



# Future of financial reporting on the Internet

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**Key words:** Financial information on the World Wide Web, online financial reporting, future of XBRL, future financial reporting on the Internet.

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## 1 Introduction

Until recently, the accessibility of a company's financial statements (income statement, balance sheet, cash flow statement and notes thereto) was limited to printed hard copies. The development of the World-Wide Web made it possible for companies to explore alternative routes for the distribution of financial statements. A report published by the Financial Accounting Standards Board (FASB) (2000) lists the following reasons for companies to publish financial statements on the Internet:

- Reducing the cost of and time to distribute information
- Communicating with previously unidentified consumers of information
- Supplementing traditional disclosure practices.

The *Companies Act* and the Johannesburg Stock Exchange (JSE) govern the distribution of financial statements in South Africa. Despite all the technological developments and the

advantages related to Internet reporting, both the *Companies Act* and the JSE stipulate that annual financial statements should at least be distributed in the printed hard copy format (South Africa. *Companies Act, Act 61 of 1973*, Section 302). It should be noted that all financial reporting on the Internet are voluntary.

A study done by Allam and Lymer (2002) on the 50 biggest companies in the USA, UK, Canada, Australia and Hong Kong concluded that 99,6% of these companies have Web sites. It was found that all of the companies with Web sites supply their financial statements via the Internet. In this research it was found that the largest (in terms of market capitalization) companies in South Africa have working Web sites and that all of them supply financial statements on their Web sites.

Debreceeny, Gray and Rahman (1999) identified three stages of Web financial reporting, as described in Table 1.

**Table 1** Stages of Web financial reporting

Stage	Characteristics
1	Duplication of the printed financial statements on 'electronic paper' [e.g. Adobe's Acrobat Portable Document File (PDF)]
2	Conversion of printed financial statements into Hypertext Mark-up Language (HTML)
3	Use of enhancements that cannot be incorporated in printed documents

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## 2 Objectives of the study

The primary objective of this study was to try to determine the future use of information technologies by listed companies in South Africa in the presentation of their financial statements on the Internet. This was done to stimulate discussion among academics, information managers, Web masters and general managers. The secondary objectives were to provide a snapshot of the current use of information technology by South African companies, to identify past trends within South African companies and to compare these trends with international trends.

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## 3 Outline and delimitation of study

The study consisted of four phases. The first was to describe the relevant technologies in each stage (Table 1). The second identified the stage at which South African companies found themselves, based on empirical research and these findings were compared with previous research to identify the current trends. In the third stage, the study then continued to compare the results with research in other countries. The fourth section speculated on future trends.

It should be noted that this study focused only on technologies that companies used to present their financial statements on the Internet and not technologies that could be used in general to

improve investor and public relations (e.g. share price charts and shareholder diaries). This study was also limited to software-related information technology.

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#### 4 Stages of Web financial reporting

Although the most popular format for constructing Web sites is HTML, for the purpose of financial reporting on the Internet, HTML and PDF are the most popular formats (Allam and Lymer 2002). Each format has its own advantages and disadvantages, as summarized in Table 2. This table is an adaptation from the FASB report of 2000.

