RSS – The future of internal communication?

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Abstract

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Contents:
RSS is a format for easy information sharing between computers. A RSS-file, also known as a feed or a channel, consist of a list of items. The items are structured with XML-tags and have to be processed in some way before it can be read. RSS-readers, web-browsers with RSS support and e-mail-clients with RSS support can be used to display the feed.

This thesis is focused to investigate if RSS can be used within an enterprise for internal communication. We look at different computer based communication tools that are available today and compare them with RSS. All the different tools has there advantages as well as disadvantages, we have tried to find out if there is room for one more information channel within an enterprise.

Our study shows that RSS is not suitable as a stand alone solution for internal combination. RSS main strengths lies in mass information that has to be pushed out in one direction.

Keywords: RSS, E-mail, intranet, instant messaging, internal communication, feed
# Table of contents

1 Problem background .................................................................................................. 1
  1.1 Problem area ....................................................................................................... 2
  1.2 Problem............................................................................................................... 2
  1.3 Purpose ............................................................................................................... 3
  1.4 Delimitations....................................................................................................... 3
  1.5 Description of approach and method ................................................................. 4
  1.6 Scientific methods used ..................................................................................... 4
2 Literature criticism..................................................................................................... 5
3. How does RSS work ............................................................................................... 12
  3.1 How do you read the RSS feed? ........................................................................ 14
  3.2 How RSS aggregators / RSS readers work......................................................... 15
  3.3 What channels are available? ............................................................................. 17
    3.3.1 RSS ............................................................................................................. 17
    3.3.2 E-mail ......................................................................................................... 19
    3.3.3 Intranet ....................................................................................................... 20
    3.3.4 Instant Messaging (IM) .............................................................................. 21
  3.4 The future of RSS ............................................................................................. 22
    3.4.1 RSS-Calendar ............................................................................................. 23
    3.4.2 Event-Driven RSS syndication ..................................................................... 24
4 Result ...................................................................................................................... 25
  4.1 Outcome ........................................................................................................... 28
5 Discussion ............................................................................................................... 30
  5.1 Other fields ....................................................................................................... 31
  5.2 Future research ................................................................................................. 32
6. References .............................................................................................................. 33
1 Problem background

RSS is a relative new technology on the market and it stands for *Really Simple Syndication* (Cadenhead R, Curry A & Zellers S, 2005a). The majority of RSS feeds are currently containing news headlines or breaking information, but the long term uses of RSS are broad. There are several different possibilities for this technology to grow and become a widely used way to spread information.

RSS is a defined standard based on XML 1.0 specification, published by the World Wide Web Consortium (Bray T, Paoli J, Sperberg-McQueen C.M., Maler E & Yergeau F, 2004), with the specific purpose of delivering updates to web-based content. Using this standard, webmasters provide headlines and fresh content in a structured manner. Meanwhile, consumers use RSS readers and news aggregators to collect and monitor their favorite feeds in one centralized program or location. Content viewed in the RSS reader or news aggregator is known as an RSS feed (Pilgrim M, 2002).

The original RSS, version 0.90, was designed by Netscape as a format for building portals of headlines to mainstream news sites. It was deemed overly complex for its goals; a simpler version, 0.91, was proposed and subsequently dropped when Netscape lost interest in the portal-making business. But 0.91 was picked up by another vendor, UserLand Software, which intended to use it as the basis of its web logging products and other web-based writing software. In the meantime, a third, non-commercial group split off and designed a new format based on what they perceived as the original guiding principles of RSS 0.90. This format, which is based on Resource Description Framework (RDF), is called RSS 1.0. But UserLand was not involved in designing this new format and as an advocate of simplifying 0.90, it was not happy when RSS 1.0 was announced. Instead of accepting RSS 1.0, UserLand continued to evolve the 0.9x branch, through versions 0.92, 0.93, 0.94, and finally 2.0. The specification for RSS 2.0 was originally copyrighted by UserLand, but in July 2003 the company transferred the copyright to the Berkman Center for Internet & Society at
Harvard Law School (Cadenhead R, et al., 2005b). The specification is now licensed under terms that allow it to be customized, excerpted and republished, using the Creative Commons Attribution/Share Alike license (Creative Commons). It should also be mentioned that an independent advisory board has been formed with the purpose to broaden the public understanding of the uses and benefits of RSS. The board will also guide developers who want to create Rss applications (Rss-specifications.com).

1.1 Problem area

The problem area that we have focused on is how RSS can be used within an enterprise. As mentioned before RSS is today mostly used to spread news headlines or breaking information. The most common way today for enterprises to spread their information is by the use of e-mail, intranet and instant messaging (IM). Each one of those methods has its advantages and disadvantages. It is important to find and implement the method that gives the most advantages to an enterprise. Important aspects when you are discussing information and it is dissemination are if, when and to who the information will reach.

1.2 Problem

The problem we have chosen to work with is: How can RSS be a more efficient channel for information within an enterprise?
1.3 Purpose

The purpose with this thesis is to examine the possibilities for enterprises to use RSS as an effective tool to spread internal information. Correct information at the right time, to the right receiver is essential for successful internal communication. We are going to examine the most common tools that can be used for exchanging information within an enterprise or organization. Our aim is to compare different computer based applications and see if RSS can replace or complement the existing tools.

