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ABSTRACT: There has been much discussion in the academic literature and in the XBRL community on the role of audit firms in providing assurance services for XBRL filings, especially now that the use of XBRL has been mandated in the United States. This paper presents the development of a framework of the demand for external assurance of XBRL filings predicated on two relative cost arguments. First, that in the absence of a mandate for XBRL filings to be assured by an external auditor, a manager will compare the cost of obtaining external assurance against the cost of obtaining confidence on the filings internally. Second, managers will be reluctant to pay more for external assurance on an XBRL filing than they paid to prepare it. The former is called the external cost relative to internal cost comparison, and the latter the external cost relative to preparation cost comparison. Based on our relative cost framework, it is predicted that there will only be a role for externally provided assurance of XBRL filings if the cost of that assurance can be either reduced or appear less significant to clients. The former outcome can be brought about by shifting assurance from the XBRL filings themselves to assurance of the preparer through a SSAE No. 16/SAS No. 70 report, thereby converting the cost of XBRL assurance from a variable cost to a fixed cost that is spread among many filers. External auditors can also attempt to make the cost of XBRL assurance less salient to managers by folding that cost into their total audit fees.


Today, corporate entities are required to adhere to the Sarbanes-Oxley Act of 2002 (SOX) which is aimed at protecting investor interests through improvements in the accuracy and reliability of corporate financial reporting and disclosures. Information Technology (IT) tools are recognized as critical for achieving the goals of the act because regulations have placed a greater emphasis on financial IT structures and internal controls. XBRL can greatly facilitate Sarbanes-Oxley compliance because the technology “fundamentally improves the way companies, investors, lenders, analysts and regulators aggregate and analyze business information” (Hoffman, 2005, p. 33).

The advent of the computer and the popularization of the Internet in the late 1990s caused business processes and information handling to evolve radically beyond the traditional scope of paper-based presentation. According to the Financial Accounting Standards Board’s (2000) Business Reporting Research Project, “more than 80 percent of major U.S. companies provide some type of financial disclosure on the web” (p. 25). With the envisioned growth of electronic financial reporting, the search continues for a markup language that will standardize data transfer and Rezaee and Hoffman (2001) believe that “XBRL is emerging as [the most] likely candidate”.


The SEC phase-in of XBRL financial statement filings began June 2009, and by 2011, all public registrants will be required to file XBRL disclosures. While the SEC expects the interactivity of XBRL-tagged data to
add value to financial reports, this benefit will materialize only if the XBRL statements are accurate and reliable. If inaccuracies or other significant problems occur in initial XBRL filings, registrants stand to lose credibility and users will lose confidence in the data, potentially forcing the abandonment of the XBRL reporting initiative. This study evaluates the accuracy of early voluntary filings and develops an expectation about the accuracy of mandated filings. While improvements in the XBRL standard and related technology will mitigate certain errors, other errors, related to inexperience, will persist. This study identifies those errors and makes recommendations about how to reduce experience-related errors.


Accounting was developed in response to the demands of business and other organizations and users for relevant and reliable financial information for decision making. Currently, many companies are providing users with financial information via the Internet on the World Wide Web (WWW or the Web). However, such information must often be reentered by users seeking to analyze it because as yet there are no common, generally accepted formats for exchanging business information on the Web. XBRL (eXtensible Business Reporting Language) is currently being developed to overcome this limitation and provide financial information users with a standardized method to prepare, publish, and exchange financial information.

Although there are several benefits of using XBRL to create documents, one limitation is that it does not take into account the quality of the information particularly whether XBRL coded information is reliable. The reliability of financial information depends on the reliability of the processes used to create an XBRL document; the nature, extent and timing of assurance procedures performed on that information; and the security measures taken to protect the integrity of the information as it travels over the Web. Information on the Web, including XBRL documents, can be created and easily revised and is vulnerable to interception and tampering. Therefore, users who depend on financial information for critical decisions should be concerned about its reliability and would be wise to obtain assurance about the reliability and authenticity of the information before using it for important decisions.

This paper describes XARL (eXtensible Assurance Reporting Language), an Extensible Markup Language (XML)-based extension of XBRL designed to enable assurance providers to report on the reliability of information distributed over the Internet. A related paper, Boritz et al. (2002), addresses the infrastructure requirements to enable XARL to be implemented. First, this paper briefly traces the development of XBRL from its origins in Standard Generalized Markup Language (SGML) to its refinement through XML, and summarizes the benefits of XBRL. Next, it describes XARL, a means by which assurance providers can add credibility to XBRL documents. XARL, when supported by an effective infrastructure, can help users and companies place warranted reliance on financial information on the Internet.


Extensible business reporting language (XBRL) is an XML-based method for financial reporting. XBRL was developed to provide users with an efficient and effective means of preparing and exchanging financial information over the Internet. However, like other unprotected data coded in XML, XBRL (document) files (henceforth “documents”) are vulnerable to threats against their integrity. Anyone can easily create and
manipulate an XBRL document without authorization. In addition, business and financial information in XBRL can be misinterpreted, or used without the organization’s consent or knowledge.

Extensible assurance reporting language (XARL) was developed by Boritz and No (2003) to enable assurance providers to report on the integrity of XBRL documents distributed over the Internet. Providing assurance on XBRL using XARL could help users and companies reduce the uncertainty about the integrity of those documents and provide users with trustworthy information that they could place warranted reliance upon.

A limitation of the initial conception of XARL was its tight linkage with the XBRL document and the comparatively primitive approach to codifying the XARL taxonomy. In this paper, we have re-conceptualized the idea of XARL as a stand-alone service for providing assurance on potentially any XML-based information being shared over the Internet. While our illustrative application in this paper continues to be XBRL-coded financial information, the code that underlies this version of XARL is a significant revision of our earlier implementation of XARL, is compatible with the latest version of XBRL, and moves XARL into the Web services arena.

Boritz, J. E.; No, W.G. (2004b). “Infrastructure Requirements for Assurance Reporting with XARL (Extensible Assurance Reporting Language)”. Received from the authors.

XBRL (Extensible Business Reporting Language) is currently being developed to provide financial information users with a standardized method to prepare, publish, and exchange financial information. Although there are several benefits of using XBRL to create documents, one limitation is that it does not explicitly address the authenticity, integrity and confidentiality of the information. XARL (Extensible Assurance Reporting Language), an XML-based extension of XBRL, was designed to enable assurance providers to report on the integrity of information distributed over the Internet and protect its authenticity and confidentiality, thus helping users and companies place warranted reliance on financial information on the Internet.

This paper addresses the infrastructure requirements to enable XARL to be implemented. First, it defines the XARL service as a Web service, and identifies issues that must be addressed by such an infrastructure. Next, four major factors associated with implementing XARL are discussed, including who creates the XBRL document, is assurance information is provided, who controls external sources, and who provides authentication? Based on these factors, alternative approaches are compared. In addition, security and version control issues are summarized.


Many companies are attempting to leverage the power of financial information by creating corporate websites to provide such information to employees, investors, and financial analysts. Extensible Business Reporting Language (XBRL) was developed to provide users with an efficient and effective means of preparing and exchanging financial information over the Internet. Extensible Assurance Reporting Language (XARL) was designed to enable assurance providers to report on the integrity of information distributed over the Internet and help users and companies place warranted reliance on such information.

