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Extensible business reporting language (XBRL): a route to financial transparency

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Abstract
In this digital world, we already know about digital photography, online shopping, online form submission, online bill payment, online chatting, online food order, electronic cash transactions (payment and receipt of cash and also electronic deposits), e-mobile, e-commerce, e-returns filing, e-voting. Now the new thing also has been added in this digitalized world that is Extensible Business Reporting Language (XBRL) since 2011 in India. XBRL International (2009) defines "XBRL a language for the electronic communication of business and financial data which is revolutionizing business reporting around the world." It provides many benefits to the users of the financial reports information. This paper has attempted to explore the available literature on XBRL. This study showed huge knowledge of XBRL and related information. Further this paper also throws light on the history of XBRL.

Keywords: XBRL, HTML, XML, tags, taxonomy, financial reporting

1. Introduction

To find out the meaning of XBRL is necessary to see several definitions existing in the literature, as each definition is differ from each. "The term XBRL is an umbrella for creating business reports, which can be financial or non-financial in nature" (Hoffman, 2006) [24]. According to Charlie Hoffman, the father of XBRL, who states: "XBRL is an open-standard which supports information modelling and the expression of semantic meaning commonly required in business reporting." Savage (2009) [37] defines XBRL as a "royalty-free, open specification for software that uses XML data tags to describe business and financial information for public and private companies and other organizations." Above lines are focusing on the technical background of XBRL. However some academicians say that it can be used to describe financial information, by using data tags. Another important fact, expressed by this definition is that XBRL is an open and free standard, which means that no license fees have to be paid by its users.

XBRL International (2009) [48] defines "XBRL a language for the electronic communication of business and financial data which is revolutionizing business reporting around the world."

XBRL International, the consortium behind the language, defines it as follows: "XBRL is a member of the family of languages based on XML, or Extensible Mark-Up Language, which is a standard for the electronic exchange of data between businesses and on the internet. Under XML, identifying tags are applied to items of data so that they can be processed efficiently by computer software" (XBRL International, 2011a) [49]. In the literature, eXtensible Business Reporting Language (XBRL) is defined as a standard " for simplifying the exchange of financial statements, performance reports, accounting records and other business information between software programs" (Hannon & Gold, 2005) [22]. "XBRL has been named a digital language of the business by the people involved in its development and adoption" (Hoffman & Strand, 2001). Often XBRL is also referred to as "interactive Data" (Garbellotto, 2009a) [18]. It is clearly specified in this definition that data is used in a modern and advanced manner. The word "interactive" demonstrates that by using XBRL the exchange and processing of data is improved.

Non-financial information can also be included in their definition of XBRL, as mentioned by Pinsker and Li (2008) [34]: "The eXtensible Business Reporting Language (XBRL) is a non-proprietary web-based XML derivative used to tag both financial and non-financial data and give it context." On the other hand the fact, that XBRL is "web-based" is wrong. The purpose of XML is to store data, on a content-based way. XBRL as an XML derivative stores data as well, but there is no general need of being "web-based". The fact that XBRL adds a semantic to the numbers is expressed by Weber as well (2003): "XBRL is a variant of XML specifically, designed to provide the semantics of text associated with business reporting. There are numerous articles both technical and non-technical" (Debreceny & Gray, 2001; Engel, Hamscher, Shuetrim, Kannon, & Wallis, 2003; Vasal & Srivastava, 2002) [15, 44], currently available which introduce XBRL technology. "eXtensible Business Reporting Language is an open, platform-independent, international standard for the timely, accurate, efficient, and cost-effective electronic storage, manipulation, repurposing and communication of financial and business reporting data. Even though XBRL has backing from Microsoft, IBM, Adobe, Sun Microsystems, and other industry leaders, it is a non-proprietary, open language (Dhingra, Singh, & Magu, 2014) [12]." As a result, the definitions within the XBRL standard are freely available (Bergeron, 2003). "Another characteristic of XBRL that it inherits from XML is that it is platform independent (Bergeron, 2003). Just as English is the accepted language of business for most of the world, XML runs on all of the major computer hardware under the most common operating systems (Bergeron, 2003)".

Srivastava and Liu (2012) [40] stated that "XBRL is an open standard based reporting language that allows companies to

electronically report and exchange financial and nonfinancial information in a standardized, machine-readable format. It can facilitate the reporting processes at each part of an organisation's supply chain, handle data presented in different languages and accounting standards, and be adapted to meet different user's requirements". He also stated that "the goal of XBRL is to develop a set of standardised XML tags, collectively known as XBRL taxonomies, to meet the specific requirements of business information."