1.4 Delimitations

The aim with this thesis is to study the different communication tools that can be used within an organisation. We have chosen to only look at the communication between employees that today is likely to be published on an intranet or be sending out by newsletters with e-mail. The study only looks and analyses the computer-based tools to communicate like e-mail, intranet and instant messaging. The study does not include the use of RSS as a tool for external communication like, marketing, communications with business partners etc. The economic aspect of implementing and using RSS is not considered at all in the study, nor the eventually savings or expenditures that a change in the internal communication can cause.
1.5 Description of approach and method

RSS is a relatively new technology, the use of it is not widely spread and its full potential has not yet been seen. Because the young age of the subject there is a limited selection of books who handles RSS. All though we have found one e-book by Rok Hrastnik, *Unleash the Marketing & Publishing Power of RSS* and one book about the subject, *Content Syndication with RSS* by Ben Hammersly. On the other hand because the subject is new, articles in branchjournals about RSS is quite common.

1.6 Scientific methods used

In this thesis we will manly use positivism as our scientific approach due to the nature of the subject. Our goal is to collect information about RSS with focus on the use within an organisation. The data collection contains of written sources and with the help of those we discuss our way through the thesis. The basics of positivism say that there is only two ways to gain knowledge, by logics and by empiric studies. We will compare and present the different opinions and views within the delimitations. To compare sources against each other and in the end have enough information to finish off a reasonable conclusion according to our problem (Thurén, 2002). We have chosen to use the deductive method in those part we apply the positivistic approach. The deductive way to work is the way of proof; you use general principles and existing theories.
2 Literature criticism

In this section we go through the references we have used in the thesis. The two first references that are mentioned are books we have used in the methodology-section. These we have not criticised or analysed, they are commonly used in thesis writing and we consider them reliable. The purpose with this section is to validate if the source is valid, reliable and relevant (Eriksson 2001, s.150).

Thurén, Thorsten, *Vetenskapsteori för nybörjare*, Liber AB, Malmö 2002


_________________________________________________________________________

Hrastnik, Rok, *Unleash the Marketing & Publishing Power of RSS*, MarketingStudies.net
Hrastnik Rok, *RSS Alerts via SMS*, Lockergnome LLC
Hrastnik Rok, *Mobile Photo RSS Reader*, Lockergnome LLC

The book *the Marketing & Publishing Power of RSS* is not published in traditional paper format it is only published as an e-book. The author Rok Hrastnik is the owner of marketingstudies.net and he has been working with e-commerce at Studio Moderna. Rok Hrastnik has been working with the development and planning of enterprises marketing strategies and the use of modern marketing tools. He uses information and efficient communication as a key feature in his work and there the RSS-part comes in (Marketingstudies.net).
We have some considerations about the book though, there is no reference-list in the end of the book. He uses references in the e-book, but does not assemble them in the end therefore it becomes harder to check its reliability. His personal objective can be seen at like it could be in his interest to promote RSS due to the nature of his employment at a marketing firm. On the other hand why should he spend 2 years of interviewing experts (the interviews are also published) in the area just to use it as a marketing tool? We will use this book as one of our more important sources and we will have the above mention issues in mind when we refer to his work.

The criteria’s mentioned above is also applicable on the two websites where Hrastnik has published two articles.

Hammersley Ben, *Content Syndication with RSS*, O’Reilly Media Inc.

Journalist and author that appear frequently in the British national press like The Times, The Guardian and The Observer (Oreillynet.com). Ben has written a new book about RSS which is released to the market in late April 2005. We can unfortunately not use this book due to the date of our seminar.

We consider the book reliable because of the fact that he has published one, soon two books about the subject RSS. He also writes about RSS in the British national press and this book is mostly about the different specifications and how they can be used.

Fichter Darlene, *Using RSS to create new services*, Online magazine

Works for the Data Library Coordinator at the University of Saskatchewan Library and founded the web-development company Northern Lights Internet Solutions Ltd. She is also a writer and columnist for Online magazine. The information gathered from this article we consider reliable. Darlene works in the IT-segment and uses RSS in her work. The only thing that lowers her credibility is that she may have an economic interest in RSS. If the RSS get more popular her company may get more assignments to help companies use RSS.

Michael Sampson is the director for Shared Spaces Research & Consulting. They claim that they are an independent market research firm (Sampson M, b). We consider this article reliable and Sampson try to give a correct view of the different tools that are available for internal communication. There can be some marketing interest from Sampson but if that is the case, it is to discredit the use of the different tools by themselves.

AllBusiness.com, *How to Use an Intranet to Make Your Company More Efficient*, AllBusiness.com

AllBusiness.com, *What Is an Intranet?*, AllBusiness.com

AllBusiness.com, *Using Instant Messaging for Business*, AllBusiness.com

Allbusiness.com is selling services in the IT-branch and has an economic interest in promoting software solutions. The content on their site we consider as reliable with some concerns about that they may also have marketing intensions.

Barlas Pete, *With E-mail Systems Stumbling, Electronic Info Feeds Take Root*, Investor’s Business Daily

The article we have used is accessed via KowNow.com, but is published in the Investors daily, a newspaper that also runs a website. The newspaper has an economic aim and provides articles with investment related material. We consider the article reliable because the newspapers aim is to provide information that can be used as a basis for investments. If the article should be used in an investment-analyst the newspapers interest should be to provide correct information.
Becker David, *RSS Gets Down To Business*, CNET Networks Inc.

