

## **Issues in Electronic On-line Financial and Business Reporting**

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### **Introduction**

The purpose of this paper is to identify and describe the issues that have been identified in preparing the CICA Research Study "The Potential Implications of Electronic On-Line Reporting on Financial and Business Reporting."

The purpose of the Study is to discuss (a) the current use of electronic financial and business reporting in selected countries, (b) the potential future impact of electronic on-line reporting on the content, timing and the format of financial information, and (c) what other types of business reporting that might be provided on-line on a continuous basis throughout the year.

A distinction is made in the study between financial statements, financial reporting and business reporting. Financial reporting includes financial statements, but also other disclosures, such as Management Discussion and Analysis and periodic news releases. Business Reporting includes all of the above, but also incorporates non-financial information, such as environmental impact assessments.

### **Trends in Technology Affecting Financial Reporting**

There are several ways in which technology can be used to convey financial information in other than the traditional paper format, the most common being the World Wide Web. Use is also made of other vehicles (regulatory or private) that are available to the public, perhaps through direct log-in lines to corporate servers.

Accounting literature and certain professional organizations have identified several trends in the use of technology that appear to be having a significant impact on the role, timing, content and structure of financial reporting. This first section provides an overview of these trends.

Regulatory systems Major regulators have developed systems for the filing of information, the first one being the EDGAR (Electronic Data Gathering And Retrieval) System of the U.S. Securities and Exchange Commission. In Canada, the Ontario Securities Commission has developed SEDAR (System for Electronic Data And Retrieval). Both of these systems are accessible on the World Wide Web.

Use of the WWW The main reason for the use of the World Wide Web is that it offers a low cost solution (for both users and producers) to access of corporate data by using an established network structure that all can participate in easily. Not only does it provide a broadcast or mass communication medium for corporate reports (Parker 1982), it offers instant access to data at convenient times for users (ICAEW 1997).

Use of the Web for financial reporting purposes has been increasing. A recent study of Web site disclosure in the UK, (Lymer 1997), which surveyed the use of the Web for corporate disclosure by UK companies in February and June, 1997, noted that many sites added interim data for the 1st Quarter of 1997 and generally increased the amount of stakeholder information available on the site. They also noted that a wider range of web facilities was in evidence at more of the sites, there was increased use of Adobe Acrobat formats for downloading of data and almost all of those companies without web sites at the beginning of 1997 still did not have them by June, 1997.

The Web offers the opportunity to provide information beyond that of traditional financial reports and in different formats. Hyper-linking of data is used to improve the readability of financial reports and to improve user access to information (Parker 1982). This facilitates the drill-down technique of accessing relevant information. As discussed below, the drill-down capability offers challenge in addition to opportunity, as it becomes difficult for users to assess the validity of information to which they are led through the links.

Trend data and analysis can readily be provided for users, but it is also possible for the user to download data and then manipulate it for further analysis (Lymer 1997). In addition, the Web facilitates the provision of non-financial measures of performance (Lymer and Tallberg 1997) and has led to an increased use of graphics for presenting information.

There are fewer constraints on presentation flexibility than in traditional paper vehicles (Green and Spaul 1997). The flexibility of presenting information made possible by technology can enable easier presentation of information relevant to other jurisdictions, such as accounts conforming to US GAAP. More fundamentally, Elliott has held that IT can allow the third wave [derivative of the Toffler model of economic activity] system to perform new analyses and report in new formats as needed. The manager of the third-wave company must be able to have data reported in the manner desired, even if the report has never been demanded before. (Elliott 1992).

Elliott also points out that IT allows the manager to add new data types without redesigning the accounting system. It also allows the system to access outside data sources and integrate them so they can be available on demand.

The timeliness of information can also be addressed in IT systems through dynamic data presentation, under which data are continually updated to reflect new information. This capability has the potential of adding new meaning to the timeliness concept of existing reporting models (Jenkins 1994, Wallman 1995).

The issues arising from technology trends such as these are numerous and fundamental. They are outlined in the next section.

### **Issues Relating to Financial Reporting**

#### ***A. Potential impact on the content, timing and format of financial information***

##### **1. Hyperlinks**

The use of electronic media, particularly the Internet, for financial reporting makes it difficult for users to know where the boundaries of the information lie. “An annual report of, say, 80 pages, has a compact and reassuringly familiar physical presence. - - - - the layout of the package is familiar, predictable and highly standardised. The boundaries of the web site, by contrast, are not at all obvious; the site often appears bulky, limitless and sometimes obscure, and examination of it leads to a curious sense of dissatisfaction.” – (Flynn & Gowthorpe 1997).

