

**Abstract ID:** 490903

**Title:** How to Improve the Overall Reliability of Corporate Financial Reporting: The Auditor's Perspective

**Abstract:** This study attempted to gauge the auditor's perspective regarding how to improve the reliability of corporate financial reporting. Using a sample of 132 auditors from CPA firms in the State of Connecticut, we identified the following research question: how can the overall reliability of financial reporting be improved? Findings show that auditors feel strongly that CEO/CFO certification and the FASB prompt response to emerging accounting issues will enhance the reliability of corporate financial reporting system. Implications for future research are discussed.

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**Abstract ID:** 484943

**Title:** Auditor Effectiveness in the United States & the United Kingdom: Comparison & Analysis

**Abstract:** Recent scandals have brought into question the validity of companies' financial statements and the negligence of auditors in gathering evidence to uncover questionable accounting practices. The public has grown aware of the auditor's role in examining company's financial statements. Investors trust in the veracity of a company's financial statements based on the auditor's report issued upon conclusion of the audit. The purpose of this paper is to review the role of the public auditor and to demonstrate, citing recent cases, some of the problems that arise when the established principles of auditor independence and due diligence are compromised. We also explain the guidelines that auditors are supposed to follow in order to ensure that investors have adequate information. This study is not meant to imply that all auditors deviate from these guidelines but is intended to focus on situations wherein adherence to the guidelines was not the top priority.

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**Abstract ID:** 484923

**Title:** The Altman Z-Score Revisited

**Abstract:** This study replicates the research that created the Altman z-score measure of bankruptcy. To eliminate criticisms of the original study, this study uses a large sample, data from recent years, additional statistical methods, and eliminates the matched pair design of the original study, to rescale the z-score. This rescaling of the z-score greatly improves the predictive power of the measure and predicting bankruptcy for more than two years prior to bankruptcy filing.

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**Abstract ID:** 488102

**Title:** Negotiations Between Auditors & Their Clients Over Booking Proposed Adjustments: The Rule of Reciprocity

**Abstract:** Auditors face the challenging tasks of attesting that the financial statements are free from material errors while simultaneously fostering a functional working relationship with the client. As the financial statements may be considered, in part, a product of the negotiations between the auditor and client management (Antle and Nalebuff 1991), the negotiation strategy employed by the auditor may be useful in effectively fulfilling both tasks. In this study we examine how auditor strategy during negotiations with the client over the resolution of proposed financial statement adjustments may affect the posting of significant audit adjustments, as well as client satisfaction and retention. We investigate, from both the auditor and client sides of the negotiation, a strategy based on the societal rule of reciprocity termed Rejection-then-Retreat (RtR). Specifically, the RtR strategy employed in this study involved the auditor bringing immaterial audit differences to the attention of the client and, subsequently, waiving these immaterial differences. Compared to an auditor strategy of no concession, an RtR approach resulted in an increased likelihood that controller participants would agree to post significant adjustments. In addition, both auditor and controller participants provide evidence that an RtR approach improves client satisfaction as well as increases the likelihood of client retention, relative to the no-concession strategy.

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**Abstract ID:** 488186

**Title:** The Enron Effects & the Former Andersen Clients' Auditor Selection in the Electric Services & Natural Gas Industry

**Abstract:** The effects of Enron debacle was not an isolated corporate failure, but was closely tied to the collapse of deregulation of energy prices and the rolling blackouts in California. This paper reviews the Enron effects in the electric services and natural gas industry and presents evidence on whether auditors increased their existing market share within this industry. Andersen's audit clients, 31% of the industry, were forced to find a new auditor to comply with SEC filing requirements of their annual audited 10K statements. The results indicate that D&T and PWC absorbed 86% of the former Andersen clients and are the leading industry specialist, whether it is measured in terms of sales or number of audit clients. Our results may be helpful to regulators as they consider the costs and benefits associated with the changing levels of auditor market concentration in the electric services and natural gas industry.