David Becker is a writer for cnetnetworks.com who runs and publishes IT-related sites. In our opinion, just like a regular news-site on the web with the same problem as many of the other web-sites has. There is a commercial interest involved in some degree but we use the reference to explain the RSS-calendar and not to promote it and there for we consider this source reliable.

Bender Stacey, *RSS Use to Increase Dramatically, Slashdot(R) Survey*

Thurén (2002, p.22-23) says that it is important to look at how the survey is conducted to validate if it can be considered as reliable. Thurén also points out the importance to see if the survey really investigated that it says it should. This survey is only conducted on 230 persons, to be considered as a large and meaningful survey it should contain more. It does not meet Thurén rules to be seen as reliable and valid, but the survey can although point in a direction that reflects the reality.


Cadenhead Rogers, Curry Adam and Zellers Steve, *RSS at Harvard Law*, RSS Advisory Board

Pilgrim Mark, *What is RSS?, O'Reilly Media, Inc.*

Eriksson (2001 s.153-154) present some important points about the validation and reliability using Internet sites as a source. Is the author reliable? What original source is the document based on? Does the url to the site correspond with the institution it claims? When it comes to xml.com, w3.org and harvard.edu these issues are fulfilled, we consider these three sources as reliable because of their status. These sites have as we know no interest to publish false or incorrect information and the material we used is not of the kind you would like to manipulate. Cause it is manly about the standard of
RSS and its specifications.

Xml.com is a widely known information source for xml and they also manage an xml-community. W3C, World Wide Web consortium works with the development of specifications, guidelines, software, and tools related to the www. They also work to develop web standards (Jacobs I, 2005). The organisation is an industrial cooperation which develops technical specifications like protocols, standards for the World Wide Web. Information that is published on this site, we consider very reliable and valid due to the organisations size and reputation. Berkman center at Harvard Law is responsible for the RSS 2.0 specification and therefore we consider this source as reliable by Erikssons (2001 s.153-154) criteria’s.

Creative Commons, Attribution-ShareAlike 1.0, Creative Commons

Works with copyright and all rights reserved issues related to the Internet. They work to describe how and what you are allowed to used from different areas and license information on web-sites. We think this source is reliable according to the criteria’s Eriksson (2001, s.150) says is important.

Gahran Amy, Headline Syndication for Intranets, CMS

The website CMS Watch writes the following on their homepage that they publish independent reports related to web content management. To retain independence they do not receive any income from published material (CMSWatch.com). We have no reason to doubt on their reliability and we can not find anything that points out that Amy Gahran should not be trusted.
Laws Kevin, *RSS-Really Something Special*, VentureBlog

Laws K works with investments in software and services. His profession makes him a bit partial and he may have some interest in promoting RSS. But his profession also gives him some credibility, it also may be in his interest to gain and collect a lot of data on RSS (Ventureblog.com). Therefore his predictions about the future of RSS can be considered as reliable according to Erikssons criteria’s (2001, s.150).

KnowNow, *Event-Driven RSS Syndication: The next big thing*, KnowNow Inc

KnowNow Inc. is a private held company and works with IT-applications for the businesses- and for the private market. We use this reference when we discuss the future of RSS and its uses to explain event driven RSS syndication. KnowNow Inc. sells applications to provide this service so they obviously have an interest to explain and promote the advantages of this.

Mongrain Alain Par, *The absence of RSS on intranets*, Association des professionnels en intranet

The main site is written in French, but some articles are in English. We found the page through Google and did not or could not navigate our way to the article on the site. We can not find out any information about the background of the author or the domain because of the French language. Although we use this source because of the subject it handles is interesting.

Net Access, *What are intranets?*, Net Access

Net Access is a company that develops intranet- and Internet software. In our opinion the site provides useful information about how intranet works and different issues around the subject. The information we collected from this website we think is reliable with some thoughts. We are aware of their intensions with the site, to make intranet look good cause it is from intranet they earn their money.

Anna Rincon has worked as a webmaster, web developer and web content analyst for many years. Today she writes articles in web-related areas and work as an adviser to companies regarding establishing, development and marketing with online ventures (Onlinebusiness.about.com). Rincon has worked with web related features for a long time and we consider her article as reliable because of her background and profession.


The article on this web-site we consider reliable according to Erikssons rules to be reliable (2001, s.150), because of the use references although their site and in their articles, which is uncommon on web-sites. The site is owned by NotePage Inc., they are a company that develops and sells communication solutions (Notepage Inc.).

2RSS.com, *What is RSS?*, 2RSS.com

The site claims that they work independently and that their aim is to provide information and has no commercial interests (2rss.com). We have no reason to believe that the site should have incorrect information on their site. With web-sites like 2RRS.com we see one possible problem, they exist to contribute information about one area or subject in this case RSS, it can tend to only have positive information about their subject.
3. How does RSS work

“RSS is a content delivery channel that allows you to easily deliver Internet content to your target audiences, while eliminating a large part of the external noise and shortcomings of other delivery channels.” (R. Hrastnik, 2005a, p.29)

To put it simply RSS is a format for easily sharing content on the web. The content is often from news-sites or notifications about updates on websites. An RSS-file, also known as a RSS-feed or RSS-channel, consists of a list of items. Each item contains a title, description and a link to a web page. The full content itself is often available separately and is accessible by the link in the RSS-file.

RSS can stand for Really Simple Syndication, Rich Site Summary or RDF Site Summary all according to who you ask and which version it is about. According to Cadenhead R, Curry A and Zellers S (2005) at Harvard the RSS 2.0 stands for Really Simple Syndication.