The XBRL and XARL services are Internet-based message exchange methods. The Internet is insecure in nature. Without good security, XBRL and XARL services will not reach their full potential. Today’s security approaches consist of a combination of user IDs and passwords and point-to-point,
transport-level security for data transmissions over the Internet such as SSL/TLS, S-HTTP, and VPN. Access control techniques based on user IDs and passwords can protect files or data from unauthorized access but cannot guarantee the integrity of the information. Transport-level, point-to-point security is not sufficient for securing information that travels between several intermediaries or for encrypting only selected portions of an information set. Thus, alternative security approaches are needed to compensate for these limitations.

This paper addresses security in financial reporting services. First, it describes Web services and conceptualizes financial reporting services such as XBRL and XARL as Web Services. Next, it discusses security threats and limitations of current security technologies. Then, it identifies security requirements that should be considered to ensure reliable, trustworthy XBRL and XARL services. Finally, the paper explains several proposed security standards and suggests Web Services Security Architecture as a suitable security mechanism for financial reporting services.


XBRL (Extensible Business Reporting Language) was developed to provide users with an efficient and effective means of preparing and exchanging business reporting, and especially financial, information over the Internet. After years of development, XBRL is now in the implementation stage, with many companies, governments, regulators, and stock exchanges around the world implementing or planning to adopt XBRL for electronic filing of financial reports and other business documents and filings. In this paper, we examine the XBRL filings in the SEC’s XBRL Voluntary Filing Program (VFP) on EDGAR from its inception to December 31, 2007, and report findings from our observations and validation tests. We identify persistent and increasing quality control and assurance issues pertaining to the filings under the VFP and discuss potential countermeasures needed to ensure that XBRL filings are reliable and gain user confidence and acceptance.


XBRL (eXtensible Business Reporting Language) was developed to provide financial information users with a standardized method to prepare, publish, and exchange business information. XBRL is being used, being implemented, or being pilot tested around the world for financial reporting and government e-filings as well as other uses. Although there has been growing awareness about assurance issues related to the use of XBRL, current audit practices and standards fall short of providing the needed guidance for the provision of assurance on XBRL-Related Documents. In this paper, we report on a mock audit that we conducted on the XBRL-Related Documents of United Technologies Corporation’s October 2005 10-Q to identify the issues that companies and auditors might encounter if they are requested to provide assurance on XBRL-Related Documents. The assurance framework applied in the audit process is summarized, and findings from the process are discussed together with their implications.

The eXtensible Business Reporting Language (XBRL) was developed to provide financial information users with a standardized method to prepare, publish, and exchange business information in digital format. XBRL is being used around the world for financial reporting and government e-filings. Although there has been growing awareness about assurance issues related to the use of XBRL, current audit practices and standards fall short of providing the needed guidance for the provision of assurance on XBRL-Related Documents. In this paper, we report on a mock assurance engagement that we conducted on the XBRL-Related Documents of United Technologies Corporation’s 10-Q for the third quarter of 2005 and repeated on its 10-Q for the third quarter of 2008 to identify the issues that companies and auditors might encounter if they are requested to provide assurance on XBRL-Related Documents. We describe the assurance framework applied in the mock assurance engagement, present the findings from the examination process, and discuss future research opportunities associated with XBRL documents assurance.


The eXtensible Business Reporting Language (XBRL) was developed to provide financial information users with a standardized method to prepare, publish, and exchange business information in digital format. XBRL is being used around the world for financial reporting and government e-filings. Although there has been growing awareness about assurance issues related to the use of XBRL, current audit practices and standards fall short of providing the needed guidance for the provision of assurance on XBRL-Related Documents. In this paper, we report on a mock assurance engagement that we conducted on the XBRL-Related Documents of United Technologies Corporation’s 10-Q for the third quarter of 2005 and repeated on its 10-Q for the third quarter of 2008 to identify the issues that companies and auditors might encounter if they are requested to provide assurance on XBRL-Related Documents. We describe the assurance framework applied in the mock assurance engagement, present the findings from the examination process, and discuss future research opportunities associated with XBRL documents assurance.


This paper describes the development and applications of FRAANK-Financial Reporting and Auditing Agent with Net Knowledge. The prototype of FRAANK presented here provides automated access to, and understanding and integration of, rapidly changing financial information available from various sources on the Internet. In particular, FRAANK implements intelligent parsing to extract accounting numbers from natural-text financial statements available from the SEC EDGAR repository. FRAANK develops an "understanding" of the accounting numbers by means of matching the line-item labels to synonyms of tags in an XBRL taxonomy. As a result, FRAANK converts the consolidated balance sheet, income statement, and statement of cash flows into XBRL-tagged format. Based on FRAANK, we propose an
empirical approach toward the evaluation and improvement of XBRL taxonomies and for identifying and justifying needs for specialized taxonomies by assessing a taxonomy fit to the historical data, i.e., the quarterly and annual EDGAR filings. Using a test set of 10-K SEC filings, we evaluate FRAANK’s performance by estimating its success rate in extracting and tagging the line items using the year 2000 C&I XBRL Taxonomy, Version 1. The evaluation results show that FRAANK is an advanced research prototype that can be useful in various practical applications. FRAANK also integrates the accounting numbers with other financial information publicly available on the Internet, such as timely stock quotes and analysts’ forecasts of earnings, and calculates important financial ratios and other financial-analysis indicators.


Business process redesign (BPR) is a pervasive but challenging tool for transforming organizations. Information technology plays an important role by either enabling or constraining successful BPR. This paper explores the links between firm-wide IT infrastructure and business process redesign. IT infrastructure is the base foundation of the IT portfolio, which is shared throughout the firm in the form of reliable services, and is usually coordinated by the IS group. IT infrastructure capability includes both the technical and managerial expertise required to provide reliable physical services an extensive electronic connectivity within and outside the firm.

Exploratory case analysis of four firms (two in retail and two in petroleum) was used to understand the ways IT infrastructure contributes to success in implementing BPR. The finding was that all firms needed a basic level of IT infrastructure capability to implement BPR. The firms that had developed a higher level of IT infrastructure capabilities, before or concurrent with undertaking business process redesign, were able to implement extensive changes to their business processes over relatively short time frames. The higher level of infrastructure capability was provided in the form of (1) a set of infrastructure services that spanned organizational boundaries such as those between functions, business units, or firms, and (2) the ability of the infrastructure to reach particular constituencies inside and outside the firm to transfer information and process complex transactions.

The more extensive business process changes were more innovative and radical, crossing business and functional unit boundaries, and resulted in a more significant business impact. The practical implication of the study is that before embarking on any form of BPR, managers should complete a business audit of their IT infrastructure capabilities, as these capabilities have an important impact on the speed and nature of business process change.


