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XBRL: Translating Accounting for Meaningful Business Analysis and Operations

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Senior Honors Project

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XBRL: eXtensible Business Reporting Language

In today's world, businesses are frequently transferring data over the internet, and many people use this data to make important business decisions. In a time when corporate scandals have threatened the credibility of financial reporting and other corporate data, businesses are finding it more important to be transparent and disclose information in clear and useful formats. XBRL is a way for companies to get the most value out of the enormous amounts of data transferred both inside and outside the company. Data takes on value when it is meaningful to users and is communicated in a timely and reliable manner. XBRL can achieve this standard of data quality, and in turn become a great asset to corporate information systems.

XBRL is a "language for the electronic communication of business and financial data" (XBRL). The language is based on standards which are specifically designed for "preparing, publishing, exchanging, and analyzing financial information" (Leahy). Free for all to use, XBRL is an open standard and does not require any license fees (XBRL). According to the XBRL website, the language is able to put data in a standardized format and is already becoming a common "means of communicating information between businesses and on the internet."

XBRL: History of the Organization

In April of 1998, a CPA named Charles Hoffman began working with XML standards and seeing how the technology could be applied to financial statements and audit schedules (XBRL). After finding the enormous potential of having a standardized financial reporting language, Hoffmann contacted the AICPA and a prototype project was

funded and developed (Tie). With the success of the prototype, the AICPA granted funding and formed XBRL International, a non-profit international consortium established to further develop and promote the technology (Tie). Recognizing the potential of this technology for accounting, XBRL International received membership from the Big Five accounting firms in 1999, Arthur Andersen LLP, Deloitte & Touche LLP, Ernst & Young LLP, PricewaterhouseCoopers LLP, and KPMG LLP (XBRL). Microsoft Corporation was also one of the first organizations to belong to the consortium. Awareness of XBRL increased in 2001 when the first International Conference was held. At the time of the first conference XBRL International only had 85 members (XBRL).

Today the membership consists of “approximately 450 major companies, organizations, and government agencies” who are working together to develop the language and its standards (XBRL). The XBRL organization meets periodically at conferences and meetings to develop the language and promote its support by businesses and government agencies (XBRL). Many industries are represented in the organization, including international accounting firms, banks, insurance companies, and technology companies like Microsoft and Adobe (XBRL). Charles Hoffman continues to be involved with XBRL and its development and adoption (Tie).

XBRL: Technology Details

It does not take a computer scientist to understand how XBRL works. Many CPAs and business professionals are attending workshops and conducting research to learn how the language works and can be applied in common business practices. XBRL is based on eXtensible markup language (XML), “which is a standard for the electronic

exchange of data between businesses and on the internet” (XBRL). XML is a language that uses a “set of elements (frequently called tags) that have one or more of the following functions: describe the structure of the document; describe the content of the document; control how the document is presented to the user” (Rezaee). XBRL expands on the capabilities of XML and “uses data tags in describing financial information” (Shin). It has been designed to “specifically meet the requirements of business and financial information” (XBRL).

When studying XBRL and how it works, some new technology terms arise, such as data tags, specifications, and taxonomies. Data tags are elements “enclosed in angle brackets” which represent attributes described by the data (Burnett, et al.). Specifications are “software codes that describe and define the financial information for XBRL software developers” (Shin). Using XBRL specifications, software developers can ensure that data recorded in XBRL can be shared and will be compatible among several different software applications (Shin). Taxonomies are “standard descriptions for presenting business information and accounting reports” (Shin). Taxonomies are published on the XBRL website, and serve as “dictionaries” for the language (XBRL). Many taxonomies have been specifically developed for industries or specific purposes, such as the General Ledger taxonomy designed to support “internal reporting within organizations” (XBRL).

The power of XBRL lies in its ability to allow data to be shared among many different computer systems, “regardless of variations in computer hardware and software (Burnett, et al.). In addition to increasing the speed and accuracy of data published in XBRL, it also increases its value by making it interactive (Sinnott). Data tags in XBRL are more than identifiers of information; they can provide information about specific

details, such as the currency of the item, references to accounting standards, links to calculations, and much more (XBRL). In XBRL there are standard data tags which refer to specific elements of financial statements, and when these statements are published, analysts and users of the information can download the statements directly into a database to be used for their needs (Rezaee). “XBRL does not change the data in financial statements – it provides a standard way of describing it” so that many different users can get value from its information (Rezaee). XBRL “provides structure and meaning to data” (Hannon – IMA). The key concept in using XBRL data tags to publish business and financial information on the internet is standardization, and from here many different users can benefit.