RSS-files are written in a XML based format and the file can be read in different ways. Because RSS is a XML format and not HTML code, the file must be processed before it can be displayed. RSS aggregators are applications which provide the means to read the content of RSS-file. These applications that can handle the RSS-format can be web-based, standalone programs, web-browsers or e-mail-clients.
Example on how the RSS-syntax is written:

```
<rss version="2.0">
  <channel>
    <title>Channel title</title>
    <link>URL</link>
    <description>Channel Description</description>

    <item>
      <title>Title for Syndicating Content Item #1</title>
      <link>Link to Content Item #1</link>
      <description>Content Description #1</description>
    </item>

    <item>
      <title>Title for Syndicating Content Item #n</title>
      <link>Link to Content Item #n</link>
      <description>Content Description #n</description>
    </item>

  </channel>
</rss>

(2rss.com)
```

The RSS feed consist of a main element `<rss>` and the feed is the channel element. The `<rss>` element can have one or many `<channel>` underneath it. In the example above there is only one channel specified. The properties of channel are specified with the elements `<title>`, `<description>` and `<link>`. Title is equal to the name of the channel, description is a text you choose to display along side with the title of the channel, and link is a hypertext link to an html-site. Item could be represented one or multiple times under the channel element, two times in the example. The item element presents the information the feed wants to present, often some kind of news or announcements.

- `<title>` - name of the item, headline.
- `<link>` - item URL, related link often to a html-site where more information about the subject can be found.

There are other elements that can be used for RSS feeds, the above mentioned are the most fundamental. All elements used under the channel element are optional. For more elements and how it can be used look at Cadenhead R, Curry A and Zellers S (2005).
3.1 How do you read the RSS feed?

RSS allows Internet content publishers to deliver content using RSS feeds. Once the publisher has created and published the feed online, it can be read by the end-user. There are different possibilities for the end-user to grab and read the feeds. The most common way is that the user downloads, install and learn how to use something called a RSS aggregator or RSS reader. This is applications that allow the Internet user to use and view RSS feeds directly from their computers. The problem with an aggregator is that the user has to download, install and sometimes configure the software. They also need to learn how to use the new software. According to Rok Hrastnik (2005a, p.41) this is the top obstacle to mass RSS penetration. Most of the RSS aggregators are standalone products that work on their own but there are also products that can be integrated with Microsoft Outlook or Internet Explorer. A good thing is that most of the aggregators today are free to use.

After the publisher has published the feed on the web, the end-user can read the information. Though it is not just for the end-user to click on the RSS-link and open it with the web browser. If users does this the only thing that they are going to see is a lot of confusing code which they will not know what to do with. Instead the user must subscribe to the RSS feed within the aggregator. When the user has the feed included in the aggregator it will fetch and display the RSS file. By clicking on an individual item the user is taken to the whole article on the web site where the publisher has placed it. At this moment the aggregator also serves as an Internet browser. As long as the aggregator is running, it will periodically check the RSS files in the users list to see if new content has been added. When there is a new content, the aggregator will mark those feeds to make the user attentive that there is new information to read. This means that the information comes to you rather than you having to go to the news. You also avoid the non-new information on a web page.
3.2 How RSS aggregators / RSS readers work

As the number of feeds has grown, a new category of software has emerged, the RSS aggregator, also called RSS reader. RSS aggregators are web-based or desktop applications that were developed to assist people in reading and managing large collections of RSS feeds. They are especially popular in the web logging community as a means of simplifying the task of keeping track of updates to a large number of interesting web logs.

In general, an aggregator goes through four main phases, managing, assembling, displaying and usually, re-publishing. In the managing phase, the aggregator provides a way for the user to edit the aggregator’s built-in list of sources, with the intent of allowing the user to adjust the gathered sources to his or her own set of interests. The sources are maintained by the aggregator in the form of a list of URLs that describe the location of RSS feeds on the Internet. In the assembling phase, at regular intervals, the aggregator automatically checks each of the RSS feeds in this list, to determine if any new items have been added since the last update. The aggregator will usually determine if new items are present by downloading a copy of the RSS feed and checking the items that it describes against a previously cached copy. If any new items are detected, they are added to the local cache of items and presented to the user in the displaying phase, via a desktop or web-based user interface. Aggregators do not usually maintain a copy of each item permanently, and will discard old items after a set time interval. In addition to helping users to collect and read large quantities of news, most aggregators will allow the user to select and re-publish items of interest in the re-publishing phase. Aggregators normally allow a user to re-publish items to a RSS feed or web log of his or her own to share with other web users.
3.2.1 Types of RSS readers

Generally, there are three types of RSS readers that users use to view feeds that they have subscribed to. Feeds can be viewed in a desktop application, web-based aggregator, or in a plug-in aggregator (Rincon A).

Desktop RSS Readers
Standalone desktop applications generally run in the background, similar to an e-mail client, automatically refreshing headlines as news feeds are updated. The RSS readers collect the feeds and refresh items in the feeds each time they are updated.

Web Based Aggregators
Web-based aggregators are online services. In simple terms, you can personalize a web page. Each time that page is accessed or each time you login to the service, the web page news headlines from feeds that you have selected will refresh.

Plug-in Readers
Plug-in aggregators expand the functionality of existing applications to allow users to view RSS feeds from within an existing program. Some plug-ins work with web browsers and others work with e-mail clients (ibid).
3.3 What channels are available?