2. Literature review

"It is one of a family of "XML" languages which is becoming a standard means of communicating information between businesses and on the internet." "It is an open standard; free of licence fees. It is already being put to practical use in a number of countries and implementations of XBRL are growing rapidly around the world." Integrated Reporting framework makes overt mention to XBRL as a "standardized technology platform that may be used for Integrated Reporting." It goes on to say that " XBRL improves the way information is created, processed, distributed and analysed by providing standardized definitions, labels, calculations, references and contexts applicable to individual numbers and narrative text" (Dhingra, Singh, & Magu, 2014) [12]. "XBRL is important for integrated reports for both non-financial and financial data in financial statements" (Dhingra, Singh, & Magu, 2014) [12].

Several times a comparison between the XBRL technology and the Universal Product Code (UPC) technology, better known as "barcoding" is made: "In layman's terms, XBRL is an IT language, not unlike barcoding, developed specifically for the management of financial information" (Dzinkowski, 2008) [14], and like Willis and Sinnett (2008) express: "Like UPC, XBRL is a form of standardization that brings significant process efficiencies. Just as the UPC standardized product descriptions enable greater agility in inventory management, enhanced product throughput and lower overall inventory management costs, XBRL enables greater agility in managing enterprise information, speed of access and analysis and provides an opportunity to lower overall compliance process costs." This comparison already includes several promoted benefits, which will be analysed later in this chapter of the literature review. On the other hand, there are various problems with XBRL, which will be also analysed later in this chapter of literature review. All those aspects of XBRL and especially their benefits for the users are examined in the following chapters, but first the development of XBRL will be explained.

Reporting systems that interconnect with each other through a shared XML- based standards, such as XBRL, are much less complex than those communicating through multiple, dedicated interfaces. "As an extension of XML, XBRL is itself an extensible language, meaning that its vocabulary can be easily modified to suit the changing needs of the finance industry (Dhingra, Singh, & Magu, 2014) [12]". XBRL works as reporting language, its uses extend beyond simple financial reporting (Bergeron, 2003). XBRL is an innovation which is used by companies to release their business information, with Internet business standardization language (Willis, 2007) [46].

XBRL assigns human and machine-readable tags to the company information, which can be imported/ exported between different systems in the different companies and organisations. Tags are standardized according to the accounting rules and taxonomies developed by the non-profit-organisation behind the standard, worldwide consortium of accounting firms, and private and public regulators. Pinsker (2003) [33] "stated that XBRL is being developed by the non-profit consortium XBRL International, which develops universal taxonomies for the language, oversees the standardization and promotes its use. XBRL International has been formed as a consortium of more than 600 major companies, organisations and government agencies from around the world". According to XBRL International (2011b) [50] is being based on XML. "XBRL is open, non-proprietary and truly extensible language. This allows information tagged by the language to be freely imported, exported, analysed and further processed regardless the systems that generated the original information. In this respect XBRL is revolutionary, since it liberates the business data from being proprietary and allows efficient and effective use and reuse of the information" (Hannon & Gold, 2005) [22]. "XBRL is a logical consideration for providing similar benefits to integrated reports that combine financial and non-financial information (Monterio, 2013) [29]." In India, XBRL taxonomies have been created and mandated by Reserve Bank of India (RBI), Securities and Exchange Board of India (SEBI), and Ministry of Corporate Affairs (MCA). "It is expected that many other regulatory and national jurisdiction bodies such as Sales Tax and Income Tax authorities will be coming up with their specific reporting requirement using XBRL (Essential Features of XBRL Reporting Software – Deloitte)". The Integrated Reporting framework makes explicit reference to XBRL as a "standardized technology platform that may be used for it." It goes on to say that "XBRL improves the way information is created, processed, distributed, and analysed by providing standardized definitions, labels, calculations, references, and contexts applicable to individual numbers and narrative text." XBRL is a logical choice for integrated reports as it provides the same benefits to non-financial data as can be provided to financial data.

Financial information is very essential, so the speed of the preparation, distribution and comparison of information is also very important in business and financial communication. The users of financial statements require information with the highest accuracy and transparency and also require quickest way to achieve the desired results in the least time. Traditional formats used for preparing financial information such as PDF, Excel, HTML, etc. cannot use and archive information in this way which they require. Rostami and Nayeri (2015) [36] stated that the use of the internet leads to the distribution of data and information without standard and specific format in traditional format of filing reports and cannot be easily compared and wastes much time due to lack of standard format. Steenkamp (2012) [41] found that in the digital format, information can be assembled and organised in a systemized way on a regular basis which can be easily compared, differentiated, and analysed regularly as per the requirement of the users. According to the researchers, XBRL is connected with accounting standards, put into code. It is a language developed from XML, but its capabilities are more and its usage is mapped more advanced and more extensible (Debreceny, Gray, & Barry, 1998). For defining the concepts of financial reporting, XBRL enciphers related

