XBRL: A Theoretical Approach

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Abstract

XBRL (eXtensible Business Reporting Language) is an emerging technology that has the potential to play an important role in the presentation of related financial statements and footnote information. In the global business environment of the $21^{\rm st}$ century, people and firms need to communicate. They need to accommodate different reporting systems, different languages and different regulatory environments. That's quite possible to do with this language for the electronic communication of business and financial data which is revolutionising business reporting around the word. This theoretical approach aims to provide a basic understanding of XBRL and how it could help individual investors, analysts, companies, stock exchanges, regulatory authorities, accounting firms, individual institutions and software vendors by providing them with updated financial informations, better, faster, cheaper, more accurate and in better quality.

<u>Keywords</u>: Financial reporting, Online business reporting, Transparency, Technology, Internet reporting, XBRL.

JEL Classifications: M40, M41, M42

1. Introduction

According to Trites (1999) Internet Financial Reporting (IFR) is defined as the distribution of business and financial corporate information through internet technologies and, particularly, through the World Wide Web (www). However, Debreceny and Gray (2001), in discussing the www limitations, revealed the resource discovery problem, the attribute recognition problem and the consistency of reporting problem as the most significant problems of IFR. The answer to the above mentioned problems emerged in early 2000s by the XBRL steering committee by launching the first XBRL specification. XBRL, an acronym for eXtensible Business Reporting Language, is an opensource reporting system that accommodates electronically prepared financial statements and reports globally (Ernst & Young, 2005; Richards, Smith and Saeedi, 2006). Moreover, as Doolin and Troshani (2007) stated, and as its revolutionary quality has been stressed in

literature in recent years, XBRL becomes an innovation promising to change the way financial information is produced and studied. On the other hand, the white paper on XBRL by the American Council for Technology and Industry Advisory Council realized on February 23, 2007 indicated that the need for real-time information exchange is fueling the drive towards adoption.

XBRL is a relatively new method (launched in April 2000 by the XBRL steering committee) and the willingness of its acceptance and adoption is quite limited at least in Europe. Moreover, the fact that: (a) since January 2005 all listed companies in the European stock exchanges are required to prepare their financial statements according to the International Financial Reporting Standards (IFRS); (b) several South American companies have adopted IFRS in order to explore the benefits of the European capital markets, and (c) since January 2005 the Greek listed companies are required to mandatory adopt the International Accounting Standards (IASs) / IFRS, the XBRL is considered as a valuable tool to overcome the implications and problems that can arise from the many different reconciliations.

Also, the fact that the UK revealed the decision that all corporation tax returns with the relevant accounts and computations will have to be filled online in a version of XBRL called iXBRL from 1 April 2011, makes this study particularly interesting and innovative.

Finally, the CEC phase-in of XBRL financial statement filings began June 2009, and by 2011, all public registrants will be required to file XBRL disclosures. Bartley, Chen and Taylor (2010) identify that various problems and errors occur in initial XBRL filings and make recommendations about how to reduce these.

2. Theoretical Background

Hoffman and Strand (2001) revealed that XBRL has been perceived as the 'digital language of businesses of those involved in its inceptions. Moreover, the business reporting literature refers to XBRL as a ground-breaking technology and many scholars highlight its revolutionary quality. Covaleski (2000, p.1) mentioned that the American Institute of CPAs considers XBRL as 'the most revolutionary change and financial reporting since the first general ledger', while Price Waterhouse Coopers (PWC) describes it as 'a more significant change than the change from paper and pencil analysis to electronic spreadsheets'. Besides, Richards and Tower (2004), in their study on XBRL for Australia, considered it a technology promising to revolutionise international accounting and having the potential to cause a fundamental paradigm shift in accounting information systems.

XBRL is based upon fundamentals of the eXtensible Markup Language (XML), which in turn is an extension of Hyper Text Market Language (HTML) (see: Debreceny and Gray, 2001; Higgins and Harrell, 2003; Pinsker, 2003 and Robinson 2006). According to Debreceny and Gray (2001, p. 47-48) the 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 only be improved to a low degree (see: Bergeron, 2003 and Kloeden, 2006). On the other hand, XBRL is an initiative to develop an XML-based internet-based business reporting specification. XBRL` promises that both humans and intelligent software agents could operate on financial information disseminated on the web with a high degree of accuracy and reliability.

Thus, XBRL, based upon fundamentals of XML, assigns tags to company information that is understandable to both humans and computers. Pinsker (2003) mentioned that tags are standardised worldwide through various accounting rules called <code>taxonomies</code>. The taxonomies are developed for each industry through cooperation of a worldwide consortium consisting of: accounting firms, software vendors, private and public companies and regulators. The main purpose of the taxonomies is to provide standard rules on how the financial information is applied worldwide.