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**Abstract ID:** 469622

**Title:** The Measurement Gap in Paying for Performance: Actual & Preferred Measures

**Abstract:** What is measured gets managed - especially if rewards depend on it. For this reason many companies (over seventy percent in this survey) have upgraded their performance measurement systems so as to include a mix of financial and non-financial metrics. This study compares how companies currently measure performance for compensation purposes with how their managers think performance should be measured. We find significant measurement gaps between actual and preferred measures, and we find that larger measurement gaps are related to lower overall performance. The choice of performance measures for compensation purposes is also related to the attitudes of managers towards manipulation of reported results.

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**Abstract ID:** 468942

**Title:** Teaching the Introductory Accounting Course: Student Perceptions & Expectations

**Abstract:** This paper analyses student perceptions and expectations about accounting and the introductory accounting course. The intention behind this investigation was to have student input when considering the design, structure and delivery of a new introductory accounting course. This investigation evaluated, through implementation of the same instrument, student views on two occasions; at the beginning of the semester and at the end. Changes in expectations are apparent in several areas. Results also indicate that dominant perceptions among students include that the course is challenging, interesting and useful. Factor analyses of the data reveal four distinct factors; expectations, topics, preparation, and ethics. Educational implications emanating from this investigation are discussed.

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**Abstract ID:** 489903

**Title:** A Positive Model for Corporate Governance

**Abstract:** Corporate governance in this country is heading in the wrong direction. The primary reason is that the governance strategies put in place, particularly the independent board required by Sarbanes-Oxley Act, may create turmoil, even animosity or adversarial relationship, in the boardroom. For instance, a strategic proposal that appears risky to an independent board member who believes that he/she has the force of law, may be opposed or denied approval. In addition, the present governance structure is founded on the agency theory of 'classical' economics whereby the relationship between shareholders and management is that of principal and agent. As agent of the shareholders, management is supposed to promote the interest of the principal. 'Classical' economists lead by such luminaries as Nobel Prize laureate, Milton Friedman, believe that management's responsibility to the shareholders is to obtain the maximum profit possible. Unfortunately, this relationship does not exist in the era of large modern corporations where investors, not owners, abound. The foundation of the agency theory are the small English merchants during the pre-Industrial Revolution where ownership is clear and well-defined. This environment has been gone since the turn of the 20th Century. Our proposal calls for a positive approach to corporate governance; a cooperative and supportive, not independent, board; the recognition of employees as key participants in the corporate process and serving as countervailing force in the boardroom against management fraud; the recognition of public trust as a social charter of the corporation and as a shared vision among the key participants of the corporate process - shareholders, management and employees; and making the profitability and success of the corporation as shared vision by these key corporate participants.

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**Abstract ID:** 481383

**Title:** Financial Reporting Factors Affecting Donations to Charitable Not-for-Profit Organizations

**Abstract:** In order to examine the value of accounting reports for not-for-profit organizations, previous accounting studies primarily investigate the association between donations and accounting information. Prior studies primarily explore the relation of donations to accounting measures of efficiency and stability and find that more efficient and more stable organizations generate greater total contributions. However, there is no consensus on which variables are related to donations, and several measures are used as proxies for similar constructs. We posit that there are four conceptual factors that are related to donations. The factors are the efficiency of the organization in allocating resources to its programs, the financial stability of the organization, the quantity of information available to donors, and the quality of the information. We use factor analysis with variables from previous studies to test this conceptual framework on a large sample of charitable organizations. We find that the variables align on four components that appear to represent the factors that we conceptualize. We also use these four components as predictor variables in an OLS regression specification of direct contributions. The model is significant and explains over 40 percent of the variations in contributions.

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**Abstract ID:** 488382

**Title:** An Examination of the Effect of Consultation Review, Financial Dependence & Moral Development on Auditor Judgment

**Abstract:** Professional standards require auditors to be independent in the performance of attestation services. Critics of the accounting profession have expressed concern that pressure to maintain and develop business opportunities may erode an auditor's objectivity and independence when making audit judgments. The profession contends that aspects of the auditing environment such as peer review, consultation review, and auditor professionalism serve to mitigate this risk. This study examines the impact of financial dependence, consultation review requirement, and moral development on a judgment based audit decision. Fifty-four experienced auditors were asked to assess the appropriateness of an audit client's proposed change in accounting estimate for warranties. Two levels of financial dependence (Large client with potential for additional consulting revenues / Small client) and two levels of consultation review requirement (Required / Not required) were manipulated in the case materials. Moral development was measured using the Defining Issues Test (DIT) p-score. Results of the tests indicate that the presence of a consultation review requirement reduced the auditors' assessments of the appropriateness of the accounting treatment; in addition, higher scores on the DIT were associated with lower assessments of the appropriateness of the accounting treatment. Financial dependence did not influence the assessment of the appropriateness of the accounting treatment. Implications for practice are discussed.