There are several reasons to join the two concepts of business intelligence (BI) and eXtensible Business Reporting Language (XBRL). Both concepts have in common the support and automation of the management process of reporting and analyzing business information. Whereas XBRL tries to describe the
meaning of business data and to standardize data exchange, BI seeks to analyze and report these decision-relevant data. Both come from different perspectives, XBRL from semantic description of data within an XML environment and BI from search of knowledge in data. In a naïve way we can understand XBRL as an automated process of business reporting and therefore as a part of BI. Otherwise BI provides a broad set of algorithms to explore the structure and meaning of data. All the data scrubbing and pre-processing (extract, transform and load: ETL) has to do with the mapping of meta data and can be neglected when we leverage clean and meaningful (XBRL-) data. So why not use the semantic layer and taxonomy of XBRL to go beyond reporting and do more in-depth analysis of financial transactions as can be found in a general ledger? Real-time control of business processes is currently hyped within the data warehousing industry. As every business process should possibly be traced in the accounts of a company a constant flow of financial data in XBRL-format into a BI-system will be necessary for a continuous control of operations, for early fraud detection and BI as a source of compliance systems. The intelligent real-time enterprise of the future will be based on these technologies. The objective of this paper is therefore to point out what future research must be done to develop analytical applications with a high degree of intelligence and very low reaction time based on XBRL and BI.


The objective of the paper is to explore the issues and opportunities associated with data level assurance services in the new business-reporting environment. The paper presents an overview of the terminology, technology, and background associated with data level assurances. The paper also compares new, business-information assurance to traditional financial statement assurance. Finally, the paper reviews several economic theories that have been used to explain the use and value attached to business information. In particular, the discussion includes implications for data level assurance from the perspective of information economics, agency theory, and transaction-cost economics. The intent is to identify research implications that can be pursued by those interested in the area.


Most major corporations in the U.S. (and a growing number of companies around the world) are reporting some level of financial information on their Web sites. However, it is not clear that the stakeholders are fully satisfied with this Web-based data. The time and effort allocated to the mechanics of Web retrieval are actually increasing because of the difficulty of finding pages and specific data within the enormity of the public Web (over 1 billion pages) or of many corporate intranets. One way to deal with this vast information source would be to automate the Web search mechanics by developing and using intelligent software agents. However, developing these agents in the current Web environment is very problematic. Three factors are preconditions for effective utilization of the Web. First, appropriate metadata representation of financial reporting information on the Web is required that could improve the accuracy of searches (the resource discovery problem). Second, accounting data points within Web pages should be able to be reliably parsed (the attribute recognition problem). Third, standard mechanisms are
required that will encourage or require corporations to report in a consistent fashion. The reality of the Web is that it falls far short of a reliable communication medium for accounting and financial information on all three of these factors. The eXtensible Markup Language (XML) provides a method to tag financial information to greatly improve the automation of information location and retrieval, and provides technical solutions to the resource discovery and attribute recognition problems. However, if every company were free to develop its own labels for its XML tags, then the searching for financial information would be only marginally improved. The recent development by a consortium lead by the American Institute of CPAs (AICPA) of the so-called "eXtensible Business Reporting Language" (XBRL) is an initiative to develop an XML-based Web-based business reporting specification. The widespread adoption of XBRL would mean that both humans and intelligent software agents could operate on financial information disseminated on the Web with a high degree of accuracy and reliability. XBRL provides rich research opportunities, including new taxonomies, database accounting, financial statement assurance, intelligent agents, human/computer interfaces, standard development process, adoption, incentives, global adoption, and formal ontologies.


This paper evaluates the implications of the proposed Securities and Exchange Commission (SEC) Rule (33-8496) which encourages companies to file reports in the eXtensible Business Reporting Language (XBRL) format. We examine the impact of the proposed rule in three domains: (1) the role of XBRL in financial reporting, (2) concerns with XBRL taxonomies, and (3) the impact of XBRL on the SEC’s filing program. The paper adopts a descriptive approach to generate normative and prescriptive propositions with implications for research that will guide preparers, users, and regulators of XBRL-tagged information.


The XBRL 1.0 specification, or more accurately XFRML 1.0 specification, was released in 2000. This was only some two years only after the proposals by Charlie Hoffman to the AICPA and the first serious academic discussion of applying XML technologies to business and financial reporting (Debreceny et al. 1998; Hoffman 1999; Lymer et al. 1999). In the intervening period, we have seen a rapidly increasing level of interest in the policy implications of XBRL. A search of XBRL on Google.com returns an extraordinary 1.4m links. Similarly, a search on bibliographic databases such as ABI/Inform discloses more than five hundred papers from the academic and professional literature. In what is a relatively short period of technology adoption, the XBRL world has also seen significant maturing of specifications, architectures, taxonomies and software tools. In an important third dimension of adoption, the XBRL organization itself has matured significantly over this period. XBRL International and its national jurisdictions are comprised of more than four hundred corporations, agencies and not-for-profit organizations. These foundational elements have clearly been vital for the observed adoption of XBRL in important information supply chains. Whilst not at the rate that early proponents might have suggested (e.g. Coffin 2001a, Coffin 2001b; Hannon 2000), the use of XBRL within areas such as credit monitoring of financial institutions and
in reporting corporate performance to a variety of securities markets does signal that XBRL has become a core enabling technology in business reporting.


In 2009, the Securities and Exchange Commission rolled out the first stage of a multi-year program to transition its EDGAR disclosure repository to the XBRL format. The quality of the XBRL data in the repository is vital for the success of the Commission’s interactive data program. A key aspect of the data quality of these filings is the correctness of the mathematical relationships implied by the taxonomy and implemented in the instance document. One quarter of the filings by the initial 400 large corporations in the first round of submissions had errors, with differences reported monetary facts and the sum of other monetary facts that were bound together in a computation relationship. The primary cause of these errors was inappropriate treatment in the instance documents of underlying debit/credit assumptions in the taxonomy. The results of the research have a number of implications for filers, the SEC, XBRL US, software vendors and the global XBRL community.


The Securities and Exchange Commission in a multi-year program is adopting XBRL as the foundation for financial filings to the Commission’s EDGAR database. The SEC requires filers to ensure that the XBRL filings accurately reflect the semantic concepts in the financial statements. To comply with the SEC requirements, filers begin with a base taxonomy of reporting concepts. US corporations registered with the SEC reference the base US GAAP taxonomy. If required reporting concepts are not present in the base taxonomy, the filer must extend the base taxonomy by creating an extension taxonomy consisting of filer-specific elements. Extensions, when used appropriately, provide decision relevant information. However all extensions lower comparability between filers. When used inappropriately, particularly by extending the taxonomy when a semantically equivalent concept exists in the taxonomy, extensions add no information content, reduce comparability and add costs to information consumers who must interpret and adjust for the extensions. Extensions that aggregate or disaggregate existing taxonomy concepts reduce comparability while adding relatively marginal information content. This research analyzes the first round of quarterly filings to the SEC to assess the propensity and implications of extensions to the US GAAP Taxonomy. In a sample of 67 filings, containing 695 monetary fact extensions, we find that over 40% were unnecessary.

Doolin, B.; Troshani, I. 2004. XBRL: A research note. QRAM Vol 1, No 2, 2004

**extensible Business Reporting Language (XBRL)** is an emerging technology that has the potential to play an important role in the production and consumption of financial information. This research note provides a basic understanding of how XBRL works and who the major stakeholders involved in its use are. It also suggests a number of issues associated with XBRL that require further investigation and research.


