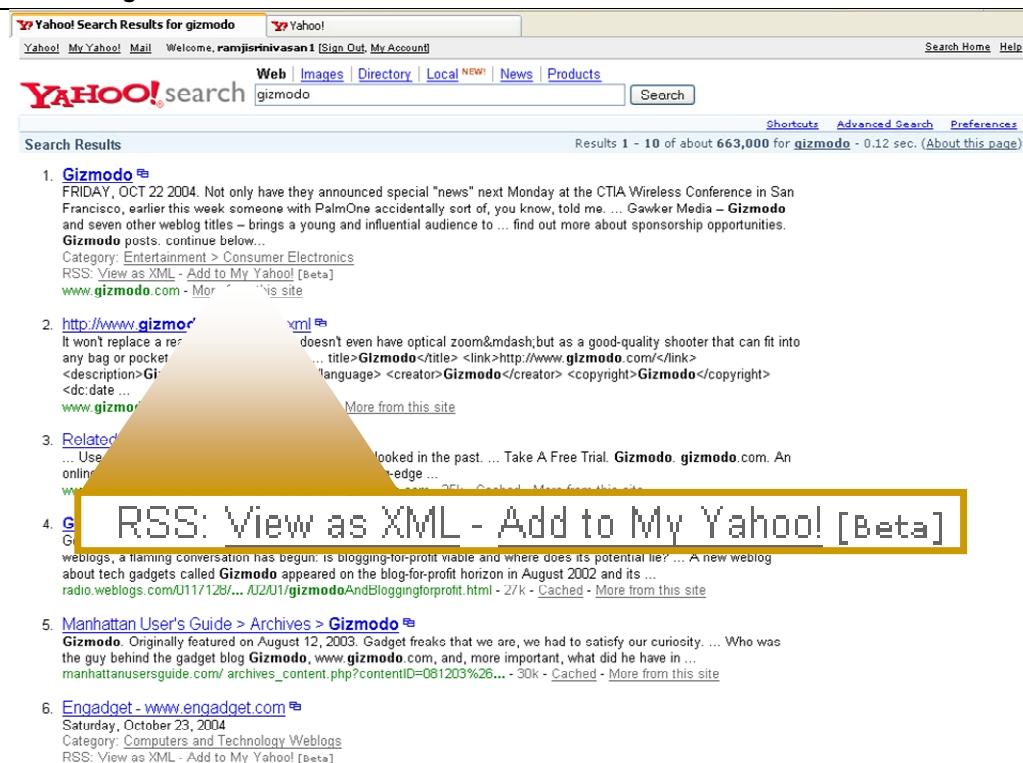
Exhibit 7

Adding an RSS Feed to My Yahoo!

Source: www.yahoo.com.

Exhibit 8

Finding RSS Feeds through Yahoo! Search

Source: Morgan Stanley Research.

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With mainstreaming of syndication comes potential for a business model in the "tails"…

The mainstreaming of Web syndication technology such as RSS through easy-to-use and popular services such as My Yahoo! could create a new business model / revenue stream for companies such as Yahoo!, as well as independent freelance Web journalists / content providers. We believe that blogs represent the traditionally hard-to-monetize tail of content, and the barriers to monetization are slowly being overcome.

We compare the Web-based content tail to how eBay often portrays its Web-based product content as a bell-shaped curve, with new/scarce products at one tail and niche/end-of-life products at the other, with the middle occupied by traditional, in-season retail, as noted in Exhibit 9. Notice that this curve describes the timeliness of a product versus its sales—for example, when iPod Minis debuted, they were limited in quantity and sold for well above their asking price on eBay: that is the left tail, the new/scarce opportunity. And as vintage wine and opera posters have come into fashion, eBay has often been a key outlet—that is the right tail, the used/vintage opportunity.