XBRL: Benefits for All

Anyone who collects business data and uses it to make decisions can benefit from XBRL. To begin, the organization itself can benefit internally through automating processes and streamlining the flow of information (Leahy). Using XBRL internally can “provide a powerful solution that lets companies flow internal reporting to external reporting,” which increases transparency and reduces errors (Hannon – ROI). Employees within the organization will benefit from the reduction of repetitive manual data-entry, and managers will be able to make better decisions with more accurate information.

Government and regulatory agencies will benefit by having companies submit filings electronically in standardized formats. Chairman of the SEC, Christopher Cox, is an adamant supporter of XBRL. He believes that it will “provide additional transparency to the financial disclosures of US public companies” (Sinnott). Furthermore, he believes XBRL has potential to increase the value of the Electronic Data Gathering Analysis and

Retrieval System (EDGAR) by facilitating “analysis by all users” and “increasing reliance on EDGAR” (Sinnott). Other government and regulatory agencies throughout the world have similar thoughts about the value of using XBRL to publish and file financial data (Sinnott). “Regulators around the globe are calling for increased financial transparency in order to rebuild market confidence,” and XBRL can be the solution (Shin).

XBRL will make it easier for investors, analysts, banks, and other third party users “to find and analyze companies’ financial information” (Leahy). Using XBRL will allow third parties to “get their information directly from the company whose data they are analyzing rather than through an intermediary” (Leahy). XBRL lets users see the true financial position of the company, not a normalized version used for publication.

Accountants will reap many benefits from XBRL. “Standardizing information formats would help CPAs gather, manage, and report information more quickly, efficiently, and accurately” (Willis). Currently the American Institute of Certified Public Accountants (AICPA), the Institute of Management Accountants (IMA), the Public Company Accounting Oversight Board, and other organizations are offering guidance to members and setting standards related to XBRL and its use in the industry (Harrington).

Software companies will need to embrace XBRL as it becomes more widely accepted. It is “designed to be integrated into business software products and will likely become embedded in more and more of those systems as its popularity increases” (Leahy). In an article by Mike Willis, he recommends that CPAs “encourage software vendors to embed XBRL capabilities as standard features in their products.” It is

important to recognize that XBRL is becoming a new standard in financial reporting, and software without XBRL is likely to become obsolete in the future.

XBRL: Necessary for Business Today

Having data in different formats, different locations, and running on different software or hardware systems means one thing – data is different throughout the world. When users need company data it sometimes goes through many intermediaries before it is available (Leahy). Taking data through many paths and transformations reduces efficiency, increases the likelihood for errors, and wastes valuable resources. “Companies are routinely spending time and money fixing manual audit trails and dealing with poor data quality, spreadsheets that introduce errors, and data that is difficult to extract from native applications” (Hannon – ROI). XBRL is able to put “the company in control of its own data” and streamline data within the company so it is more efficient; a necessary feature in a time when data needs to be accurate and readily available for reactive decision making (Leahy).

Transparency is a key issue in the world today as financial regulatory agencies focus on “protecting investors, encouraging capital formation, and promoting healthy markets” (Hucklesby). Users are “demanding that information about business operations be more transparent, easy to access, and timely” (Burnett, et al.). Publishing documents in XBRL provides the “promise of greater transparency and efficiencies throughout the financial reporting supply chain” (McGuire, et al.). In fact, an article in Strategic Finance claims that XBRL is “designed to vastly improve transparent reporting” (McGuire, et al.). In an interview with Conrad Hewitt, the SEC’s chief accountant, he predicts that “those

companies using XBRL might have a larger following in the investment community than those not doing it” (Dzinkowski). The ability of XBRL to put data in context and give it meaning helps users understand more of what is really going on in the company.

Many times data needs to be translated between systems, particularly when linking older legacy systems with newer systems (Hannon – IMA). XBRL is able to “make connections between different systems in order to exchange data” (Haseqawa, et al.). With legacy systems, business and financial data are stored independently and there is no architecture to connect the two systems, meaning most data has to be input manually from the business system into the financial system (Haseqawa, et al.). A special taxonomy called XBRL-GL is able to “bridge the gap between legacy systems and new systems” (Hannon – ROI) and make sure the “information produced and reported is accurate and can be tied to business processes” (Burnett, et al.). Using XBRL to restructure information systems and make data flows more efficient is a necessity for running a more effective business.

Electronic filing has the potential to become much more efficient with XBRL. “Compliance reports filed in XBRL will present the company’s finances, as well as narrative discussions, in a format that could make automated analysis simple” (Copenhafer). Providing data with contextual links to supporting schedules, calculations, and notes will make data much more meaningful to government and regulatory agencies. EDGAR filing with the SEC used to require manual preparation by using a word processor program, but now it can use XBRL to function as a “database to facilitate the receipt, aggregation, interpretation, and analysis of financial results” (Rezaee).

