

# Blogging, RSS and the Information Landscape: A Look At Online News

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## ABSTRACT

This paper explores the effect that blogs have had on the adoption of RSS syndication by online news web sites. It uses the diffusion of innovation models presented in Everett Rogers' *The Diffusion of Innovation* and Brian Winston's *Media, Technology and Society* to explain the relationship between RSS, blogs, and online news.

**KEYWORDS:** Blogs, blogosphere, RSS, XML, syndication, communications, mass media, newspapers, public opinion.

## INTRODUCTION

In 1994, the *San Jose Mercury News* launched the first online newspaper, leading a change in both print and electronic media. In 1998, the *Charlotte Observer* used a blog-like format to report on Hurricane Bonnie. And in 2000, the *Wall Street Journal* launched a blog-like feature called "The Best of the Web." Not only were mainstream media online, some were experimenting with new technologies. [8]

The word "blog" has many constructs: it can represent an action (to blog), an end product (a blog), or a technology (software that enables blogging). There is no clear distinction between the technology and the product, unlike, for example, newspapers. A newspaper (an end product) is printed (an action) on newsprint (a technology); the words clearly differentiate the technology, action and product. Many things are printed on newsprint, but we don't confuse them with "newspapers." In fact, the differentiation is so clear that we understand what is meant by the phrase "on-

line newspaper" – which is the content of the "printed" product, re-packaged and delivered in electrons instead of paper and ink. This is not yet the case with the word blog, nor, as we shall see, is it the case with RSS.

This paper explores the effect that blogs (the end product) have had on the adoption of a related technology, RSS, by online newspapers. It uses the diffusion of innovation models presented in Everett Rogers' *The Diffusion of Innovation* and Brian Winston's *Media, Technology and Society* to explain the relationship between RSS, blogs, and online news. The paper first explores the origins of RSS technology before moving to its adoption and diffusion. It then outlines adoption and barriers to adoption in the online news sector.

## 1. RSS Technology

RSS is an abbreviation for Rich Site Summary, Really Simple Syndication, RDF Site Summary, or a variation on any of these names. It is an XML document that facilitates content syndication.

Regardless of its specification, an RSS file, known as a "feed,"<sup>1</sup> contains structured data – headlines, dates, authors, content summaries. Web site publishers or individuals can subscribe to a feed, which is transformed from data to information by an RSS reader.<sup>2</sup> [18]

RSS allows an information publisher to easily syndicate (feed) content headlines or blurbs; other web sites can publish this information at no cost to either party. The feed becomes as a form of free advertising for the original publisher and also allows the ideas embodied in that feed to easily spread throughout the Internet.

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<sup>1</sup> RSS files are also known as news feeds, RSS feeds, and XML feeds. The technology is referenced as both syndication and subscription. The lack of a common nomenclature may inhibit diffusion.

<sup>2</sup> RSS readers are sometimes called news aggregators.

After subscribing to an RSS feed, an information consumer automatically sees new content offerings (headlines and blurbs, with a hyperlink) in her news reader; she does not have to visit the original website to see if there is new content. To read or hear the entire story, however, the consumer must usually follow a hyperlink to the original publisher's web site.

### 1.1 Development Timeline

Netscape created the first RSS specifications, 0.90 and 0.91, in March and July, 1999. The goal was to allow information such as news headlines or content summaries to be easily published on web site portals like Netscape.com. Web site visitors would see customized content that was updated often, but the customization would happen via technology, in the background, without the need for (more costly) human intervention.

Netscape lost interest in the portal business after being acquired by America Online and abandoned the prototype. Although the specification document remained publicly accessible on Netscape.com until 2001, there were no organized efforts to spur its adoption.

In June 2000, almost a year after Netscape published RSS 0.91, Dave Winer of UserLand published yet another RSS 0.91 specification; it was incompatible with the Netscape version. UserLand was not interested in the portal business and, instead, planned to integrate the technology into its blogging software.

The RSS-DEV Working Group released RSS 1.0 in late 2002. It was compatible with none of its predecessors, but it gave homage to Netscape's 0.90 because both were based upon RDF<sup>3</sup>. UserLand was not interested in the more complex RDF-like syntax and followed a parallel development path.

From April 2001 to January 2003, UserLand released several versions of the specification, culminating in RSS 2.0.1. It has since remained unchanged, in order to help facilitate its adoption. [17, 20] From the RSS 2.0 specification:

RSS is by no means a perfect format, but it is very popular and widely supported. Having a settled spec is something RSS has needed for a long time. The purpose of this work is to help it become a unchanging thing, to foster growth in the market that is developing around it, and to clear the path for innovation in new syndication formats. Therefore, the RSS spec is, for all practical purposes, frozen at version 2.0.1. [19]

Freezing the specification helped developers of RSS

readers and RSS syndication tools: they were no longer shooting at a moving target.

