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XBRL Usage: A Socio-Economic Perspective

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ABSTRACT

eXtensible Business Reporting Language (XBRL) represents a standard format for exchanging business information which is capable of narrowing the reporting gap between public companies, regulators, and interested members of society (i.e., banks, investors, etc.). Through the use of tags, XBRL provides a standard language for reporting both financial and nonfinancial information not previously seen in the reporting environment, across different software applications. As a result, interested stakeholders can gain access to public information much more quickly and transparently than ever before.

Due to ever-increasing demands on the corporate reporting supply chain (i.e., regulators, lender, investors, etc.), there is an urgent need to eliminate the labor-intensive processes currently used to produce business reports. Monumental sums of money, time, and other resources are being wasted on mundane data entry tasks, rather than on critical data analysis tasks. Thus, regulators lack the time to properly review public company reports. In fact, many public companies cannot be reviewed for several years by regulators, such as the Securities and Exchange Commission (SEC), mainly because the technology currently used by the regulators and companies are not compatible.

The current paper reports the corporate and regulatory usage of XBRL, as well as its potential impacts on various stakeholders. The paper also discusses the potential significant cost savings resulting from XBRL usage. Evidence indicates that worldwide XBRL usage would result in significant efficiency and data access gains to capital market participants, as well as labor unions and regulators.

INTRODUCTION

eXtensible Business Reporting Language (XBRL) defines a new and consistent format for business reporting and streamlines how corporations prepare and report accounting information, as well as how various stakeholders review and interpret it (PwCglobal.com 2003). It results in large improvements in accessibility, interoperability, and efficiency; creating significant time and cost savings. Recent international legislation and regulation aimed at corporate accountability, transparency, and earnings management issues, can be addressed through XBRL usage. Corporate reporting strategies worldwide are now moving from "should we have XBRL capabilities?" to "when should we be deploying it and who should be involved," (Hucklesby 2003). Yet, outside of Bonson (2001), Bovee et al. (2002), and Hodge et al. (2004) there is a lack of academic research investigating XBRL and its impacts on society. The purposes of this paper are to report on how XBRL usage would affect various information stakeholders in society, as well as to spark a significant increase in XBRL academic research.

Although XBRL adoption and consequent usage would benefit many parties, each party is affected differently. This paper reports how XBRL usage would affect the following groups in a global reporting environment: the reporting corporation, regulators, investors, and labor unions. Weber (2003) indicated that investors will view XBRL like any other innovation. As long as XBRL is perceived to be a value-added innovation, investors will mark

the security price upwards. Since XBRL is an important innovation, investors need to understand the nature and possible implications of this markup language for the businesses in which they invest. Investors are demanding timely and high quality information from businesses on a continuous basis (Editorial Staff 2002). Technology, such as XBRL, makes real-time business reporting possible. On the other hand, businesses are reluctant to report on a continuous basis. Managers believe if the nature and timing of reporting is not controlled, competitors may acquire important information (Weber 2003).

Due to ever-increasing demands on the corporate reporting supply chain (i.e., regulators, lenders, investors' demands mentioned above, etc.), there is an urgent need to eliminate the labor-intensive processes currently used to produce business reports. According to Forrester Research data from 2002, U.S. companies spent $404 billion paying workers to find and re-key information (Stock 2003). That accounts for an astounding 11 percent of all wages paid in the United States. Additionally, analysts spent months gathering data for their Y2K-compliance analyses that would have only taken minutes had the reports been in a consistent format. Further, institutions responsible for business reporting in capital markets are reeling from the fall-out of accounting information scandals of monumental proportions (e.g., Enron, WorldCom, etc.). Investors and other corporate stakeholders worldwide have become increasingly skeptical about business reporting models that seem out of control and out of touch with commercial reality. Clearly, business reporting is at a crossroads (Sutton 2002).

Section II of this paper contains a brief overview of XBRL, as well as how it fits in with other technology innovation adoptions. Section III discusses how XBRL usage impacts the previously mentioned groups. Section IV examines how XBRL usage could reduce information asymmetry between corporations and their stakeholders including the review of the critical transparency and earnings management issues. Section V provides data from CPAs and individual investors (MBA students) regarding their various beliefs about XBRL adoption, usage, and usefulness. Section VI concludes with a summary and identifies areas of future research.

XBRL OVERVIEW

Background

Until recently, there were no uniform standards that allowed financial and nonfinancial (i.e., non-monetary) information to be communicated among different applications (PwCglobal.com 2003). As a result, corporations often manually assembled information from different information systems in order to prepare reports. Furthermore, the lack of effective communication to investors, inefficient aggregation and analysis, and the need for creation of financial statements made it difficult for investors and other corporate stakeholders to track corporate performance and to conduct inter-industry comparisons.

The following quotes summarize the existing reporting problems as well as the effect XBRL is expected to have on businesses.

"Over the last decade or so, this country's vaunted system of disclosure, financial reporting, corporate governance and accounting practices has shown serious signs of failing to keep up with the needs of today's investors, our economy, and new technology makes rapid communication not only possible but essential," Harvey Pitt, former chairman of the Securities and Exchange Commission (SEC) commenting on the demise of Enron (Hucklesby 2003).