Exhibit 9

**eBay Opportunity In the "Tails" of Timeliness**
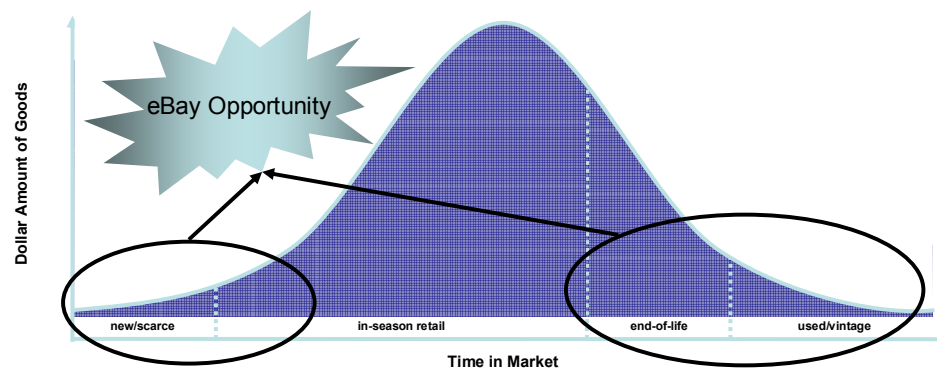
Source: eBay.

We believe that one could view Web content in a similar way, as noted in Exhibit 10. For news content, typically a few well-placed sources are privy to an event first, with the news then rushing into the mainstream. Traditionally, beat reporters disseminate the news to others; with online publishing, any individual with a keyboard (or a digital camera or other recording devices) can disseminate information quickly. At the end of the tail—as time goes on—the news becomes the subject of more nuanced discussion. While many blogs deal with mainstream content, their very nature makes them ideal for dealing with the tails at the beginning and the end.

Exhibit 10

The News Curve: How a News Story Evolves Over Time
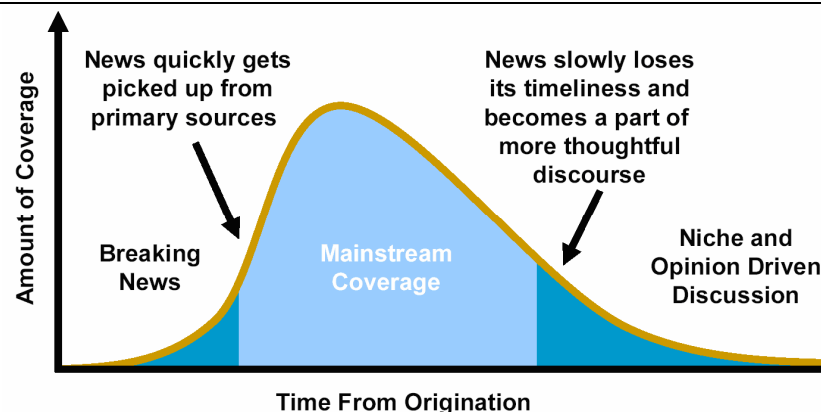
Source: Morgan Stanley Research.

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Now consider sources. In Exhibit 11, we place every source—be it from TV, Cable, Radio—on to a curve, and order them by number of viewers. For example, Yahoo.com and NBC TV could appear on the left hand side, while fringe Web sites like JibJab.com could appear on the right. We can draw some interesting segmentation of this curve as a result. For a Web site operator, it is easier to draw advertisers to one large site with millions of viewers than it is for a thousand sites each with a thousand viewers. However, for example, compared to eBay with hard-to-find products and Google with hard-to-find information, the market opportunity could be very significant for monetizing—or drawing advertising or easy-to-use payment solutions to—the thousands of disparate sources of published content (or what Chris Anderson, of Wired Magazine, dubbed "The Long Tail").