The nascent market for RSS readers was poised to take-off in 2003. For example, Pluck – which markets a product by the same name that turns Microsoft Internet Explorer into a RSS reader – was launched in 2003 and has received \$2 billion in venture capital. Its software received a cNet editor's choice rating in July 2004; a commercial version debuted in February 2005.<sup>4</sup>

Nevertheless, yet another syndication technology has appeared on the scene: Atom. Major industry players like IBM and Google threw their support behind Atom in 2004. [6]

### 1.2. RSS Diffusion

This development path reflects Winston's theory: inventions begin with an idea. A technologist (or two or more) envisions a problem, and then begins to methodically test solutions. However, if there is no supervening social necessity, the prototype – even if technically functional – will not achieve widespread adoption. When there are competing, incompatible prototypes, the adoption rate will slow. [24]

Rogers defines innovation (the invention) as “an idea, practice, or object that is perceived as new by an individual or other unit of adoption.” (p 11) It doesn't matter if the invention is truly new; it must be perceived as new. He describes five characteristics that help explain why one innovation might be adopted at a different rate than another, based upon the perception of the social system:

- Relative advantage over current practice
- Compatibility with current practices and values
- Reduced complexity (ease of use)
- The opportunity to test before committing (trialability)
- The ability to observe results before adoption (observability)

According to Rogers, diffusion is a type of social change, described in a five-step model. The potential adopters of an innovation must first hear about it; then they must be persuaded as to its benefits. If the persuasion is successful, they will decide to adopt the new technology. After trying the innovation, they will confirm or reject their decision to adopt the innovation.

In the first step – the communication – messages focus on an idea. Messages are shared by members of a social system; these members have a common goal and can be individuals, groups or organizations. The culture and mores of a social system can affect the diffusion. [21]

<sup>3</sup> RDF stands for Resource Description Framework; see <http://www.w3.org/RDF/>, accessed 5 March 2005.

<sup>4</sup> From <http://www.pluck.com/>, accessed 4 March 2005.

What was the status of RSS diffusion in January 2003? Lexis-Nexis data-mining<sup>5</sup> reveals a technology that was not yet being communicated through two important channels: news wires and major newspapers.

News wires include, but are not limited to, announcements from businesses about new products and services distributed via PR Newswire and Business Wire. These announcements may not make their way into print but they serve to inform other members of the social system. For calendar 2002, there were 20 instances of wire stories that mentioned blogs; there was only one that mentioned RSS syndication.

Even though the popular press was beginning to discuss blogs in 2002, RSS was non-existent in that communication channel. A Lexis-Nexis search of major newspapers, which reach a broader social system, found 123 instances of “blog” or “blogger” in 2002. Not one story mentioned RSS syndication. Thus, early adopters<sup>6</sup> would be hard-pressed to answer if asked “what is RSS?”

Any attempt to explain the relationship between the adoption of blogs and the adoption of RSS technology must also acknowledge the burden that RSS version incompatibility placed on developers of RSS readers. In addition, potential readers of RSS feeds faced the burden of finding and installing a piece of software. As Associated Press Technology editor Frank Bajak wrote in February 2004:

Alas, you'll not find the tools for handling RSS in your Microsoft Windows operating system. Not yet, anyway. You've got to go out and get them, just like you had to download Netscape or one of its competitors in 1994 when you wanted a Web browser. [1]

Diffusion requires a common message and an infrastructure that fosters interoperability and ease of use. There must be some advantage over existing practice. The growth of the blogosphere highlighted problems with existing practices, a problem that RSS readers were designed to resolve.

## 2. Blogs and the Information Consumer

Blogs are online journals that are characterized by reverse chronological publishing; regular, date-stamped entries; links to related online documents; accessible archived content; and an RSS (XML) feed for syndication. [8]

When UserLand developed RSS 2.0, there were approximately 500,000 blogs, by one estimate. In March

<sup>5</sup> Methodology: Lexis-Nexis Academic search for “blog” or “RSS Syndication” for the time periods and media referenced in the text; University of Washington, Seattle. 2-3 March 2005.

<sup>6</sup> Early adopters are one of five categories of social system members identified by Rogers [21]. In order of adoption, they are innovators, early adopters, early majority, late majority and laggards.