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**Abstract ID:** 490483

**Title:** A Behavioral Model of Decisions to Accrue & Disclose Environmental Liabilities

**Abstract:** Using a sample of 263 financial executives, this study furthers our understanding of the factors that influence the accrual and disclosure of environmental liabilities. It uses the Theory of Planned Behavior (Ajzen, 1991) to investigate these discretionary accruals and disclosures as ethical decisions at the level of the individual decision maker. The authors know of no other study that explicitly examines the accrual decision as distinct from the disclosure decision with respect to environmental liabilities. Results indicate that the intentions to accrue and disclose environmental liabilities are significantly related to an individual's attitudes, subjective norms, perceived behavioral control and perceived moral obligation. Findings also suggest that financial executives are more willing to accrue an environmental liability than to disclose it in the notes to the financial statements.

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**Abstract ID:** 461781

**Title:** Standards for Determining & Alternatives for Reducing Executor Liability for an Estate's Federal Tax Obligations

**Abstract:** Personal representatives of decedent estates generally have personal liability for the payment of all estate taxes, both income tax and estate tax. In fact, the research indicates that this liability is almost absolute if the executor distributes estate assets to heirs so as to leave insufficient funds to pay the tax. Consequently, executors have a natural reluctance to distribute any funds to heirs before all statutes of limitation expire for the IRS to assess tax deficiencies. In addition to examining the extent of executor liability of estate taxes, the paper offers several statutory alternatives available to estate administrators to reduce their liability and thereby facilitate the efficient and prompt closing of estates. All executors and their tax advisors should be cognizant of the tax liability issues discussed in the paper, and in appropriate circumstances, elect an alternative that will relieve the executor of liability without reducing the ability of the IRS to collect tax revenue.

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**Abstract ID:** 489222

**Title:** The Influence of Decision Aid Use on Auditor Processing of Irrelevant Information in Fraud Risk Assessment

**Abstract:** This study provides evidence that in a fraud risk assessment task, decision aid use increases auditor susceptibility to dilution, an information processing bias where non-predictive cues water down or dilute the predictive value of diagnostic cues. The results of a between-subjects experiment where senior auditors assessed fraud risk indicate that in response to irrelevant information, decision-aided auditors lowered their fraud assessments more than their unaided counterparts did. Even in a high fraud risk context, where auditors should be particularly thoughtful as they review data in preparation for assessing fraud risk, the decision aid still impaired judgment.

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**Abstract ID:** 467263

**Title:** Sales & Stock Valuation: The Case of High-Tech Industry

**Abstract:** This study examines the role of sales revenue in the valuation of high-tech stocks. We compare the associations of high-tech stock prices and earning, sales revenues, and cash flows, over the period 1990 through 1999. We find evidence that sales outperform earnings and cash flows in valuating high-tech stocks in general, and high-tech firms reporting losses in particular.

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# Complete Research Papers (Included in Proceedings)

## **XBRL Usage: The Socio-Economic Perspective**

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## **XBRL Usage: The Socio-Economic Perspective**

### **ABSTRACT**

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

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 analyze 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. As a result, accounting scandals like Enron and WorldCom have rocked the accounting profession and have severely harmed various accounting information stakeholders.

eXtensible Business Reporting Language (XBRL) represents a reporting standard capable of significantly 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. As a result, interested stakeholders can gain access to public information much more quickly and transparently than ever before.

#### **Key Words:**

XBRL  
Technology  
Internet  
Financial Disclosure

## **Accelerating XBRL Usage: The Socio-Economic Perspective**

### **I. INTRODUCTION**

“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 (eXtensible Business Reporting Language) 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).