It is always important to research new technological developments and understand the effects on specific businesses and industries. It is important for companies not to be caught off guard and left behind if XBRL becomes mandatory for reporting and filing. Many public companies are still adjusting to the rigorous requirements of the Sarbanes-Oxley Act of 2002, and lack the energy to invest time and resources into XBRL, but it may be worth the effort to reap the benefits XBRL has to offer (Hannon – ROI). Christopher Cox believes “XBRL will become the standard before too long, given all that it has to offer, so the earlier companies can get up to speed and work out their issues, the better off they will be” (Sinnott). Business leaders who are looking for ways “to make financial reporting more cost-effective, informative, and regulatory compliant” can find the solution in XBRL (Burnett, et al.).

XBRL: Advantages of Using the Language

Data lacks value when it is not able to be used as information. Businesses and users of company data make decisions based on information, not the raw data. It is important for data to be formatted in ways that allow it to be easily manipulated and used for business analysis. XBRL provides the mechanism for producing higher quality data and improving timeliness. It also standardizes data to be independent of software, promotes easier accessibility, and reduces the cost of non-value added activities. All of these advantages increase the usefulness of the data, which is what XBRL is all about.

Improved Data Quality

Data coded in XBRL will become more reliable because it is derived directly from company sources. When preparing external reports, employees can rely on internal

company data and provide valuable links to source data, calculations, and accounting standards (XBRL). When the data is properly linked in the systems, XBRL “can reduce time spent manually finding and preparing information and improve data quality through fully automated information exchanges” (Willis). Automating the flow of information within the company can greatly improve quality by reducing errors common with manually re-keying information (Sinnott). XBRL data “can be combined easily, without re-keying or reformatting,” which provides a great advantage when companies are designing reports or performing comparative analyses (Hannon and Gold). Comparing data manually is a “time-consuming and error-prone process,” so it is extremely beneficial to have data available in a useful, quality format (Leahy).

Data quality is further improved by having interactive reports available directly from company websites in XBRL formats. XBRL documents facilitate easy downloading and evaluation by users. Many times analysts and users get company information from “third-party distributors and aggregators, [which] isn’t always accurate” (Leahy). In fact, one source says that the “numbers the analysts are using in their valuation models can have an error rate of 28% or higher” (Hucklesby). The high error rate is a result of the manual processes used to re-key “information extracted from the actual financial reports” published by companies (Burnett, et al.). When a company uses XBRL, the information reported on their website can be tagged to “journal entries, accounting master files, historical status reports” and much more (Hannon – XBRL GL). “Users can easily find the underlying accounting data that they are interested in” to justify the validity of the numbers (Shin). When users can access information in this way it is a positive reflection of the company, its transparency, and the quality of its data.

Interactive Data

Interactive data is data that has been uniformly tagged so that it can be read and processed by different computer systems without requiring manual intervention (Hannon – ROI). Interactive data contains both the data and the means to interpret and understand the data. One of the greatest advantages and strengths of XBRL lies in its transformation of data into information that is interactive and capable of providing context and meaning to the numbers. “XBRL distributes data together with the context and the rules to interpret, validate, and represent the data” so that users have a better understanding of how the company works (Garbellotto and Hannon). Interactive data can help combat the problem of “naked data,” which occurs when the information reported is “stripped of all supporting information and becomes just a number” (Hannon – XBRL GL). Christopher Cox, chairman of the U.S. Securities and Exchange Commission, is a supporter of XBRL and sees it as an important tool necessary to improve financial reporting (Sinnett).

“Interactive data could make it possible for issuers to reduce the cost of substantiating the numbers that appear in their financial statements. It would assist regulators in maintaining the integrity of the markets. Interactive data would also make disclosures more useful to investors, and to every market participant” (Sinnett).

Interactive data has advantages for many different users of financial data, but most importantly it can help the company get better control of its own data.

Ideally a company should maximize its efficiency by using XBRL internally and for publishing its financial data externally. Interactive data “represents tremendous

advantages for both internal and external business reporting” (Hannon – ROI). If the company truly wants to take full advantage of the potential of XBRL, it should implement the technology throughout the “financial supply chain, including for internal reporting and decision analytics” (Barlas). When it comes time to prepare external reports, XBRL provides an easier means to let “companies flow internal reporting to external reporting” (Hannon – ROI). In addition to increasing quality, streamlining this flow of data adds credibility and support to published financial reports. As more companies realize the advantages of interactive data and regulatory agencies stress its adoption, XBRL will soon become the standard for communicating financial data (Sinnett).