Exhibit 11

The Content Curve: How are Viewers Distributed Over Sources
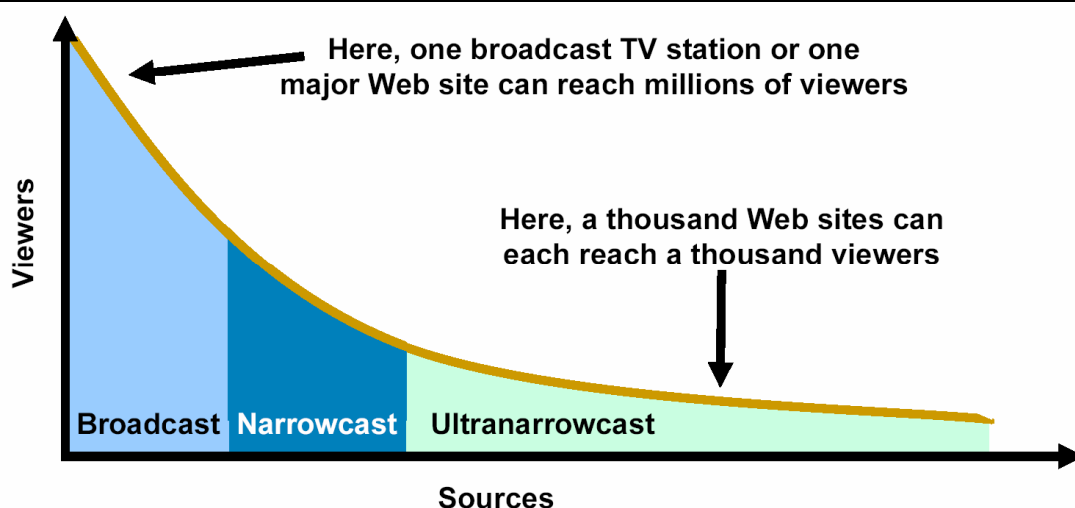
Source: Morgan Stanley Research.

Web content syndication technology such as RSS should help the likes of Yahoo! and its users to collect, organize and aggregate this new and evolving form of content from the hundreds of thousands of sources (channels) that provide it. RSS provides a structure to grab the headlines and summary of articles from a Web site. We believe syndication technology is one of the tools that through a virtuous cycle should propel Internet leaders such as Yahoo! further into the forefront of all media, albeit slowly and steadily. High-quality, unique, and cutting-edge content is critical for the growth of any medium. We believe advertising and fees for syndicated content present a potential business opportunity for the Internet leaders and content providers.

The promise of proprietary or differentiated content is extremely important for all types of media. Consider the recent example of Howard Stern and his planned switch to the Sirius Satellite Radio network in 2006 and the potential impact (for better or worse) on the public's perception of the satellite radio medium. The medium is nothing without the message, and for the Internet, the popularizing of syndicated content further enhances the medium as a democratized content platform.

What could drive the adoption of a sizeable and profitable business model?—a look at the stakes and the stakeholders…

We note some important parallels between what Google and Overture have done with their syndicated advertising networks, what eBay has done in creating a global feedback-driven, user-generated, shopping experience, and what any one of the Internet leaders could do with syndicated media, beyond the traditional link and aggregation portals that exist today. Yahoo! has created a strong and growing collection of both proprietary and user-generated content that engages users in a range of programmed service offerings. All in, the growth in content, users and usage helps drive growth in advertising inventory for Yahoo!. We believe the syndication of media/news sources will very likely create another market for sponsored/targeted online advertising.

For example, could a My Yahoo! RSS-fed blog page (Exhibit 12) be overlaid with sponsored links that generate revenue for Yahoo! as well as provide greater revenue sharing opportunity to independent Web sites? Or, could ads be inserted into existing RSS feeds directly? Google, by virtue of owning Blogger.com, could have an advantage

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in inserting ads directly into RSS feeds. Or, ultimately, could My Yahoo! accept smaller payments (through the seamless integration of a payment system) for access to certain content, with portions of the fees going to both Yahoo! and the source of the feeds? And, under what circumstances would a structure such as this make sense, for users, for publishers and for a company such as Yahoo!?

Exhibit 12
Potential Advertising Driven Scenario

Source: My Yahoo!, Morgan Stanley Research.

Exhibit 13
Potential Smaller Payment Driven Scenario

Source: My Yahoo!, Morgan Stanley Research.