All different ways to communicate has its specific advantages and disadvantages. In the following section we present the different types of information exchange that could be used for internal communication. Employees have to communicate with each other, organize individual- and team actions. In this study we have selected to focus only on computer based communication tools and put the face-to-face interaction aside. The key-element that is compared is:

- Time, is the information available directly.
- Correct information, correct information to the correct user. Type of information, information from the board, work-colleges or private. One-to-one, or one-to-many. Need for one-way or two-way communication.
- Control, is it possible for the users to manage which information they gets.

3.3.1 RSS

Advantages

Darlene Fichter has written an article in Online Magazine (2004) where she discuss the benefits and possibilities to combine a company’s intranet with RSS. She point out 5 main advantages to use of RSS:

- Saving time, it takes the same time to read a dozen of websites than it takes to visit two or three of them. It takes seconds to scan the headlines from all the websites in a RSS-reader.
- Convenience, information gets to the user immediately, to the right place and in the right form via the RSS-reader or webpage.
- Control, the user controls what to subscribe to. Spam has not yet reached the RSS-readers.
• Structured content, the information is presented in RSS standard which gives the content a structured format.

• Live delivery, in real time the user gets a notification when new information is available.

Amy Gahran (2004) supports the above mentioned advantages with RSS, she uses the words: direct, time-saving, spam-proof and can be automated with an existing intranet. She also point out that the technology to publish RSS-feeds are fairly simple and usually inexpensive to publish online. Michael Sampson (2004a, p.19) points out two main advantages to RSS as a communication tool.

• Users do not have to visit the web site to gain something from the information that has been posted. The RSS reader will automatically highlight items when updated.

• Way to subscribe, the user has the ultimate and exclusive control over the RSS-reader and the information downloaded. Information can be deleted if it does not fill any use for the user anymore.

Disadvantages
Because RSS is a new feature users do not have the knowledge how they shall use the RSS-reader and therefore the full potential of RSS is not used. People are not used to handle RSS-readers and there is a “fear-factor” when it comes to make e-mail-subscribers to use RSS. On the other hand is RSS easy to use, to subscribe and unsubscribe from feeds are quick and easy. To prevent users from unsubscribing from feeds the RSS-channels has to be updated frequently and provide high quality information (Hrastnik R, 2005a, p.90).

A newsreader displays what is published on the main page and a foreign party has the control over the information. There is at the moment no way to forward fragments of the information published. Users do subscribe to a whole RSS feed, there is no way to narrow down the information that is received with for example key-words. Because of the lack of tools to receive less information can cause a problem with information overload. It is only a one-to-many communication channel, there is at the moment no way to use RSS-feed to reply. (Sampson M, 2004a, p.19-20)
The risk for information-overload grows, when RSS becomes more spread the number of available feeds increases and the easiness to subscribe can cause problems. Users can subscribe to too many feeds and the result is that the user overloads itself with information. (Hrastnik R, 2005a, p.92)

3.3.2 E-mail

Advantages
For employees e-mail offers an electronic way to communicate without time-consuming meeting and it is possible for one-to-one communication. With e-mail it is possible to distribute documents and information to multiple recipients at the same time (Allbusiness.com, b).

E-mail is presented and written in formatted text and therefore has a low complexity and high interoperability. It can be accessed by web-sites which gives the advantage that e-mails can be read by employees on all places where there is a computer with Internet access (Sampson M, 2004a, p.8-9).

Disadvantages
From the beginning it was expected that a user would receive a small number of e-mails per day, the culture of business was slower than today and people did not care if it took a couple of days to reply to an e-mail. The technology was constructed to meet those demands, but today e-mail is used to send highly fragmented information. The use of e-mail has changed to look like a conversation, a sentence or a couple of sentences are sent back and forward. In a one-to-one communication this tends to work out fine, but when multiple users communicate in this way it causes problems (Sampson M, 2004a, p.9-10).

It is difficult to control the e-mail, which information is correct and which is not, which information does the user want etc. E-mails are received in an inbox and all e-mails end up here, this causes lots of unstructured information. Users have to organize them into folders to get a working structure (Hrastnik R, 2005a, p.17).
Spam is a big problem, e-mail inboxes get flooded with spam-mail. To handle this problem anti-spam software and filters was introduced. This causes new problems because e-mails that were not spam are caught in the filter. Then the user has to plough through the spam-mail anyway to find those one that is not spam. In the form to send e-mails today it is pretty easy for software’s to obtain the information that is send in an e-mail. A number of encryption solutions exist, but is not adopted for widespread use. Sending an unencrypted e-mail can lead to sensible information in the wrong hand (Sampson M, 2004a, p.10-11).

3.3.3 Intranet

Advantages
Intranet is an excellent channel for publishing time-sensible information for a larger group. Intranet is a good tool to use as an electronic message-board, to publish information about the company and employee information. As a communication tool intranet is often seen as an important complement to the organisations traditional communication channels (Bark M, et al. 2002 p.38). Intranet can be used to publish and distribute company documents, enable group scheduling, provide an easy font end to the enterprise database. It gives the opportunity for employees and departments to publish information they need to communicate to the rest of the organization (Net Access).