The use of Hyperlinks is the main technology tool that creates a boundary problem. (Canadian Securities Administrators - CSA). Hyperlinked data are also very analogous to the concept of inclusion by reference, a concept well established in the field of financial reporting

for regulatory purposes. Material included by reference establishes a clear responsibility for that information in the context of the primary information.

The SEC has said (in Release No 33-7233) that information accessible through a hyperlink is similar to including the paper version of the information in the same envelope as the main document (which establishes a responsibility of the provider for the accuracy of that information).

The “boundary problem” cuts both ways. It means that users don’t know when they have gone outside the financial presentation. It also means they don’t know when they have seen it all and they may be missing information required by GAAP.

There are numerous other issues pertaining to the use of hyperlinks. For example, should companies be allowed to offer GAAP information by using hyperlinks? If they are, how does the user distinguish between the linked information that is required by GAAP and that which is not? Will users be aware that they have moved from audited information to unaudited information?

In addition, the linking of information raises the issue of the currency of the information being linked. For example, information of a current nature, such as the latest financial statements, could be linked to market information on another server that is not being maintained to a current date. Users might have difficulty knowing when they are viewing information that is current and when they are not. Even worse, they might be misled into thinking that the out of date information is as current as the rest of the information they have viewed

Finally, links can be established between any servers on the Net. This also may have implications for the reliability of the information they are viewing.

It will be necessary for the study to explore ways for users to deal with these issues.

## 2. Presentation of Unstructured Information

### (a) Accountants as interpreters of information

Accountants have become skilled at presenting information in certain standardized formats (primarily in the form of general purpose financial statements), so that their message can be relatively easily understood by the informed reader. Through this process, accountants also limit the information to be provided on the basis of what is considered to be important and critical to comply with generally accepted accounting principles. Therefore, underlying these accounting functions is the assumption that accountants are the gatekeepers of accounting knowledge – they both provide and limit information.

“This benefits both the accountant and the user; the accountant retains a key position of authority as the arbiter of knowledge, and the user receives information in a form which, while limited in scope, is reassuringly presented in a familiar package. *More widespread use of the Web as a medium of reporting could upset this long-standing arrangement*; if the potential of the Web is thoroughly exploited users could receive far more information on a much more timely basis, albeit in a form which may not be comparable with the information provided by other companies. “. (Flynn & Gowthorpe 1997 - emphasis added) In other words, the data or information may be presented in customized formats.

In addition, this alteration in the work of accountants may involve moving from the summarization of information in a standard format to the interpretation of unstructured information provided by companies. Although, at present, many accountants already provide interpretive services, this shift would be a considerable change from the historical role of accountants.

(b) User Built Reporting models

One of the potentially more significant implications of the idea of presenting unstructured information is that the users can enter that information into their own models. This concept is very consistent with Toffler's Third Wave model, under which he says that consumers are increasingly playing a role in the design of the products they consume. There is no reason why information products should be any different. In fact, much of the product innovation in recent years has consisted of changes in the information content of products.

Since accountants are concerned with communicating information to users, they must be aware of the needs of their audience. In part, these needs are affected by the degree of sophistication of the users. Investment analysts, one of the most sophisticated groups of users, have built their own models for years. There is evidence that this has become quite sophisticated. The following quotes provide examples:

"There are several on-line services that analysts get, and I'll never understand why auditors don't get them too. For example, one that costs \$14.95 a month from Prodigy lists analysts' estimates for earnings.- - they have models of the companies they follow. On worksheets and subworksheets, they try to build in every element they know of the company's operating structure. Then as information flows in, they constantly update those models.

"I'm on the board of a gaming company, and we publish weekly casino revenues in Illinois. Every analyst who follows the company gets those reports. Everyone who follows General Motors gets the car sales reports, and they adjust their models on that basis. For only a couple hundred dollars a month you can get a service that tells you how many prescriptions were sold of every Pfizer drug each month." – Lee Seidler, PhD, CPA. (as quoted in Hill, 1996)

If unstructured information becomes available in electronic format, analysts and others will quickly find ways to import the data into models they build for their own purposes. Accountants will be able to help in designing the models used to analyze information.