The first companies to publish XBRL financial statements, Microsoft and Reuters, did so in early 2002 (Zarowin 2003). Over 200 companies and organizations are involved in the development of XBRL.

Due to ever-increasing demands on the corporate reporting supply chain (i.e., regulators, lenders, investors, 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, as former SEC chairman Pitt’s quotation would indicate, business reporting is at a crossroads (Sutton 2002).

Until recently, there were no uniform standards that would allow financial and nonfinancial 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 standardization also made it difficult for investors and other corporate stakeholders to track corporate performance and makes inter-industry comparisons; enter XBRL.

XBRL defines a 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). As expressed in the Mike Willis quotation, XBRL usage is a “big deal.” 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 no longer focusing on “should we have XBRL capabilities?” to “when should we be deploying it and who should be involved,” (Hucklesby 2003). Yet, 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 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, taxpayers, individual investors, and labor unions.

Section II of this paper begins with a brief overview of XBRL – what it is and how it “works.” 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 concludes with a summary and calls for the areas of future research.

## II. XBRL OVERVIEW

“XBRL is a non-proprietary, Web-based language based on Extensible Markup Language (XML) that tags financial and nonfinancial data and gives it context,” (Pinsker 2004, 4). XML and its derivatives have become increasingly important data formats for storing and exchanging business data among various systems on the Internet (Feng et al. 2002). Using Web services (i.e., Internet applications that communicate information between two computers) and a transmitting protocol such as Simple Object Access Protocol (SOAP), companies all over the world are able to send and report business information in almost real-time. Web services will eventually replace the current model on the Web – users looking at static Web pages – with automated software communication allowing information to be accessed and processed without the need for human intervention (PwCglobal.com 2003). A combination of Web services and XBRL would allow stakeholders to automatically retrieve company reports using a financial analysis program of their choice (as long as it is XBRL-enabled), without the need to locate and download the information. Figure 1 shows a simplified reporting process for Company R using XBRL, the Internet, Web services, and SOAP. Specifically, the figure presents various business information tagged in XBRL and displayed according to access granted by Company R. Through the use of the Internet and its tools (i.e., Web services and SOAP), various stakeholders can then gain instant access to critical business information to make decisions with no re-entry of data.

[Insert Figure 1 about here]

Since XBRL is created in XML, it 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, Java, etc.), XBRL usage provides substantial improvements. XBRL provides structure to the data between the tags allowing for interactive uses. 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.

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. The W3C 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.

The XBRL development and adoption progress has been significant in many countries. In addition to International Accounting Standards Board, Australia, Canada, Germany, Ireland, Korea, Netherlands, New Zealand, Singapore, Spain, United Kingdom, and United States have formally or provisionally established XBRL jurisdictions. Furthermore, the development of XBRL taxonomies in various jurisdictions and the integration of XBRL into accounting software are expected to convert XBRL from just a new technology acronym to a tool for more efficient and effective use of business information. Various software developers have started incorporating XBRL functionality in their software, including ACCPAC, Creative Solutions, FRS, Hyperion, and enterprise source planning giant SAP AG (XBRL 2002).

### **III. FINANCIAL IMPACTS OF XBRL USAGE ON CORPORATIONS, REGULATORS, TAXPAYERS, AND INDIVIDUAL INVESTORS**

#### **Corporations**

XBRL provides adopting companies with numerous benefits. 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, applications (i.e., interoperability), and Generally Accepted Accounting Principles (GAAP; 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 (whether that be 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 lags and the importance of the Internet as a reporting medium are two reasons 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% 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. One potential reason for the differences is the uses of the documents. Annual reports are more likely printed in their entirety and PDF is a more printer-friendly format than HTML. Whereas, quarterly reports need to be analyzed quicker, sometimes in their electronic state, where HTML has the advantage. Using XBRL provides a flexibility advantage 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 extracted in a variety of formats to meet the particular need of each user and reliably do so in seconds.

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.<sup>1</sup> 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).

There is growing evidence of a market demand for more continuous reporting coupled with more meaningful disclosure of nonfinancial information (Elliott and Pallais 1997). 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<sup>2</sup>, making benchmarking easier.

