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RSS – MORE THAN JUST NEWS FEEDS

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RSS (Really Simple Syndication/RDF Site Summary) is a simple lightweight format that was originally used for news alerts and content syndication. It is now being used in a wide range of applications. This paper describes the background to RSS and describes the various ways in which RSS can be used. Examples are provided of the ways in which RSS can be viewed and the variety of approaches for creating RSS. The paper argues that, although there is still confusion over the different types of RSS standards, the format is an essential for use in digital library services.

Background

The roots of the RSS (which, confusingly, can stand for both Really Simple Syndication and RDF Site Summary) format date back to the mid 1990s. Once the Web had demonstrated its rich potential and had moved from its research and academic roots to use by the general public, many organisations began to explore ways in which they could enhance the services they provided. An early innovation was provided by the BBC (British Broadcasting Corporation), which developed an application that made use of 'push' technology to send news to a desktop application, which continually displayed the news using a tickertape display, as illustrated in Figure 1. The news content was continually updated, so there was no need for the users to 'go' to a particular Web page.

This approach proved very popular. It became clear that many users valued this type of interface and the push approach it provided. There was a need for a similar approach to access information provided by other information providers, and not just the BBC. Similarly there was a desire by information providers to deploy similar services. However the BBC's approach was proprietary, making use of an internal file format developed by the BBC and their own desktop application. There was a need for an open format that could be used to provide access to news feeds. The availability of an open file format would provide benefits of scale and help develop a market for viewers and authoring tools.

Netscape's Contribution

In the mid 1990s Netscape was the most popular Web browser. Netscape sought to exploit that position by developing a Web portal that provided access to Web resources. An innovative feature of the Netscape portal was its personalisation capabilities: rather than providing a static list of resources, users of the My.Netscape portal could select the information sources of interest to them. This could include 'channels' of local weather reports, information on preferred TV channels, etc. In order to access to the channels Netscape developed a file format known as RSS, which stood for Rich Site Summary. This format could

FIGURE 1
The BBC News ticker

be used by any content provider who wished to allow their content to be accessed through the My.Netscape portal.

RSS Wars

The approach developed by Netscape proved popular. Unfortunately, around this time, Netscape was suffering from competition from Microsoft and the company was undergoing changes as a result of company mergers and a refocusing of its business activities. As a result of this, Netscape ceased their involvement in RSS development. Netscape also deleted the SGML file that defined the RSS format, which had the unfortunate effect of causing many applications to cease working.

However, the functionality provided by RSS had, by this time, proved its worth. The Blogging community, for example, needed a mechanism for providing alerts and syndication of new postings. Similarly the W3C (World Wide Web Consortium) recognised the potential for RSS and wished to use it for providing news feeds for the W3C. Developers closely associated with the W3C's Semantic Web activities built on Netscape's initial work and released a new version of RSS based on the W3C's RDF (Resource Description Framework) standard. In this new version, known as RSS 1.0,[1] the RSS abbreviation was changed to stand for RDF Site Summary, in order to differentiate itself from its predecessor.

However despite the importance, which W3C gives to RDF and the Semantic Web, in some sectors RDF is felt to be a cumbersome and unwieldy format. Led by David Winer, an alterative format to RSS 1.0 was developed – confusingly also known as RSS, which, in RSS 2.0[2] stands for Really Simple Syndication.

From an end user's perspective these RSS 'wars' are confusing: many users will regard RSS 2.0 as a later version to RSS 1.0 and not a different format. In practice, however, most RSS viewers will work with both versions of RSS and there are efforts to bring together the divergent standards. Despite this confusion, the benefits of RSS are widely acknowledged and many RSS tools are available. The confusion over the RSS name should not be regarded as a barrier to making use of RSS.