Disadvantages
On an intranet you can often find useful information that could enhance collaboration and projects throughout the enterprise. Only a small part of the information on the intranet is accessed and used by the employees. They are not aware of the intranets full potential and do not browse outside their normal information range (Gahran A, 2004). Managers and intranet administrators complain about the low traffic to their intranet sites. In spite of they frequently update the information and news they can convince people to use the intranet as a resource. Mongrain writes about the importance to make the intranet the centre point for employees workday, otherwise it wont be used even if it is managed right (Mongrain A.P, 2005).
3.3.4 Instant Messaging (IM)

**Advantages**

Instead of waiting for e-mails to download, it is possible for employees to communicate in real-time. It is an effective way to communicate if constant information exchange is necessary (Allbuisness.com, b).

IM have similarities with a phone call, both parts of the conversation can give real-time attention to the other part. Due to this, problems and issues can be solved and discussed immediately. Once the user learns how to handle IM it is no problem to have ongoing conversations with three or four people on the same time. The IM also display the other parts status on the screen, meaning they can directly see if the person is available for discussion or not (Sampson M, 2004a, p.14).

**Disadvantages**

Some of the IM programs on the market can not save the history of the conversations which means that the user can not go back and check what was discussed. It is only possible to communicate with people who have online status, if offline the message will not get through. IM is depending on how fast the user can type and even if the user is fast typing a phone call would handle the same thing quicker (Sampson M, 2004a, p.14-15).

According to Allbuisness.com (c) there are some other disadvantages with IM, the users who want to communicate with each other has to use the same instant messenger program. Otherwise the possibility to communicate will not be possible. They also points at the character limit in an IM-message as an disadvantage for efficient communication.
3.4 The future of RSS

Thousands of sites use RSS and more people understand its usefulness every day. By using RSS, information on the Web becomes easier to find and web developers can spread their information easier to special interest groups. According to Kevin Laws (2005) there are a variety of interesting capabilities with the future use of RSS. In his article Laws is mentioning the possibilities for an enterprise to use RSS.

“Imagine replacing Microsoft Exchange with an interlocking array of RSS-feeds. Each user with Outlook receives their shared calendar, contacts and other information from subscriptions to RSS feeds.” (Laws K, 2005)

According to Laws, the future will inspire a new wave of RSS companies along with some of the current players. Existing enterprise solutions will then be able to use RSS as a communication mechanism that is not limited by sharing a Microsoft Exchange server, allowing standardized information sharing. He means that this will more or less complete the promise of interoperability that began with XML.

Anyone who lives in the U.S. or Belgium can now join a new service that is available. Feedbeep is the company behind, and the service sends the subscribed users an SMS alert when new RSS headlines are available. The alerts can be set to go to your mobile device on your keywords or any time new information is posted to a feed (Hrastnik R, 2005b).

“FeedBeep is the final link between you and the wealth of information published on the internet. Hundreds of thousands of data feeds are available in RSS format, and now you can receive alerts about events worldwide — as they happen — right on your SMS-capable phone.” (feedbeep.com)
A company called 49PM has released an application that shows another area of use for RSS. The application enables people to read RSS feeds by using their mobile phones, and view any associated images formatted exactly to the size of the mobile display. They mean that since RSS content items are usually just short messages they are appropriate for delivery to mobile phones (Hrastnik R, 2005c).

Slashdot.org, a community-driven technology site on the Web, had on February 2 2005 a link to a survey about RSS on their website. The purpose of the survey was to determine how Slashdot readers are using RSS technology now and detect future plans and platforms for accessing content via RSS. 230 respondents completed the survey and the results showed that:

- 73% of the users will increase their use of RSS feeds in the next year.
- Most of the users received their feeds through a Web-based RSS syndication service. It also showed that many users did not use traditional methods to read their feeds; instead they were relying on mobile and other devices to obtain their feeds.
- Receiving feeds through mobile units such as cell phones, SMS messaging, voice mail, WAP or portable audio players will increase.
- Technology will improve as RSS use increases, making RSS feeds easier for users to read and for publishers to deliver (Bender S, 2005).

3.4.1 RSS-Calendar

Another application that uses the RSS technology is the RSS calendar. The RSS Calendar program allows the user to convert and publish calendar data as an RSS feed. Anyone who has an interest can then subscribe to the calendar feed and automatically receive notices of new appointments, which can be viewed through an RSS calendar or imported to a Web-based calendar or Microsoft Outlook. According to the developer John Pacchetti was the goal with the calendar to simplify something that the software industry seems to make more complicated than it needs to be. The items of the RSS Calendar can be converted to the iCal and vCal formats, which mean that they will be readable by Web-based calendars and Outlook. Pacchetti also says that he in the future will have a plug-in that works with Outlook so that the integration will be more automatic (Becker D, 2005).
3.4.2 Event-Driven RSS syndication

The next big thing that includes RSS is according to the company KnowNow is Event-driven RSS syndication. Event-driven content syndication is transforming the way employees, partners and customers communicate and collaborate. They mean that with this solution you will receive only the information you need. With Event-driven RSS syndication the employees can get information within different categories, for example the most up-to-date corporate financial data or manufacturing and inventory statistics (KnowNow).