Richards, Smith and Saeedi (2006) stressed that taxonomy was an important element to understanding the function of XBRL, and as a second important element, they discussed the importance of instance document, consistent with (Ramin and Prather, 2003 and Kloeden, 2006). As for the taxonomy, they consider that it acts like a dictionary and that almost every element of the financial information should be classified according to the taxonomy rules. For example, in an accounting taxonomy, cash is being classified as a subset of current assets, and in turn, current assets are classified as a subset of total assets. After the taxonomy has been designed and reviewed, it may be mapped to an instance document. In order to present the financial information in a variety of formats, a set of instance documents are needed. Mejzlik and Istvanfyova (2008), consistent with Elliot and Elliot (2004), also discussed the instance document, arguing that either it has to be used in conjunction with a style sheet or that it should be linked to automated software that can produce style sheets.

In a recent study, Pinsker and Li (2008), in examining the costs and benefits of XBRL adoption, mentioned that although it is given that XBRL increases transparency, on the other hand, it cannot force managers to disclose honestly and to prevent any fraudulent behavior. That is, XBRL is not an enforcement agency and therefore, valuable information could be deliberately omitted or falsified. Moreover, according to Elliot and Elliot (2004) and Mejzlik and Istvanfyova (2008) XBRL is not an accounting standard itself, thus, the user should be familiar with the applicable accounting standards in order to analyse the financial information.

There are many benefits that can be associated with the use of XBRL. Many scholars (see: Higgins and Harrell, 2003; Richards and Smith, 2004; Robinson 2006; Pinsker and Li, 2008) discussed the issue and they mainly focus and emphasise three of them, which are: better; (b) faster; and (c) cheaper. With regard to the 'Better' benefit, it provides a more effective use of financial data, which in turn provides much higher quality and more accurate information. Besides, the 'Faster' benefit allows companies to greatly decrease their turnaround time when producing financial statements since much of the work is automated under the XBRL method. Finally, the 'Cheaper' benefit is multi-dimensional: (1) companies can achieve a reduction in their cost of reporting and analysing their financial data; (2) regulators, investors and analysts are provided with the convenience of receiving easily analysed information without rekeying any data; (3) financial publishers lower the cost of customising the data and minimise possible errors; and (4) independent software vendors are provided with financial data that are compatible with any other financial applications.

According to Higgins and Harrell (2003, p.17) XBRL developments is occurring worldwide. On July 31, 2000, the committee released the XBRL Specification and the first taxonomy for financial reporting of commercial and industrial companies under US GAAP. Moreover, Australian and New Zealand's accounting bodies and organisations have

taken leading roles in getting XBRL adopted. In Europe, the XBRL is well accepted in countries such as the UK, Germany, France and Spain. In the rest of the continent, except the US, Japan and China are adopting the XBRL process, while in South Africa the Financial Reporting Solution Company is combining XBRL into International Accounting Standards (IASs) at the transactional level. Robinson (2006) considered the future of XBRL to be of great potential. Finally, it is worth mentioning that on March 22, 2006, the UK revealed a requirement that all companies will have to adopt XBRL for their financial reporting by the year 2010 (XBRL, 2006).

In the recent years, several studies have been conducted and the first results on the XBRL adoption and its usefulness have been published. Hodge, Kennedy and Maines (2004) investigated whether using an XBRL enhanced search engine helps nonprofessionals financial statement users acquire and integrate related financial information when making an investment decision. They revealed that many users do not access technology, but those who do it are better able to acquire and integrate information. Moreover, their results suggest that search-facilitating technologies, like XBRL, help financial statement users by improving the transparency of companies' financial statement information and managers' choices for reporting that information. Romeo, Parrino and Bell (2008) tried to explain the US Security and Exchange Commission (SEC's) proposal to require local and foreign companies that prepare their financial statements in accordance with US GAAP to file financial statements contained in registration statements and periodic reports in an interactive data format using XBRL. They revealed that SEC is confident that financial reporting based on the XBRL format would create new ways for analysts, investors, and others to retrieve and use financial information in documents filed with the SEC. Similar studies, exploring the SEC attitude towards XBRL have been conducted by Heffes (2007) and Fisher (2008), among others.

As for the taxonomy, Bonson, Cortijo and Escobar (2008) examined whether the IFRS taxonomy, and its current state, adequate covers European companies' dissemination practices and strengthened the benefits of XBRL. Among others, they provided implications for the evaluation of the effectiveness of the IFRS taxonomy and shed light on directions that may lead to the improvement of this taxonomy. Their results seem to be consistent with the views reported by Ramin and Prather (2003) and Smith and Saeedi (2006).