"The effect that XBRL will have on the business community will be more significant than the transition from paper and pencil analysis of financial information to the use of electronic spreadsheets," Mike Willis, founding chairman of XBRL International and a PricewaterhouseCoopers partner (Goff 2003).[1]

As new technology develops, it becomes increasingly clear that reporting and data access standards are necessary, particularly over the Internet or through a Web browser format. Extensible Markup Language (XML) was

[1] The first companies to publish XBRL financial statements, Microsoft and Reuters, did so in early 2002 (Zarowin 2003). Currently, over 250 companies and organizations are involved in the development of XBRL.

created in response to this need. XML, when tightly integrated with Microsoft SQL databases, will allow information queried from the database to be presented in a browser-style interface as formatted documents called Style Sheets.

"XBRL is a non-proprietary, Web-based language based on XML that tags financial and nonfinancial data and gives it context," (Pinsker 2004, 4). XML and its derivatives (i.e., XBRL) have become increasingly important data formats for storing and exchanging business data among various systems on the Internet (Feng et al. 2002). Web services are discrete units of XML code that handle a limited set of tasks. They communicate information between two computers across all operating systems, regardless of programming language. Using Web services and a transmitting protocol such as Simple Object Access Protocol (SOAP), companies all over the world are able to transmit and report business information in almost real-time.[2]

One side of figure 1 shows a simplified reporting process for Company R using XBRL, the Internet, and Web services. Various business (i.e., financial and nonfinancial) information is tagged in XBRL and sent across the Internet (via Web services and SOAP) to various governmental entities. Those entities receive the information and store it in a repository (not shown) for later access.

The other side of figure 1 involves investor A's request of Company R's information. The SEC (one of the governmental entities who received Company R's information) answers investor A's request and forwards the information across the Internet. Upon receipt, investor A is free to analyze Company R's information with no data re-entry. The entire process saves significant time for all three parties when compared to either using disparate technologies (requiring data re-entry) or mailing hard copies of the information.

XBRL provides users with a standards-based method to reliably extract and exchange important public company information in a variety of formats (Carey 2001). When compared to other current options for providing information electronically (e.g., Hypertext Markup Language, etc.), XBRL usage provides substantial improvements. XBRL provides structure to the data between the tags allowing for interactive uses. XBRL tags are implemented into existing financial software. Once added, it will automatically and transparently translate all requested business information - numbers and words - so each segment of data is identified when viewed by a Web browser or sent to a spreadsheet application for calculation or examination.[3] Software developers already incorporating XBRL functionality in their software include: ACCPAC, Creative Solutions, FRS, Hyperion, and enterprise source planning giant SAP AG (XBRL 2002).

The XBRL specification represents a framework for expressing financial facts and associating those facts with financial concepts (Hoffman and Strand 2001). Taxonomies have been created to represent each industry's standard tags and to preserve industry uniqueness (Pinsker 2004). In July 2000, the first XBRL taxonomy (for Commercial and Industrial entities) was released in the United States. Recent research (Bovee et al. 2002) has indicated that on average, the taxonomy is a good fit with firms' preferred reporting practices, but still needs some revision.[4]

Similarities Between XBRL and Other Technological Innovation Adoptions

Fichman (1992) separated technology adoption studies into four quadrants. The first of two constructs, locus of adoption, categorizes the adoption studies as individual versus organizational (organizational-level) decisions. The

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[2] Web Services Description Language (WSDL) provides a model and an XML format for describing Web Services. WSDL enables one to separate the description of the abstract functionality offered by a service from concrete details of a service description such as how and where that functionality is offered. SOAP is fundamentally a stateless, one-way message exchange paradigm, but applications can create more complex interaction patterns (e.g., request/response, request/multiple responses, etc.) by combining such one-way exchanges with features provided by an underlying protocol and/or application-specific information.

[3] The rules for the tags are defined by an international group of companies, accounting firms and associations, and governmental entities (called the World Wide Web Consortium (W3C)) brought together in an attempt to provide universal semantics to accounting data. XBRL is the work of XBRL.org. XBRL.org is independent of W3C.

[4] XBRL.org is currently working on taxonomies for banking and service companies, insurance companies, and others in an attempt to eventually fulfill the reporting needs of all industries. Additionally, regulators are working to develop taxonomies for various regulatory filings.

second construct, class of technology, classifies the technologies researched as containing either 1) a low knowledge burden or low user interdependency (type 1) or 2) a high knowledge burden or high user interdependency (type 2).

According to Fichman's (1992) framework, most organizational-level adoption studies involved a type 2 technology. However, XBRL would be considered a type 1 technology, because it is embedded into a firm's new software package. XBRL coding by firm employees would not be necessary and technical support would come from the software vendor (Li and Pinsker 2004).

Only two studies have qualified as firm-level adoptions of type 1 technologies. Gatignon and Robertson (1989) examined laptop computer adoption. They found significant results for all of the following constructs: adopter industry competitive environment, supply-side factors, organizational characteristics, and decision maker characteristics. Raho et al. (1987) studied a broader technology adoption: the infusion of personal computers at industrial firms. The authors found the phase of diffusion was significantly related to the level of educational opportunities (i.e., how committed key personnel were to the technology).

XBRL is unique when compared to other type 1 technologies. As illustrated by two studies described above, prior research has been constrained to specific industries and focused on improving internal processes. However, XBRL adoption and usage applies to all industries. Further, it explicitly involves the impact of the relationship between organizational capital providers (i.e., creditors and investors) and the organization itself: a concept not typically studied outside of finance, economics, and financial accounting (Li and Pinsker 2004).