According to an article in Investors Business Daily, the company ING has launched a pilot test of Event-driven RSS syndication that includes 200 employees. The reason for the pilot test was that chairman Michael Tilmant wanted to send an e-mail to all his 100,000 workers. Unfortunately the note got stuck in some of the employees’ e-mail filters which lead to that some of the company’s workers got the message long before others. As a result of this ING began using electronic news feeds delivered directly to 200 employee’s desktop computers. Workers in the test group get updates on a variety of topics, such as employee benefits and company hires. If the pilot test works out fine, ING is hoping to expand the service to 20,000 employees by the end of the year (Barlas P, 2005). ING also expects RSS to reduce the load on its networks caused by other forms of communication, such as e-mail. Willem Duinkler, head of ING’s global e-business center, strengthens this view:

“*Our IT people are happy because the solution is not one that puts a heavy load on the infrastructure, because it's based on pushing the information and not pulling the information from somewhere*” (Barlas P, 2005)
4 Result

The focus in the thesis has been to analyse the different computer based communication tools, for internal communication within an organisation. The tools we have looked at are e-mail, intranet, instant messaging and RSS. Since RSS is a relatively new technology have we decided to examine the possibilities for an enterprise to use RSS as a channel for their internal information. Key elements when we have studied the different tools are:

- Time, is the information available directly.
- Correct information. By this we mean if correct information reaches the correct user. Type of information, is it information from the board, work-colleges or private. Is the communication one-to-one or one-to-many? We have also examined the needs for one-way or two-way communication.
- Control, is it possible to manage which information the user gets.

None of the different tools are complete for employee and internal communication. They all have their strengths and weaknesses, some information is for example more suitable to send with e-mail and some may suit better to send with RSS.

E-mail – Is often used for all types of communication, newsletters that are sent out to all of the employee’s inboxes. For conversation based communication when e-mails is send back and forward and each time contains one or two rows of information and several e-mails, creates a conversation. E-mail is in our opinion most suitable for one-to-one communication and for exchanging larger fragments of information or documents. Another advantage with e-mail is that it is possible to communicate with no consideration if the receiver is online or not. The receiver will get the information either way. E-mail should not be used for conversation with a few lines exchanged, IM is
more suitable for doing this job. Newsletter is often sent out to all e-mail addresses within an organisation, this causes pressure on the e-mail servers and on the network. It also contributes to the inbox-overload problem.

Besides this problem there is another big problem with e-mail. It is hard to control what every employee install into their e-mail programs. This can lead to that a lot of the employees have filters on their e-mail programs and maybe the information never reaches the employee. Despite these problems is our opinion that e-mail is here to stay, although it will need to evolve to further retain its usefulness as the top communication channel.

RSS – Is not commonly used for employee communication today. The key advantage with RSS is that the information is pushed out to the receiver instead of the receiver pulling the information. RSS can be a useful tool when it comes to one-to-many communication, when the information only has to go in one direction. The RSS potential within an organisation is not to replace e-mail, rather as a complement. Organisations would have the most benefits with RSS if they stop with the e-mail-newsletters and instead use RSS to push out that kind of information.

Other advantages with RSS are that there is a relatively small amount of data that is sent over the network and the RSS provides a standardize way to publish information. The information published with RSS is available direct on the subscriber’s newsreader and does not have to be accessed via an e-mail-client or a webpage. RSS can not yet be used for two-way communication due to its nature, it is therefore not possible to reply with the same tool. This is the biggest reason to keep the e-mail and not replace it with RSS. There is also a risk that the same problem as with intranets evolves, that there is very useful information available but nobody uses it or sees its full potential.

You have to use a specific tool or software to read a RSS-feed. If RSS-readers are not used and e-mail-client or web browsers are used to read the feeds the push advantages is blown away. Because then it is up to the user again, just like intranet, to get the information. According to us, there are some issues that must be solved before an enterprise can use RSS as an effective tool for internal communication:
• RSS-readers have to be installed on all computers and the users should not have the rights to turn it off.
• It should not be possible to unsubscribe from some feed that is mandatory.
• There should be different feeds for different information, for example one feed for the vendors and another for the economists.

This will help the enterprise to ensure that the information gets to all of the employees at the same time. It will also make sure that correct information reaches the correct receiver.

Instant Messaging (IM) – Best tool to resemble a real face-to-face conversation, is conducted in real time and suits best for short messages. The conversation is instant and is faster than using e-mail. The speed of the conversation is depending on how fast the user can type, those who are used to type on computers can communicate fairly fast. A lot of IM programs also give the user the possibility to send attachments, at the same time as the conversation goes on. This function distinguishes a lot between e-mail and IM. The receiver of the attachment will have to be online if you use IM, but if you use e-mail you can send an attachment to a receiver any time you want. The next time the receiver goes online, the attachment will be available when the e-mail is opened.

IM is not suitable for larger information exchange and it is not possible to send large amount of data as a message. In most cases the programs that are used have a maximum number of words that are allowed in each message.

Intranet – Can be used to publish all kinds of information and is available for all computers with a connection to the intranet. Intranet is an easy way to publish information to all employees and to distribute documents at the same time. Users do not have to be online all the time to read the information, they can access the intranet page whenever they want. The problem that can occur is that there is a lot of useful information published on the intranet, but the employees do not access to read it. Or they do not use the intranet as the extension that they could, they only use the small part of the intranet they need. The willingness to explore the intranet and the possibilities it can offer when it comes to information resources is not overwhelming.
4.1 Outcome

To summaries our result we have to answer our stated problem and reach a reasonable outcome. RSS can not be the one and only solution for distribution of internal information. The nature of RSS is to push out information to the users, two-way-communication is therefore not possible. E-mail and IM is still needed for one-to-one communication within the enterprise. RSS should be seen as a complement, not a replace for information distribution. It can be used to replace mass-distributed e-mail, this will ease the pressure on the e-mail infrastructure and the users’ inboxes.

