

XBRL And Its Potential Impact On Events Reporting

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Abstract

Financial accounting and reporting has been criticized for producing untimely, periodic, historically-based, and highly-aggregated financial statements that fall far short of meeting the needs of the financial community. Especially recently, the accounting profession has been roundly criticized for its perceived role in highly publicized audit failures including Enron and WorldCom. Proponents of the events reporting paradigm assert that what is needed is an events reporting system that reports a wider range of relevant and disaggregated events that are free from the biased value judgments and allocations of management. This paper explores the possible role of Extensible Business Reporting Language (XBRL) in the movement toward such an events reporting approach. The web-based XBRL reporting languages allow for the tagging of web-reported business information to provide meaning and context to the information. XBRL provides a platform-independent vehicle for the efficient exchange of business information. Developing XBRL reporting taxonomies will facilitate multi-company financial comparisons and provide a mechanism for obtaining more detail through drill-down analysis.

1. Introduction

The area of financial accounting and reporting has suffered a continual barrage of criticism in recent decades that has sought to highlight many alleged limitations and to question its future relevance. Specifically, critics point to untimely, periodic, historically-based, highly-aggregated financial statements that fall far short of meeting the needs of the financial community. This criticism has intensified with the emergence of information technology (IT). Clearly, users of financial information in this information age expect that the capabilities of financial reporting should expand with those of IT.

The events theorists have been among the critics of traditional financial reporting, pointing to many of the deficiencies described above, and proposing that financial events be made available to report users in less aggregated formats as well as disclosing a wider range of “relevant” events. This paper begins with a review of the development of the events theory of accounting. Following this review, the authors describe the recent development of a web-based financial reporting technology known as Extensible Business Reporting Language (XBRL) and attempt to project how the development of this language might provide the vehicle for events reporting.

2. A Review Of Events Accounting

It has been over thirty years since George Sorter introduced the concept of an “events” approach to accounting in his seminal paper *An “Events” Approach to Basic Accounting Theory*, published in the *Accounting Review* (Sorter, 1969). Sorter and other proponents of “events theory” suggest that the purpose of accounting is to “provide information about relevant economic events that might be useful in a variety of possible decision models.” In that paper, Sorter contrasted events theory with the “value school,” the majority-held view that users’ needs are known and sufficiently well-specified so that accounting theory can provide the appropriate input values for decision models. Sorter criticized value theory for failing to recognize the “many and varied uses of accounting” and the impossibility of specifying optimal input values for a wide range of decision models. Sorter also criticized value

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theory for excluding many events such as commitments that did not affect income or net asset values. Also, Sorter pointed to the loss of information resulting from the aggregation, valuation, and allocation inherent in current financial reporting.

Johnson (1970) asserted that events accounting would require that financial reports “reflect observations of the real world and not the wishful inferences of devious managers...” He states further:

If accounting reports were to contain only aggregations of the characteristics observed in connection with real events, then the user would be free to create for himself both value inferences and event extrapolations as well as value and event predictions. This freedom for the user would be enhanced if the reports were to include observations other than the monetary characteristic.

Johnson urged that events theorists experiment with new report forms and that such reports should contain taxonomically appropriate summaries of observations with the objective of maximizing the forecasting accuracy of accounting reports.

McCarthy (1982) categorized criticisms of conventional accounting into four groups:

1. Limited measurement dimensions, namely monetary measures;
2. Loss of information due to inappropriate classification schemes;
3. Loss of information due to high levels of aggregation; and
4. Lack of integration with other functional areas of the enterprise.

Building upon earlier data modeling approaches, namely Chen (1976), McCarthy introduced REA, a generalized accounting framework based upon abstract representations of economic **resources**, economic **events**, and **agents**. He asserts that artifacts of traditional double-entry accounting systems such as debits, credits, and accounts are “not essential aspects of an accounting system,” but that such double-entry “manipulations” could be derived through external schemas (database views) from the basic data model. With REA, economic events captured by the system would both be accessible at the atomic level (individual transactions) as well as through the process of conclusion materialization (snapshots).