Since the mandate by the U.S. Security and Exchange Commission (SEC) to begin the interactive data reporting in June 2009, according to XBRL Cloud, an XBRL product and service provider, more than 4000 filing errors have been identified. We examine the overall changing pattern of the errors to understand whether the vast number of errors may hamper the transition to the interactive data reporting. Using a sample of 4532 filings that contain 4260 errors, we document significant learning curves exhibited by the SEC XBRL filing environment, by the filers, and by the XBRL software vendors. Specifically, we find that the number of errors per filing is significantly decreasing as more quarters pass, when a company files more times, and when a higher version of software is used, suggesting that the SEC, the company filers, and the technology community all learn from their experiences and therefore the future filings are improved. Our findings provide evidence to encourage the regulatory body, the filers, and the XBRL technology supporting community to embrace the new disclosure requirement in financial reporting. The significantly decreased number of errors also helps address the information users’ concerns regarding the data quality of XBRL filings.


This document is an unofficial guide to the IFRS-GP XBRL taxonomy. The IFRS-GP is a financial reporting taxonomy used for reporting under International Financial Reporting Standards (IFRS). It is purposefully "unofficial" so that it can delve into areas of speculation where official documents cannot. This guide is in no way endorsed by or associated with the IASC, IASB, or XBRL International. The audience for this document is: (1) accountants who desire to understand the taxonomy and (2) information technology people who are trying to use the taxonomy. This document is as non-technical as it can be. Specifically, the hope is that more and more accountants and technology people can truly understand the taxonomy and therefore provide feedback to make the taxonomy and the process for creating future versions of this taxonomy better. This document is not a tutorial; it consists of pointers, hints, background information, explanations, insider information, and whatever else that users of the taxonomy might find useful. The authors welcome comments and suggestions to improve this document. Please address feedback directly to one of the authors whose email addresses are provided above.

This study investigates whether XBRL filings of 10Ks and 10Qs possess incremental information content beyond current EDGAR filings in HTML format. The sample comprises of 342 voluntary XBRL filings from the period of 2005 to Jun 30, 2008. We document a significant market reaction on the day when XBRL reports are filed. The market response is stronger for larger firms, more recent filings and more timely filings. Furthermore, it is more pronounced in instances where multiple reports are filed. Using the R2 in a regression of fiscal quarter abnormal returns on XBRL filing abnormal returns, we find that approximately 1.2% to 8.0% out of total information content in earnings disclosures is associated with these XBRL filings.


The complexity of data warehouse models based on the entity-relationship-model was one of the biggest driving forces behind multidimensional modeling. Designed models should be easily understood by a business expert and easily analyzed by the final user. Nevertheless, the evolution of the dimensional paradigm has showed that the business world is complex and it is necessary to introduce new concepts to the models to allow a greater level of representation. These include bridge tables, heterogeneous dimensions and factless fact tables (Kimball, Ross 2002). As a result, the designed model lacks the desired simplicity and does not yet guarantee the representation of all the semantics of the domain. This paper explores an alternative design of data warehouses that allows the creation of a model that reflects in a greater proportion the semantic of the business world and that can be exploited by the final user through different analysis tools. The alternative, based on XBRL Dimensional Taxonomies (XDT), is shown through a comparison with a dimensional model and the level of semantic representation. We explore all the limitations and ease of use derived from this standard reporting language, eXtensible Business Reporting Language (XBRL). The objective is to show a dimensional and a XDT design and stressing out the semantic richness of each approach. In order to do so, the article will explore briefly the background of a dimensional understanding of a problem domain in the second section. Then it will show dimensional XBRL as a more semantically approach to model a dimensional reality in the third section. To show this, the fourth section contains an example that will be applied in a real case study.


The use of the Internet for financial reporting creates unique opportunities and challenges for the auditing profession. This exploratory study identifies the key audit implications of Internet financial reporting through a comprehensive review of the academic and professional literature. Further, the study analyses the contents of all listed company Websites in New Zealand to assess the nature and extent of current audit-related Web practices. The relatively high degree of similarity between New Zealand’s auditing standards and those of other jurisdictions (e.g. International Standards of Auditing and auditing
standards in countries such as the UK, Australia and the USA) contributes towards the international generalisability of the content analysis. The literature review highlighted issues relating to the auditor’s role and responsibilities, the audit report, and audit procedures. The results of the content analysis of auditor Web-related practices reveal several significant concerns for the auditing profession in relation to the presentation, context, and content of the audit report in a Web-based environment.


Among the various processes deemed critical by a firm, financial reporting is continuously moving up the scale of priorities. The design of a reliable, fast and IT supported system for providing relevant business and financial data for management accounting purposes has always been one of the main fields of study in management information systems. Under the umbrella of Management Support Systems (MSS) various technical solutions to providing information for decision makers were presented, based primarily on data warehousing concepts (Gluchowski, Gabriel, Chamoni 1997, pp. 147).


The eXtensible Business Reporting Language (XBRL) has been developed as a standard for business reporting on the Internet. As such it will impact the audit profession that provides assurance over financial information, an issue that has not yet received enough attention. Therefore, the overall research purpose of this study is to describe the effects that the use of XBRL has on audit and assurance services by analyzing the implications on services to the public and the way assurance providers conduct their work in providing those services. The study looks at effects of both Internet reporting and continuous assurance, which are inextricably interwoven through their technological basis. Representatives of the audit profession and other groups affected by assurance services, e.g. users and government agencies, are interviewed using a semi-structured interview technique. Interview transcripts are used to compare the answers of the audit profession with those of the other interviewees in order to draw conclusions about what the impact of XBRL will be. The results indicate that XBRL adoption will not significantly change audit
and assurance services to the public in the medium-term. However, it will have decisive impacts on the work tasks that assurance providers have to execute in providing services.


XBRL (eXtensible Business Reporting Language) is an emerging technology that facilitates directed searches and simultaneous presentation of related financial statement and footnote information. We investigate whether using an XBRL-enhanced search engine helps nonprofessional financial statement users acquire and integrate related financial information when making an investment decision. We conduct our investigation in the context of recognition versus disclosure of stock option compensation. Our results reveal that many users do not access the technology, but those who do use it are better able to acquire and integrate information. Specifically, we find that when stock option accounting varies between firms, the use of an XBRL-enhanced search engine increases the likelihood that individuals acquire information about stock option compensation disclosed in the footnotes. We also find that XBRL helps individuals integrate the implications of this information, resulting in different investment decisions between individuals who use and do not use the search engine. Our results suggest that search-facilitating technologies, such as XBRL, aid financial statement users by improving the transparency of firms’ financial statement information and managers’ choices for reporting that information. Our results also reveal that wide publicity about the benefits of using search-facilitating technology may be needed to induce financial statement users to access the technology.


With today’s dynamic business environment there are increasing calls for more frequent financial reporting to ensure investors, bankers, and other users have access to timely information to make informed decisions. Further, recent advances in information and communication technology (ICT) infrastructures such as enterprise-wide systems, wide-area, high-bandwidth networks and XBRL (eXtensible Business Reporting Language) make it feasible to do so. Nonetheless, we have yet to see a groundswell of firms voluntarily providing more frequent monthly, daily, or continuous financial disclosures, raising the obvious question of “why?” In this paper, we review factors affecting the supply and demand for continuous reporting (CR) and identify issues that promote or inhibit the implementation of CR. Accordingly, we consider the information economics perspective, the effect of CR on companies’ abilities to manage earnings, potential costs of disclosing firm proprietary information, the likely effects of CR on capital market behavior, litigation exposure, and related considerations associated with continuous assurance.