1. *Yahoo! and others must overcome potential competitive pressures of an open syndication network and generate user volume for the support of advertising*

The open system of the Web/authoring tools has been one of the fundamental drivers of democratized journalism and content. However, an open system also creates strong competitive pressures. In order to keep that open syndicated structure in place, a user interface that supports advertising should be integrated with a number of additional features that could provide incentives for use over other ad-supported or non-ad supported reader applications. Some of these include integration with other Web usage profiles (including Web mail or personalized search), feedback systems and payment systems. We believe it is likely that some content could be supported by fees as opposed to advertising, and a payment system would provide that functionality.

We see different competitive advantages for the leading Internet companies: eBay's trustworthy buyer and seller feedback profiles as well as an easy-to-use global payment system; Yahoo!'s tight integration with Yahoo! Search and other Web applications, a seamless user experience and My Yahoo!; Google's massive information aggregation skills and content development tools (Blogger). All of these could be important in creating user experiences that enable users to ferret out which news sources are most relevant and what content may be worth potentially paying for.

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Remember, with publishing being so easy, it will be very important to be able to separate the wheat from the chaff.

Advertising, itself, may be a competitive advantage, in the end. Sponsored links have been so successful in part because they do improve the search experience, as they often make it easier for searchers to find what they are looking for. So too, could sponsored links related to syndicated feeds potentially improve the user experience. For example, if one develops a personalized syndication reader (such as My Yahoo!) focused on, say, indie rock, the Red Sox, watercolors, cyberlaw, and Internet stocks, sponsored links could offer new CDs, ticket services, sales on paints, new books, and investment services. These ads are relevant and perhaps, even more exploitable than the average search, as those interests are something that would be constantly piqued.

2. *The RSS user experience needs to improve, so that the aggregator can collect additional content, as opposed to mere links*

Today, the majority of RSS feeds provide links to pages or short summaries, but rarely do they provide all of the content that one might seek. David Sifry of Technorati notes that 31% of blogs have RSS feeds, and only 28% of those RSS feeds are full-text. Nevertheless, we see a potential virtuous cycle here. As we have mentioned, publishers seek a larger audience for their works, and potentially greater monetization for their sites. The major Internet players seek to expand audience, ad inventory and community engagement in order to increase advertising revenue, while users continually seek a better overall experience.

In our opinion, a company with significant syndicated readership volume could push for better-syndicated feeds in exchange for a portion of the advertising revenue it helps generate. In this way, a content provider such as Yahoo! may overcome any latent hesitation by an independent Web site to give up control of its content. Instead of users clicking on sponsored Google Ad Sense or Overture ads on the blog itself, they may click on them on My Yahoo!, with revenue going to both Yahoo! and the publisher. We believe that increased readership, as supported by user feedback and reviews, could balance the difference in percentage share. We believe this is the promise of RSS or future syndication technology, and many publishers (especially bloggers) would welcome more exposure to the mainstream. We can think of many failed personal content sites that may have

succeeded with greater exposure and potential for monetization. Nevertheless, there could be a business model that works on pure links alone, although it may be less favorable to the blogger. We are not suggesting one business model over another; rather, we are considering the stakes and levers of any number of potentially successful business models over time.

3. *Extension to images, audio and video*

RSS and syndication work admirably well for text feeds, but we believe a natural extension of the format could be to images, audio and video. For images, strong trends are already in place. For audio, an early version of syndicated feeds is podcasting. Podcasting allows users to subscribe to feeds of Internet radio shows through RSS. For the feed, a description of the show appears, along with an "announcement" to the RSS reader that an audio file is in the feed. The twist here is that—with free applications such as iPodder—the audio file is downloaded automatically and put in the playlists for your iPod.

Similarly, for video we could imagine, for example, a feed of the top Yahoo! Launch music videos or trailers from movies ranked 1-10 in box office gross receipts that one could subscribe to in My Yahoo!, from which the videos are automatically extracted and downloaded to your personal media player.