2005, estimates ranged from 8 million to more than 24 million blogs. No one knows. All we know is that the technology adoption has exploded since 1998’s handful of blog-like sites. The number of people going online also continued to grow throughout this period, and their information foraging patterns changed. [8, 25]

In the spring of 2002, the Pew Internet and American Life Project began asking Americans about blogs; about 3 percent of the respondents said that they had created a blog for others to read. By early 2004, that number had grown to 5 percent; in November 2004, it was up to 8 percent.

But was there an audience for those blogs? In a March 2003 survey, Pew Internet discovered that 11 percent of those going online said that they had read blogs. By early 2004, the number of us who said we read blogs jumped to 17 percent. As 2004 drew to a close, 27 percent of the 120 million US adults using the internet said that they read blogs. [16]


The 2004 presidential election is credited with increasing the visibility of blogs among mainstream readers. In July, both parties announced that bloggers would be given press credentials. In November, about 9 percent of Pew survey respondents said that they regularly read political blogs during the campaign. Then *Time* magazine named Power Line blog its first Blog of the Year. And in March 2005, the White House gave a press pass to its first blogger. Blogging has gone mainstream. [5, 10, 15, 22]

However, for the purpose of exploring the diffusion of RSS readers, the significant change in the blogging social system is the increase in readership. Most publishers (bloggers) can easily syndicate their content because the functionality is integrated into their blogging software.<sup>7</sup> Thus, they propagate the news feed effortlessly. It is easy to identify a website that has RSS feeds and is actively promoting subscription: they place the RSS “branding” icon<sup>8</sup> in a prominent position on the site.

This “build it and they will come” practice has spurred RSS feed growth. Technorati<sup>9</sup> was tracking 7.7 million blogs in March 2005, compared with 2 million in March 2004. [8] The number of RSS feeds tracked by Syndic8.com<sup>10</sup> has grown from 2,500 in mid-2001 to 286,000 in January 2005. [3]

Since the advent of the technology, RSS news readers have been moving into the marketplace, some free, some commercial. However, until recently, to actually subscribe to and consume RSS feeds, the consumer had to be willing and able to research readers, find the download site,

<sup>7</sup> Examples include Blogger, Movable Type, Manila, or RadioUserLand.

<sup>8</sup> This icon is used to advertise the availability of RSS feeds and usually links to the feed itself: 

<sup>9</sup> <http://www.technorati.com/>, accessed 6 March 2005

<sup>10</sup> <http://syndic8.com/>

download and install the reader, and then learn how to use the new software! In other words, even though news reader developers had figured out how to resolve the RSS feed incompatibility issues, there was still a technological hurdle, keeping the technology at the early adoption state. [9]

Despite this burden, regular blog consumers wanted a better way to keep track of changes than visiting every blog website. In late 2004, 5 percent of Pew survey respondents, more than 5 million Americans, said that they used an RSS reader to keep up with blogs and “content-rich” web sites. According to Pew, these information consumers are “classic early adopters: veteran internet users, well-educated, and relatively heavy online news consumers.” [16] In addition, they are a prime demographic for online newspapers.

Data from Lexis-Nexis reflect this rise in visibility. Data-mining shows RSS mentions in news wire reports increased significantly from 2003 to 2004. The growth spurt lags that of blogs by a year.

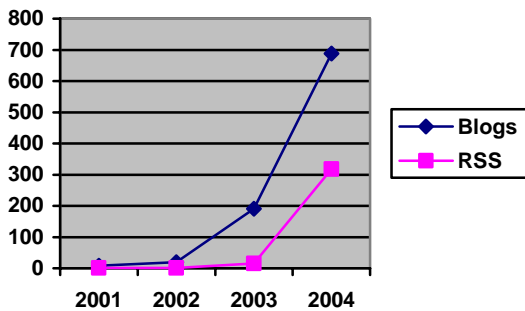


Figure 1: Frequency of Appearance of “Blogs” and “RSS Syndication” in Lexis-Nexis News Wire Reports, 2001 – 2004.