Standardized Data

Many believe the greatest advantage of XBRL lies in its potential to become the standard language for online reporting. When a company uses XBRL, the “interactive data isn’t bound to specific software applications, nor is it locked in proprietary data formats that require specialized report retrieval tools” (Hannon – ROI). Standardization with XBRL “maximizes speed and accuracy” when information is transferred between different software programs in one or more organizations (Willis). With XBRL the same data can be used on any computer system or application, which provides great advantages to all users (Willis). It is important to note that standardization of financial data offers specific advantages to CPAs to help them “gather, manage, and report information more quickly, efficiently, and accurately” (Willis). In a global economy, standardization of financial reporting offers great advantages in facilitating international business. There is no need for reformatting the data, errors are reduced, less time is invested in manipulating

the data, and the software independence of the information makes it easily downloadable by any computer system. “XBRL’s forte is standardizing data,” and it is time to embrace this technology and reap its benefits (Leahy).

XBRL: Disadvantages of Using the Language

When millions of dollars are on the line, corporations are always skeptical of implementing new technology. Switching over an information system to use XBRL involves a substantial investment in resources and time spent training personnel. A company needs to perform a cost-benefit analysis to make sure the investment is worth the benefits it will receive. Technical problems, including security risks, programming errors, system malfunctions, and data errors, are very common with new technologies, and the corporation may choose to delay implementing XBRL to give these problems time to be worked out. The disadvantages and challenges of implementing XBRL are unique to each company and determined by the state of its current information system infrastructure.

Investment of Time and Resources

Investment in new technology requires a vast amount of resources and money to be spent on buying software, upgrading current information systems, and most importantly, training personnel. Many companies may not see the value in making such a huge investment at this time since it is not currently required. The decision to adopt XBRL needs to be evaluated “within the context of the impact on the organization” (Burnett, et al.). Charles Hoffman says XBRL should be evaluated based on the “value, effectiveness, and efficiency” it can provide to a company (Tie). Chairman Cox from the

SEC believes XBRL is worth its investment and that “people will use it when they discover how much time and money it can save them, by automating and speeding up the process” (Sinnott). Every company is different and has different information needs. Performing a cost-benefit analysis is the best way to help a company determine if the investment will be worth the return.

As part of the cost-benefit analysis, companies should take into account the cost of being left behind with new technology that may become the standard for financial reporting. Regulatory compliance is an important issue, and using XBRL may become a requirement in the future. John Stantial, director of financial reporting for United Technologies, is a firm supporter of XBRL and has seen it provide his company with many benefits. He believes that “XBRL will become the standard before too long, given all that it has to offer, so the earlier companies can get up to speed and work out their issues, the better off they will be” (Sinnott). Many times the cost of new technology is a burden and disadvantage, but it is important to look ahead and make decisions that will best support the company in the future.

Security Risks

Publishing data on the web that has links to source data and operational databases may allow unauthorized users ways to change or destroy data (Shin). Organizations need to make sure that appropriate controls are in place to protect company data from manipulation. The corporate “security policies and procedures for configuring firewalls, hardening operating systems, and other relevant security controls” need to be adequate to prevent intrusion (Shin). Although it is an advantage that users can “easily find

underlying accounting data,” this transparency quickly becomes a security issue if it provides the means to compromise the integrity of source data (Shin). A strong control structure needs to be in place before opening up the company to these risks.

XBRL has the potential to open up financial markets to fraudulent data. There are currently no regulations or encryptions that prevent someone from publishing data under a company’s name without authorization (McGuire, et al.). “Today’s published XBRL data can easily be downloaded, modified, and passed to others fraudulently without the organization’s consent or knowledge” (McGuire, et al.). Users of financial data need to be skeptical of its sources and only rely on documents downloaded from “trusted source data aggregators” (McGuire, et al.). As XBRL becomes more widely accepted, it will most likely be more regulated to provide security from false representation and fraudulent data.

Programming Errors and System Malfunctions

Programming errors can result in data that is in the wrong format, incomplete, or inaccurate. Obviously corporations do not want to implement a system that may inaccurately depict its data, so this can be a significant risk of implementing XBRL. When a company designs its XBRL framework, it must “map internal accounts to XBRL tags” and use XBRL taxonomy to provide sources for the data (Burnett, et al.). Mapping is a very tedious process due its subjective nature. “There may be disagreements regarding the correct XBRL element to which a given internal account should be mapped,” so it is important to invest in XBRL training and collaborate with accountants, managers, and others to make the right decisions (Burnett, et al.). With little regulation

governing XBRL at this time, companies must use their own judgment during the process of mapping and selecting appropriate taxonomy (Burnett, et al.). “The risks of XBRL center on the accurate and complete mapping of the financial information and accounting data to the tags” (Shin). Inaccurate mapping leads to program errors which may cause data inaccuracy. Companies should be prepared to handle these situations and strive for consistency in XBRL coding to reduce errors.