items using specified and common national or international labels. Labels can be used to relate users with the information of financial reports and in such a way; it will be more understandable for browsers (Hao, Zhang, & Fang, 2014) [23]. Financial reports' which came from the results or by using the XBRL format are consistent with the labels are called a sample documents. Each industry can design, map and generate its own glossary for maximum and flawless use of this language. According to (Richards, Saeedi, & Smith, 2005) [35] Extensible Business Reporting Language, used as an instrument, can enter the information in the financial reporting system by supposing the highest level of information. According to study of Peng and Jaine (2010) [31], XBRL is a successful technology in the field of accounting and auditing. This language increases levels of accuracy, reliability and efficiency of e-business and financial communication (Yoon, Zo, & Ciganek, 2011) [55]. Use of this language for business reporting is initiated as an important source in the information value chain. Extensible Business Reporting Language increases the capacity of intra-organization electronic commercial transactions by increasing the flow of information and interaction and expands the contribution of organizations in others' information (Troshani, 2007) [42]. In other words, XBRL is a robust format that allows electronic changes of organization's information systems in desired format (Golkar & Nikbakht, 2011) [20]. Hannon (2003) considers XBRL "as a non- specific standard language based on the Internet that is used to provide and publish financial statements via computer and software platforms based on the accounting standards". According to Rostami, 2015 [36] "Organizations can use XBRL as a global framework with the aim of increasing efficiency and improving the reporting path and thereby increase the quality of their financial disclosure and dissemination of information and attract more investors by raising the level of trust resulted from transparency of information." "Using XBRL, flexibility of organizations' information for immediate analysis and compliance with financial models increases and with this view, foreign investors are interested in starting up an activity with the organization (Steenkamp & Nel, 2012) [41]." Using XBRL reduces the cost and time associated with emancipating of information. Use of Internet has changed the flow of information from suppliers to users and vice versa, as well as access to information. The users' financial reports can operate, exercise, analyse and review the data (Amini & Moradi, 2006) [1]. Electronic distribution of information is a growing phenomenon and organizations provide financial information on their sites voluntarily through internet (Craven & Marston, 1999) [6]. Submission of financial reports increased through internet has increased and has reduced the cost of distribution. As a result of that, connecting suppliers and users will be easily achieved (Golkar & Nikbakht, 2011) [20]. Information is available quickly for users for their use and processing (Pinsker, 2003) [33]. Disadvantages of distribution of financial reports traditionally due to lack of access to information and opportunities for investment and lack of direct relationship between investors and other users and suppliers of information decrease the productiveness of provided reports (Sohrabi & Khanlari, 2008) [39]. Lack of knowledge about computation basis of financial instruments is the disadvantage of traditional reporting that will be resolved with the use of the Internet and Internet dissemination and analysis. The uses of internet platforms and integrated frameworks increase the comparability of reports and analysis of information can be easily accomplished (Amini & Moradi, 2006) [1]. Most of the organizations record their accounting information in papers and distribute and circulate it by issuing the report pages; and in many cases, they make record in physical form for future analysis (Cordery, Fowler, & Mustafa, 2011) [5]. For increasing the transparency of the information, "Non-traditional models will enable users to uses the information within the disseminated reports and if necessary, depending on the application, change or analyse them (Golkar & Nikbakht, 2011) [20]".

Debreceny (1999) [9] stated that the organizations will be able to use their manpower to analyse, select and process information by applying new technologies and innovations instead of just recording accounting and time-consuming traditional activities, thereby increasing the quality of their reports and manpower in the organisation. (Pinsker, 2003) [33] states that by defining particular formats and encoding for filing reports, XBRL will enable the organizations to reduce its mistakes, errors and inaccuracy while filing formats and make the maximum and possible benefit of reporting standards.

Extensible Business Reporting Language (XBRL) is an XML-based open standard that is used for the preparation, exchange and publishing of financial information across disparate computer platforms, software applications and accounting standards (www.xbrl.org, 2010).

3. History of XBRL

First a research on the history of XBRL is outlined in order to show the evolution of XBRL. A view back to the roots should explain the development and moreover show the current status of XBRL as well as show technical, economical and legal areas which are under construction right now.

The Certified Public Accountant (CPA) Charles Hoffman is known as the founder of XBRL. In 1997 "Charlie Hoffman (CPA, Knight Vale & Gregory, Washington, US) proposes using XML for financial reporting" (Deshmukh, 2004) [11]. Hoffman's "idea was quickly supported by the American Institute of Certified Public Accountants (AICPA) in developing the first prototype" (Phillips & Colvard, 2007) [32]. Afterwards funding was granted and a steering committee was found in order to start a controlled development of the XBRL technology.