Cushing (1989) provided clarification on the types of events that would (and would not) be reported under an events accounting approach. His examples of relevant events that might be reported include project engineering data and quality control tests, ecological data, and personnel assignments. Cushing also suggested that some information presently reported under the value approach, that would presumably not be reported under the events approach, would include accruals, allocations, depreciation, valuations of tangible assets, consolidations, and judgments concerning future values (i.e. bad debts). Cushing also speculated on the technological infrastructure needed to accommodate the mass data storage requirements and high-speed data transmissions as well as the potential need for information intermediaries to minimize redundant data storage and transmission. In addition, he projected how the costs of events reporting might be born by society and the economic impact of this approach on various financial reporting constituencies.

Elliott (1992) analyzed the impact of the third wave (information technology) on business, management, and accounting. He cited several limitations of the present external reporting model, among them the presentation of financial events in statements -- “physical aggregations of data presented in standardized form.” Elliott emphasized that information technology “makes possible the real-time release of salient facts as they occur.” He provided the following example:

Instead of (or in addition to) presenting physical external statements to investors, users might log on to the company's system and manipulate the company's spreadsheet to analyze and reanalyze the company's data along dimensions different from those reported or change management's assumptions and reanalyze the data.

Elliott (1994) also characterized the present financial reporting paradigm as being merely a “keyhole” glimpse of all potentially relevant events. As he points out, frustrated users are forced to find other sources of in-

formation. Citing, electronic data interchange (EDI) as precedent, Elliott suggested how interested outside parties might be granted access to an organization's database and how such access might be limited.

Hollander, Denna, and Cherrington (2000) reiterated many of the criticisms of the traditional accounting model, particularly those expressed by McCarthy (1982), and extend the REA model to include locations as an additional entity of interest. Their REAL model (resources, events, agents, and locations) represents an event-driven architecture whereby "business processes and events shape how data are captured, stored, and used" (Hollander, Denna, Cherrington, 2000). This enhanced architecture is characterized by:

1. focus on business events rather than merely those affecting the accounting equation;
2. support for business process reengineering;
3. tight integration of all relevant data about all business events, rather than a collection of loosely integrated systems; and
4. integration of information processes and real-time controls.

3. The Emergence Of Web Reporting And XBRL

As we retrospectively examine the multiple visions of events reporting presented in the previous section, we may assume that most of these authors could not have fully envisioned the Internet technology we presently enjoy any more than we can accurately predict future technological platforms. Nevertheless, their vision has persisted, perhaps awaiting the appropriate technology and political climate to bring their ideas to fruition. In this section we focus on Extensible Business Reporting Language (XBRL), an emerging web-based financial reporting protocol based on Extensible Markup Language (XML).

The predominant Internet protocol for the presentation of web-based documents is Hypertext Markup Language (HTML). Released in 1990 by Tim Berners-Lee of CERN, HTML provides the formatting instructions web browsers need to display documents. The HTML protocol is heavily presentation-oriented, addressing issues such as document headings, fonts, and paragraphs, much like the control characters embedded in a word processor to control document display. Its limitation, however, is its superficiality. HTML focuses on display attributes, not substantive content, information structure, or relationships. With HTML alone, context and meaning are generally established upon viewing, and the transport of HTML-formatted data to other applications is difficult. However, XML provides a richer markup language capable of describing the data content and its structure (schema) within the web document. The content is "marked up" to attach context and semantics to data, thus providing more sophisticated publishing capabilities and ready access to web-published information. While a web publisher is not free to create new HTML formatting tags, he or she may use XML to create new taxonomies of information content as each situation requires. Hence, XML is extensible and adaptable to an unlimited number of situations. In addition, XML is a non-proprietary, platform-independent protocol that will provide a "standardized, vendor-independent level playing field on which different systems may freely communicate" (Watson, McGuire, and Cohen, 2000).

XBRL (Extensible Business Reporting Language), formerly named XFRML (Extensible Financial Reporting Markup Language), is available in the public domain, and is based on XML. XBRL can be thought of as simply a specialized version of XML designed specifically for the accounting profession. XBRL was developed with the blessing and input of the AICPA, which means that accountants have started to embrace it as a communication and publishing language (<http://www.xbrl.org/Faq.htm>). XBRL is the de facto electronic language for financial reporting as it is based on XML, providing the accounting and financial professions a method to prepare documents and automatically exchange those financial documents with other organizations. XBRL does not change the essence of accounting; rather, it enhances current accounting standards by defining a single common language that can be used for purposes such as communicating with external users and publishing data on the Internet.