XBRL is relatively new, and using it for internal and external financial data may not be compatible with a company’s “current general ledger and internal reporting system” (Burnett, et al.). Furthermore, if the industry is not using XBRL, it may not be worth a company’s investment to adopt the language. Implementing XBRL for a company could hinder its communication with the information supply chain throughout the industry (Burnett, et al.). Without internal and external compatibility, XBRL may cause significant issues within the company’s information system. It is important to ensure that XBRL works well with the current information systems of the company and its industry to prevent problems and system crashes.

Data Errors

Many view XBRL as the way to get financial data published in real-time. “AICPA senior vice president Alan Anderson envisions the business reporting model of the future as online, real-time disclosure,” and XBRL can provide the means to achieve this goal (Shin). While real-time data may be an advantage for some companies, the “risk of error in the financial statements could become higher, depending on the controls in place” (Shin). Getting company data reported in real-time increases the amount of

automation used in gathering, computing, and publishing data. While automation may reduce errors in some ways, it decreases human review which is sometimes necessary to discover certain errors in logic (McGuire, et al.).

When coding and implementing XBRL within the information system, it is possible to overlook certain items, such as accounts, schedules, and other source records. All relevant data from the source records needs to be tagged to ensure complete representation of the company financials (Shin). Incomplete data can be a problem just as significant as inaccurate data. Auditors should make sure that “application controls relevant to XBRL address input, error correction, and output” in addition to making sure that the tags used in financial documents are taken from the correct taxonomy (Shin). Careful analysis and review is necessary to make sure the information system has been coded to accurately and completely portray company data.

XBRL in Action – The Banking Industry

XBRL adoption in the United States has been relatively slow by corporations because the SEC and other regulatory agencies do not currently require its use for published financial data. Many organizations do not fully understand the impact of the language, and are hesitant to invest resources in a new technology which could weaken security or cause system malfunctions when it is not necessary to meet regulations. Serving as a guinea pig for requiring XBRL implementation, the Federal Financial Institutions Examination Council (FFIEC) has been the first major industry group to mandate the use of XBRL for its member institutions (Hucklesby). There are over 8,300 commercial US banks which are required to file call reports in XBRL format (Leahy).

Call reports are filed quarterly and include the balance sheet, income statement, and list of securities for each financial institution (Leahy). The industry has benefited from the standardization of its data through increased efficiencies, error reduction, and an increase in the speed of data transfer and feedback.

With financial data filed in a standardized format throughout the industry it is much easier for the FDIC to manage and assimilate the massive amounts of data it receives every quarter. Mike Bartell, CIO of the FDIC, says, “Too much critical information today is buried or obscured by the massive volume of data that we all create and process. The longer it takes us to manage that data, the less responsive we are to the needs of the industry and the public” (Leahy). Bartell has seen how XBRL can help an industry gain better control of its information, leaving more time to respond to current opportunities and issues. Many times edit functions and other downstream controls can be eliminated because the data is not being manipulated or re-processed during the filing process (Hucklesby). XBRL helps data flow seamlessly throughout an industry, increasing efficiency within the information supply chain along the way.

Gianluca Garbellotto notes that the results of the FFIEC XBRL mandate are impressive through increased efficiencies, as well as error reduction. After implementing XBRL, the quality of clean data from financial institutions rose from 64% to 89% (Hucklesby). The twenty-five percent increase in clean data is extremely impressive considering that many edit checks and data controls were no longer used to check for errors due to the increased efficiency of XBRL (Hucklesby). The way banks achieve this reduction in errors is from the instant feed-back feature of XBRL. When preparing reports, errors show up immediately and can be corrected before filing with the FDIC

(Leahy). In the past the bank would have to wait on feedback from the FDIC to know about reporting errors, which required more time for correction and resubmission (Leahy). Being able to detect and correct errors in real-time has significantly improved the quality of data throughout the banking industry.

Timeliness of data is important when making decisions that are crucial to the success of a business. In the banking industry, XBRL has significantly increased the speed of data transfer between the FFIEC and its member institutions, facilitating more responsiveness and informed decision making (Hucklesby). Not only do the FFIEC and its financial institutions benefit from timely data, but users of these published call reports now have accurate financial data available more quickly. The XBRL filings give “Wall Street analysts an immediate, accurate look at the financial health of any US commercial bank” (Leahy). In the past call reports would be published 30 to 60 days after the quarter had ended, but now analysts have access to the data as soon as it is filed (Leahy). All users of financial information in the banking industry can now make more informed decisions due to XBRL and its ability to facilitate faster data exchange.