You have to keep in mind that RSS is not suitable for all types of enterprises. It all depends on the enterprises:

- **Size** – RSS suits best when information shall be distributed to a larger number of employees. E-mail may be sufficient if the enterprise only have a smaller number of employees.

- **Culture** – The enterprise culture can be a key-element if a RSS implementation will succeed or not. If the employees or the leaderboard do not want to start using RSS it is doomed to fail. Instead of fear of change and the use of new technology, users have to see the possibilities and advantages with RSS.

- **Need** – Is there a need of RSS on the enterprise? If current information channels work as they should, the implementation of RSS may be unnecessary. RSS should be implemented if there is a use for it and not only because it is a new hyped technology.

- **Existing infrastructure** – If the existing intranet collects its information from a database the script to create a RSS-feed is not very complicated to write. The feed will then be published automatically at the same time as the information on the intranet.
The cost to implement a working RSS-environment is relatively low. Many of the RSS-readers are available for free download and use. Most enterprises already have the infrastructure that is required for implementation and use of RSS. The thing that has to be done is the installation of the RSS-readers, a script (PHP, ASP) has to be written and integrated with the intranet.

According to us the best combination for internal communication is intranet, e-mail and RSS. Key features for it to work optimal are that the information always is up-to-date and frequently updated.

- E-mail for one-to-one communication.
- Intranet for publishing enterprise information and news.
- RSS to push out important information fast and link to the intranet for further reading. Different feeds can be used to fulfil the needs for correct information to the right receiver.
5 Discussion

RSS is a relatively new technology and the use of it is not widely spread. It is mostly web pages that publish some kind of news that use RSS to push out their news. Today the common Internet users do not know what RSS is and what the benefits of it are. If the users do not know how to use RSS the scepticism and fear of new technology comes, and within a company it could be hard to implement it because of this lack of knowledge. Internet users and employees have to see which the benefits with RSS are, if it should grow, otherwise RSS only will be used by technology-interested users.

In the future it is important to keep the development ongoing and try to prevent the same problem with spam and unwanted information, like e-mail has today. Information-overflow problems also have to be solved, for example to filter subscriptions by keywords. If RSS get the same problems as e-mail the benefits disappears and the reliability will decrease. Security issues could lure in the near future, it is possible to transmit audio and media via RSS today and this opens an opportunity for viruses and worms to infect subscriber’s computer.

RSS will not likely take over or replace the role that e-mail plays today. E-mail is a powerful one-to-one communication tool. RSS have to find its niche to survive, it is highly suitable for mass-communication where the information has to be pushed out. Calendar functions in RSS-format are one way to niche, if the calendar is written in RSS and has an interface that can be reached and edited with a web browser, this opens the opportunities to

- Edit wherever there is an Internet connection, at home, at work, with PDA, with mobile-phone, laptop or with wireless connection.
- Can be read by web browser in all the different applications mentioned above.
• Synchronised with the e-mail client on the computer, with the mobile-phone calendar and e-mail-client. Now the calendar for all the technical applications is available, no use for multiple calendars because of synchronisation problems.

There are few written sources to refer to due to the nature of the subject and problem. RSS is relatively new and there are not many books available about the subject. Those books that are available on the market today contain what RSS is and how to write RSS-code, not much in the area about RSS as a communication tool within a enterprise. Therefore we had to find reliable and correct information in journals and on websites.

We have not been in contact with any company that uses RSS. Therefore we have not been able to evaluate and see how it works when it is implemented. Neither have we interviewed companies if they use RSS or if they intend to do it in the future. Maybe we should have constructed a RSS-feed to show how it works and how to connect it to a database. For example we could have used a news-database, at the same time the database is updated, the RSS-feed gets updated with the help of for example php-script. By doing this the knowledge and the understanding about how it works will increase.

5.1 Other fields

We have not looked at the possibilities to use RSS as a marketing-tool. To use RSS-feeds instead of using e-mail as a channel to push out information to customers or people who are interested. To completely cover this area we would have to involve another person with skills within marketing and also an economist to measure the economical costs and savings.

In the thesis we do not have a single interview or any case-study from an enterprise. The interests to participate in interviews from the enterprises were very low, they all say that they are interested but we should come back when the thesis is finished. Although it would have been hard to make an interview or a case-study on any enterprise, because it seems that no one has implemented RSS as a communication channel.
Another interesting field would have been to cover all the available communication-channels within an enterprise. To look at human-based communication such as conversations, meeting, telephone and also the computer based such as e-mail, IM and RSS. Compare the different types of communication, the different ways to use them and which role they play within the enterprise.

5.2 Future research

In our opinion there are a lot of new areas with RSS that can be interesting to investigate further.

- Implement RSS as a communication-tool in an enterprise. Make it work together with the existing infrastructure like intranet, e-mail and databases. Also look upon the employees’ opinion and how they use the new tool and if they think it are worth using.
- Use RSS as a tool to communicate with their partners, suppliers and other associates. Is it possible to connect it to the ordering system and send the information in RSS-format? Use it as a news-broadcast and information channel.
- A small amount of data in a structured format gives the possibility to use RSS in wireless environment with WLAN or 3g-connections. The small amount of data that has to be send enhances the speed and reduces the cost for data transfer, because it is never a whole website that is downloaded.

Because the technology is as new as it is, the possible areas to research in will increase with the growth of RSS. To use RSS in marketing can be one of the big things in the near future. The potential is huge but marketers have to find a way for RSS to handle the problems with spam.
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