U.S. adoption of search-facilitating technology has been slow and several constituencies question whether investors will choose to use the XBRL-formatted information the Securities
and Exchange Commission (SEC) is now requiring companies to provide. Unlike prior research, we use an exclusive choice experimental design to examine (1) which reporting technology nonprofessional investors will choose to complete a financial analysis task (XBRL-enabled, portable document file, or spreadsheet) and (2) why they choose the specific technology. We found 66 percent of nonprofessional investor proxies chose to use XBRL-enabled technology, while 34 percent chose spreadsheets. Participants who chose XBRL-enabled technology perceived it reduces the time required to complete the task (i.e., increases task efficiency) while participants who chose spreadsheets indicated their technology choice was driven by amount of prior experience with that technology. Our findings have implications for the technology choice literature, regulators mandating or considering mandating XBRL-based reporting, and XBRL-enabled technology adoption.


This paper reports the final results of a Delphi study into corporate financial reporting by 2010. Twenty UK experts in accounting and the Internet representing academics, auditors, regulators, reporting companies and users participated in the study. A three-dimensional conceptual framework was adopted consisting of the role of the Internet (i.e. problem solver or problem creator), the determinant of change (technological determinism, non-technological determinism or contingency perspective), and the pace of change (conservatism, gradualism or radicalism). The consensus view was that the financial reporting package would evolve into a core of general purpose, standardized information (in both the hard copy and Internet version) together with a non-core of general purpose and customized information. Radical changes suggested by prior studies such as real-time reporting and disclosure of raw data will not occur, at least to the core package. Auditors will be reactive and cautious, and regulators will adopt a minimalist approach. The fundamental dilemma of financial reporting in the Internet environment will be between standardization and customization.


Today the eXtensible Business Reporting Language (XBRL) is accepted as the standardized international exchange format in external business reporting. This objective does not, however, realise the full potential of XBRL. The XBRL standard was established with the vision to improve the whole information supply chain within enterprise reporting. XBRL may provide significant benefits for collection of information from heterogeneous data sources and subsequent preparation of enhanced information. Implementation of enterprise reporting processes on the basis of a standardized data format offers

The Extensible Business Reporting Language (XBRL) is a grammar based on XML that is defined and described in the XBRL 2.1 specification. Instance documents are created by combining XBRL taxonomies and linkbases with data (facts) for a particular context. An alternative view is, XBRL is a mechanism for communicating information for decision-making between interested parties based on a generally accepted way of representing and digitally transmitting symbols of actions and events. XBRL may be both of these and many other things depending on how we frame our methodological understanding for the purposes of research. In this section we present an approach that conceives XBRL as a socio-technical object in the tradition of post-social perspectives (Knorr Cetina 1997; Latour 1996, 1999).


Pressure is being applied on companies right across Europe to distribute more corporate information, in more usable ways, with fewer time delays. The delivery of corporate information via the Internet is being seen by many companies as a way of addressing at least some of these demands. This paper introduces the subject of electronic corporate reporting and provides a detailed literature review of both academic and professional material produced on this subject so far. It also outlines a wide range of issues that need to be considered by companies, accounting regulators and standard setters in determining how this form of reporting should develop in the future. This debate is specifically set in a European context but has global applications.


The use of Internet technology for corporate reporting is now a well-established activity in countries that have developed securities markets, raising many questions for the provision of audit and assurance on such reports. This paper reviews the state of guidance provided by securities regulators and audit standards setters. We find that, notwithstanding the recognition by various audit standards bodies of the need for further guidance to auditors on the implications of Internet financial reporting; the actual pronouncements made thus far by the various bodies around the world fall considerably short as a response to the challenges that arise from current and future Internet reporting technologies. We point in particular to shortcomings related to the way in which users interact with Internet financial reporting web sites, the implications of this interaction and on what we term 'information component' technologies such as the XML-based eXtensible Business Reporting Language (XBRL). The paper sets out a range of institutional, standards setting and technological solutions to these issues.


Document Type and Number:European Patent EP1883035 Kind Code:A2
An electronic data disclosure system including a submitter device, an electronic disclosure device, and a reader device is provided. The submitter device is configured to execute the steps of, creating submission data and transmitting the submission data to the electronic disclosure device. The electronic disclosure device is configured to execute the steps of receiving the submission data from the submitter device, giving a digital signature to the submission data received and disclosing the submission data to which the digital signature has been given. The reader device is configured to execute the steps of obtaining the submission data disclosed by the electronic disclosure device, to which the digital signature has been given, displaying the submission data to which the digital signature has been given, performing signature verification of the submission data to which the digital signature is given and displaying a result of the signature verification.


This article discusses how emerging information technology (IT) frameworks, such as extensible markup language (XML) and Web services, can be utilized to facilitate continuous auditing for the next generation of accounting systems. Relying on a number of components of Web services technology, this article presents a new model for continuously audit business processes, referred to as continuous auditing web service (CAWS). The CAWS mechanism would run as a “web service” in the audit firm’s computing environment and could be applied at a very granular level to provide assurance about specific business processes, at a very aggregate level for providing assurance relating to continuously reported earnings, or to provide continuous assurance (CA) about the operation of internal controls resident in the audit client’s environment. The primary user of CAWS, given the current audit model, is the audit firm itself. However, the proposed CAWS approach facilitates a new “pull” model of auditing as envisaged by Elliot [Account. Horiz. (1992) 61], where assurance consumers invoke the CAWS routines to obtain assurance on demand. In such a model, the auditor would offer restricted views provided by the CAWS routines on a fee basis to analysts, investors, financial institutions, and other parties interested in obtaining CA of business performance or other audit objects of interest. The frameworks and technologies that facilitate such a Web-service-based continuous auditing mechanism in an XML-enhanced world are briefly described. The article concludes with suggestions for future research.


This research develops a framework for deploying software agents in e-commerce applications. A transaction agent is a specialized software component that cooperatively interacts with the data-capture facilities of a transaction-processing system at the point or band of capture, such as the Web server and browser. The generalized framework provides means for checking transaction validity and accuracy within the Internet model of data communications as well as XBRL taxonomies or other data format checks. It also provides the functionality to cooperate with management authorization software to terminate or correct classes of transactions.
The emergence of electronic commerce exchanges in the organizational supply chain has created a demand for increased accountability and control among transacting parties. The provision of assurance services has the potential to satisfy this demand, as a compensatory service for exchange partners who would otherwise not have the capability to exercise control over a specific exchange they are involved with. In business-to-business electronic commerce (B2B EC) exchanges, there is a demand for assurance services to ensure data integrity in many situations and types of events. Trustworthiness must be communicated to users when an exchange occurs; a possible way to accomplish this is through the use of control templates, which can validate the content of documents involved in the exchange. In consequence, this type of validation must be provided through assurances at the data level and must be based on the firm’s data model and its structural constraints. The present study examines the impact of data-level assurances in minimizing the extent of relational risk in an inter-organizational exchange. A simulated EC exchange using eXtensible Markup Language (XML) was custom-developed for this experiment to examine the extent to which data assurances that are provided in a data exchange influence the level of assessed risk in an inter-organizational exchange. The results of the study indicate that the provision of data-level assurances have a significant effect on the reduction of relational risk. Furthermore, perceived risk within a specific decision context was found to interact with the availability of data-level assurances when subjects evaluated the overall risk of engaging in transactions with the B2B EC exchange. These results present implications for the demand and supply of data-level assurances in information systems used in B2B EC environments. The study makes important contributions to both researchers and professionals that are evaluating the effect of data-level assurances on the overall risk associated with EC exchanges.