But not all investors and users of financial reports are as sophisticated as investment analysts. This has long been recognized in the presentation of financial statements and to a lesser degree in financial reporting. The solution has been to present a standardized package that most presumably could understand. The presentation of unstructured information moves away from this approach, and must inevitably rely to an extent of the users to make good use of the information. This requires some degree of sophistication. A lack of sophistication of users may inhibit companies from disseminating unstructured information for general purposes.

(c) Selective data, low cost

"In the case of the WWW, - - - we see a new type of voluntary disclosure emerging; the disclosure is not usually novel because of its content (although it may be), but rather because of the implied selection by management of data for disclosure and the new medium by which

it is being disclosed. There is no regulation involved in the dissemination of information, and the costs involved are likely to be low. Even if the perceived benefits are not high, they may very well outweigh the low costs of information provision.” (Flynn & Gowthorpe 1997).

Flynn & Gowthorpe assert in their paper that the cost of providing Web information is lower, other writers suggest it is high. Intuitively, it would seem likely that, while there is a cost of providing information on Web pages, it would be lower than the provision in formal annual reports, which are often prepared in glossy formats, require distribution costs and are more limited in the extent of information that can be provided.

#### (d) Comparability

More timely but non-standard information creates a problem of comparability of information among companies. To what extent is there a need for standardization in order for financial disclosure to be useful. If non-standard information is presented, should there be some standardization of at least the components. Or will the continuation of existing standards, calling for specific financial statements and other components of disclosure like the MD&A, fill the need?

### 3. External vs. Internal Information

Traditionally, management has made available more information to itself than to outside stakeholders. This has been because of cost, competitive disadvantage and privacy.

With the Web however, it is possible to provide a large amount of information at low cost. To the extent that cost has been a factor in the limitation of information to outside stakeholders, it is likely that the Web will blur the distinction between financial information used by management and information made available to the public.

A significant factor in the future development of this trend will be the expectations of user groups. As they become more aware of the capabilities of technology to provide instant and voluminous information at low cost, they will demand more such information. Companies will have to address this demand.

### 4. Information Overload

Many people argue that the Web has already created information overload. There is every reason to expect that this is likely to continue in the area of financial reporting. The ability to provide large amounts of information, at low cost, in an unstructured format all will conspire to make it so. The hyper-linking functionality and the resultant boundary problems will also contribute to it.

The issue may come down to redefining the meaning of relevance in a high tech environment. Perhaps relevance will be defined from case to case by the users. This could be done by enabling them to find information they need at a particular point in time for a particular decision. Although the Web enables the production of vast quantities of information, it also enables a more effective search mechanism than other media.

The inclusion of effective search tools within Web sites containing important financial information can help the users to find relevant information. It may mean that the data

preparer would need to consider what kinds of decisions their users might want to make and direct the search to the relevant information.

This could involve the presentation of preconfigured queries of database data, a twist on the presentation of unstructured data.

#### 5. Trend to disaggregation of information

Wallman (Accounting Horizons 1997) has made a good case that the basic function of accounting may shift from compiling information to disaggregating information. He characterized compiling information as “making data useful by taking data bits that are not useful in their raw form, tracking and aggregating the data by categories over time periods, and presenting the results of the compilation in accordance with a standard language – in this instance GAAP – to make them useful.

“Our system of aggregation is an interesting one given the tremendous resources employed by the analyst community and others in disaggregating information. What we have is a system where great effort, time and money is expended to aggregate information by preparers, and then similarly expended to disaggregate it, albeit at a different level than the data bits used in the original compilation.”

Wallman concludes this line of thought with “if we were to start from the basic needs of users, and employ the technology currently available or about to be available we would develop a very different system than the one we have today.

The very different system that Wallman envisages would imply that, if we are starting with disaggregated information, then the process of presentation would be (1) of the pure data or (2) of some classified data, albeit of a less aggregated nature.

If we were to start all over again, then we would likely choose which information would need to be aggregated or summarized - and in which forms - and which information or data would be presented in its pure form to users for their further analysis.