The banking industry has proven to be a successful example for other industries that are considering adopting XBRL. The benefits of increased efficiency, cleaner data, and timely data exchange have been experienced throughout the banking industry by the FFIEC, its member institutions, and external users of financial data. Other industries and regulatory agencies will undoubtedly look to the banking industry as an example of what can be done to improve financial data. Recognizing the positive impact XBRL can have on the information supply chain is the first step toward mainstream adoption.

XBRL and Accounting

XBRL began development in the context of the accounting industry. Charles Hoffman, a CPA with the firm Knight, Vale, and Gregory in Tacoma, Washington, began developing prototypes of financial statements and schedules using XML formats (XBRL). After realizing the potential for a standardized financial reporting language, Hoffman presented his ideas to the AICPA and from there the current XBRL consortium evolved. CPAs have been very involved in the creation of XBRL and are largely responsible for making it “available to the global business world” (Tie). XBRL benefits accounting by providing rapid and reliable data, aiding in Sarbanes-Oxley compliance, and serving as a fundamental audit tool. CPAs can help stimulate the adoption of XBRL, and currently several professional accounting organizations, such as the Institute of Management Accountants, are providing educational resources to promote the use of XBRL throughout the industry.

Improved Financial Data for Accounting

CPAs spend much of their time compiling information from spreadsheets and other data sources to prepare financial reports. XBRL can “reduce time spent manually finding and preparing information and improve data quality” by allowing information to flow seamlessly among different software applications (Willis). Having rapid and reliable data gives accountants more time to analyze information and prepare accurate reports. XBRL works in the background to eliminate much of the manual work that accountants are doing, such as re-keying data and manually inputting data into different schedules (Tie). Charles Hoffman’s vision for XBRL involves eliminating unnecessary

manual processes and automating the information flow so that accountants have more time for valuable services and reduce the amount of errors common when re-keying and restructuring data (Tie). Increasing efficiency in information systems has a positive impact on the accounting profession by making it “easier and more effective to exchange, access and better analyze financial information” (Harrington).

Aiding in Sarbanes-Oxley Compliance

Perhaps one of XBRL’s most advantageous benefits for accountants lies in its ability to help reduce the amount of work involved in compliance with the rigorous requirements under the Sarbanes-Oxley Act of 2002 (Burnett, et al.). Above all, the Sarbanes-Oxley legislation was put in place to require better management of information resources and increase the transparency of public companies. XBRL facilitates uniform coding for financial data and stores the data with access to important contextual aspects, which provides a look at the company’s true financial position. With the quality and context of data improved, accountants can achieve greater efficiency in preparing financial statements which adhere to SEC regulations on transparency.

Having a sound system of internal control is equally important in complying with Sarbanes-Oxley. Using XBRL not only creates efficiency, but in turn “establishes internal control over data as documents can be accessed and used across the firm’s information supply chain” (Burnett, et al.). To further strengthen internal control, data coded in XBRL can be automatically checked during information processing to uncover errors and provide feedback (Burnett, et al.). Having real-time validation of data reduces

the possibility of errors, increases the level of internal control, and helps follow Sarbanes-Oxley regulations (Burnett, et al.).

Accountants, public companies, and the SEC are faced with the burden of complying with the stringent requirements of Sarbanes-Oxley. By filing financial reports in XBRL, the SEC hopes to reduce the amount of time required to review every listed issuer for Sarbanes-Oxley compliance (Copenhafer). Tad Leahy believes the SEC is justified to require the use of XBRL because the language would “streamline the additional workload that Sarbanes-Oxley compliance has placed on that agency.” Charles Hoffman believes that companies should incorporate XBRL in their efforts to meet Sarbanes-Oxley requirements because the language can greatly facilitate compliance (Tie). Hoffman continues by saying that software systems need to handle XBRL coding to be useful in the future (Tie). Compliance with Sarbanes-Oxley can become more manageable with XBRL because it increases efficiencies for companies, accountants, and agencies by better managing the information supply chain.

Using XBRL in Conducting Audits

Accountants conduct audits and follow the trail of data, which in today’s myriad of disjointed spreadsheets and data warehouses can seem overwhelming. Without a standardized financial reporting language, data is constantly being transferred, exchanged, and manipulated in different software programs throughout a company’s information system. These inconsistencies in data can make it very difficult to perform audits, but XBRL has the potential to revolutionize the auditing profession. In one way it will be easier for accountants to interpret financial data because it will all be in the same

language and capable of running on any application (Harrington). In addition to standardization, data in XBRL format only needs to be entered once to run on multiple systems; therefore, auditors will not have as many documents to analyze, which reduces the amount of time needed to conduct an audit (Harrington).