In addition to the previously described benefits, many other significant benefits accrue to corporations who would use 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

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<sup>1</sup> 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.

<sup>2</sup> XBRL usage should not provide more information than what is already available; but, rather, more accessible information.

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 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 due out in 2004. 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 standards or are currently piloting such projects.<sup>3</sup> 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).

## **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 governmental agencies like the SEC<sup>4</sup>, 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 the XBRL standard for processing submissions. For example, the

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<sup>3</sup> 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.

<sup>4</sup> The SEC is already moving to accept XBRL filings (Davis et al. 2002) and the EDGAR database has already provided several data points (i.e., company data) formatted in XBRL.

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 to various regulators already requiring a reporting standard such as XBRL (see earlier Direct 2 APRA footnote).

Second, XBRL usage allows the regulators to argue more strongly for the standardization and harmonization of International Financial Reporting Standards (IFRS; Weber 2003). Creating a global GAAP would increase comparability of company financials significantly 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).

XBRL represents a universal translator of information. 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 IRS) 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).

Corporate and regulatory use of XBRL may have prevented some of the recent accounting scandals. 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. With XBRL, all corporate submissions could be read by analytical software, increasing the probability that abnormalities in reporting could be detected much earlier in the process.

### ***Taxation***

The growth and usage of XBRL and other XML-based applications in the realm of U.S. federal taxation is tied closely with the E-filing initiative imposed by Congress in 1998. As part of the Internal Revenue Service (IRS) Restructuring and Reform Act of 1998 (RRA), the IRS is obligated to have 80 percent of all returns filed electronically by 2007 (Walsh and White 2000). 50 percent of returns were filed electronically in 2002 (Internal Revenue Service 2003).

There are a number of reasons for this initiative. Electronic filing shortens processing time for returns and reduces error rates, as return data is no longer re-keyed into IRS' systems. Faster processing time results in quicker refunds for taxpayers and lower error rates result in fewer false audits by the IRS, audits triggered by erroneous IRS data. Above all, e-filing lowers the cost of processing returns, thereby increasing the IRS' revenue yield (i.e., amount of tax revenue collected per a dollar of collection cost).

The IRS estimates processing costs being reduced from \$5 per return to less than \$2 (Walsh and White 2000).

While electronic filing refers primarily to the means of transmission of return data (i.e., electronically as opposed to postage), it does necessitate changes in content format as well. Electronic transmission requires that the return data already be in electronic format. While there is more than one format available, XML and XBRL -based applications present the strongest and most versatile format. As a result, the IRS has begun the development of XML-based schema for various tax returns.<sup>5</sup> This development project presently is limited to three series of federal tax returns: IRS Forms 940, 990, and 1120. The Form 940 series (e.g., IRS Forms 940, 941, and 945) is used by employers to file quarterly and annual employment tax returns that report liability for employer social security and unemployment taxes, as well as withholding for employee social security and income taxes. The 990 series of tax forms is used by tax-exempt organizations and is filed not only with the IRS, but with state authorities as well. The Form 1120 is the annual corporate tax return. The roll-out of these three forms as an XML schema has already begun, starting in 2003. Their implementation solidifies the linkages between tax and financial reporting, especially among corporations already using XBRL. As will be discussed later, the usage of XML-based Form 990s by tax-exempts will substantially change the way non-profits are viewed by both the government and the public (Strand et al. 2001).

## **Taxpayers**

### ***Corporate Taxpayers***

Corporate taxpayers are likely to be the quickest to use an XML-based application for tax return preparation and filing, particularly public companies. This is due to the strong incentives already being faced by public companies from shareholders and the SEC to use XBRL for financial reporting. The use of another XML application for tax reporting is a logical next step. The complete integration of financial and tax reporting can then be achieved. No longer will firms need duplicate accounting systems for financial and tax filings. Additionally, the adoption of XBRL reporting by other regulators will further streamline firms' accounting functions and systems. A single XML-based accounting system can prepare required reports for filing with the SEC, IRS and other agencies and users, all from a single data source.