**Table 2** Advantages and disadvantages of HTML and PDF formats

	PDF	HTML
<b>Advantages</b>	<ul style="list-style-type: none"> <li>• When the file is printed, it looks exactly like the printed document on which it was based</li> <li>• Very easy to create from original document</li> <li>• Document cannot be inadvertently altered by users</li> </ul>	<ul style="list-style-type: none"> <li>• Can easily hyperlink into and out of HTML pages</li> <li>• Can be viewed directly in the browser – requires no plug-in</li> <li>• Is an open formatting standard</li> </ul>
<b>Disadvantages</b>	<ul style="list-style-type: none"> <li>• It is difficult to read and navigate through PDF files on a computer screen</li> <li>• Acrobat files are relatively large and need to be downloaded</li> <li>• Requires Adobe Acrobat Reader plug-in that the user must install</li> <li>• Reader is based on a proprietary format and is currently free, but may not be free forever</li> <li>• Can hyperlink out of PDF files, but cannot hyperlink into specific points inside a PDF file</li> <li>• Information in PDF files is not indexed by search engines</li> <li>• Plug-ins can be a security risk, since they execute automatically when users select PDF file</li> <li>• PDF data cannot be exported, copied or paste to other software. Users are therefore required to re-type the data in a suitable software package for financial analysis purposes.</li> </ul>	<ul style="list-style-type: none"> <li>• A document printed from the browser will probably not look like the original document</li> <li>• Browser may split tables and pages</li> <li>• Users may experience the 'lost in cyberspace' feeling</li> <li>• Saving HTML pages may be a problem</li> <li>• Can require significant work to convert original document to HTML document in terms of layout and design</li> <li>• Although HTML data cannot be exported to other software, users can copy or paste the data to certain software packages, for example Microsoft Excel, for analysis and other purposes.</li> </ul>

One could reason that, purely from a technical viewpoint, companies would prefer to use the PDF format instead of HTML. Motives would include ease of preparing PDF documents and a lower risk of users infiltrating and corrupting the information.

From a strategic and public relation point, however, it is essential that companies should consider the needs of their shareholders as well as all other parties that may be interested in their financial statements. Both PDF and HTML hold certain specific advantages and disadvantages for users of financial statements. Different users would probably prefer different technologies based on their specific needs and level of computer literacy.

PDF would appeal to users since it is easy to print and save, and all information is normally available in one file, compared to HTML that doesn't print or save adequately. In HTML, different sections of financial statements are usually situated at different locations. The use of hyperlinks to and from relevant information and the ability to copy and paste information to other software packages would be of particular importance to users who are analysing the financial situation of a company. HTML facilitates these usages.

Stage 3 (of Table 1) is characterized by the use of enhancements that cannot be incorporated into printed documents. Relevant technologies would include:

- Interactive Financial Statements
- Web casts
- The provision of financial statements in a downloadable format, for example Microsoft Excel
- Extensible Business Reporting Language (XBRL)

#### *Interactive Financial Statements*

Interactive Financial Statements have two characteristics that make the format attractive to investors:

- A series of drop-down menus with easy and quick access to any specific section of the financial statement.
- A search function that enables users to search for any specific item in the financial statement in which they are interested.

#### *Web casts*

Web casts offer interested parties timely information and remote access to live presentations. Web casts are available either in video and/or audio format.

#### *Excel*

The availability of financial information in Excel makes it easier for users to analyse the financial situation of a company. HTML documents can be pasted and copied in Excel, but this is a cumbersome and time-consuming exercise. Financial information supplied in the PDF format must be printed out and re-entered before any meaningful analysis can be made.

#### *XBRL*

Despite declarations by information technology leaders such as Bill Gates (XBRL International Consortium 2004), that XML will be the next revolution on the Internet, XBRL are still fairly unknown. XBRL is based on XML.

Both XML and HTML are derivatives of SGML (Standard Generalised Mark-up Language). SGML, developed between 1978 and 1986, is used extensively in document publishing but has proved too complex for wide adoption and use on the Web. XML was developed in 1998 to solve the problems experienced with SGML and HTML (Hoffman, Kurt and Koreto 1999).

XML is similar to HTML in that both use mark-up symbols or tags to indicate how the contents should be displayed or is described. An important difference is that HTML uses the mark-up symbols to describe the placement and appearance of content on a Web page compared to XML, which is used to describe the content in terms of what data are being described (Investor Relations Society 2004).

There are a number of different XML applications. XBRL was developed in 1999, specifically for the purpose of financial reporting. XBRL uses XML-based data tags to describe financial statements and is being developed by a non-profit consortium (XBRL International Consortium) consisting of over 200 leading companies, associations and government agencies around the world.