As Zarowin and Harding (2000) point out, most accounting software will make use of XBRL and will eventually insert the tags or markers automatically. These markers stay with the data to identify it to the user and provide context for it.

XBRL is being used to publish financial statements that are used by external users (<http://www.w3.org/XML/1999/XML-in-10-points>). An XBRL-based financial statement is simply an electronic version of a common financial statement, which could include the balance sheet, an income statement, a statement of equity, a statement of cash flows, the notes to the financial statements, and/or the accountant's report. It could also include future reports that have yet to be identified.

Watson et al. (2000) identify two problems that XBRL can solve:

XBRL solves two significant problems for anyone preparing financial reports. First, it provides reliable extraction of financial data across all technological formats. With XBRL, financial data have to be entered only one time, thereby reducing the risk of data entry error by eliminating the need for various reporting formats. Furthermore, XBRL facilitates comparison of financial reports by establishing compatibility in categories of financial data.

We anticipate that XBRL will, in addition, potentially solve two additional problems. The first problem concerns redundant effort in preparing financial information. An organization might have to prepare financial information on paper, a website, and for submission to the SEC, which is obvious wasted duplicate effort. With XBRL, information can be prepared once and then submitted as a printed financial document, an electronic document for a Web site, or an SEC EDGAR filing.

The second problem involves integrating large quantities of electronic information from many different organizations, a common problem faced by financial analysts when analyzing an industry. Currently, such organizations use a manual process or subscribe to a service that has already collected and organized such data. If financial information is prepared using XBRL, computer programs could be developed that could easily extract every piece of information from any financial document.

In order for XBRL to become a universal standard and for it to achieve its potential, three things must to happen. First, all companies would have to use XBRL in a consistent way throughout all their financial transactions. Second, applications would have to be developed that facilitate creating financial statements that use XML tags and that adhere to the standard specifications. Third, style sheets must be developed which can help in putting information into specific or a variety of formats. If these things happen and XBRL becomes a standard, it will facilitate improvement in the processes of creating, sharing, and publishing financial reports.

If a universal standard is not adopted that works for all companies, applications will have to be written that automate integrating the statements of every different specification. Not only is this inefficient, it might be impossible as new specifications could be continually appearing. In summary, the accounting profession, in conjunction with the SEC, must endorse and enforce one XBRL-based specification that all auditable organizations use and which would not preclude particular industries from including some unique, additional sections within their standard accounting information. This specification would include all the required data that a company would provide in a publicly available, real-time, XBRL format.

There have been a few attempts to standardize the format of accounting information using technologies such as electronic data interchange (EDI) and the hypertext markup language (HTML). These technologies have thus far failed to facilitate mass standardization of accounting information formats. Whatever technology is eventually embraced, it must be able to create a standard method of preparing, publishing, exchanging, and analyzing financial statements across all software formats.

In the future, the SEC should adopt XML as a filing format as they already "tag" some pieces of data. However, the level at which information is tagged does not provide much detail. For example, EDGAR documents include a tag on an entire table but there is no information concerning the contents of the table or when the data in the table was current.

To summarize, XBRL is a financial reporting extension of XML. As with XML, XBRL provides an information tagging taxonomy that enables each data element to be given a description and a context. XBRL is an

agreed-upon set of tags and formats for specific business documents such as the balance sheet and the income statement. The XBRL working group, composed of representatives from the accounting profession as well as from commercial and industrial companies, has already completed the XBRL taxonomy incorporating U.S. Generally Accepted Accounting Principles (GAAP) for commercial and industrial companies. It is expected that working groups will also be formed to develop financial reporting taxonomies in other industries (Zarowin & Harding, 2000).

4. XBRL And Events Reporting

4.1 The Opportunities

The implications of XBRL for events reporting are potentially significant. XBRL theoretically provides a mechanism for accessing disaggregated information about events. XBRL tags can be applied at the lowest transaction levels (although presently they are primarily used for establishing a web-based schema for financial statements). XBRL can facilitate “drill-down” analysis, allowing the user to explore the details of aggregated information. Watson et.al. (2000) identify that more than 200 XML specifications for transaction-level information tagging are emerging.