Aside from increased linkages between financial and tax reporting, XML usage for tax compliance will greatly facilitate the audit process. Firms using XML-based applications for tax and financial reporting will already have supporting data in a digital format. As a result, IRS requests for schedules and other records can be answered almost instantaneously. Examinations may then be carried out and completed in shorter timeframe and with less cost, for both the taxpayer and the government.

### ***Individual Taxpayers***

The use of XBRL and other XML-based applications for individuals is likely to follow a reverse pattern. Whereas businesses are likely to use XBRL initially for

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<sup>5</sup> The IRS, along with the various state taxing authorities, is currently developing an XML schema for select tax forms. While not XBRL per se, this XML-based format will be translatable into XBRL and allow uploads and downloads of data between the IRS format and XBRL.

financial reporting and then progress to tax compliance; individuals are likely to start with using XBRL and other XML-based applications for tax return preparation and filing. Unlike businesses, individuals are limited in their accounting systems, with the tax return being the only substantial accounting documentation prepared. As a result, it is through tax reporting that individuals will likely initiate XBRL usage.

Unfortunately, the IRS' current XML initiative does not include individual taxpayers, Form 1040. However, a number of personal financial software vendors have started implementing XBRL add-ins for their products (i.e., Intuit's Quicken and Microsoft's Money and Excel) (Hannon 2003). Accordingly, individuals soon will possess the means to prepare, save and produce accounting records electronically in XBRL format.

Individuals will be impacted in a number of ways. Once the IRS has developed an XBRL or XML format for Form 1040, individual taxpayers will be able to seamlessly integrate their personal financial software and/or excel spreadsheet data into their tax filings. This will greatly simplify the tax filing process. Additionally, along with the IRS' electronic filing initiative discussed earlier, tax filings will be quicker and less error prone. Individuals will also be able to analyze both their tax and financial data at the same time as part of an integrative financial planning scenario. Because XBRL is non-proprietary, an individual's data will not be locked into a single application. Data can be exchanged between applications, including spreadsheets and personal financial software packages.

### ***Tax-Exempt Organizations***

Tax-exempt organizations in the United States are likely to experience a renaissance in financial reporting and governance oversight as results XBRL usage. Exempt organizations number over 1.5 million and make-up a significant part of the economy, generating almost 10 percent of the nation's gross domestic product and the employing over 10 percent of the nation's workforce (Gross et. al. 2000). Additionally, exempt organizations perform a vast array of services that the government would normally have to provide, such as education, medical care, and low-income housing assistance.

However, exempt organizations are not subject to the same market forces and oversight as public companies. External oversight of exempt organizations rests with state authorities and the IRS. Instead of investors and creditors, an exempt organization possesses donors, and possibly members. While investors in public companies receive annual reports, donors do not. Thus, there exists a need for greater information disclosure by exempt organizations to the public, current and prospective donors. Exempt organizations are generally required to file an annual return with the IRS, Form 990, and an annual report with the relevant state agency, though many states will accept a copy of the IRS Form 990. The Form 990 includes information on the organization's exempt mission, finances, contributions, expenditures, and fundraising, as well as the names of the organization's trustees, officers, and highly compensated employees. While these reports are publicly available, they consist of paper forms that must be copied and transcribed or re-keyed for further analysis. This contrasts sharply with the ability of public company investors to download financial statements and data in XBRL and immediately use the data in their own spreadsheets or other financial analysis software.

The current reporting system for exempt organizations begins with the preparation of the IRS Form 990, which may be prepared by hand or via computer. The return is then printed out and mailed to the IRS and possibly one or more state agencies. The returns are received by the IRS and state and re-keyed manually into their own systems, as well as scanned onto a CD-ROM. The CD is then forwarded to the National Center for Charitable Statistics (NCCS) and GuideStar. Both the NCCS and GuideStar upload the forms, in *pdf* format, to their respective websites, for public viewing and download. Additionally, members of the public may contact the exempt organizations directly for a copy of their Form 990.