Finally, Premuso and Bhattacharya (2008) investigated to what degree early and voluntary filers of financial information in XBRL format show superior corporate governance and operating performance relative to their non-adopting peers. They examined performance, market, and structure-relate company variables and reveal and suggest that corporate governance is significantly and positive associated with a company's decision to be an early and voluntarily filer of financial information in XBRL format.

Figure 1 shows the Business reporting supply chain framework as presented by Taylor and Dzuranin (2010).

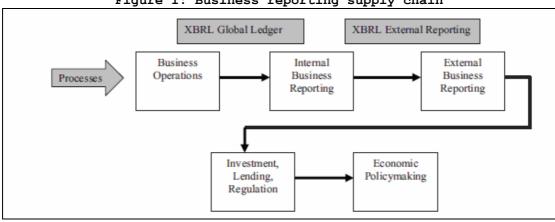


Figure 1: Business reporting supply chain

Source: Taylor and Dzuranin (2010)

3. Recent Studies

In the recent years several studies and researches have been conducted to acquire information about the XBRL utilisation. Thus, we indicatively present some of them, which have particularly contribution on the evolution of XBRL internationally.

Jones and Willis (2003) looked at the history of XBRL and provided a clear case study of how Morgan Stanley has made use of this system. They also predicted some developments for the future.

Doolin and Troshani (2004) research note provided a basic understanding of how XBRL works and presented the major stakeholders involved in its use. Moreover, they suggested a number of issues associated with XBRL requiring further investigation and study. Table 1 presents the areas of further research as discussed in their study.

Table 1: Possible research approaches to XBRL

| XBRL | |
|--------------------|---|
| as a technology | Social construction of XBRL Political process studies of XBRL-based change XBRL as the diffusion of an innovation XBRL and Technology Acceptance Model Factors influencing adoption and use of XBRL |
| as a standard | XBRL taxonomy development Compliance with local and international accounting standards Cross-country and industry comparisons of XBRL development Auditing and assurance issues |
| as a business tool | XBRL application case studies Business benefits realisation XBRL in the financial information value chain SME involvement in XBRL |
| in education | Pedagogy and curriculum for teaching XBRL Graduate XBRL skill sets Teaching cases in XBRL implementation and use |

Source: Doolin and Troshani (2004)

Hodge, Kenenty and Maines (2004) investigated and examined the investment decisions from knowledgeable individuals who used search-facilitating technology compared to individuals who did not use such technology to acquire and integrate information from financial statements and footnotes. The participants were asked to analyse information whether to take an investment decision or not in a firm stock.

They developed the following two Hypothesis:

 ${\tt H_1:}$ Individuals who used search-facilitating technology were more likely to acquire information's from various places in the financial statements and footnotes than individuals who didn't use search-facilitating technology and

 ${\tt H_2\colon}$ Individuals who used search-facilitating technology would better integrated related information's from various places in the financial statements and footnotes than would individuals who didn't use search-facilitating technology.

The main findings from their study were:

- The using search facilitating technology helped users for better evaluate implications of acquiring footnote information and combining these implications with related information's placed elsewhere in the financial statements.
- There was a large number of nonprofesional who didn't use the XBRL technology. For this reason may be needed for the benefits and to induce to access the technology.
- The search facilitating technology improved the transparency of manager's financial reporting choices and the financial statement effects for these choices.
- The increased transparency with XBRL processing encouraged managers to be more neutral in their choices for estimate and assumption.

Another study worth to be mentioned is the usage of International Financial Reporting Standards (IFRS) towards the global adoption of XBRL conducted by Bonson, Cortijo and Eescobar(2008). They analysed the degree of fit between the IFRS taxonomy and the information provided by the European companies that draw up their financial statements using IFRS. The IFRS taxonomy established an XBRL standard for the financial statements prepared according to the IFRS and was covered the balance sheet, income statement, cash flow statement and statements of changes of equity.

There was a detailed study for these mentioned financial statements for finding deviations in presentation with the IFRS taxonomy. Finally a qualitative analysis was made for these particular differences and the research questions are tested. The results were as follows:

- The fit between the IFRS taxonomy and information reported by the European entities that utilise IFRS was not perfect. It indicates that the IFRS Taxonomy is not adequately covering European companies reporting practices.
- The companies classified into economic groups according to the Global Classification System. In this classification, financial and insurance institutions was presenting a higher proportion of divergences

- The analysis according to the size was made by using total assets as a surrogate variable. It saw that the largest companies need to report their information to greater level of detail and the lack of fit presented is greatest.
- The taxonomy presented a better fit for some financial statements than the others.