According to the XBRL International Consortium (2004), the advantages of XBRL are that it:

- is a standards-based method with which users can prepare, publish (in a variety of formats), exchange and analyse financial statements and the information they contain;
- is freely licensed;
- permits the automatic exchange and reliable extraction of financial information across all software formats and technologies;
- ultimately benefits all users of the financial information supply chain: public and private companies, the accounting profession, regulators, analysts, the investment community, capital markets and lenders, as well as key third parties such as software developers and data aggregators;
- does not require a change of existing accounting standards;
- improves access to financial information;
- reduces the need to enter financial information more than once, reducing the risk of data entry error and eliminating the need to manually key in information for various formats; and
- enhances efficiencies of the Internet by making Web browser searches more accurate and relevant.

Table 3 summarizes the advantages of XBRL over PDF and HTML. This table is an adaptation from Bosak and Bray (1999).

**Table 3** Advantages of XBRL over PDF and HTML

Criterion	PDF (Stage 1)	HTML (Stage 2)	XBRL (Stage 3)
Web page creation	Creates scanned version of printed documents for Web pages	Creates Web page layout (text, image, push buttons)	Creates Web-enabled catalogues of information
Delivery	Sends Web pages as fancy fax documents that can be viewed on	Sends Web pages as fancy fax documents that can be viewed on	Specifies the location and description of

method	various computers (appearance is exactly the same on all computers)	various computers (appearance may differ from computer to computer)	individual data items that appear on the Web
Formatting	Uniform formatting because it is a picture of documents	Data formatting does not allow the meaning of the data to be provided	Resource Description Framework (RDF) is used as a catalogue of the information represented
Search efficiency	Does not allow searches	Allows searches, but at slow speed and often inaccurate	Allow high-speed and accurate searches
Culture and language	Language is not an issue (a document in any language can be scanned)	Language specific, making exchanges between languages difficult	The data entered in a generic form can be used by Web pages in any language by a simple translation program
Link to other Web pages	No Web links into the PDF file from any Web page, but links out to Web pages	Provides hot Web links to various Web pages, but can result in error 404 (file not found)	Provides X-links to databases. No error 404 (file not found)
Information processing	Does not allow for processing of data at all	Static processing where the data cannot be analysed on the spot (there is a need for additional queries)	Dynamic processing of data on the spot: Users can copy and paste data to software packages such as Excel for analysis
Programming	Uses Acrobat PDF Writer to translate text documents or scan documents for attachments	Programming in HTML; templates are available	Extensive programming needed to specify all data tags

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## 5 South African companies

### 5.1 Previous research

A literature study was done of previous research on the status of financial reporting of South African companies on the Internet. The findings of these studies were extracted and are summarized in [Appendix A](#). For ease of comparison, the format used by Venter (2002) is used to present the information.

### 5.2 Empirical research

The Web sites of the top 50 companies listed on the JSE was investigated. Market capitalization as on 1 March 2004 was used to identify the top 50 companies. To ensure that the results are reliable and compatible, all the data were collected in a two-day period during March 2004.

### 5.2.1 Research results

#### *General*

All 50 companies did have working Web sites and all presented their financial statements on their Web pages.

#### *Online format of financial statements*

It was found that all 50 companies used PDF to present their complete financial statements on the Web. Some companies used HTML, Excel and Interactive Financial Statements to supplement the PDF financial statements. Others used these technologies to give users the option of the format in which they would prefer to access the financial statements. At the time, none of the companies used XBRL.

Table 4 lists the results of the different formats used in presenting annual financial statements on the Internet [compared to research by the International Accounting Standards Committee (IASC) (1999) and Venter (2002)]. It should be noted that, for the purpose of this research, *full* is defined as complete financial statements and notes thereto, compared to *partial* that include only financial statements without notes.