One improvement would be the electronic filing of an exempt organization's Form 990 with the IRS and the state. This would eliminate the need to re-key the data from the form into the IRS' systems, as well the states' systems. The elimination of re-keying will reduce both errors and costs, particularly labor costs. The adoption of an XBRL or XML-based format for the Form 990 will further improve public access to exempt organization financial and operational data (Strand et al. 2001). The content contained with the traditional Form 990, both financial and operational, will be available immediately for analysis in a digital format. Form data may be not only filed electronically with the IRS and state, but also retransmitted by the IRS to NCCS and GuideStar for public access and download, further increasing speed and accuracy of access, as well as reducing costs. Instead of months, an organization's Form 990 data will be publicly available within days. Additionally, a prospective donor or organization member can download the data directly into their spreadsheet application and perform their own analysis, cross-sectional or times series, of the organization's performance. Members of the public, media and government officials will have near immediate access and use of an exempt organization's performance results. This will facilitate greater public and governmental oversight of the non-profit sector, similar to the oversight provided by regulators and investors over public companies, via XBRL electronic filing with the SEC's EDGAR system.

### **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 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.<sup>6</sup> 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

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<sup>6</sup> See the Great Plains demo at [www.XBRLSolutions.com](http://www.XBRLSolutions.com) for an example.

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, great harm could occur to the investors. 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. Speculation is difficult at best such that if Enron had been reporting continuously via XBRL, then no scandal would have occurred. However, XBRL usage and a more continuous reporting environment would have made financial and nonfinancial (i.e., 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.

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 will lead to a loss of core competencies by a business over time. 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.

#### **IV. XBRL USAGE HELPS RESOLVE INFORMATION ASYMMETRY ISSUES**

##### **Labor Unions**

Accounting information plays an important role in labor-management negotiations. Industrial conflicts occur between labor and management, 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. 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.<sup>7</sup> 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.

### **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. Business 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, 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.

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<sup>7</sup> 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.

Earnings management exists primarily for two reasons. 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. Thus, current earnings management practices could potentially be reduced or, at the very least, altered.

XBRL and continuous reporting result in real-time data and real-time management decision-making. It would be naïve to believe XBRL and continuous reporting would completely negate earnings management practices. However, it would be entirely practical to believe that combined with increased accessibility and transparency to external stakeholders, XBRL and continuous reporting would force management to spend considerably less time potentially manipulating accounting information and more time satisfying stakeholder needs.

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 interested parties. The Sarbanes-Oxley Act (discussed previously) was designed to increase corporate accountability and timely disclosures. It is hoped by many in the accounting profession that legislation such as Sarbanes-Oxley in the United States and Direct 2 APRA in Australia, will significantly decrease the number of earnings management incidences. XBRL usage could play a key role through its increased accessibility and timeliness qualities.

In addition to transparency and earnings management related information asymmetry problems, the capital markets have been guilty for quite some time of releasing information early to a "privileged" few. Information asymmetry then becomes more pronounced between those few and the corporations when compared to the rest of the public and the corporations. This problem is possibly more pronounced in the United States than elsewhere, given its typical position as the world's most "popular" capital markets (i.e., the New York Stock Exchange and NASDAQ).<sup>8</sup>

Regulation Fair Disclosure ((FD); adopted by the Securities and Exchange Commission on August 15, 2000) includes three rules (101-103) aimed at eliminating the selective disclosure of material non-public information (i.e., tipping) to a discrete set of individuals (i.e., brokers and analysts). Whereas traditionally, many companies release information early to analysts, Regulation FD requires immediate disclosure of material information to the public. The long-term goal of the regulation is to restore investor confidence in the integrity and fairness of the market (Pinsker 2003). Assuming corporate permission, XBRL usage would assist corporate compliance with this regulation by increasing accessibility to all, thereby creating a "level playing field."

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<sup>8</sup> "Popularity" is defined here as number of capital market participants.

## V. 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. KPMG's Zachary Coffin, founding member of the XBRL Consortium and XBRL liaison Chair, made the most visionary statement. Coffin (2001a and 2002b) has identified top ten effects of XBRL. If the predictions of Mr. Coffin come true XBRL will be leading the charge towards improving financial reporting. These are improvements that could save billions in the costs of processing and analyzing business information, as well as speed-up and simplify its use.

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 a global reporting standard called 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. 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 paper. For example, auditors, 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. Additional academic research should also be undertaken in order to further general knowledge and understanding.