FINANCIAL IMPACTS OF XBRL USAGE ON CORPORATIONS, REGULATORS, TAXPAYERS, AND INDIVIDUAL INVESTORS

Corporations

XBRL represents a single common language for expressing business information. As such, it has been referred to as the "digital language of business," (Hoffman and Strand 2001, 11). A common language allows reductions in developmental costs, sharing the creation of intellectual property, and agreement at a certain level on the semantics of the business information to make it easier to exchange it across disparate languages, computer systems, and applications (i.e., interoperability; Pinsker 2004).

Whether the company is a small firm with a single product line, or a global conglomerate attempting to consolidate subsidiary information, it need only import required information, tagged in XBRL, into its customized software package once (i.e., enterprise resource planning (ERP), a simple spreadsheet, etc.). Conversely, if a company operates a series of disparate applications that do not easily communicate with each other (often called legacy systems), there can be significant time lags between the capturing, processing, and disseminating of information as it needs to be "translated" between applications (Hunton et al. 2003). These time lags lead to processing inefficiencies and potentially higher costs of capital (if the information is material).

Increased time lags and use of the Internet as a reporting medium are two reasons why many companies have adopted the Internet as a channel for communicating their financial and nonfinancial data to interested stakeholders. Rezaee et al. (2001) found that greater than 80 percent of U.S. public companies sampled provide voluntary disclosure on the Internet. Additional research indicated that only 54.3 percent of 1998 Fortune 100 companies had annual report disclosures on Web sites (Davis et al. 2002). Nearly two-thirds of the disclosing companies presented their annual reports in a personal data file (PDF) format, rather than in Hypertext Markup Language (HTML). In 2001, 97.9 percent of the same Fortune 100 companies had annual report disclosures on Web sites.

In terms of quarterly reports, 1998 Fortune 100 companies had a 90.4 percent rate for providing the reports as of 2001. Overall, the large percentages indicate that companies perceive value in providing more timely information to external stakeholders (Hunton et al. 2003). In stark contrast to the annual report trend, quarterly reports were most often presented in HTML, rather than PDF. Using XBRL provides flexibility over both PDF and HTML to corporations currently using the Internet for disclosure. Corporations would be able to publish their information in a

way that would allow the information to be reliably extracted in seconds in a variety of formats to meet the particular needs of each user.

Using XBRL-enabled software allows for automation and integration of the manual data entry, gathering, and reporting processes. The enabled software also makes corporate continuous reporting both possible and feasible.[5] In fact, XBRL is seen as an enabler of continuous reporting in the American Institute of Certified Public Accountants' (AICPA) new business reporting model (Editorial Staff 2002), as well as many other international reporting models. Continuous reporting is a much-needed process given that various stakeholders are placing less emphasis on traditional financial statements due to their untimely preparation (with respect to current events) and the omission of key nonfinancial value drivers (Hunton et al. 2003).[6]

Various individuals have called for greater disclosure of nonfinancial information by companies (AICPA 1994; Lev 2001). Critics raise concerns about the backward-looking nature of financial performance measures and argue that traditional financial measures have diminished relevance, due to the "new economy" business models (Maines et al. 2002). Demand for the external reporting of nonfinancial measures also has been driven by corporations' adoption of internal evaluation performance measures (e.g., the Balanced Scorecard) that incorporate key nonfinancial information (Kaplan and Norton 1996). XBRL usage would allow both financial and nonfinancial information to be reliably tagged with ease to be used in future data extraction. It would give companies more readable information on competitors[7], making benchmarking easier.

In addition to the previously described benefits, many other significant benefits accrue to corporations that utilize XBRL. According to a recent XBRL white paper (2002), benefits include: accelerated (timelier) decision-making by financial institutions and other users; minimized costs by allowing more automatic composition and processing of reports to different clients; improved process for publishing analyst and investor reports; and more confidence in data presented by limiting the risk of erroneous data entry (i.e., the data is only entered once). Given all of the benefits, corporations would still not adopt and use XBRL if an unfavorable cost/benefit scenario results. Thus, consideration of the cost of purchasing and training employees on the use of XBRL-enabled software is necessary.

For those corporations not creating their own XBRL-enabled software (XBRL is non-proprietary in nature), it is generally estimated by XBRL advocates that needed software would cost somewhere in the range of $800-$2,000. ERP and other current accounting systems would not have to be overhauled (an additional cost) with XBRL usage, because XBRL is being introduced as an add-in for many updated software packages. Since a corporation may continue to use their own software provider with an XBRL add-in, training costs should not be significantly greater than that typically incurred for an updated software release.

Two examples of recent XBRL software additions involve Hyperion and Microsoft. Hyperion is currently the global leader in Business Performance Management software. It recently announced plans to make the new XBRL Web-based specification a key feature in the newest version of its financial reporting and compliance application. The new software will provide companies with even more automated financial reporting and filing capabilities than they currently have. Similarly, Microsoft has announced that it will include an XBRL add-in for its new Office 11 package released in 2005. This is a huge push for XBRL usage, given the widespread use of Office software.