**Table 4** Format of presentation of financial statements: 1999 to 2004

	IASC (1999)			Venter (2002)			Research in this study (2004)		
	No PDF	PDF	Total	No PDF	PDF	Total	No PDF	PDF	Total
No HTML	26%	13%	39%	2%	35%	37%	0%	48%	48%
Partial HTML	7%	10%	17%	12%	22%	34%	0%	22%	22%
Full HTML	23%	20%	43%	8%	21%	29%	0%	30%	30%
Total	56%	43%	99%	22%	78%	100%	0%	100%	100%

PDF was the most used format in presenting financial statements. A clear trend away from HTML to PDF could be identified. Substantiation of this trend was provided by the following:

- Companies that used *only* PDF increased from 13% (1999) to 35% (2002) to 48% (2004) compared to companies that used *only* HTML that decreased from [30%<sup>1</sup>](#) (1999) to 20% (2002) to 0% (2004).
- Companies that used PDF (solely or jointly with HTML) increased from 43% (1999) to 78% (2002) to 100% (2004) compared to companies that used HTML (solely or jointly with PDF) that increased from [60%<sup>2</sup>](#) (1999) to 63% (2002) and decreased to 52% in 2004.
- Companies that used no PDF decreased from 56% (1999) to 22% (2002) to 0% (2004).

In addition to HTML and PDF, Excel spreadsheets and Interactive Financial Statements were the third and fourth most popular formats for presenting financial information. The use of Excel, Interactive Financial Statements and XBRL, however, are not included in the above, since

neither the IASC (1999) nor Venter (2002) report on the use of any of these technologies in their research.

Table 5 summarizes the findings of this survey on the use of Excel and Interactive Financial Statements.

**Table 5** Use of Excel and Interactive Financial Statements

	No PDF	PDF	Total
<b>No Excel</b>	0%	74%	74%
<b>Partial Excel</b>	0%	24%	24%
<b>Full Excel</b>	0%	2%	2%
<b>Total</b>	0%	100%	100%

	No PDF	PDF	Total
<b>No Interactive Financial Statements</b>	0%	0%	90%
<b>Partial Interactive Financial Statements</b>	0%	0%	0%
<b>Full Interactive Financial Statements</b>	0%	10%	10%
<b>Total</b>	0%	100%	100%

Some companies, for example Old Mutual ([http://www.oldmutual.com/Financial/annual\\_report/index.asp](http://www.oldmutual.com/Financial/annual_report/index.asp)), link their interactive financials to a series of PDF documents compared to others that provide links to HTML documents, for example First Rand (<http://www.firstrand.co.za/yearend2003/web/index.html>). Examples of companies that offer their financial statements in the Excel format include Goldfields ([www.goldfields.co.za](http://www.goldfields.co.za)), SAB Miller ([www.sabmiller.com](http://www.sabmiller.com)) and Sasol ([www.sasol.com](http://www.sasol.com)).

Since neither the IASC (1999) nor Venter (2002) report on any companies that used Excel, XBRL or Interactive Financial Statements, it is assumed that none of the companies made use of this technology at that time. Currently, 26% of the companies sampled provide their financial statements in the Excel format, compared to 10% that provide Interactive Financial Statements.

### Web casts

A number of companies used Web casts to deliver presentations of their latest financial statements on the Internet. Table 6 indicates the various methods that companies use and compares the results with previous research.

**Table 6** Web casts

	Venter (2002)	Research in this study (2004)
Audio presentations	5%	30%
Audio and video (combination)	11%	34%



presentations		
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Although it was not possible to ascertain which of the Web casts were available live through investigation of the Web pages, 22% of the companies that offered Web casts made special reference in their presentations to the fact that the presentation will be live and available on other premises as well.

Examples of companies that offer live Web casts of their annual financial statement presentations include Sasol ([www.sasol.com](http://www.sasol.com)), MTN ([www.mtngroup.com](http://www.mtngroup.com)), First Rand ([www.firststrand.co.za](http://www.firststrand.co.za)), Old Mutual ([www.oldmutual.com](http://www.oldmutual.com)), Harmony ([www.harmony.co.za](http://www.harmony.co.za)) and Sappi ([www.sappi.com](http://www.sappi.com)).

### Conclusion

The use of PDF increased to the detriment of HTML. If this is compared to the stages of Web financial reporting explained in Table 1, South African companies did not progress from Stage 1 to Stage 3, but rather reinforced their position as a Stage 1 country. On the other hand, implementation of technologies such as Excel (26%), Interactive Financial Statements (10%) and Web casts (64%) are components of Stage 3.