There are certainly copyright and payment issues to resolve, but we believe that podcasting is an interesting first take at an automated music syndication service. That said, putting our futurist hats on, we think a more likely path of development may be the following. One has a subscription (possibly for pay) to a music feed on My Yahoo!, and a high-speed, always-on Wi-Fi connection to your media player (be it an iPod or iRiver). As new music or new radio gets posted to one of the subscription feeds on My Yahoo!, the audio gets "pushed" and downloaded onto your device. Before the download goes through, your device could give you the option to confirm payment, if it is a "premium" feed. Clearly, there are many interim steps to get to this vision and a few more pillars (such as widely accepted digital rights management) that need to be in place, but we believe that a company—such as Yahoo!—that provides an aggregation point for amassing content coupled with a rating system for determining what content is worthwhile, could stand to realize substantial upside from media feeds and associated smaller payments.

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Contemplating the risks…

We do see additional challenges. Right now, many of the popular blogs run by independent journalists, in addition to Google's AdSense sponsored link technology, use donations (in addition to day jobs) to help support their platform. And when it comes to real news, somehow sponsored links would seem blatantly inappropriate, for example, if the topic was a natural disaster or war or death. A model such as this would seem to favor media content with some commercial intent, such as the popular consumer electronics blog, Gizmodo.com. In this situation, perhaps a model can be set up to collect and distribute the advertising fees generated by a given user's page.

Other difficulties may be legal ones. While RSS is an open medium, publishers who wanted to close off part of their content via copyright law could slow what should be a technical process akin to Google News aggregation. In the worst case, negotiating thousands of copyright agreements in the absence of a more open general agreement could be a weighty proposition for a content aggregator; this could result in a system that favors links rather than a more useful reading system. Grass roots cyberlaw movements such as the Creative Commons or the Free Software Foundation may provide structure for independent content providers to produce streaming/syndicated content without giving up one's true intellectual property rights. We suggest taking a look at www.pumpaudio.com for a creative take on a business model for paying musical artists. In addition, if online payment systems (like PayPal off eBay) gain more traction among users and vendors, it's conceivable that content providers will be able to be more effective at asking for digital content product payments, and actually receiving payments…

On the other hand, users must also start dealing with privacy issues and information collection. What one searches for provides certain challenges to maintaining privacy. What one reads opens up a Pandora's box of issues, as it gets to the very heart of privacy and, to many, free speech. An important precedent in this regard may come from attempts by Google to address privacy concerns in Gmail by declining to collect information with regard to served ads in email.

Finally, the content aggregator may have to deal to with liability problems, with regard to libel, slander and obscenity, those persistent free speech issues that traditional mass media must always consider. The pocketbook of a successful Internet company looks more inviting than the pocketbook of a revenue-sharing blogger. What constitutes implicit distribution of slanderous or libelous material? This could be a significant governor on what these distribution mechanisms ultimately look like.

The promise of user-generated content…

Let's take this back to the beginning. We see many similarities between this emerging model and historical precedent, as we understand it, with the help of Morgan Stanley Publishing analysts Doug Arthur and Lisa Monaco. Consider how the Associated Press, Reuters, or freelance journalists work. The Associated Press pays reporters a salary or a per article stipend. The Associated Press then receives revenue in the form of a per-article amount or packaged subscription from each paper that syndicates the article. On the other hand, freelance journalists often retain copyright to their work and receive some amount for each paper that publishes the article. In our model, Yahoo! potentially serves as an "agnostic" Associated Press, collecting freelance pieces from the Web, and distributes a portion of revenue generated by advertising in each one of its syndicated papers, meaning each of those personal syndicated feeds that users set up. It is not unlike Google's AdSense for Content platform, but in this case the entire service is done within the confines of a single site.