What is left for corporations to decide is whether or not to voluntarily adopt and use XBRL, or await the possibility it will be mandated through regulation. Several countries already have either adopted stringent reporting

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[5] For the current paper, continuous reporting refers to the reporting of company information in a relatively quick format, whether that is weekly, daily, or up to real-time.

[6] It should be noted that the increased timeliness in disclosure afforded by continuous reporting could cause unintended stock price volatility. That would be because investors would be receiving information so quickly (compared to interim reporting), that wide differences between them would allow for greater bid-ask spreads. However, as will be discussed in Section 4 of this paper, legislation such as the Sarbanes-Oxley Act (2002) is moving U.S. reporting practices in this direction.

[7] XBRL usage should not provide more information than what is already available; but, rather, more accessible information for immediate analysis (as opposed to time needed to first re-renter the information).

standards or are currently piloting such projects.[8] The United States has also recently adopted stronger legislation, the Sarbanes-Oxley Act (2002). The major purposes behind the Sarbanes-Oxley Act were to establish the Public Company Accounting Oversight Board, improve auditor independence, enhance financial disclosures through providing more and accelerated disclosures, and increase corporate accountability and governance (Gara and Langstraat 2003). Given the interoperability and efficiency benefits it has to offer adopting corporations, it would appear that in the long run, XBRL usage should reduce the cost of compliance with Sarbanes-Oxley's reporting regulations (Weber 2003). XBRL assists companies in creating reports more quickly, thus complying with Sarbanes-Oxley's reporting requirements. Furthermore, it allows company IT and accounting personnel to more easily consolidate financial information that is both timely and reliable and present it to management and other stakeholders.

Regulators

For regulators, XBRL offers two benefits. First, it reduces the costs associated with obtaining and assimilating information from companies. The $404 billion cost of re-keying information cited in the introduction does not include data entry costs of U.S. regulatory agencies like the SEC[9], Federal Deposit Insurance Corporation (FDIC), and Internal Revenue Service (IRS). XBRL usage would likely save billions of additional dollars and save countless hours when both submitting companies and the agencies are using XBRL for processing submissions. For example, the FDIC, Office of the Comptroller of the Currency, and the Federal Reserve Board recently signed a contract to install a reporting system using XBRL to speed up information delivery. It is estimated the system will end up saving the agencies approximately $26 million over 10 years (Blackwell 2003). Such savings are already being felt internationally as various regulators already require a reporting medium such as XBRL (see earlier Direct 2 APRA footnote).

The U.S. General Accounting Office (GAO) has reported that use of XML-based technical standards (i.e. XBRL) could potentially save the government billions and substantially improve efficiency of operations. However, the GAO cautioned that XML-based standards are still in their development stage and the government as a whole, as well each agency, must adopt a strategy of XML usage to prevent data definition redundancy, ensure data security, and guarantee the interoperability and exchange of systems and data (GAO 2002).

Second, XBRL usage allows regulators to argue more strongly for the standardization and harmonization of International Financial Reporting Standards (IFRS; Weber 2003). Bonson (2001) concludes that adoption of both XBRL and IFRS facilitates a homogeneous communication of information across applications, thus making the job of international regulators who analyze the information easier. Creating a global GAAP would significantly increase comparability of company financials as well as make accountants' jobs easier (i.e., they would only need to know one GAAP and would have no reconciliations to perform). Furthermore, many stakeholders and issuers see IFRS as increasingly important, because they represent a passport to accessing funds on a global marketplace (Hucklesby 2003).

However, XBRL is not a GAAP translator. Individual jurisdictions create their own "taxonomies." A combination of XBRL and IFRS would open the door to numerous international opportunities. Some countries are already seizing the momentum a combination of XBRL and IFRS would bring, and requiring IFRS and XBRL usage. For instance, all listed companies in the United Kingdom will be required to adopt IFRS in 2005. Additionally, the United Kingdom's Inland Revenue Service (the UK's version of the Internal Revenue Service) is attempting to have all its corporate tax returns submitted to it in XBRL by 2006 (Hucklesby 2003). Japan's stock exchange has mandated XBRL usage by the end of 2003 and New Zealand's exchange is currently running a pilot with XBRL usage, while pondering a potential mandatory policy of its own (Wood 2003).

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[8] For example, Direct 2 APRA (Australian Prudential Regulatory Authority) in Australia requires immediate disclosure of material information for banks, insurance companies, pension funds, and many other public companies. New Zealand, England, Singapore, China, and many others are piloting similar reporting requirements.

[9] The SEC is accepting voluntary XBRL filings beginning in 2005 and the EDGAR database has already provided several data points (i.e., company data) formatted in XBRL.

Corporate and regulatory use of XBRL may have helped to prevent some of the recent accounting scandals. With XBRL, corporate submissions could be read by analytical software, increasing the probability that abnormalities in reporting could be detected much earlier in the process by the auditor. XBRL makes it possible for governmental agencies to process corporate information much faster than currently possible with disparate systems. For example, in 2001, the SEC reviewed only 16 percent of the 14,000 annual filings of U.S. public companies (Hannon 2002). Additionally, the SEC had not reviewed Enron's filings since 1997. The reason was that the SEC was not equipped to read the other 84 percent of submissions.