The growth in RSS feeds, which is directly related to the growth of blogs and blog postings, spurred the development of easy-to-use RSS readers. Ease-of-use is one of Rogers’ five characteristics needed to achieve adoption. In 2004, Yahoo! launched a beta version of MyYahoo! that incorporated point-and-click subscription to a limited number of RSS feeds. [26] Jeremy Zawodny, a Yahoo! developer and RSS evangelist, told InternetNews.com in September:

This not only makes My Yahoo relevant in the modern wave of syndication, it does something else – something that Yahoo is in a unique position to do: bring RSS to the masses. [14]

Yahoo! Now serves more than 7,000 feeds. [2] Not all are RSS feeds, although it’s reasonably easy to add your

favorite if it’s missing from Yahoo!’s inventory. Yahoo!’s Zawodny: “We’re trying to make this understandable for normal people.” [27]



Figure 2: Screenshot of MyYahoo! RSS Management

In summary, the growth of the blogosphere has fostered a social system where prior practice – visiting individual web sites to see if blogs had been updated – is cumbersome. The rise in the number of people reading blogs has produced a positive climate for the awareness of and adoption of RSS reader technology. But what does this mean for mainstream newspapers?

### 3. Online Newspapers

All major newspapers have an online edition today; even many small, rural weeklies publish a limited online edition. The repurposing of printed content to electrons is a business decision made by an industry that continues to suffer declining readership of its printed product. [4]

Newspapers began reporting on the blogosphere and the blogging phenomena in 1999, but have been slow to adopt the technology or the publishing format. There are more newspapers with editorial columns “called” blogs than there are that actually publish blogs. This slow or reluctant adoption is possibly a result of a social system and values at odds with the new medium. Blogs represent, in the main, the antithesis of the values articulated by objective journalism: they are personal, passionate, subjective, and not subject to editorial oversight.

The first cousin technology, RSS, however, is another story.

Syndication is a concept newspaper editors and publishers understand. It is also an integral part of their social system; in other words, it’s not strange or new.

The *Christian Science Monitor* has been an innovator, implementing an RSS feed in October 2002 that



encompassed the entire newspaper.<sup>11</sup> This is a five-day-a-week newspaper with a daily circulation of 69,000 and an online readership of 1.7 million per month. Today the paper offers 25 different RSS feeds, encoded as RSS 1.0. Publisher Stephen Gray:

I look at the Web as an opportunity to have a million doorways to the Christian Science Monitor. I think of it as a progression from one end, where it's free, to the other end, where it's paid. The pipeline has to be really big at the out end to bring in lots of beginners if you want to maximize the number of subscribers at the other end. [12]

An examination of the daily newspapers in the top 15 urbanized areas of the United States (which accounts for about 65 percent of the US population), shows that the overwhelming majority have some form of RSS feed. All have been implemented since late 2003.<sup>12</sup>

In seven of the 11 urbanized areas, the newspapers have adopted RSS 2.0, making it the clear market leader. Two use RSS 1.0, and two use RSS 0.91.

Of the 18 mainstream newspapers reviewed, only four have no official RSS feed: *the Los Angeles Times* (#2 urbanized area), the *Chicago Tribune* (#3), the *Miami Herald* (#5) and the *Atlanta Journal-Constitution* (#11). There is no simple explanation for this absence. The *LA Times* and the *Chicago Tribune* are owned by Tribune Publishing; joint ownership suggests this may be a factor. However, the *Miami Herald* is owned by Knight-Ridder, and the *Atlanta Journal-Constitution* is owned by Cox Enterprises.<sup>13</sup> Each of these papers are in Southern, red states, not characterized by above average computer use in the home.<sup>14</sup> [23] Perhaps the lack of an RSS feed reflects the characteristics of the social system in those two states.

Then again, AJC.com's editorial director wants to gain the desktop presence that accompanies RSS, but says "if we're going to do it, then we have to have our own reader or our own branded reader." [10] The statement suggests a misunderstanding of the technology; this path would build yet-

<sup>11</sup> <http://www.csmonitor.com/rss/>

<sup>12</sup> Methodology: US Census data were used to identify the top 15 urbanized areas in the US. Only one newspaper was picked to represent each market, except in the three markets that have two newspapers with joint operating agreements; thus, 18 papers were examined. The data were collected by visiting each web site and looking for the phrase "RSS" or "XML" as a hyperlink as well as looking for the RSS-branding image. Identification of papers without a feed under the management of the paper was confirmed using Newsgator; feeds available through third parties are not included in this study.

<sup>13</sup> Data from Columbia Journalism Review, <http://www.cjr.org/tools/owners/>, accessed 4 March 2005.

<sup>14</sup> Categorization of "red" and "blue" states is based on voting Republican or Democratic in the last two Presidential elections; it is an artifact of the demarcation system used on electoral maps by television news media in 2000.

another technological barrier for consumers to overcome.

Most newspapers have more than one feed. One, the *Washington Post*<sup>15</sup>, has more than 125 (encoded as RSS 2.0, launched March 2004). The number of official feeds for these 14 newspapers ranges from 1 – 125 with an average of 34.9; the median is 29.

