



## Extensible Business Reporting Language (XBRL): A Tool for Accounting Education in the 21st Century

Samuel FABOYEDE<sup>a</sup> Obiamaka NWOBUB<sup>b</sup> Oladimeji AKANDE<sup>c</sup> Olufemi OLADIPO<sup>d</sup>

<sup>a</sup> PhD, Covenant University, Nigeria, [samuel.faboyede@covenantuniversity.edu.ng](mailto:samuel.faboyede@covenantuniversity.edu.ng)

<sup>b</sup> Covenant University, Nigeria, [obiamaka.nwobu@covenantuniversity.edu.ng](mailto:obiamaka.nwobu@covenantuniversity.edu.ng)

<sup>c</sup> International University, Benin, [akande\\_deji@yahoo.com](mailto:akande_deji@yahoo.com)

<sup>d</sup> Landmark University, Nigeria, [oladipo.olufemi@lmu.edu.ng](mailto:oladipo.olufemi@lmu.edu.ng)

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### **Keywords**

XBRL, Financial Reporting, Business Information, 21st Century, Accounting Education.

### **Jel Classification**

I29, M41.

### **Abstract**

21st century education standards focus on 21st century skills, content knowledge and expertise. Technology advances such as eXtensible Business Reporting Language (XBRL) have revolutionized the way information is exchanged and the way business is conducted. These days, speed is of the essence and loss of accuracy, lack of transparency, and difficulty in analysis are increasingly becoming apparent risks. This research exposes XBRL as a phenomenon that represents the future of global accounting education. It discusses the concept and need for XBRL as well as its potential uses and challenges. The research found that there is an ongoing transformation in the way business is conducted and regulated world-wide. The onslaught of the information revolution has profound ramifications for corporate reporting information preparers and users. It therefore recommends that the greater the degree of collaboration between all participants in the financial information supply chain, including government regulators and public sector accountants, the greater the benefits that this information format enables for all participants, educationists, academics, companies, regulators, investors, and government agencies alike.

## **1. Introduction**

The twenty-first century has witnessed a changing world where people learn, live and work in new ways. New ways of teaching, learning, and evaluating are evolving and new insights from research and observations emerge all the time. Twenty first century education standards are characterized by a focus on 21st century skills underlined by content knowledge and expertise, building understanding across and among core subjects as well as new interdisciplinary themes, emphasizing deep understanding rather than shallow knowledge, engaging students with the real world data, tools, and experts they will encounter in college, on the job, and in life, actively engaging students in solving meaningful problems, and allowing for multiple measures of mastery (Solomon, n.d.) The next step forward for twenty-first century business or accounting education is the move to educate on how to become entirely 'paperless' by removing paper from business workflows. This is because sharing information has become increasingly easier since the advent of the internet; businesses have become increasingly reliant on technology in order to cut costs and increase efficiencies as well as effectiveness. Presently, most financial reports are available free of charge on company websites for public companies and also filed with financial databases such as SEDAR (Canada) and EDGAR (America). There is the bid to overcome the many problems associated with 'paper based' reports. Paper reports cannot keep up with snappy financial analysis and the needs of investors and information users which are real time in nature. Extensible Business Reporting Language (XBRL), a new global language for managing and manipulating information more easily, aims to resolve these paper-related reporting concerns. XBRL is a game changer in the world of financial reporting because it will become the new global format for financial reports due to its potential to change the way accountants communicate information (Naseem, 2011; Kernan, 2008).

This paper brings to the fore the ways the XBRL is altering the terrain of accounting education all over the world. For accountants and business practitioners, it will no longer be business as usual as change becomes a necessary advancement shift.