Individual Investors

Differences in terminology, presentation, and interpretation of business reports have made the search for relevant information a nightmare for individual investors worldwide (Malhotra and Garritt 2002). Because corporations need to serve the needs of various stakeholders (e.g., regulators, creditors, and employees), the information they supply can be confusing, frustrating, unrewarding, and possible misleading to individual investors. Additionally, it is nearly impossible for investors to go to a corporate Web site and retrieve relevant information without having to re-enter it (Goff 2003). XBRL usage by corporations creates an agreement on standardized terms for machine use within an industry that makes data easily transferable through disparate systems, as well as more understandable and comparable to investors.

Unlike paper-based reporting, where investors have to sift through various pages in order to locate certain information, XBRL would alleviate many of the information overload and inefficiency problems.[10] If corporations tag their information in XBRL and make it publicly available, all investors would have to do is click on the appropriate link and save the data (as an XBRL file), then import it into a spreadsheet or other analysis software (it would be self-populating). XBRL usage by issuers and investors would effectively put an end to a lot of typing.

If XBRL were not used, it would be difficult to create a more continuous reporting corporate environment. If the interval for reporting is relatively long, there are likely to be events occurring during the reporting period of which investors are unaware. Without this information, investors may experience great harm. Investors would be unable to revise their beliefs and take appropriate actions in a timely manner (Hunton et al. 2003).

Such harm is exacerbated in today's fast-paced and highly dynamic marketplace. For example, when Enron filed for bankruptcy, Enron's employees lost both their jobs and their retirement savings. However, external parties were also gravely harmed. Individual and institutional investors lost millions of dollars. The Florida Teachers Retirement Plan, for example, lost over $8 million. XBRL usage alone would likely not have prevented the demise of Enron; however, XBRL usage and a more continuous reporting environment would have made financial and nonfinancial (e.g., related parties transactions) information more accessible and comparable for analysis.

Research has shown that investors' ability to use nonfinancial and financial information consistently across companies and time is impaired by noncomparability in measures or formats (Amir and Lev 1996; Hughes 2000; Hirschey et al. 2001; Ittner and Larcker 1998). Such noncomparability is likely to reduce the value of nonfinancial performance measures and may lead to investors focusing primarily on historically-driven financial measures for assessing company performance (Maines et al. 2002). The lack of ability to analyze key nonfinancial information was a definite factor in the Enron scandal. Moreover, perhaps with more accessible and comparable information, investors may also have been able to compare WorldCom's salaries expense and asset numbers to those of competitors and identified problems before it was too late. Information in otherwise incompatible formats can be compared across different entities using the XBRL specification. The use of the specification is not limited to financial statements, but also includes nonfinancial information.

Whether or not individual investors would embrace XBRL usage is an open question. Investors could view XBRL like any other innovation – corporate share prices could increase to the extent investors perceive XBRL as a value-increasing innovation (Weber 2003). However, investors may have a negative view if they perceive XBRL use

[10] See the demo at www.XBRL.org for an example.

will lead to a loss of core competencies by a business over time. If so, corporate adoption of XBRL may decrease. Overall, individual investors need to take on the responsibility of assessing the impact that XBRL will have on corporate business models, as well as how well corporations have assimilated the business models that best suit an XBRL environment into their operations.

XBRL USAGE HELPS RESOLVE INFORMATION ASYMMETRY ISSUES

External Stakeholders

Corporate transparency to external stakeholders continues to be at the forefront of discussion in the global marketplace (PwCglobal.com 2003). To achieve a high degree of transparency, corporate disclosures should be clear, timely, and contain all information that will have a material impact on the corporation (Hannon 2002). Transparency is enhanced when corporate information can be understood both in the context of the individual corporation and within an industry segment. Financial reporting is said to be transparent if the presentation of the information gives the user a clear indication of the financial condition of the corporation.

As previously discussed, research has indicated nonfinancial measures in particular have been difficult for investors to access and use for corporate comparisons. XBRL tags and processes nonfinancial information as easily as it does financial information. Without the use of XBRL, the location and context of corporate-provided information can be confusing to those stakeholders trying to analyze it (investors, lenders, analysts, regulators, etc.). Thus, it would appear that XBRL use, as defined above and shown in Hodge et al. (2004), could make corporate-provided information more transparent to users.

Increased transparency could lead to decreased earnings management practices. Earnings management refers to the selection of accounting estimates, accruals, disclosures, and choices that bias reporting and, thus, do not accurately reflect underlying economic activity (Healy and Wahlen 1999). Since capital markets reward corporations that meet or beat analysts' expectations, some corporations routinely manage earnings to match such expectations (Brown 2002; Nelson et al. 2002).

Research on the stock market reaction to earnings announcements indicates investors prefer a smooth-line series of increasing income, something earnings management provides (Healy and Wahlen 1999). However, evidence shows the market reacts negatively when earnings management is detected or alleged (Hunton et al. 2003). Thus, corporations engaging in earnings management practices must be careful not to get caught or otherwise risk significant market value deterioration.