In addition, XBRL provides an efficient mechanism for the transfer of event information. Rather than requiring a centralized “mass data storage for large numbers of reporting entities” (Cushing, 1989), users can simply download (or receive Internet channel feeds of) XBRL output provided by the various reporting entities. Pre-established reporting taxonomies both at the reporting and transaction levels will presumably allow this information to flow seamlessly between applications and across computing platforms.

XBRL financial reporting taxonomies would not preclude the development of alternative or competing taxonomies for the reporting of relevant events. Therefore, a single taxonomy would not necessarily presume to meet the needs of all information users. The information intermediaries described by Cushing (1989) may assume the role of developing such competing taxonomies. Presumably, users of financial reports would create the marketplace for these taxonomies. Those taxonomies obtaining the most favor from users would eventually dominate.

4.2 Challenges and Barriers

Cushing (1989) analyzes the various constituencies of events reporting in order to predict which of them would likely support or resist its implementation. While XML and XBRL may provide the enabling technology to support a type of events reporting, companies may have little incentive to provide such transaction feeds. A major concern to most companies relates to the potential disclosure of sensitive, proprietary data and the expense of making such data publicly available. Clearly, companies could not be expected to release data that would compromise their competitive position, but they could release data that reflects the business operations. For example, a company could release data on a daily basis that states the dollar amount of orders that were placed that day and the dollar amount of returns and allowances. Such information would communicate to the market the relative health of a company without disclosing competitive secrets.

Companies probably have few short-term incentives to implement a full-scale XBRL system that makes data publicly available. Thus, short of a government mandate of such a disclosure, companies should think instead of the long-term benefits. There would clearly be a benefit related to communicating more frequently to investors and other constituents. It is possible that a premium would be placed on daily information, and securities prices would reflect the premium. Simply stated, daily information would be more “comforting” to investors that have been recently spooked by the publicized accounting fraud cases. If more information is disclosed more frequently, it can often be independently corroborated and can be of higher value. Clearly, some organizations will choose not to disclose more detail about their operations than they presently do. They can obviously choose to limit their XBRL reporting to traditional aggregated financial reports.

To more fully meet the needs of the user community, accountants who build reporting taxonomies must not neglect non-financial event reporting. As Elliott (1992) points out, “much of what users want to know about the

company is non-financial.” In response to this need, it must be noted that XBRL taxonomies do include elements for notes to financial statements and therefore are capable of representing non-financial information. Clearly, XBRL could also expand its taxonomies to capture other relevant events and/or processes not traditionally articulated within the structure of the financial statements.

5. Conclusion

Peter Drucker (1998) asserts that we are on the verge of an information revolution. He views the first 50 years of information technology (IT) as focusing primarily on the “T” (technology) and efficient processing of data that has primarily benefited operations rather than top management. Drucker envisions the next revolution focusing on the information content and the emergence of “new concepts.” According to Drucker, accounting’s contribution in the technology era has been an emphasis on cost control. He believes that the focus must change to wealth creation. It could be said that HTML (which focuses on visual presentation of data) is representative of Drucker’s technological era in which the focus is on data. Following this analogy, XML and XBRL may well represent the information era in which meaning and context are enhanced.

The continuing development of XBRL may well allow financial reporting to move beyond the limitations that have fueled so much criticism. It would appear that the technological platform needed to support events reporting could soon be in place. What remains to be seen is whether the demand for such disaggregated reporting actually exists and whether the suppliers of such reports will be willing to meet the existing demand.

Future research opportunities include determining appropriate levels of granularity (or aggregation) to be made available in a continuous reporting format. This is likely to be driven in part by the user's perceived need for the information and the technology for processing a continuous stream of tagged events.

Additional research should address the ability of current decision models to facilitate continuous flow reporting. In other words, what changes will be required in conventional decision models to effectively utilize the flow of the real-time event data?

Research might also examine the incentives (disincentives) companies might have for participating in continuous flow reporting. Additionally, research should assist in defining the relevant “events” (both financial and non-financial) to be captured for the events-reporting system.

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