## **2. The Essence of Accounting Education**

In today's business world, accounting is one discipline of study that all people, regardless of job position, should have some knowledge of. Its concepts can be applied to all job specialties because it is useful in people's everyday lives. An understanding of accounting education is necessary for every corporate stakeholder. For instance, secretaries must use accounting skills to manage the company check book and orders, auditors must study financial

statements in order to evaluate the accuracy and integrity of the business, and executives need to judge the success of their business using accounting statements from the past and present. In recent years, it has become imperative for students and people in the business world to be held more accountable for their financial practices as a result of past rampant fraudulent/illegal accounting practices and the avoidance of any future misstatements unintentionally occurring. Accounting education is useful for personal benefits such as making investment decisions, assessing interest rates to pay off house mortgages, and calculate rates for car payments. Accounting is the most basic framework of business that prepares people for the real world (Fisher, n.d.).

Businesses or entrepreneurs that care less about the financial insight depth and planning that accountants offer have experienced their Waterloo. This is because accountants bring to the table the following values: (i) they allow entrepreneurs to focus on why the business came into existence (ii) they enable entrepreneurs to achieve a work/life right balance (iii) accountants portray businesses professionally or in the best possible way (iv) accounting service is vital or a critical element to the success of businesses (v) accountants can provide new perspectives or ideas to business operations (vi) accountants have a wide reach as they possess insights and knowledge across businesses or industries (vii) good accountants partner with businesses to look at data and build planning roadmaps for success (viii) accountants understand tax compliance, and (ix) accountants analyze data for growth and profitability opportunities (BusinessDay Editor, 2014)

Required qualitative characteristics for accounting educational information include: relevance, reliability, comparability, consistency, understandability, usefulness, materiality, and conservatism. As a result, accounting education information serves as the basis for decision making purposes. The information must make a difference, be of relative significance, be prudent, be verifiable, factual, and neutral. It should be comparable among different entities and consistently prepared from year to year. These qualities make accounting information understandable and useful for decision and reporting reasons desired by current and potential investors, creditors, government, standard-setting bodies, and other stakeholders (Simple Studies, 2012).

### **3. The Necessity for XBRL**

Although the Internet has forever changed expectations about communications, recent market events have shown that corporate communications methods are obsolete and not meeting the needs of the markets. There has been a growing demand for businesses to

disclose more relevant information to an ever-wider group of stakeholders, on a more frequent and timely basis. The Internet has not yet provided a consistent way for users to extract and analyze data, including the information that companies disseminate in corporate reports, press releases, and other communications posted online. To date, there has been a problem with communicating accurate and unambiguous financial information effectively across the Internet. Incompatible systems and software have prevented genuine cross-platform communication and data sharing, and limited the usefulness and transparency of the reported information. This has left both companies and capital markets little better off than in the days of the printing press. Dealing with financial information in electronic form can be complicated, unwieldy, and time wasting. The problem of having too many formats for reporting company financial information e.g. formats in HTML, Excel, Word or PDF, constitutes a usability challenge. There is also the challenge of financial information having to be modified for different parties after preparation because the information needs of users of accounting information differ (Naseem, 2011). In traditional financial reporting, the accuracy of information search engines has been low and getting smoothly details of relevant disclosures as well as underlying notes to information items has also been a challenge (Mehta and Mehta Legal Ltd, 2014; Faboyede and Mukoro, 2008).

High profile corporate failures have outlined the need for transparency and call for change in the way companies report to investors and financial markets. There are regulatory demands for more timely information, more comprehensive information and new types of information. Businesses are also looking to use their reports as part of their competitive arsenal including for instance environmental and similar reports on corporate sustainability.

#### **4. The Evolution of XBRL**

The coming of eXtensible Business Reporting Language (XBRL) marks the advent of greater transparency in financial reporting which accounting professional bodies have always desired. The history of XBRL goes back to a CPA practicing in Washington, Charles Hoffman. He saw the problems that were inherent with managing the different file formats and began experimenting with XML as a way to solve them. He approached the AICPA with his idea and this eventually led to the development of the XBRL International consortium that is charged with the further development of the platform. XBRL originated at the AICPA, which provided the initial funding for research and development and was a founding member of both XBRL US, an organization that began as an executive committee of the Institute, and XBRL International, a consortium of 650 companies and agencies (AICPA, 2013). The XBRL

International Consortium provides the worldwide agreement on this Internet-based information standard. The evolution of information formats – from clay tablets and printed pages through e-mail, web sites, and PDF-files to XBRL – is central to any progress in enhancing the transparency of financial markets. The consortium has been very successful persuading many countries and major stock exchanges to adopt XBRL. According to Jones and Willis (2003), the XBRL International is the focal point of the accounting industry's collaboration with major companies, industry organizations, regulators, software makers and other organizations from all over the world.