Earnings management exists primarily for two reasons.[12] First, managements' compensation contracts are typically tied to improvements in reported earnings and stock price valuations. Managing the earnings to maximize compensation has been rumored to be widespread for the past several years. Second, the time lag between processing and reporting corporate information allows ample time for management's choices of accruals and estimates leading up to earnings management. Whereas XBRL usage as an enabler of some form of continuous reporting would not change the structure of management compensation contracts, it drastically reduces the reporting time lag. In other words, use of XML-based business documents such as purchase order invoice, etc., can speed up transaction processing and thereby reduce the reporting time lag. Such documents, however, are not part of XBRL. Use of XBRL facilitates the exchange of tagged financial data between the reporting entity and the readers of financial statements. Thus, current earnings management practices could potentially be reduced or, at the very least, altered.[13]

[12] Other incentives for earnings management exist. Examples include: influence of political regulatory process; reduction political costs; reduction of management buyout costs; influence of proxy contests; assurance of stakeholders for their implicit claims,; and avoidance of losses.

[13] The second cause of earnings management stated above introduces a research question for rigorous empirical research based on accepted economic theory.

Earnings management harms corporate stakeholders by producing information that does not accurately reflect the corporation's underlying economic activity. As a result, investors and other stakeholders make decisions regarding the corporation based on inaccurate information. Earnings management practices have been a crux of recent U.S. legislation aimed at protecting investors and other parties. The Sarbanes-Oxley Act (2002) was designed to increase corporate accountability and timely disclosures. Specifically, section 409 requires public filing of most material events within 4 days of occurrence. This timeframe is significantly shorter than the previous 15-day requirement. Thus, management has significantly less time to decide disclosure presentation and timing. Through its increased accessibility and timeliness qualities, XBRL could help comply with section 409's requirements.

Labor Unions

Accounting information plays an important role in labor-management negotiations. Industrial conflicts occur between labor and management, frequently because key financial and nonfinancial information about a corporation is typically more accessible to management than union negotiators. The costs of the conflicts due to this information asymmetry can be substantial (Labour Office 1987). Management typically expects public reporting of this information to weaken its bargaining position. However, according to the information-expectation hypothesis and empirical support by Elias(1990), the average expected settlements by union negotiators would generally be higher under information asymmetry than in information symmetry due to higher expectations when both profit and loss scenarios exist. Increased symmetry would produce lower settlements (under times of low earnings or loss); assuming the unions believe management is reporting "truthful" information.

Assuming ample disclosure by management, XBRL usage would allow faster processing by both management and labor representatives in the time leading up to negotiation. Hunton et al. (2003) indicated that by providing decision-relevant information to all stakeholders simultaneously through continuous reporting, violations of insider trading rules an be averted, investor confidence in the capital markets strengthened , and informational opportunism by company management minimized. XBRL would not make the information reported more reliable (except for the sharp decline in re-keying errors), but it would substantially reduce data entry delays and increase the available analysis time for both sides.[14] Thus, more "informed" arguments could be made not only by the unions, but also by management (i.e., management would not have to delay or stall for more time when aggregating information). The end result could be more equitable resolutions for both sides.

SOME EVIDENCE FROM INVESTORS AND CPAS

A questionnaire was distributed to two samples of stakeholders discussed above: CPAs and individual investors (using MBA students as proxies).[15] The CPA sample was obtained from a two-hour XBRL continuing professional education (CPE) presentation made by one of the authors. 34 CPAs were given the questionnaire and 17 provided usable responses (a 50 percent response rate). The average (standard deviation) age of the sample was 42.53 (11.41). Nine females (52.9 percent) and eight males (47.1 percent) participated. They had an average (standard deviation) of 17.56 (11.15) years of work experience. 13 (76.5 percent) had primary work experience in accounting, finance, or computers, 3 (17.6 percent) had primary work experience in other areas, with 1 (5.9 percent) non-respondent. Thus, the demographics indicate the sample obtained was fairly diverse and experienced in accounting, finance, and/or computers.

The MBA students were given the questionnaire after a series of classroom lectures (comparable to the CPE session for the CPAs). 46 out of 50 students voluntarily participated and provided usable responses (92 percent response rate). The average (standard deviation) age of the students was 28.33 (4.69). 18 females (39.1 percent) and 27 males (58.7 percent) participated, with 1 non-respondent (2.2 percent). They had an average (standard deviation)

[14] Labor unions may also be concerned about the impact of XBRL usage on the elimination of data entry positions, and corresponding decline in union membership.

[15] MBA students have been used as proxies for individual investors in a number of accounting studies (e.g., Belkaoui and Cousineau 1977; Cooper and Selto 1991). Further, Elliott et al. (2004) provided empirical evidence consistent with MBA students, at the same stage of their programs as those in the current paper, being valid proxies for individual investors.

of 6.63 (5.02) years of work experience; however, only 9 (19.6 percent) had primary work experience in accounting, finance, or computers. 36 (78.3 percent) reported a primary work experience in other areas, with 1 (2.2 percent) non-respondent. 22 (47.8 percent) students received an undergraduate degree in business; whereas 24 (52.2 percent) received their degree in a non-business discipline. Finally, the students had completed an average (standard deviation) of 2.08 (1.48) accounting classes prior to completing the questionnaire. Thus, the students appear to represent a diverse group of individuals with some work experience. Since the precise demographics of individual investors are unknown, this group represents as fair a representation as any used in previous studies.

Both samples were asked seven questions regarding their perception of XBRL for external reporting. The survey questions and results are presented in table 1. All results were analyzed using an alpha of 0.05. The first question focused on XBRL adoption intentions if the price was acceptable to ownership (consistent with Link and Siegel 2002). Both groups indicated a tendency to be in favor of adoption. Specifically, the CPAs had a mean response of 4.59, while the MBA students had similar results with a mean of 5.61. A *t*-test, using the midpoint of the scale as the critical number, indicated that the means were significantly greater than the midpoint.