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## 6 Trends in other countries

To determine trends in other countries, research done by the IASC (1999) and Allam and Lymer (2002) was used, because of its ability to identify trends. Research by the IASC focused on the top 30 companies in 22 countries, compared to the research by Allam and Lymer that focused on the top 50 companies in the USA, UK, Canada, Australia and Hong Kong.

The PDF-only style is clearly the most-used technology in the above five countries. The use of the PDF-only style is, however, not consistent and varies from 30% and 34% in respectively the USA and the UK to 58%, 66% and 80% in Canada, Australia and Hong Kong respectively. Allam and Lymer (2002) speculate that cultural differences, management philosophy, local rather than international trend following and Internet accessibility are all possible reasons for these diversities.

The use of the HTML-only style was found not to be popular, with only 8% of the Hong Kong companies, 2% of USA, UK and Australia and 0% of Canadian companies employing this technology. Allam and Lymer (2002) found that of the 250 companies they surveyed, 68% used the HTML format (solely or jointly), while 98% of the companies used the PDF format (solely or jointly).

It should be noted that the definition of partial and full HTML use was not explained by the above researchers and may therefore differ slightly from the definitions used in this research.

Table 7 summarizes the use of the HTML format compared to the use of the PDF format in five international countries from 1999 (IASC) to 2002 (Allam and Lymer), compared to South Africa from 1999 to 2004.

**Table 7** Use of HTML format (solely or jointly) compared to the PDF format (solely or jointly)

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	South Africa			USA		UK		Canada		Australia		Hong Kong	
	1999	2002	2004	1999	2002	1999	2002	1999	2002	1999	2002	1999	2002
<b>PDF only</b>	13%	35%	34%	7%	30%	0%	34%	17%	58%	23%	66%	0%	80%
<b>PDF (solely or jointly)</b>	43%	78%	100%	44%	96%	50%	90%	90%	100%	70%	98%	10%	86%
<b>HTML only</b>	30%	20%	0%	47%	2%	10%	2%	3%	0%	10%	2%	23%	8%
<b>HTML (solely or jointly)</b>	60%	63%	52%	84%	68%	60%	58%	76%	42%	57%	34%	33%	14%

The use of the PDF-only format increased in all of the above countries, compared to the use of the HTML-only format that decreased in all countries. The use of the PDF format (solely or jointly) also increased in all countries, compared to the use of the HTML format (solely or jointly) that decreased in all countries. From this one could conclude that the South African trend is similar to the international trend.

It should be noted that, especially in an Internet environment, comparing 2004 results with 2002 results would not be a straightforward comparison. Electronic Data Gathering Analysis and Retrieval (EDGAR), a registered trademark of the US Securities and Exchange Commission (SEC), is keeping a database of all companies that converted their financial statements to the XBRL code. On 05 April 2004, 65 companies were included in the database (EDGAR-Online, 2004).

According to the XBRL International Consortium (2004), users of XBRL include the UK Inland Revenue, the Japan National Tax Agency, the Tokyo Stock Exchange, Wacoal, KOSDAQ, and the US Federal Deposit Insurance Corporation (FDIC).

The research showed that currently none of the companies investigated in South Africa apply XBRL. This may be an indication that South Africa is lagging behind international companies in the adoption of the latest technology to present financial statements on the Internet.

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## 7 Conclusion

The PDF style is the most used style in the presentation of financial statements in both South Africa and overseas countries such as the USA, UK, Canada, Australia and Hong Kong. It was found that in all countries investigated the trend for companies was to use more PDF and less HTML. PDF is an attribute of Stage 1 and HTML of Stage 2. This indicates a trend towards Stage 1.

Stage 3 is characterized by the use of enhancements such as Excel, Web casts, Interactive Financial Statements and XBRL. It was found that the use of Excel, Web casts and Interactive Financial Statements in South Africa had increased dramatically over the past two years, which indicates a trend towards Stage 3. No comparative information could be found for other countries. None of the companies investigated in South Africa applied XBRL, compared to 65 companies in the USA and a growing number of international institutions.