Viewing RSS

RSS is sometimes regarded as a mechanism for embedding content from third parties in a Web site. UKOLN's RSS-xpress[3] was an early pioneer in this

area. RSS-xpress can be used to display RSS feeds within a Web site. RSS-xpress is a CGI program that can be installed locally, and the interface configured with the local look-and-feel. Use of RSS-xpress requires System Administrator privileges for the software to be installed on a Web server. A simpler approach is to make use of a solution that uses JavaScript to access the RSS file and to convert the content to HTML format. The RSS-xpress Lite[4] software illustrates this approach.

These two examples illustrate techniques for embedding RSS into Web pages (and similar applications, such as the Higher Education Academy's RSS Configurator,[5] are available). As well as embedding RSS resources within Web pages, many dedicated RSS viewers are available as can be seen from the lists of RSS tools.[6] Applications such as Bloglines[7] and Awasu,[8] illustrated in Figures 2 and 3, provide easy-to-use interfaces for selecting RSS news feeds and for managing alerts.

Creating RSS

Because RSS is a simple XML format (as can be seen from the example shown in Figure 4) it is possible to create RSS files by hand.

However, because such a method is prone to errors, a better approach is to make use of an RSS editor. A number of dedicated RSS editors are available. The RSS-express software, which has been mentioned previously, can be used for creating and editing, in addition to viewing RSS files.

As well as use of dedicated RSS editors, there are other approaches to creating RSS files. Content Management Systems (CMSs) may provide the ability

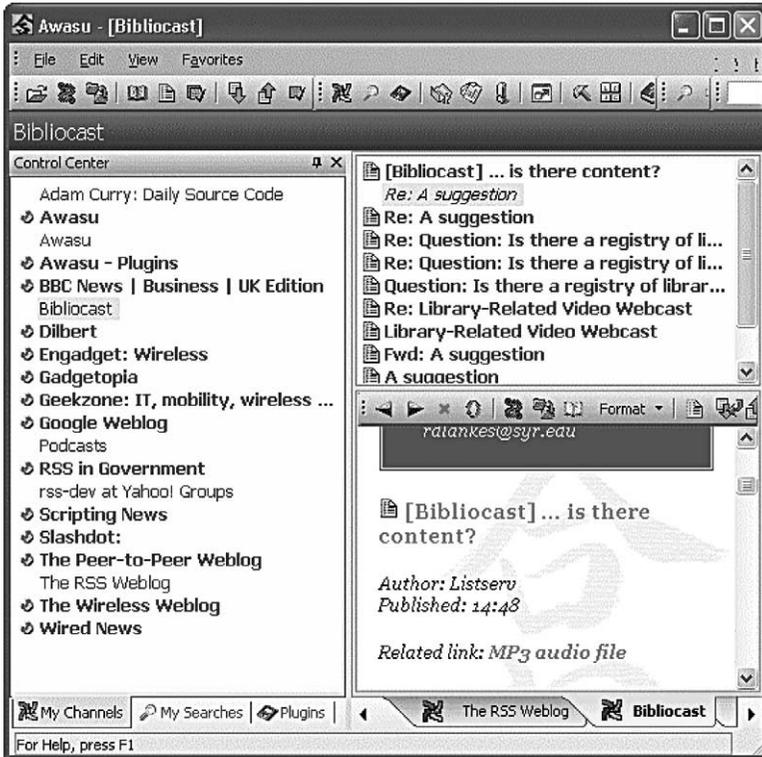**FIGURE 2**
The Bloglines RSS viewer

FIGURE 3
The Awasu Desktop RSS viewer

to create RSS files, either through dedicated support for RSS or through the creation of appropriate templates. An alternative approach is to create an RSS file by transforming data from other formats: for example it is possible to transform HTML files to RSS format (or, indeed, RSS to HTML).

```
<channel>
<title>BBC News | UK | UK Edition</title>
<link>http://news.bbc.co.uk/hi/uk/default.stm</link>
<description>BBC UK News updated every minute of every day</description>
</channel>
<item>
<title>Clare Short quits post over Iraq</title>
<description>Clare Short quits the cabinet, accusing Tony Blair of breaking his promises
over the UN's role in rebuilding Iraq.</description>
<link>http://news.bbc.co.uk/hi/uk_politics/3019871.stm</link>
</item>
```

FIGURE 4
Example of an RSS file

When planning the architecture for creating RSS, it will be necessary to be aware of the strengths and weaknesses of the different approaches.