## **5. The XBRL Concept**

XBRL is an independent language platform that can support both financial and non-financial data. It uses four basic documents namely (1) the XBRL specification- provides the fundamental technical definition of XBRL framework (2) XBRL taxonomies-which are a bit like dictionaries because they contain definitions of data tags, the data tags themselves and the relationships between tagged items (3) XBRL instance documents- which essentially mean the coming together of the taxonomy and the XBRL specification in the context of a financial report (4) style sheets-which convert the machine-readable instance document into a form that is readable by humans. XBRL is a freely available Internet-based standard that allows for greater transparency and comparability of financial and other business information. It is the latest information format for business reporting. The XBRL is a language that can be understood by both computers and humans and it is being developed in collaboration so that there is broad agreement on its content.

The XBRL concept is underlined by the Extensible Markup Language (XML) which is an exciting new Internet technology that is already being used for the electronic exchange of transaction data in a wide range of companies, both internally and externally, and across supply chains enhancing the exchange of information, goods and services. The application of XML for accounting entries and business reporting information is called the “Extensible Business Reporting Language” or XBRL. XBRL is an interoperable information format that facilitates the exchange of business reporting data between disparate information systems. It provides a common way for disparate information systems to exchange business reporting data. With XBRL, extracts from the XBRL based electronic information can then be published as conventional human readable documents on Internet sites at the touch of a button when agreed labels have been added. This will allow both internal users and external users, via the

Internet, to efficiently seek out, identify, select, and import such information directly into software on their own computers (Jones and Willis, 2003).

XBRL is an open standard that uses data item tagging for financial reporting. All numerical information are tagged using standard taxonomies which make the actual format of the financial statements irrelevant. XBRL tagged documents can be combined with a 'style sheet' to produce statements similar to their hard-copy versions. With XBRL, there is no need for specialized software or infrastructure. Once information has been tagged, it can be manipulated by external parties and companies can embed details for external parties thus eliminating the need for different reports altogether.

## **6. The Effects of XBRL on the Accounting Profession**

The high practical relevance of XBRL (Extensible Business Reporting Language) is emphasized by several laws and a large number of regulatory requirements stipulating the use of XBRL for business and financial reporting. XBRL is a key element in addressing today's corporate communication and information processing failures. The broad implications are revolutionary: unprecedented levels of connectivity amongst individuals, companies, regulators, and other stakeholders resulting in enhanced and effective information exchanges. Corporate internal and external reporting have taken a turn for the best due to the XBRL enabled possibilities in the collection, consolidation, and publication of information. XBRL enables core data to be presented in more than one format or report and is therefore sufficiently flexible to accommodate new reports and additional content. How information is reported (format and presentation) has also been revolutionized because XBRL is platform independent.

Irrespective of whatever type of computer or software being used, XBRL information is the same as it allows all recipients of financial information provided in the XBRL format to analyze and use precisely categorized information instantly, with no need to re-key or convert to other formats. The need for human intervention when moving financial and business reporting information from one system or organization to another is reduced (Jones and Willis, 2003).

Unlike traditional reporting methods, XBRL effectively frees information from the constraints of time and place and provides crispness and clarity. Information preparers will be able to channel information in their financial statements without distortion, directly into the myriad of analytic tools of their investors and other stakeholders, all in a single format. Some of the most prominent benefits of the XBRL adoption for information dissemination

include: lower preparation costs; reduced preparation time; simplified international access; broader information availability; enhanced analytical capabilities; more informed investment decisions; and more trustworthy information when associated with a digital signature (Sheridan and Drew, 2012).