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There are currently many developments in the world of business reporting, which influence the way companies are reporting their business data. In this paper, we investigate how suspicious accounting structures can be detected by using the structured representation of data in XBRL reports. Our approach is based on establishing a knowledge base of suspicious patterns an applying specific search and/or pattern matching algorithms for detecting whether the suspicious structures from the knowledge base are present in a (financial) report made using XBRL. We consider consolidations of a chain of participations (chain consolidation) and present guidelines for detecting such abnormalities regarding chain participations. We show that such a suspicious pattern can be represented as a directed acyclic graph and its presence can be detected using search techniques from the artificial intelligence field. We conclude with a brief discussion on the use of computational intelligence techniques for mining more complex patterns in XBRL-based reports.


The eXtensible Business Reporting Language (XBRL) is a metadata representation language designed for a wide range of business reporting environments. Whilst primarily aimed at financial reporting, today XBRL is in use in not only for typical financial reporting domain, but also in various other business reporting scenarios. So for example, the Committee of European Banking Supervisors (CEBS) in its Common Reporting (COREP) taxonomy uses XBRL for reporting of solvency information for financial institutions (Boixo, Flores 2005). Another example is the EUROSTAT initiative that is analyzing the use of XBRL for statistical purposes for gathering business related information. Nonetheless, each of these scenarios do not cross the border of what traditionally could be regarded as business reporting that is closely related to financial information. One of the possible reasons for this can be related to the profile of the participants of the XBRL International consortium that is responsible for the development of the language. Traditionally, the significant majority of these participants come from the financial reporting and related domains (XBRL 2006a). That is why it is important to evaluate XBRL use as a more universal metadata language. Observing the recent developments concerning XBRL in the European Union (EU) it can be clearly stated that due to its extensibility the XBRL standard is very useful in the many scenarios where the international reporting needs to be implemented at international and national levels. Usually the regulations are interpreted in paper form and often employ proprietary reporting solutions are implemented to enable data gathering. The innovative approach of the CEBS, with the European COREP XBRL taxonomy being extended on the level of European member stated, demonstrates the potential for standardisation and harmonisation of business reporting.
For some time regulators across the globe have been advocating a more modern financial reporting process that would provide additional information (i.e., mainly nonfinancial) in a timelier manner (the AICPA’s Jenkins Committee (1994), Financial Accounting Standards Board (FASB; 2000). Recent regulation, such as Sarbanes-Oxley section 409 (henceforth, 409) in the United States and the Corporation Act in Australia, are requiring public firms to report material information more quickly than ever before. Since the information being reported to the regulators is also publicly available, firms need to consider the adoption and consequent use of a technology that is 1) capable of continuous disclosure (CD); 2) can work with existing Enterprise Resource Planning (ERP) systems to internally gather and then externally report required information quickly and reliably; and 3) comply with appropriate regulation.

For example, if material (i.e., would affect the decision of a reasonable user), 409 requires reporting of earnings information, changes in management, and bankruptcies within four days of occurrence. The prior regulation required 15 days to disclose. Sections 674 and 675 of the Corporation Act require continuous disclosure of similar information; meaning the information is to be reported the same day as occurrence.

For purposes of the current paper, a CD technology is defined as one that is capable of complying with the particular jurisdictional disclosure requirements. Given inherent differences across country requirements, it is not possible to generalize a definition.

The term “firm” in the current paper refers to public corporations, since they typically affect a larger number of market stakeholders than private companies.

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Financial reporting via XBRL is a low-cost method for increasing transparency and compliance while potentially decreasing a firm’s cost of capital.


Tagging financial information using eXtensible Business Reporting Language (XBRL) creates documents that are computer readable and searchable. Since 2004, the Securities and Exchange Commission (SEC) has taken steps toward requiring XBRL to be used in its filings, including a voluntary filing program. Once XBRL is required, investors are likely to demand assurance on the tagging process. The PCAOB has issued
guidance on attest engagements regarding XBRL financial information furnished under the SEC’s current voluntary filer program, which relies on the auditor agreeing a paper version of the XBRL-related documents to the information in the official EDGAR filing. While this process may be adequate for the current paper-oriented reporting paradigm, the power of XBRL is that it allows individual pieces of financial data to be extracted from the SEC’s financial database outside the context of the statements as a whole. This article provides some background on the SEC’s efforts to incorporate XBRL into its filing process and a brief overview of the technical aspects of XBRL. Its principal focus is on several important questions that assurance guidance must address in a data centric reporting environment, such as, what constitutes an error or what does materiality mean when individual pieces of financial data will be used outside the context of the financial statements? It also describes some XBRL-related areas where academic research can and should provide inputs to the process of developing guidance for XBRL-document assurance.


In een eerder artikel (zie Poels in Accountancy en Bedrijfskunde, 2004/4, 18) stelden we de eXtensible Business Reporting Language (XBRL) voor als een technologisch raamwerk voor e-reporting. We illustreerden eveneens de werking van enkele eXtensible Markup Language (XML) kerntechnologieën die worden gebruikt bij de implementatie van dit raamwerk. De vragen die het gebruik van XBRL oproept bij de audit van elektronisch verspreide financiële rapporten werden hierbij onbeantwoord gelaten. Nochtans suggereerden we dat het uitklaren van de impact van deze nieuwe technologie op de accountantscontrole een verdere impuls zal geven aan de verspreiding van het raamwerk. In dit artikel synthetiseren we de resultaten van recent wetenschappelijk onderzoek dat gevoerd werd naar audit en assurance in een XBRL-omgeving. Wij hopen dat deze toelichting de accountant, auditor en assurance professional een beter idee zal geven van de veranderingen en opportuniteiten die het gebruik van deze nieuwe markeertaal met zich mee zal brengen.


On March 16, 2005, the SEC issued Final Rule 33-8529 encouraging registrants to voluntarily file tagged financial statement information on the EDGAR reporting System using XBRL format. In this paper, we examine whether early and voluntary filers of financial information in XBRL format demonstrate superior corporate governance and operating performance relative to their non-adopting peers. We investigate performance, market, and structure-related firm variables. Our results suggest that corporate governance is significantly and positively associated with a firm’s decision to be an early and voluntary filer of financial information in XBRL format. At the same time, firm performance factors including liquidity and firm size are also associated with the early and voluntary XBRL filing decision. Our findings should be particularly interesting for the SEC, as it considers the corporate governance and firm-performance related associations between certain registrants’ early and voluntary response and its call for XBRL-based filings.