- *By hand*: Experienced Web developers may wish to create RSS files 'by hand' – i.e. using a simple text editor and inputting the data and the RSS markup elements manually. This approach may be suitable in some cases, but not as a general solution. It should be noted that in cases in which this approach is used, it is important to validate the RSS file in order to ensure that no errors have been made when entering the RSS markup elements.
- *Dedicated RSS editor*: Use of a dedicated RSS editor requires no knowledge of the RSS format. A limitation of this approach is that the data has to be entered by hand rather than reusing existing data. This approach can then result in the appearance of minor discrepancies.
- *Use of Backend CMS/Database*: A third approach is to create the RSS directly from a backend database or Content Management System (CMS). This has the advantage of reusing data from a single source – i.e. data held in a CMS can be published as HTML resources and as an RSS file using the same source data.
- *Transformation*: Languages such as XSLT or home grown applications can be used to transform data from one format to another. For example, a HTML file could be converted to RSS, or *vice versa*. It should be noted, however, that since RSS is a simpler format than HTML, transformation of RSS to HTML will not allow the full richness to be provided (e.g. embedding formatting information).
- *User of Blogs*: You can make use of a Blog in order to create an RSS file. This approach has the advantage that additional services provided by the Blog will also be available (e.g. ability to allow users to provide comments; automated management of a URI for individual items, etc.).

User Issues

Usability Issues

As we have seen there is a wide range of tools available for viewing RSS files. In addition, information providers can make use of a variety of approaches for creating RSS. However, although RSS is being used by Web enthusiasts, it is not necessarily being widely exploited by a wider user community.

One barrier to user take up of RSS feeds is the difficulties end users may experience in understanding how to make use of RSS files. Users who may be intrigued by the hype surrounding RSS, will be disappointed on clicking on a link to find a plain listing of the RSS markup. It is not necessarily obvious that, rather than clicking on the link, the file should be imported into an RSS viewer. The usability of RSS files can be addressed in a number of ways. The title attribute of the $<A>$ link element can be used to provide advice when the user moves the cursor over the link. Another approach is to acknowledge that many users will follow the link to the RSS file and provide help information in the display of the file. This can be done by providing a link to an XSLT file within the RSS file,

which can transform the RSS file into a styled file that may have the appearance of a conventional HTML file. The XSLT transformation can also embed help information with the page. This approach has been used on the BBC Web site as shown in Figure 5.

User Support Issues

Many bloggers were early adopters of RSS and make use of RSS tools for reading Blogs, news, etc. However the diversity of RSS viewers can make it difficult for individuals and for organisations to select a particular application. There is now a need to develop strategies for encouraging greater take-up of this technology. This will require engaging with the user community to gain a better understanding of the user requirements as well as evaluate the tools and deploying the software and support infrastructures.

One way of encouraging users to make use of RSS is to prioritise RSS for the publication of news. This approach was taken with the Institutional Web Management Workshop held in Manchester in July 2005. A news page containing information about this annual event was provided[9] that was available in RSS and

FIGURE 5
Transformation of an RSS file

HTML formats. In addition, occasional email messages were sent out to delegates. However, the RSS file was updated first, and email messages were sent out up to a day later. This enabled RSS users to benefit from advance notification of the opening of bookings for the parallel sessions.

Quality Issues

The ability of RSS files to be embedded in third party Web sites without the need for manual processing can speed up processing. However this can lead to concerns regarding the quality of the information. Such information could potentially be incorrect, inappropriate or misleading. Organisations such as the BBC will be regarded as trustworthy and many organisations will be willing to accept RSS feeds without the need for moderation. There will be a need to ensure that the content provided by third parties does not lead to concerns by organisations wishing to embed such content.