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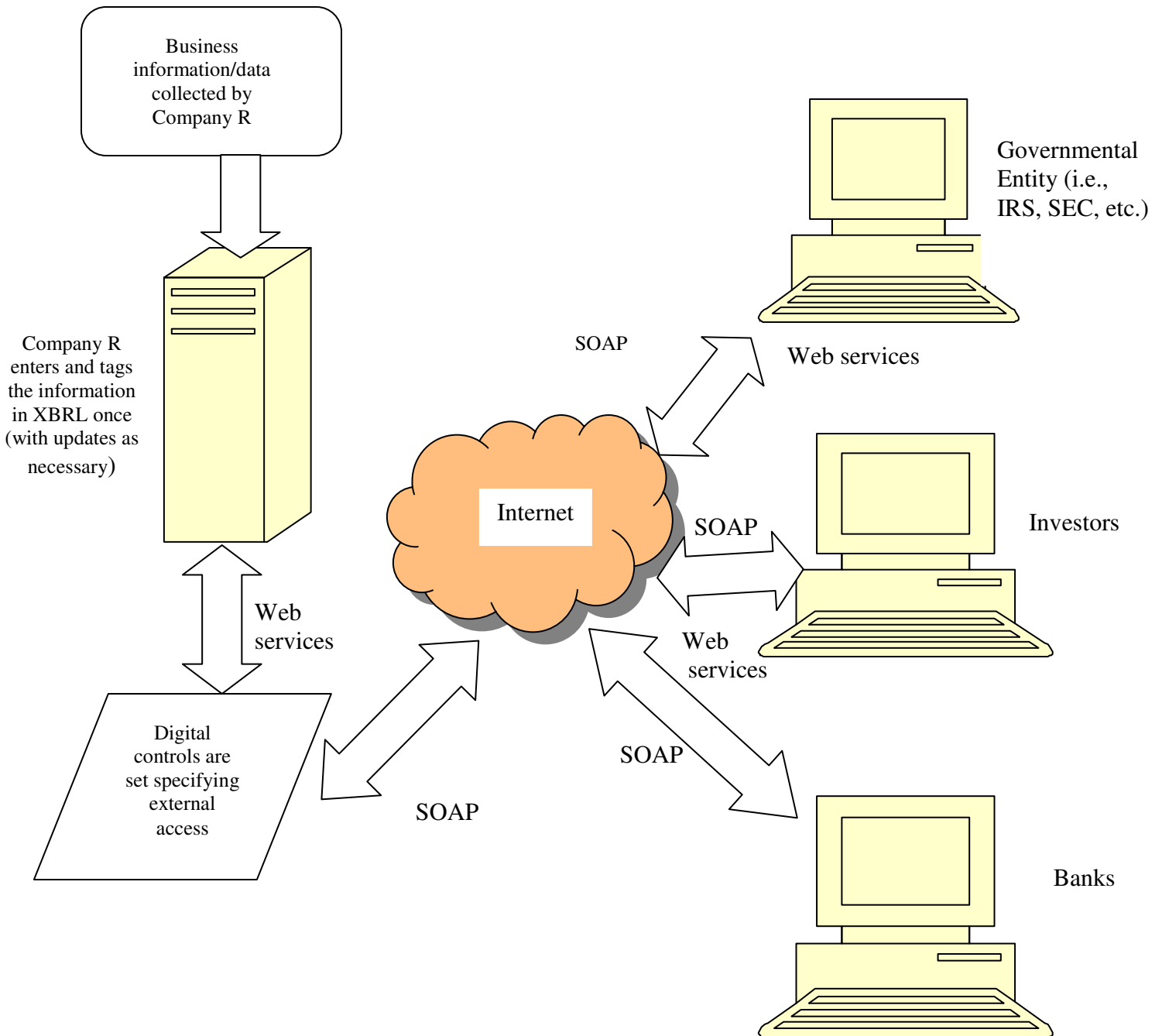
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**Figure 1**  
**Example How XBRL ‘Works’ for External Reporting Purposes**



Through the Internet, Web services, and SOAP, information stakeholders receive reported information from Company R. The stakeholders can immediately use the tagged information for analysis with no re-entering of data.

Adapted from Pinsker (2004)