The first daily to endorse the technology appears to have been *the New York Times*.<sup>16</sup> In April 2002, the Times announced it had reached an agreement with UserLand to syndicate content using RSS. Initially, this content was available only to UserLand customers. Sometime before February 2004, the Times moved its RSS feed to the broader web audience. [11, 13]

Why should newspapers consider implementing an RSS feed? According to Eric Bauer at the Boston Globe, "... if you're a newspaper site ... I think news content is particularly well suited to RSS ... it auto updates and ... it allows the user to sort of control the clutter." In addition, those papers that have launched feeds have seen an increase in page views. Boston.com reported a 10-fold increase in traffic within six months of implementing RSS, with the only marketing being the RSS link on the home page. [10]

Online newspapers had already been using e-mail as one way to communicate "what's new" on the web site. Microsoft Chairman Bill Gates told attendees at the 2004 CEO Summit that RSS

...get[s] away from the drawbacks of e-mail – that it's too imposing – and yet the drawbacks of the Web site – that you don't know if there's something new and interesting there -- this is about solving that.

The ultimate idea is that you should get the information you want when you want it... [7]

Whether to have a feed and how many feeds to enable appears to be an editorial decision, distinct from the publishing system. For example, in three of the 15 markets, competing newspapers have co-management.<sup>17</sup> In Philadelphia, the *Inquirer* offers 16 feeds and the *Daily News*, 2; the papers began the service in December 2003.<sup>18</sup> *The Detroit News*<sup>19</sup> offers 35 feeds, but the *Detroit Free Press*<sup>20</sup> only one. The *Seattle Times*<sup>21</sup> offers 45 feeds, and

<sup>15</sup> <http://www.washingtonpost.com/wp-adv/rss/front.htm>

<sup>16</sup> <http://www.nytimes.com/services/xml/rss/>

<sup>17</sup> The Philadelphia papers (urbanized area #4) are both owned by Knight Ridder. In Detroit (urbanized area #9) and Seattle (urbanized area #14), the papers operate under a Joint Operating Agreement but are owned by different media firms.

<sup>18</sup> <http://www.philly.com/mld/philly/7444190.htm>

<sup>19</sup> <http://www.detnews.com/includes/rssfeeds.htm>

<sup>20</sup> <http://www.freep.com/>

<sup>21</sup> <http://seattletimes.nwsourc.com/rss/>

*the Seattle Post-Intelligencer*<sup>22</sup> only 27.

Almost all of these papers require free registration to access content. Almost all archive stories after one day or one week, imposing a “pay to read” barrier to access the archive. An “archive after a week” policy has only a minimal impact on information consumers who are using RSS readers; the reader accesses and displays the most recent content. However, it is a potential barrier to having a story referenced by a blogger, since free access to the linked content is limited.

Why did online newspapers decide to adopt RSS technology at such a breakneck pace? Unlike blogging, which does not fit the social system, syndication is an understood concept. Enabling free syndication, however, requires culture change. Data suggest that the growth in blog readership, coupled with easier-to-use technology for reading RSS feeds, appealed to editors and publishers eager to bring new eyeballs (and page impressions) to their online news sites. The business model for online news continues to evolve; RSS may be one step in that evolution or it may be a keystone. Only time will tell.

## CONCLUSION

RSS technology evolved alongside blogging technology, although RSS adoption has lagged blogs by at least a year, based on Lexis-Nexis data-mining. Developers eager to create software to decode RSS feeds were hamstrung by a fairly rapid series of specification changes, with each subsequent revision incompatible with prior iterations. A temporary freeze of the specification in early 2003 appears to have stimulated both adoption and investment in RSS reader technology.

In this model, the absence of a supervening social necessity and competing protocols caused RSS adoption to languish. Blogs provided a social need for RSS, not unlike the railroad providing a need for the telegraph. The resulting change in social conditions positioned blogs as a technology accelerator.

The 2004 Presidential campaign stimulated blog readership. The rise in the number of blogs that an online consumer wanted to check regularly for updates created time management pressure. This fed the demand for easy-to-use RSS readers. RSS reading technology has been mainstreamed with its integration into MyYahoo!. Newspapers, a traditional medium comfortable with both the text emphasis of RSS feeds and the culture of syndication, have adopted this new syndication technology at a brisk pace.

Areas for future research include the impact of podcasting (RSS feeds announcing audio and video files) on radio and

television; the use of RSS by business and e-commerce; and the effect of Atom on RSS adoption.

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