While the original XBRL International started with 12 members (Vasal & Srivastava, 2002) [44], currently it has grown to some 550 members (Callaghan & Nehmer, 2009) [3]. It is a not-for-profit organization. Its organizational structure is comprised of local jurisdictions which represent countries, regions or international bodies and it focuses on the progress of XBRL in constituting jurisdictions, as well as contributing to international development. While the XBRL International is involved in developing technical standards for XBRL, the individual jurisdictions such as XBRL-US is responsible for developing XBRL taxonomy and the corresponding schemas based on US GAAP (XBRL US 2009a, 2009b for the current US GAAP taxonomy) [52, 51]. The XBRL India is responsible for developing the taxonomy based on Indian GAAP (www.XBRLIndia.com). In fact, the Indian Institute of

Chartered Accountants of India (ICAI) issued the Exposure Draft of General Purpose Financial Reporting XBRL Taxonomy for Commercial and Industrial Companies (ICAI, 2008) [25] and had requested public comments by October 2008. It is interesting to see that the drive for XBRL came originally from practice, however a handful of researchers have taken keen interest in exploring the value of XBRL and related issues from a research perspective.

"A lot of companies with different backgrounds joined the XBRL committee, like banks, auditing and accounting firms, as well as software developing companies. The effort of promoting XBRL leads to increased popularity: XBRL is moving into the mainstream. Organizations need to be proactive in responding to XBRL, whether their use of XBRL is going to be voluntary or mandated by an outside organization such as regulatory bodies or banks" (Gray & White, 2005) [21].

In cooperation they wanted to develop a first version of XBRL. "In 2001 the first global meetings were held in London, New Orleans and Sydney. In December 2001 XBRL 2.0 is released, one year after the first XBRL 1.0 specification for financial statements was released for commercial and industrial companies in the United States" (XBRL International, 2009) [48].

If XBRL wants to be a well-accepted standard, it needs continuous improvements and has to be up-to-date to the developments and regulations in the market: "The standards and taxonomies are constantly evolving based on industry and IT input. XBRL International oversees global cooperative efforts and different national chapters' works on the ground to lobby for and actively promote the implementation of XBRL reporting by companies" (Dye, 2009) [13]. In 2002 the Australian Prudential Regulation Authority (APRA) was the first company using XBRL in daily business, when it announced "that XBRL is being used to overhaul data collection from 11,000 super funds, insurers and banks required to report to it on a regular basis" (XBRL International, 2009) [48].

A few years later, the U.S. Securities and Exchange Commission (SEC) encouraged companies to use XBRL as well: "In an effort to make financial statements machine-readable, to increase the accuracy and quality of financial data, and to reduce the cost of financial reporting, the SEC began its Voluntary Filing Program (VFP) for XBRL in 2005. In return, the companies that participated in the test program received accelerated reviews by the SEC on their financial documents" (Choi, Grant, & Luzi, 2008) [4].

Since 2009 it is mandatory for the 500 biggest companies listed in the US to report in XBRL. As a lot of companies in the United States have to report in XBRL, it is likely that the speed of development will increase now. As now about 6000 companies have to report in XBRL in Delhi. Afterwards more possibilities to use XBRL will be discovered: "Currently, the market's focus around XBRL has been on its benefits for those outside an organization. For companies, XBRL implementations have mostly been about complying with SEC reporting requirements" (Ohata, 2008) [30]. When more companies deal with XBRL, even if their incentive is just compliance, it might be possible that they will discover more benefits of using XBRL. Especially internal benefits by using XBRL are promoted, but so far there are not many solutions available. The empirical chapter will examine if the interviewed experts see potential for internal use of XBRL.

4. Summary and conclusion

In conclusion, we have introduced the basics of XBRL technology and how it would benefit the process of reporting, sharing, aggregating, and transporting of business information efficiently and effectively. We have also discussed the current status of research related to XBRL technology. In particular, we have paid special attention to the research related to description of XBRL, history of XBRL. Since then it has grown to become a global phenomenon. Currently the "XBRL-adopting countries include Australia, Belgium, Canada, China, Denmark, France, Germany, Greece, India, Ireland, Israel, Japan, Korea, Luxembourg, the Netherlands, New Zealand, Norway, Singapore, Spain, Sweden, Thailand, United Kingdom, and the United States of America (XBRL International, 2009 [48]; Debreceny *et al*., 2009) [8]." From the literature we can conclude that XBRL is an important tool for the financial reporting it increase the efficiency and transparency in the company. XBRL improves the standard of financial reporting which gives unique results. After using of XBRL format, companies are able to compare their reports with related companies and make it convenient to each other for making comparative study. XBRL is machine readable programme and it is free to access. It gives help in making policies and strategies for the government and increased good governance.

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