Some of the governance weaknesses stem from the information asymmetry between insiders and the investing public. One way to mitigate the information asymmetry problem is to enhance accounting disclosures through XBRL format. In this paper, we analyze financial characteristics of early-adaptors of XBRL. We build a multivariate logistic regression model to examine the relationship between firm characteristics and voluntary XBRL adopters. The results indicate that firm size, debt ratio (leverage), plant intensity, PE ratio (growth), and inventory ratio (complexity) are useful in discriminating voluntary “XBRL adopters” from non-adopters. We also build a multiple regression model and use the Governance Score developed by Brown and Caylor (2006) to further investigate the relationship between corporate governance rating and operating performance for voluntary XBRL adopters. Our results indicate that current ratio (liquidity), firm size, and auditor type are associated with corporate governance rating for early adopters of XBRL. Key words: XBRL; interactive reporting; voluntary adoption; logistic regression; information asymmetry

Reyes, E., Rodríguez, D., Dolado, J. (200?). "Overview of XBRL technologies for decision making in Accounting Information Systems". Journal?? Source??

XBRL (eXtensible Business Reporting Language) is a language for the electronic communication of business and financial data based on XML (eXtensible Markup Language). Compared with paper based or other previous adhoc EDI (Electronic Data Interchange) technologies, XBRL provides major benefits in the preparation, analysis and communication of business information. Those benefits include cost savings, greater efficiency, accuracy and reliability to all activities involved in supplying or using financial data. This paper provides an overview of XBRL technologies and how it is applied to decision making in several financial areas. It also covers some possible extensions with the semantic Web and Web services as future challenges.


Technological advances (e.g. e-commerce and the Internet) have changed business practices and the process of recording and storing business transactions. Extensible Business Reporting Language (XBRL) will soon be built into accounting and reporting software which would allow on-line real-time preparation, publication, examination, and extraction of financial information. Thus, outside, independent auditors should use continuous, electronic auditing when most financial information exists only in electronic form under real-time accounting systems. Continuous auditing and its implications for independent auditors, including internal control considerations and audit procedures, are described and analyzed.

Richards, J., B. Smith, and A. Saedi. 2007. An introduction to XBRL. Working paper, Dublin City University

XBRL, the eXtensible Business Reporting Language, is an open standards-based reporting system being built to accommodate the electronic preparation and exchange of business reports around the world. XBRL is all about the electronic tagging of data. It has been compared to the introduction of bar-coding and to the introduction of the ISBN number for books. While financial data is an obvious choice for electronic tagging, all data can be tagged. XBRL is an extension of XML, the eXtensible Markup Language. An extensible language means one that is designed to easily allow the addition of new features at a later date. As might be expected, the rules, or specifications, for these languages need to be managed so as to
allow consistency in their development. The goal of XBRL is to develop a standard set of XML-type tags that can be used to create instance documents that can be then presented in a variety of formats. XBRL is not trying to set new accounting standards; it is attempting to standardize the XML-based tags that are used in business reporting so that the business reports prepared by organizations can be more easily compared and collated for regulatory and other purposes.


The purpose of this paper is to look at the XBRL mandatory filings, use a third party ratings of the quality of XBRL filings (XBRL CLOUD Inc.), and report any progress as well as deficiency. Although this is an empirical study, it is also considered an exploratory study to observe deficiency in the XBRL filings that can be identified with some characteristics of the filer such as operational complexity, prior experience with XBRL filings, etc. We examine determinants of the deficiency of XBRL mandatory filings for all the SEC filings from July 2009 to December 2010. We find that XBRL deficient filings tend to have higher percentage of extensions; are filed by bigger and more complex firms; and are from earlier years. Finally, we find that firms that have done many XBRL filings are less likely to have major errors; but more likely to have minor errors. The results of this study have several important implications for SEC, XBRL US, auditors and filers.


XBRL (eXtensible Business Reporting language) was recently, in 2008, in its 10th year. The concept was articulated in 1998 by Charles Hoffman, known as XFRML (eXtensible Financial Reporting Mark Up Language) to facilitate the business reporting process and improve financial reporting. The objective of this paper is to examine a decade (1998-2008) of XBRL articles published in various publications including trade, practitioner and academic journals to identify trends and patterns, milestones, and organizations actively contributed to this development. Another goal is to assess public perceptions of XBRL, its capabilities and its future. We examined published articles where XBRL appeared either in the title or abstract of the article during 1998-2008. Considering that XBRL reporting is being required only in recent years, the research shows various interest groups worked together for a long time to achieve a common goal. The academic community has also been proactive in contributing to and assessing this new reporting standard. There is a trail of research articles to document this contribution. This paper provides various charts and interesting statistics.


This article is an analysis of adopting technical EDI standards in the field of XBRL-based reporting. The analysis is divided into two areas: current XML standards and future XBRL standards. Before presenting the analysis results we introduce the standards architecture of XBRL and basic functional requirements for implementing automated reporting processes.

This paper will discuss where financial reporting is heading, how such financial reporting according to EU standards should be done in XML and XBRL technology, and why electronic signatures such as XMLDSIG and XAdES should secure this.


Since the mid 1990s, large companies have increasingly used the Internet to disclose business and financial information. Internet technology is regularly claimed to facilitate greater relevance and timeliness of business information. The integrity of information disclosed on corporate websites has, however, been subject to comparatively little scrutiny. This study focuses on the integrity of Internet Financial Reporting (IFR) by reference to the adequacy of underlying corporate governance procedures. Using a sample of 100 large European companies, a questionnaire survey was used to identify whether or not governance procedures that specifically address the distinguishing features of web-based financial reporting are used by large companies. The results confirm the trend identified in prior research of increasing Internet usage to replicate paper-based financial information. Responses to the questionnaire also suggest that concerns about the integrity of IFR are justified. Erroneous assumptions and assertions by respondents regarding the security of IFR, in addition to knowledge of work undertaken by external auditors indicate limited engagement with IFR by management of large European companies. The conclusion of this study is that the governance framework surrounding IFR has received insufficient managerial attention.


XBRL stands for extensible business reporting language. It is an XML based computer language for reporting business information. In December 2008, the United States Securities and Exchange Commission (US SEC) voted to require public filers to provide a supplemental exhibit of their financial statements (including footnotes) in XBRL, with the approximately top 500 public companies required to comply with this new requirement starting June 15, 2009, and the phase-in of this requirement for the other filers to be completed on June 15, 2011. The file created using the XRBL language is called an XBRL instance document. Under this requirement, the filers are not required to obtain a third party assurance on the XBRL instance document. The main reason for not requiring a third party independent assurance of XBRL instance documents is to encourage filers to comply with the SEC requirement without incurring much added costs. In addition, to encourage the filers to comply with this requirement, the SEC is not holding filers legally liable of any errors in the filed XBRL instance documents so long as they look similar to the standard reports when viewed using the SEC viewer. Even though the SEC is not currently requiring a third party assurance of the XBRL instance documents of the SEC filings, it is in the best interest of the public that these documents be assured. Although there have been efforts by both the practitioners and
academics to investigate issues involved in providing assurance on XBRL documents, these efforts have been focused on the specifics of the assurance process and the difficulties involved in it, and not on developing a framework of assertions. Even the American Institute of Certified Public Accountants recent publication SOP 09-1 provides only an illustrative list of management assertions for handling the XBRL-tagging engagements under the SSAEs as agreed-upon procedures without considering a framework. Without a conceptual framework, the assurance process for XBRL instance document would be ad hoc and inconsistent. This paper develops a set of assertions for providing assurance on XBRL instance documents similar to the management assertions for financial audits. Further, we discuss how such a framework would assist auditors in planning and evaluating such an engagement by collecting appropriate items of evidence pertaining to specific assertions to form an opinion whether the instance document is a true representation of the standard format (i.e., ASCII or HTML) document. We also discuss how the use of new technology would make the assurance process more effective and efficient.