It may become important to provide a process for deciding which information to present. Potentially, this could be addressed in a manner similar to the procedure used for internal purposes. For example, in designing an internal information system, a company often begins by identifying its Critical Success Factors (CSF's) and then deciding how they will be measured. Measurements are often termed the Key Performance Indicators (KPI's). Reports for management are then designed so as to present the KPI's for evaluation by management.

#### 6. Data Integrity

Paper information will generally stay the same, even though there is some scope for forgery and alteration. Electronic information is more readily subject to change, unless there are good security precautions taken to prevent unauthorized changes. Therefore there is a need for controls to ensure the accuracy and completeness of the data and to ensure that no unauthorized or inappropriate changes are made.

The CSA has identified Integrity, Security and Confidentiality of information as a concern to be addressed. In the case of presentation of reports, this could be achieved by securing the

electronic documents themselves. In the case of presenting database information, it would be necessary to secure the database, which could be a more difficult challenge.

It may be possible to address this concern by establishing appropriate controls over the Web site in which the financial information resides, such as those set out for WebTrust. However, a further issue may be whether those standards are appropriate and sufficient for financial information, or whether more stringent controls are necessary.

#### 7. Effective access by users

The CSA has identified effective access by users as an issue. Their concern is that users should be provided the same access to information that they would have with other media – that the medium should facilitate access, not be a burden. If users need information and the information is provided in electronic form, then the users must have the technology, the means and the ability to access that information in an effective manner.

At present, all users do not have easy access to the internet. This would indicate they would need to be provided the information in an alternative technology, such as CD's or failing that, in the traditional paper format. This may be a transitional issue.

When information is transmitted electronically, users may not be aware that it is available (CSA). When information is sent in hard copy, it is delivered to an address, so users are generally aware of its existence. If it is not delivered, steps are taken to give notice in some fashion. With electronic information, it may simply be posted to a site and the users never be notified. This would indicate a need for formal notice to users that information is available on the Internet or perhaps in other electronic form.

#### 8. Multimedia Communications

The Internet has considerable capability to provide information in multimedia format, using sound, voice and video. There has been concern in the past about the use of graphics and ratios in financial reporting, and the extent to which it can be misleading. For example, the CICA issued the Research Report "Using Ratios and Graphics in Financial Reporting" which "provides guidance for using ratios and graphics in a financial reporting context." One of the major reasons for the study was the potential for significantly misleading representations, and the consequent need for guidance.

The ability of the Internet and other electronic media to make use of multimedia significantly extends the concerns that apply to graphics and ratios. There has been a concern expressed by the CSA about the use of multimedia in their "Request for Comments 11-401. The SEC permits the use of multimedia communications in filings with it if certain additional disclosures are included. (SEC Release No 33-7233, example no. 13).

#### 9. Liability

Issues of liability are undefined in the electronic environment. Most of the other issues discussed in this paper conspire to intensify liability issues in the electronic reporting environment. For example, the issue of undefined borders means that there is responsibility for linked information, but the degree of the responsibility is difficult to determine.

#### 10. Quality of information

A matter of concern regarding information generally on the Web is that of quality. Various ways are being used to try to address this problem. Some of them are systemic and others relate directly to the substantive information.

A systemic approach to Web information quality is that of WebTrust, sponsored by the CICA and AICPA. This new initiative is designed to set criteria for business practices in the electronic environment and to provide verification that those criteria are followed. Webtrust will also provide assurance about transaction integrity and information protection.

### The Accounting and Business Reporting Model

#### (a) Traditional

The traditional financial reporting model is perhaps best represented in the FASB's Conceptual Framework. Section 1000 of the CICA Handbook uses most of the principles in the Conceptual Framework, but applies them to financial statements, which is only a part of financial reporting. This model may be obsolete, and this area will be pursued in the study.

#### (b) Alternative models

Elliott has suggested that the triple entry model of Yuji Ijiri has relevance to the modern technological society. That model adds to measures of wealth ( $w$ ) and changes in wealth ( $w' - \text{income}$ ) measures dealing with the rate of change in income ( $w''$ ). (Elliott 1992). The concept of measures of the rate of change is generalizable to other measures, such as rate of change in quality, rate of change in innovation, etc. This construct is significant from the perspective that management in the information age is a process of managing change.

The Jenkins Committee designed its business reporting model to respond to many of the pressures on financial reporting in the information age. In addition, another relevant model will be the new Integrated Reporting Initiative recently announced by the CICA. This aspect of the study is in its very formative stages.