Five of the remaining questions asked involved the perceived benefits an XBRL adoption would bring: consistent with the earlier discussion. The first benefit indicated that using XBRL to report financial information would result in more accurate information than using current technology. Both samples were agreeable to this statement, with the CPAs and MBA students exhibiting significant means of 3.18 and 2.87, respectively. Thus, some evidence was found supporting the belief that its usage is perceived to help produce more accurate information when compared to other existing technologies (as a whole).

The next two questions inquired whether XBRL usage in external financial reporting would make a company more efficient and more effective, respectively. The CPAs did not provide responses statistically different from the midpoint of "not sure" for either question. Specifically, the CPAs had a mean of 3.81 for efficiency and a mean of 4.19 for effectiveness. The MBA students, however, did produce statistically lower means than the midpoint. The means were 2.41 for efficiency and 2.72 for effectiveness. Thus, the preparers of reporting information (CPAs) were not as sure as the users of the information (investors/MBA students) if the company using XBRL would obtain efficiency and effectiveness gains from adoption.

The two questions that followed switched the perspective of XBRL benefits from the reporting company to the individuals receiving and analyzing the reported information. Particularly, the questions queried whether using XBRL to analyze a company's annual report information would be more effective and efficient, respectively, than using a paper version. The CPAs were split on their perceptions regarding these questions. They had a marginally significant mean of 3.13 for effectiveness. However, for efficiency, their mean response was insignificant at 3.18. The MBA students indicated agreement to both benefits. Their mean of 2.63 for effectiveness and 2.35 for efficiency were both statistically lower than the midpoint of the scale. Therefore, on average, the MBA students were more agreeable than CPAs to the effectiveness and efficiency benefits that could accrue to annual report users of XBRL.

The differences in the above results may be due to the different perspectives of the samples (i.e., preparers versus users), or they may be due the sample participants' current perceived knowledge of XBRL (question seven). The CPAs had a mean response of 1.71 and the MBA students had a mean of 4.35. Apparently, the CPAs did not perceive themselves as being very knowledgeable about XBRL in general, while the MBA students perceived themselves as being somewhat knowledgeable regarding XBRL. Therefore, given their lack of perceived XBRL knowledge, the CPAs may have been less definitive in their responses compared to the MBA students: resulting in some statistically insignificant beliefs regarding XBRL benefits.

Overall, empirical evidence regarding perceptions of XBRL benefits related to accuracy, and to a lesser extent effectiveness, were found in both sample groups. Both groups indicated a willingness to encourage XBRL adoption. Finally, consistent with the "Individual Investors" section of the current paper, the MBA students were agreeable to all of the perceived benefits questioned.

CONCLUSION

There are speculations concerning how the XBRL will transform the financial reporting systems. Projected impacts range from effects on global financial markets to investor protection. Organizations worldwide cumulatively spend billions of dollars every year to find and re-key business information. Additionally, the information reported to various stakeholders can often be confusing and needs to be reformatted in order to be analyzed and understood. The recent momentum of XBRL has pushed these efficiency and transparency issues into the limelight. As a result, several XBRL-enabled software packages are available to governmental entities, companies and individuals for use in gathering and comparing critical business information and at a reasonable cost for most.

A sample of CPAs and MBA students provides some evidence indicating XBRL adoption and usage provides the potential accuracy and effectiveness benefits discussed earlier in this paper. Further, MBA students believed themselves to be "fairly knowledgeable" about XBRL as a whole and were significantly in favor of all perceived efficiency, effectiveness, and accuracy benefits posed. Caution in interpreting these results should be taken since only a small representation of both CPAs and individual investor populations were surveyed. Future research using both similar and dissimilar samples is highly encouraged to obtain more understanding about how various stakeholders perceive XBRL.

This paper implies that as global acceptance and usage of XBRL increases, information processing and analyzing costs, as well as the current form of earnings management will decrease making society as a whole better off. Time and future research will indicate if that happens.

Future Research

Future research should include evidence on XBRL uses other than for financial reporting. For example, XBRL General Ledger (GL) is a taxonomy specifically designed to improve the internal data capture and reporting processes. It represents a revolutionary tool linking accounting information to other business information throughout an organization. Additionally, future research should examine the perceptual and behavioral impacts XBRL adoption and usage would have on various accounting domains not mentioned in the current article. For example, cost accountants and accountants specializing in information technology will also be significantly affected by XBRL usage. Evidence of the specific impacts on those groups is sorely needed.

XBRL International and other XBRL insiders need to reach out to a variety of groups to communicate what XBRL usage could mean to them. For example, the relatively low level of perceived XBRL knowledge in the CPA sample would indicate that CPAs are one group that needs more communication. Additional academic research should also be undertaken in order to further general knowledge and understanding.