Moreover, they examined the degree of misfit between the taxonomy and the information contained in financial statements. Regression analysis have been used as a statistical method.

Some useful conclusions from this study were:

- There were many different XBRL taxonomies based on different national accounting regulations. A possible solution to this problem is to create a toolset capable to translate the financial statements under the set of accounting principles into another one.
- The IFRS taxonomy was of great importance as it serves both to establish a common ground for international firms and to create a platform for the utilization of XBRL.
- The study identified the need to consider extensions for insurance companies.
- The taxonomy has still not been applied by companies in the actual preparation of accounts.

Nel and Steenkamp (2008) study, limited to chartered accountants, examined the levels of awareness and understanding of XBRL in South Africa. They found that the majority of chartered accountants in this country are unaware of XBRL and moreover, just few fully understand it. This is consistent to research results from Australia and US where the levels of awareness and understanding of XBRL is also very low. Romeo, Parrino and Bell (2008) revealed that SEC believes that financial reporting based on the XBRL would create new ways for investors, analysts, and others to retrieve and use financial information in documents filed with the SEC.

Premuroso and Bhattacharya (2008) examined whether early and voluntary filers of financial information in XBRL format achieve superior corporate governance and operating performance compared to their non-adoption peers. Results revealed 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. Results also proved that firm performance factors like liquidity and firm size are associated with the early and voluntary XBRL filing decision.

Keman (2008) believed that XBRL is predicted to have a profound impact on any person or organization that creates or uses business information. Based on this view, she discussed issues related to XBRL adoption globally, and especially in Europe, Asia, China and the US. Although XBRL is evolving everywhere, she notices that governments' policy, stock exchanges, banks and other industry sectors unevenly drive its use.

Mandilas, Maditinos and Kousenidis (2009) examined of what drives a company's decision to adopt a technological innovation such as XBRL. The study developed a conceptual framework incorporating six technological, organisational and environmental determinants of XBRL adoption. It examined a sample of companies across European countries. The results indicated that the corporate choice of

adopting XBRL were the firm size, the level of technology competence and the firm scope.

A more recent study conducted by Yoon et al. (2010) in Korea examined whether or not the adoption of XBRL reduces information asymmetry in stock market context. Since all public companies in Korea have been required to submit their financial information in XBRL format from October 2007, they examined the pro-adoption period (December 2006 to August 2007) and the post-adoption period (December 2007 to August 2008).

They developed the following two hypotheses:

 $\mathbf{H}_1\colon$ XBRL adoption reduces information asymmetry in the capital market, and

 ${\tt H_2}\colon$ The effect of XBRL adoption on reducing information asymmetry is stronger for large companies than for small ones

To explore the hypotheses they constructed a regression model where the dependent variable is the relative spread, computed according to Boone (1998), and the independent variables are the XBRL adoption (pre XBRL adoption period was coded as 0 while post XBRL period was coded as 1), the size, the turnover, the volatility and the stock price.

Below we see the regression model:

 $Spread_{it} = b_0 + b_1 XBRL_{it} + b_2 Size_{it} + b_3 Turnover_{it} + b_4 Volatility_{it} + b_5 Stockprice_{it} + e_{it}$

Where \mathbf{I} denotes firm and \mathbf{t} denotes either pre-adoption period or post-adoption period.

T-tests and multiple regression analysis were employed to explore the two hypotheses. Results revealed a significant and negative correlation between XBRL adoption and information asymmetry. This implies that the adoption of XBRL may lead to reduction of the information asymmetry in the Korean stock market. Moreover, they proved that the effect of XBRL adoption on reducing information asymmetry was stronger large sized companies compared to the medium and small-sized ones.

This study motivates us to further examine the same hypotheses in the European capital markets and especially in the Greek one.

4. Discussion and Conclusion.

In this study we performed a brief introduction to the XBRL and the various entities interested in its development. We have also outlined some important approaches and studies examining this new financial reporting system.

XBRL holds the greatest promise for building a global standard that can bridge the current financial reporting gaps. The significant involvement at the governmental, corporate and professional levels suggests a major change in how information is communicated, shared and analysed. This opportunity for improving financial transparency can indeed revolutionise corporate reporting.

Since no study has been yet conducted in Greece regarding on the XBRL adoption and its usefulness, we intend to empirically examine what drives both internal and external interest parts to the XBRL acceptance and use. We aim to use the unique sample of all Greek listed companies to investigate whether the XBRL adoption affects their performance and to what degree it aids to gain a competitive advantage. Furthermore, we intend to explore, analyse and compare the results with other revealed in other capital markets (e.g. US,

Australia and Europe) and make considerations and suggestions for the XBRL adoption in Greece and other countries with similar market characteristics.

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