XBRL is capable of doing the following functions as it uses eXtensible Mark-up Language (XML) which improves Internet-based communication by enabling these functions. The functions include: Relevance to individual users by providing a structure and context for data, Interoperability between disparate software applications by enabling applications to exchange data seamlessly, Diversity in the use of data from a single source by separating data from its presentation style, Re-usability of data by separating data from application logic, Greater efficiency at a lower cost, Enhanced digital signatures that allow users to authenticate the source and integrity of the information presented, Validation that information complies with pre-set rules, Linkages to other relevant internal and external content, and An application or system independent environment.

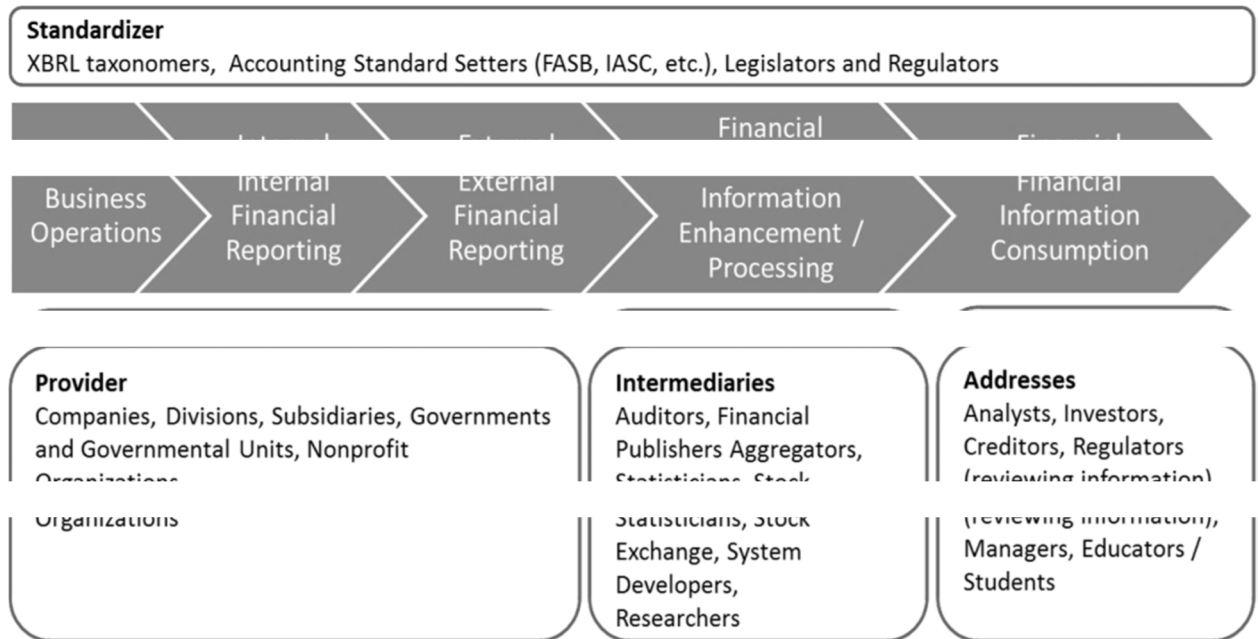
Several stakeholders in business and production supply chain are already clamoring for the XBRL reporting push. Leading market establishments want their stakeholders to have every communication advantage for analysis and assessment. Creditors seek to gain from the more efficient processing format of XBRL. Governments want to be better and successful at regulator processes and administrative functions. Information service providers and analysts want better access to already reported financial information. Also, smaller and less well-known public companies seek to grow and gain the market's attention. It is the desire of all emerging companies to attract capital from investors and gain coverage from financial firms which, before now, could not have committed money or resources to tracking smaller companies (PricewaterhouseCoopers, 2002)

With XBRL, accountants and auditors will be able to reduce information asymmetry which is a primary goal of the profession. Auditors will have to adapt their audit approach to incorporate XBRL document audit into the regular financial statement audits. The audit approach will forever be changed since auditors will increasingly have to rely on internal controls to carry out audits.