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Table 1: Questionnaire and Results

1) What would be your reaction to adopting XBRL, assuming the price of the technology was acceptable to your company's owners? (1 = would not be strongly in favor of adopting, 4 = not sure, 7 = would be strongly in favor of adopting)

	CPA Sample	MBA Sample
Mean:	4.59	5.61
S.D.	1.00	1.27
t-statistic	2.42**	8.57**

2) I believe that using XBRL to report a company's financial information would result in more accurate information than using the current technology. (1 = strongly agree, 4 = not sure, 7 = strongly disagree)

	CPA Sample	MBA Sample
Mean:	3.18	2.87
S.D.	1.47	1.61
t-statistic	-2.31**	-4.75**

3) I believe that using XBRL to report a company's financial information would make a company more efficient. (1 = strongly agree, 4 = not sure, 7 = strongly disagree)

	CPA Sample	MBA Sample
Mean:	3.81	2.41
S.D.	1.60	1.68
t-statistic	-.47	-6.40**

4) I believe that using XBRL to report a company's financial information would make a company more effective. (1 = strongly agree, 4 = not sure, 7 = strongly disagree)

	CPA Sample	MBA Sample
Mean:	4.19	2.72
S.D.	1.64	1.72
t-statistic	.46	-5.05**

5) I believe that using XBRL to analyze a company's annual report information would be more effective than using a paper version of the annual report. (1 = strongly agree, 4 = not sure, 7 = strongly disagree)

	CPA Sample	MBA Sample
Mean:	3.13	2.63
S.D.	1.89	1.72
t-statistic	-1.85*	5.41**

6) I believe that using XBRL to analyze a company's annual report information would be more efficient than using a paper version of the annual report. (1 = strongly agree, 4 = not sure, 7 = strongly disagree)

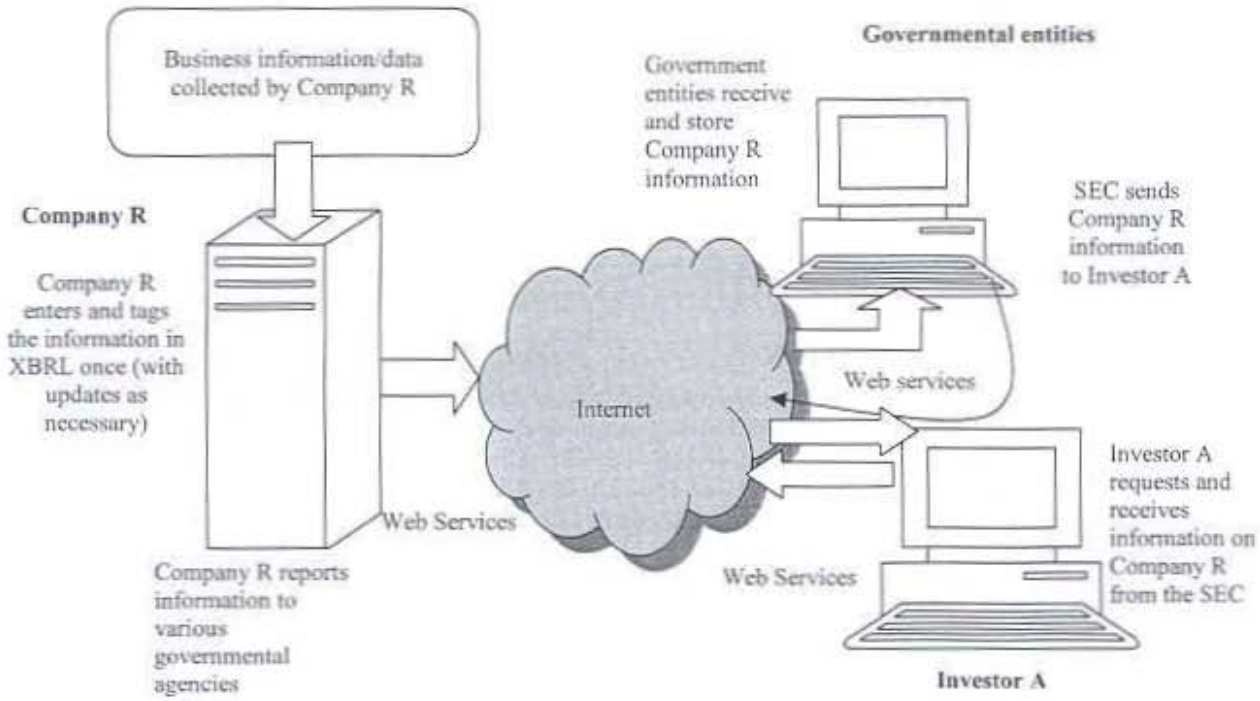
	CPA Sample	MBA Sample
Mean:	3.18	2.35
S.D.	2.01	1.60
t-statistic	-1.69	-7.03**

7) How would you rate your overall knowledge with XBRL? (1 = not very knowledgeable, 4 = somewhat knowledgeable, 7 = very knowledgeable)

	CPA Sample	MBA Sample
Mean:	1.71	4.35
S.D.	1.36	.90

CPA Sample = 17 CPAs attending a 2-hour CPE session, MBA Sample = 46 first-year MBA students*t*-tests used 4.0 (mid-point of scale) as the critical value, excluding question 7. * = significant at an alpha of 0.10, ** = significant at an alpha of 0.05

Figure 1:Example How XBRL 'Works' for External Reporting Purposes



Through the Internet and Web services (using SOAP), investor A requests and receives reported information from Company R, with the SEC as a data repository. Investor A can immediately use the tagged information for analysis with no re-entering of data.

Adapted from Pinsker (2004)