### B. Continuous business reporting

It has been predicted that real-time computer-based financial reporting will replace current paper-based periodic reporting (Miller & Young 1997). Financial and non-financial information that might be provided on-line on a continuous basis throughout the year is vast. It could include conventional financial information or data (structured or unstructured) provided from databases. Continuous reporting has been an ingredient of reporting required by the Securities authorities for many years. At present, SEDAR is requiring continuous reporting in electronic form.

#### *The Corporate Dialogue Concept*

It has also been suggested that corporate reporting is likely to become interactive, such that the users participate with the preparers in the design and delivery of corporate reports. This has been referred to as the Corporate Dialogue Concept (Spaul 1995). Spaul states that



corporate reporting as it presently exists is in need of radical change if it is to meet the challenge of the global digital economy and realize the potential offered by technology.

“Corporate dialogue provides an approach that is more in keeping with future needs. The concept calls for all stakeholders to be allowed immediate access to a broad range of internally generated corporate information and to more informal material, such as technical research reports and media reports compiled by third parties. From this base data they will have the power to construct their own reports.” Spaul.

The corporate dialogue concept encompasses the idea of a bi-directional flow of information between a variety of participants rather than a unidirectional paper flow as at present, as well as management of the information flows by using artificial intelligence to select relevant information from a given body of corporate data for different stakeholders.

Participants in Corporate Dialogues would include the corporations and stakeholders, perhaps aided by intelligent software agents. These are applications, or components of applications, that will undertake data retrieval tasks with non-directive instructions. Intelligent software agents are now used to search for information on the Internet and it is expected they will be integrated into a range of applications and information services over the next several years.

The use of intelligent software agents in the corporate reporting process has the potential to provide a means by which users can search for relevant information within the very extensive volumes of corporate data available to them through technology.

“Intelligent agents - - - will provide assistance with categorization, help prioritize, selectively disseminate, and annotate information. They could traverse the Internet and corporate intranets, looking for data which is of interest, applying sophisticated filters and even learning by experience to become more selective.” (Spaul). In essence, software agents will be able to serve the purpose of customizing corporate reports for the use of individual users.

“With the use of on-line corporate reporting, the dialogue between stakeholders and management is likely to be much greater than that which currently exists through the annual shareholders meeting.” Intelligent software agents can provide a means to coordinate and manage this dialogue.

By using various Internet-style retrieval methods, corporations will be able to create dialogues with a number of stakeholders on topics of interest to them, for example:

- individual customers on product information
- managers and other employees about the company policies
- shareholders regarding corporate strategy and investment decisions, and
- environmental agencies on environmental impacts.

This will create a phenomenon of more or less dialogues that are both standardized and customized, but that will be a dynamic form of reporting.

### *C. Implications for accounting standards.*

Some preliminary thoughts as to the implications of these issues on standards setting are:

1. The World Wide Web has a global reach, meaning that the dissemination of financial information through this means raises the need for international standards.
2. A frame of reference for continuous electronic reporting should be established on a proactive basis.
3. Continuous financial reporting will likely emanate from databases. The use of data warehouse style databases may be a practical solution to this need. Under this approach, a separate database is set up to feed information to the users. The source of the data in the special database comes from the operating databases of the company. However, the update of the special database can be carried out in a controlled manner. The standards-setting process may be able to focus on this system as well as on the data being provided.

R K Elliott has suggested (Elliott 1992) that standard setters in the modern knowledge based environment should:

1. Study the behavior of users, not just their stated preferences or their comments on GAAP. If they use non-GAAP information in attempting to predict future cash flows, assume it is useful.
2. Study IT era internal information needs.
3. Focus on third-wave value drivers (information-based assets and people).
4. Focus on continuous rather than periodic information flows.
5. Focus on measurements that signal change in the rate of change (w”).
6. Provide continuing service (consultation, education, and software) to constituencies.
7. Educate management and users as to the third-wave accounting paradigm.

#### *D. Conclusion*

The study is in a relatively early issues identification stage. Even at this point, however, it is clear that some of the fundamental precepts that have guided accounting for the past few centuries will have to be challenged. These will have implications for the traditional reporting models, the periodic reporting concept, and the essential relationship between providers of business information and their stakeholders. Opportunities abound for research in this field

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