The Public Company Accounting Oversight Board (PCAOB) realizes that accountants need to understand XBRL when conducting audits. A recent ruling says that “CPAs must have adequate knowledge of XBRL-formatted financial information to participate in related attestation engagements” (Tie). “The accounting profession and those it serves benefit from standards governing reporting and auditing,” so it only makes sense to use a standard-based language to increase auditing efficiency (Willis). XBRL has great potential to minimize the workload of conducting an audit, and provides auditors easy access to company data in a standardized format.

Institute of Management Accountants – Support for XBRL

XBRL is helping companies give structure and meaning to data that is spread across multiple disparate applications. The Institute of Management Accountants (IMA) has recognized the potential the language has for internal management and decision-making, which is why it sponsors a specialized certification program (Hannon – IMA). The IMA Digital Reporting Certificate Program is a series of classes which provide the “skills and insight needed to lead the way toward integrating business information into actionable management reports” (Hannon – IMA). It has become more and more important for management to have access to timely, accurate reports, which demonstrates the need for XBRL with internal reporting (Hannon – IMA). With the support of

accounting organizations such as the AICPA and the IMA, XBRL will continue to be promoted as a valuable technology that can have a positive impact on the accounting profession.

Role of the CPA in Promoting XBRL Adoption

XBRL adoption will not happen unless CPAs become proactive supporters, which means learning about the language and promoting it to clients and software vendors. XBRL has been deeply rooted in the accounting industry since it began with Charles Hoffman and the AICPA (Tie). Hoffman believes that CPAs can play many roles in developing XBRL, such as helping to create taxonomies and infrastructure components and promoting the use of the language (Tie).

Accountants should take advantage of educational opportunities and expand their knowledge base to learn about digital reporting in general (Willis). Joining XBRL International, researching information, and participating in certification programs are examples of ways to learn about XBRL (Tie). After gaining knowledge about XBRL, Hoffman encourages CPAs to offer input and help develop standards (Tie). XBRL is used to “represent reporting concepts in accordance with generally accepted principles,” so it is important to consult accountants when developing the XBRL infrastructure (Dreyer and Willis).

Accountants can serve an important role as ambassadors for using XBRL in the workplace. The accounting profession should encourage adoption of XBRL by business clients who would benefit from using XBRL to send and receive financial data (Tie). In addition to clients, CPAs should encourage software vendors to integrate XBRL into

program design (Willis). CPAs need software systems that will run XBRL and should inform vendors of what XBRL capabilities are most important to accountants and their clients (Willis). Having software vendors incorporate XBRL as their standard for storing data as well as in generating extracts and reports would be a much more desirable path rather than being dependant on integration or interface programs to translate to and from XBRL and a proprietary format. Accountants should stress the need for software vendors to design entire systems that run on XBRL, and not just to design software programs that can code and translate. In order to produce financial data that is more accurate, timely and useful, the accounting profession needs to promote widespread adoption of XBRL by offering its input.

Current Status of XBRL

Adoption of XBRL is at different stages throughout the international business community and differing industries. The speed of adoption depends on “market and regulatory forces that vary by nation” (Tie). The market forces are largely controlled by the technological life cycle of XBRL. Tad Leahy says there are three stages in the development of new technology – initial market excitement, realistic reflection, and main-stream adoption. Leahy believes XBRL is currently in the second stage and within five years it may reach the third stage. The market is currently evaluating the technology to understand its capabilities and the benefits it can realistically provide (Leahy). The regulatory forces are based on the requirements and laws of different countries and industries which vary from voluntary to mandatory use of XBRL (Dreyer and Willis). As more industries and agencies begin requiring XBRL, the technology will develop into the standard for financial reporting (Tie).

United States

Aside from the banking industry, corporations in the US are not mandated to use XBRL. Without some sort of mandatory requirements by the SEC or other regulatory agencies, adoption of XBRL will continue to be slow in the United States (Leahy). Charles Hoffman believes that acceptance of XBRL in the United States has been held back by the pressures of Sarbanes-Oxley compliance and other market forces (Tie). Public companies are not willing to invest more time and resources into using a new technology at this time (Hannon – ROI).