As a matter of course in international business, multinational firms produce reports according to different taxonomies for the same entity. However, the relation between US and IFRS taxonomies is nontrivial. There are some exact correspondences of accounts and some accounts which lack congruence. This issue is complicated by the need to have different industry taxonomies applicable to different reporting needs in different countries. The source of the differences is the different regulatory accounting approaches to economic events. This paper addresses these taxonomy issues, both generally and with a case example of a specific firm. Investors, companies, and regulators have the need to reconcile statements produced under alternative taxonomies. This problem is not restricted to this one issue. For example government authorities create XBRL taxonomies for banking purposes and then need to reconcile with generally used Generally Accepted Accounting Principles (GAAP) taxonomies from different jurisdictions.


Given their proprietary data standardization process, Compustat (www.compustat.com) provides accounting data which may differ, to some degree, from accounting data provided by some individual companies via XBRL (eXtensible Business Reporting Language). In this regard, the purpose of this study is to analyze the extent of such differences, if any, between accounting data provided by Compustat and accounting data provided by (via) XBRL. The results suggest that differences exist and the reconciliation of such differences is not obvious.


Until EDGAR Online began operational, Compustat was (arguably) the only provider of financial statement information with accompanying database development capabilities. While EDGAR Online has received relatively little attention in the literature to date, we posit that the use of Edgar Online could flourish given the recent XBRL (eXtensible Business Reporting Language) reporting mandate of the SEC (Securities and Exchange Commission). In this regard, we identify the differences between Compustat and EDGAR Online in terms of data presentation as well as database development capabilities and product pricing.
Our results suggest that differences exist between data presentation, database development capabilities as well as product pricing. In turn, we believe that such differences may facilitate EDGAR Online's competitive position with respect to Compustat.

Teixeira, A. (2002). A Commentary on the Business and research Implications of XBRL.
XBRL is a computer language add-on that facilitates the rendering of financial reports. XBRL does not solve financial reporting judgment issues or lead to continuous reporting. The reduced transaction costs and improved efficiency in rendering the information are, however, powerful and far-reaching consequences of the language. I identify and discuss some of the implications of XBRL for businesses and, in doing so, identify research opportunities. To date discussions of the implications of XBRL have largely ignored the literature on voluntary disclosures and earnings management. Once this literature is considered the predicted implications of XBRL appear exaggerated. Nevertheless there are implications for financial system design, auditing and market efficiency. It also has the potential to enrich the data available to analysts and researchers.

In 2000 XBRL became part of accounting terminology. An ambitious project to generate a public domain XBRL resource has attracted the support of the accounting standard setters in all leading jurisdictions as well the support of regulators, leading software houses and professionals.1 Much has been promised and there is an ongoing debate on just how it will change financial reporting. In the XBRL discussions to date little reference has been made to the literature on information dissemination, particularly as it relates to efficient markets, earnings management and the voluntary disclosure of financial information. In this respect the debate is incomplete and somewhat naive. If what we know about the incentives managers face is factored into the debate some of the claims about XBRL appear exaggerated.

Interview with Charles Hoffman.

Paper of the assurance work group


The paper considers two major economic effects created by the Internet for financial accounting and disclosure. First, the Internet changes the costs of information processes and with it the demand and supply of financial information in capital markets. Second, Internet financial reporting creates a demand for standardization, which has been taken up with the development of XBRL. It is argued that while XBRL is designed to standardize only the format of information, it will also standardize contents. Finally, the paper discusses the issue of assuring high quality Internet financial reporting.


The last fifteen years or so have seen enormous development of the Internet and an increasing acceptance by its users. Major characteristics of the Internet are that information can be accessed (almost) any time and everywhere, and generally at a low cost; the information is up-to-date; there are few limits on data availability; information can include dynamic presentations and multimedia; and there is the possibility of interactive information demand and supply. These developments have a significant effect on the dissemination of information and on the trading of goods, including shares, and thus on the organizational structures of how these activities are performed. They also open up new and astounding opportunities for financial disclosure that affect all interested parties, notably corporations, investors, auditors, and information intermediaries. These opportunities concern standard setters as well as regulators.


The eXtensible Markup Language (XML) is a language that defines a set of codes or tags that can be attached to text to define the meaning of the text. XBRL is a variant of XML specifically, designed to provide the semantics of text associated with business reporting. Both are designed to help achieve the goal of interoperability. In other words, one organization should be able to exchange data and use the information system services provided by another organization independent of the technology platforms that both use. Potentially, XML and XBRL will have a major impact on the way businesses operate and the way reporting is undertaken in future. I am delighted, therefore, to see the publication of this monograph in which some colleagues address the impact of XML and XBRL on business. While they address the potential general impact of XML and XBRL on business, the monograph has a particular focus on the consequences of XML and XBRL for business reporting. Given the prominence of business reporting within many national economies and the global economy overall, this monograph is timely and important. It lays a valuable foundation for us to better understand the ways in which business reporting is likely to evolve and the issues we need to address if the adoption of these technologies is to be cost effective. In this brief introduction to this monograph, I hope to whet the readers’ appetite for the feast that follows. Specifically, I wish to offer some brief reflections on how I believe XML and XBRL might impact four major stakeholders (Figure 1): businesses, investors, regulators, and researchers. The remaining papers in this book tease out these reflections in more detail.

Online business reporting and the benefits thereof are widely reported in the academic and practitioner literatures. Much is made of its potential to transform information supply and demand and the dominant focus of the current discourse is on the automation and publishing aspects of online business reporting. These we argue are necessary aspects but present a narrow conception of the role of business information in organisations. Current research lacks an information management perspective, which focuses attention on the design, management and intellectual organisation of business information. Drawing on a preliminary study of the adoption and implementation of business reporting markup languages (in particular XBRL) in the Australian financial sector we draw out the issues for research and practice. We present a complementary perspective that makes information and information work visible and takes into account the complex inter-relationships between the activities of humans and the information itself.


As an open standard for electronic communication of business and financial data, XBRL has the potential of improving the efficiency of the business data supply chain. A number of jurisdictions have developed different XBRL taxonomies as their data standards. Semantic heterogeneity exists in these taxonomies, the corresponding instances, and the internal systems that store the original data. Consequently, there are still substantial difficulties in creating and using XBRL instances that involve multiple taxonomies. To fully realize the potential benefits of XBRL, we have to develop technologies to reconcile semantic heterogeneity and enable interoperability of various parts of the supply chain. In this paper, we analyze the XBRL standard and use examples of different taxonomies to illustrate the interoperability challenge. We also propose a technical solution that incorporates schema matching and context mediation techniques to improve the efficiency of the production and consumption of XBRL data.