XBRL, like HTML, is a derivative of SGML. If this is evaluated against the trend towards PDF – away from HTML – one could argue that companies will be wary to implement XBRL. This trend will not change, unless companies become aware of the advantages offered by XBRL.

XBRL will solve many of the problems experienced by PDF and HTML and will benefit all users of the financial information supply chain.

According to the Investor Relations Society (2004), recent accounting scandals have revitalized interest in XBRL. Recent financial catastrophes such as Enron increased the demand for greater transparency. The Investor Relations Society (2004) advocates that achieving the desired improvement in transparency is not just about what and how much a company discloses about its businesses operations, but rather how the company discloses it and the ease with which others can access and interpret it. How a company publishes information has a dramatic impact upon how quickly that information can be digested, analysed and returned to the market. The *Sarbanes-Oxley Act of 2002*, which mandates a clearer set of rules by which companies make financial disclosure, has also added support to the XBRL initiative (Rogers 2003).

Although the advantages and possibilities of XBRL are clear, there are a few restraining factors that still need to be overcome by the XBRL International Consortium. According to the XBRL International Consortium (2004) there are three prerequisites for the successful deployment of XBRL. They are:

- the creation of a specification that is the same for all companies and that is consistent from one financial statement to another;
- applications that will allow the creation of financial statements 'tagged' with XBRL that adhere to the specifications; and
- style sheets that render information for a specific or variety of formats.

The development of a specification that defines the syntax and the semantics of taxonomies is the responsibility of the XBRL International Consortium. Taxonomies are the dictionaries of the tags needed for XBRL to function. The XBRL 2.1 specification was finalized on 31 December 2003. Taxonomies are developed by bodies such as the International Accounting Standard Committee (IASC) and US General Accepted Accounting Practice (GAAP). The adoption and implementation of taxonomies by the majority of companies is a prerequisite for the effective deployment of XBRL. For this standardized financial statements across companies and industries are needed. Historically the layout of financial statements differed over companies, industries and countries. Possible reasons include diverse operations, industries, culture, local laws and personal preference.

According to a survey done by the American Institute of Certified Public Accountants (AICPA) in 2003, two-thirds of accounting software vendors in the USA have either implemented XBRL into one of their accounting software packages or will do so by December 2004 (SmartPros 2003). Once added to software, it will automatically and transparently translate all the business information selected and create XBRL documents.

A collaborative team from Nasdaq, Microsoft and PriceWaterhouseCoopers developed a demonstration (style sheet) to illustrate how information reported by companies in the XBRL format will benefit investors, analysts and other users. The demonstration attempts to highlight the inherent analytic capabilities of XBRL formatted data for companies and their stakeholders. It is available at [www.nasdaq/xbml](http://www.nasdaq/xbml).

Of the above three prerequisites for the successful deployment of XBRL, the task of creating standardized specifications and taxonomies will probably be the single biggest potential limiting factor. Software for the XBRL tagging of financial statements and style sheets for the use of the

XBRL-tagged information have already been developed and will be improved as market demand increases.

Companies that do not adapt to XBRL will soon be isolated and marginalized in the investor milieu. They will forego all the advantages and cost savings associated with XBRL. Given the rate of change in the world of technology, the shift towards XBRL will be sooner rather than later. Knowledge of XBRL is especially important for information managers, general managers and accountants.

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## Appendix A

Source and date published	Date of empirical research	Sample	HTML	No PDF	PDF	Total
IASC, 1999	1999	Top 30 South Africa Dow Jones Global Index	No HTML Partial HTML Full HTML Total	26% 7% 23% 56%	13% 10% 20% 43%	39% 17% 43% 99%
Stainbank, 2000	1999	Top 100 JSE	No HTML Partial HTML Full HTML Total	No data was collected and/or published on the technologies used to communicate financial information on the Web.		
Venter, 2002	January 2002	Top 100 JSE	No HTML Partial HTML Full HTML Total	2% 12% 8% 22%	35% 22% 21% 78%	37% 34% 29% 100%

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