The Securities and Exchange Commission (SEC) has voiced its support for XBRL, but understands the apprehension of US companies to be forced to follow more financial reporting requirements. By establishing the Voluntary Filing Program (VFP) in February 2005, public companies have the option of filing 10-K and 8-K financial reports in XBRL format (Leahy). Currently, 19 companies have filed reports under VFP (XBRL). Of these companies, many are technology-based, such as Adobe Systems Incorporated, Infosys Technologies, Microsoft Corporation, and United Technologies Corporation (XBRL). These technology companies more clearly understand the potential for XBRL and have a “stake in its development” (Leahy). It is the responsibility of these companies to “provide leadership and pave the way for the others” (Sinnett).

In spite of some apprehension about using a new technology, the FFIEC began requiring registered institutions to file call reports in XBRL format in October 2005 (Dreyer and Willis). The banking industry set an example for other industries in the

United States by showing how XBRL can help standardize information flows and increase efficiency throughout the information supply chain (Hucklesby).

Charles Hoffman believes the SEC and FFIEC have both developed XBRL projects that can be models for the world to use (Tie). Although adoption has been slow, the United States is not behind other nations in implementation (Tie). According to SEC Chairman Christopher Cox, “The reason that everyone is not doing their financial reporting using interactive data is simple: it’s a new concept” (Sinnott). In time, more and more corporations and regulatory agencies will develop interest in interactive data, which will lead to wide-spread adoption of XBRL for financial data in the US (Sinnott).

International

Internationally, XBRL is continuing to grow as individual countries and international organizations join the consortium and begin adopting the language in their capital markets (Hucklesby). One research study has found that the “adoption rate of XBRL is strongly influenced by government and regulatory decisions;” therefore, countries who choose to mandate the use of XBRL have a direct impact on its international adoption (Davidson, et al.). As more countries and organizations begin using XBRL, the quality of data in global markets will become much more reliable and easier to exchange. Several countries already show support toward reaching this goal by mandating XBRL in their markets.

New Zealand is proud of its involvement in the development of XBRL. The country adopted XBRL in August 2002, and since then several New Zealanders have played a major role in XBRL activities (Davidson, et al.). Josef Macdonald, Alan

Teixeira, Grant Boyd, and others have all served major leadership roles and chaired committees within the XBRL international consortium (Davidson, et al.). In May 2004 the country hosted the 9th XBRL international conference, which further increased the country's involvement with XBRL (Davidson, et al.). Although most of New Zealand's Chartered Accountants are not currently using XBRL, a survey conducted by Alex Davidson has shown a strong interest in encouraging clients and firms to adopt the language (Davidson, et al.). One of the main reasons for lack of adoption is limited knowledge about the technology, but of these respondents, 63% are interested in learning more (Davidson, et al.). With so many New Zealand business leaders involved with XBRL International, XBRL New Zealand is challenged to increase adoption within its own capital markets to mirror jurisdictions who have achieved more prominent participation (Hucklesby).

The United Kingdom and China are two other jurisdictions that have made great strides in implementing XBRL (Dreyer and Willis). In the United Kingdom, the government announced that all company tax returns must be filed in XBRL format by 2010 (Hucklesby). This transition to mandatory adoption has begun with Her Majesty's Revenue and Customs (HMRC) which now accepts tax information in XBRL format for its online corporate tax service (Dreyer and Willis). In China, the Securities Regulatory Commission has required that all public companies file documents in XBRL format (Dreyer and Willis). To assist companies with this transition, the commission has sponsored projects at the Chinese stock exchanges (Dreyer and Willis). From the Shanghai Stock Exchange alone, there are over 10,000 XBRL formatted company reports (Dreyer and Willis). Other leading markets, such as Japan, Spain, Netherlands, France,

Italy, and many others are implementing similar projects to encourage XBRL adoption throughout their countries (Dreyer and Willis).

Future Outlook

The future of XBRL is in the hands of everyone who uses financial information to make decisions. Capital markets, businesses, governments, regulatory agencies, analysts, accountants, and shareholders all need a higher quality of financial information. Raw data needs to be translated into interactive data to give users the ability to process data from different software applications and computer systems without manual intervention or complicated transformations. “XBRL meets these needs and improves the usefulness of financial information on the internet” (Shin). As users recognize these benefits and begin adopting XBRL for business practices, the technology will enhance the quality of data and provide much needed credibility to businesses and capital markets.

It is difficult to determine a timeline, but many believe that within five years XBRL will achieve widespread adoption both in the United States and internationally. It is the responsibility of all users of financial data to encourage the use of XBRL by businesses, clients, software vendors, and others who have a role in adopting the language. In today’s world of global communication, time-sensitive data is constantly exchanged among disparate computer systems. Businesses need XBRL to communicate and process data efficiently. The key is to recognize this need and use XBRL throughout the world to communicate corporate accounting data in a standardized language that can then be easily used for business analysis and operations in an accurate and timely manner.

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