We would like to think that the popularization of syndicated content could further fulfill some promise of an engaging, useful and vibrant user-generated medium on the Internet. This does not suggest the end of mass media, either broadcast or narrowcast, but it could represent significant changes in consumption and monetization. If the Internet is a marketplace of ideas, then the best ideas should float to the top, with traditional mass media perhaps serving as a tool for legitimizing/establishing discourse. The driver for Yahoo!, eBay, Google, Microsoft and Amazon.com's Internet successes has been their never-ending quest to create the perfect, seamless user experience—in other words, they do right by their users. What open syndication shows is that by doing right by their users and independent publishers, they also have the potential ability to do right by investors, in our view.

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Updates from the Digital World – An Overview

Since our first "Digital World" report, published in 2002, we have used this series to discuss some major events and inflection points related to the Internet that we thought were underappreciated. Below, you will find a list of our "Digital World" reports to date. In this report, we update our Internet Ecosystem Framework and review current trends for key Internet usage and user metrics.

- **Update to our Internet Ecosystem Framework**

February 2004: We compile what we believe are the most relevant publicly available metrics that represent key market trends in various parts of the Internet usage/user spectrum.

- **Who Has the Momentum?**

November 2003: To determine which Web sites are supporting the greatest growth momentum, we reviewed multi-factor rankings aggregating absolute and sequential trends for visitors, page views, and usage minutes at 1,217 leading properties/sites (using US Media Metrix data). Growth trends for advertising, commerce, content, and community continue to look encouraging.

- **Microsoft, it's the Sound of Online Music?**

June 2003: In our view, the day (May 29, 2003) that Microsoft agreed to pay AOL Time Warner $750MM to settle the lawsuit related to Microsoft's Netscape-targeted business practices marked an end, and a beginning, for the evolution of the Internet. To put this event in a historical context in our report, we told a short story of the evolution of the commercial Internet to date. Recent data related to online music — a natural SFO business — gave us the sense that music could, finally, become a catalyst that changes the rules of the game in the evolution of the Internet. We also focused on Microsoft's front- and back-end Internet-related initiatives with forthcoming releases of Internet Explorer, MSN, and Windows (Longhorn), and ongoing developments to the company's Web services (.NET) efforts.

- **What's New at Yahoo!?**

April 2003: We focused on the positive core secular trends in Internet advertising and drilled down on Yahoo! as a proxy and driver of these trends. In addition, we touched on what we saw as an impressive list of improvements by Yahoo! to provide a better experience for users and more effective marketing for advertisers.

- **Who's Keeping the Customer Satisfied — and How?**

Late-March 2003: Internet leaders such as Amazon.com, eBay, and Expedia had just scored strong relative results in customer satisfaction in the highly regarded American Customer Satisfaction Survey. Convenience, low (and transparent) prices/pricing, uniquely strong 24x7 customer service, and extensive selection had long been key factors behind the growth for leading online commerce (and information) sites. These attributes were becoming increasingly apparent to us (and measurable). Owing in part to the power of their technology platforms, Internet leaders were raising the bar on customer satisfaction and loyalty.

- **What Brought on the Strong Momentum of CQ4:02?**

March 2003: In addition to improvements in the SFO experiences of the Internet, a key part of the answer may have been the scale and ramp of residential broadband usage, which made possible the emergence of what we saw as a group of Internet-enabled "power consumers."

- **The Great Online Migration — Is eBay a Replay of New York City's 18th Century?**

February 2003: We focused on the relevance and magnitude of sellers and buyers migrating online, as illustrated by eBay's momentum, and we drew some historical analogies to the dynamics of the settlement and growth of New York City.

- **Is Search/Find/Obtain (SFO) Becoming the Internet's Third Killer Application?**

December 2002: Our first "Digital World" report examined online vs. offline momentum related to expanded global distribution, lower relative pricing related to transparency and the ramp in the sale of used goods, and the rising impact of replacement products.

All of Morgan Stanley's equity research technology reports are available on the Internet through Client Link on www.morganstanley.com. If you wish to receive this service, please contact your institutional sales representative. All of the above reports (along with other technology overview reports) also can be downloaded from www.morganstanley.com/techresearch. For our thoughts on companies mentioned in these reports, see our company-specific reports.

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Total	1,827		656		

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