An example of a Service Level Description was provided by UKOLN on the RSS page for the Institutional Web Management Workshop Web site[10] which is shown in Figure 6.

Additional Uses For RSS

This article has described simple uses of RSS for news alerts. It should be noted that the simplicity of RSS has led to the format being used in many innovative ways.

- *Amazon Alerts*: The Amazon RSS Feed Generator[11] provides an example of a third party service that can generate an RSS feed for an Amazon search query. Users can specify searches of the Amazon database and receive RSS alerts of successful results.

The following policies apply to the RSS feed for the Institutional Web Management Workshop 2005:

We will seek to ensure that the content of the RSS feeds is accurate and appropriate.

We will seek to ensure that the titles and descriptions are kept to a consistent length and style.

We will endeavour to ensure that the URL of this page and of the RSS feeds remain for at least one year after the event.

We will validate the RSS files when they are created or updated.

We will make use of simple, clean RSS in order to ensure the feeds can be used in a wide range of RSS readers.

FIGURE 6
Example of a policy statement for an RSS feed

- *General syndication*: As well as providing news feeds and alerts, RSS can be used for the syndication of simple Web content.
- *Email*: Email messages can be received using RSS. Email services such as GMail provide access to email using RSS viewers and the JISCMail service provides access using RSS to its email archives. This may be of particular interest for use with mailing lists that are of background interest, and there is no desire to contribute actively.

RSS is increasingly being used to provide alerts for a range of changes. For example, software can monitor changes to stocks and shares, weather forecasts, Web pages, etc., and provide this information in RSS formats. One of the most interesting new uses for RSS is in Podcasting. Podcasting can be regarded as a distribution channel for audio files. We have described how RSS can be used to syndicate content (including text and images) across Web sites. Podcasting, which makes use of RSS 2.0, uses a similar approach, but this time syndicates sound files (typically in MP3 format) so that they can automatically be transferred to networked devices, such as a mobile MP3 player (typically, but not necessarily, an iPod).

Conclusions

The article has reviewed the RSS format and described how the simplicity of the format has led to it being used in a many different ways. We have seen how the format can be used not only for embedding news items in Web pages, but also for syndication and repurposing of content and for allowing users control over ways in which new information can be provided. We have outlined the different ways in which RSS files can be created and the strengths and weaknesses of the different approaches.

Organisations wishing to make use of RSS will have several issues to address, including the areas in which the format should be used, the approaches to be taken to authoring and user support and addressing issues of trust. The author feels that use of RSS can provide such useful services that organisations should be able to justify such effort.

Notes

1. RDF Site Summary (RSS) 1.0: http://web.resource.org/rss/1.0/spec (accessed 13 March 2006).
2. RSS 2.0 Specification: http://blogs.law.harvard.edu/tech/rss (accessed 13 March 2006).
3. RSS-xpress, UKOLN: http://rssxpress.ukoln.ac.uk/ (accessed 13 March 2006).
4. RSS-xpress Lite, UKOLN: http://rssxpress.ukoln.ac.uk/lite/include/ (accessed 13 March 2006).

5. RSS Configurator, HE Academy: http://www.prs-ltsn.ac.uk/rss/rssconfig.html (accessed 13 March 2006).

6. List of news aggregators, Wikipedia: http://en.wikipedia.org/wiki/List_of_ news_ aggregators; News Readers, Open Directory Project: http://dmoz.org/Reference/ Libraries/Library_and_Information_Science/Technical_Services/Cataloguing/Meta data/RDF/Applications/RSS/News_Readers/ (accessed 13 March 2006).

7. Bloglines: http://www.bloglines.com/ (accessed 13 March 2006).

8. Awasu: http://www.awasu.com/ (accessed 13 March 2006).

9. Institutional Web Management Workshop 2005: News, UKOLN: http://www.uk oln.ac.uk/web-focus/events/workshops/webmaster-2005/news/#rss (accessed 13 March 2006).

10. Ibid.

11. Amazon RSS Feed Generator: http://www.oxus.net/amazon/ (accessed 13 March 2006).

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