As of today, some of the world's biggest economies such as the U.S., China, France, and Japan companies are obliged to use XBRL for financial reporting. Many more countries such as Germany and India have also started to follow. As a result, attention from business, market,

research and academic sectors around the globe and from various disciplines has been drawn towards XBRL (Muller-Wickop, Schultz, and Nuttgens, 2012).

**Figure 1. Overview of XBRL Stakeholder**



Source: (Muller-Wickop, Schultz, and Nuttgens, 2012).

**Figure 2: Impacts of XBRL**

|                    | <b>Impacts of XBRL</b>   |
|--------------------|--|
| <b>Quality</b>     | Increased Comparability/Transparency; Increased Accuracy; Improved Analysis. |
| <b>Development</b> | Improved Market Efficiency; Advanced Standardization                         |
| <b>Efficiency</b>  | Time Savings; Reduced Efforts/Costs; Improved Communication                  |
| <b>Flexibility</b> | System Flexibility; Conceptual Flexibility                                   |

Adapted from: Muller-Wickop, Schultz, and Nuttgens, 2012



## **7. Concerns About XBRL**

The hysteria and prospects of XBRL as a communication tool are not being echoed by top management as they view the change as just another format change that regulators require and that corporations will have to comply with, as a cost of doing business. Further, XBRL will only work if the collaborative efforts that have contributed to its development to date continue to flourish and the business information supply chain participants continue to deliver. The greater the number of parties who actively participate in XBRL development, the stronger that bridge will be and more informed decisions will be the result. This will be a very beneficial outcome to all supply chain participants.

There are challenges relating to data quality, adoption effort, and uncertainty. Under data quality, there are characteristics based issues which border on data credibility and processing. There is the authenticity issue because data can easily be changed without leaving a trace and the exchange of information needs to be secured. Data security, authentication, validity and integrity issues arise as the revelation of inconsistencies by validation software reports may lead stakeholders to question the reliability and quality of XBRL data without investigating the numbers. Also, speaking in term of empirical investigations, it has been found out that the complexity of XBRL may introduce errors. There are multiple vendors with different approaches to creating, collecting, and viewing XBRL information. There is no standard way to protect the integrity and validity of the XBRL data once it is created nor to easily reconcile it with physical representations of the information. These barriers must be overcome to achieve widespread adoption of XBRL (Adobe Systems Incorporated, 2006; Beers, 2011).

Processing challenges arise mainly due to the tagging process which is complicated but required in order to convert financial information into an XBRL document. The technical validation rules of XBRL cannot measure the appropriateness of the tags applied to financial information. Auditors therefore need to extend their procedures to include the tagging and provide assurance. This is a need which potentially may complicate the audit process. It is also not clear how the materiality concept will be applied in an XBRL environment. There are also needs for compliance with accounting standards in taxonomy extensions and making changes to internal and external controls.

In respect of adoption effort, implementation of XBRL entails remarkable effort especially for the organizations providing XBRL formatted information. These include building up relevant Knowledge (intangible asset) and acquiring necessary infrastructure and software

tools. There is need for expertise knowledge as well as additional learning to understand complex taxonomies/procedures. In term of infrastructure, there is the necessity for new/updated software infrastructure in order to fully utilize the XBRL. There are also increased software acquisition and auditing direct costs.

Uncertain software supports will make the realization of XBRL benefits very difficult. Reasons such as lack of demand, XBRL complexity, lack of expertise, and threats of free XBRL-enabled applications will bring about limited offerings of XBRL tools. Uncertain future development also exists in areas which include: limited number of success stories, small number of listed companies, limited evidence of XBRL benefits, unforeseen implementation effort, post-adoption maintenance costs, and lack of awareness about XBRL advantages. These all may negatively affect the adoption decision of several stakeholders. Further, the benefits of XBRL are not expected to be immediate but will accumulate over time. For small and medium size companies, it is stated that benefits of XBRL are limited as the reporting requirements are relatively straightforward.

Finally, there are standardization issues as financial reporting, disclosure practices and legal aspects vary among countries and between industries. There is thus considerable need for increased coordination effort for taxonomy design with complex interactions amongst diverse organizations. Standards at different steps in the reporting supply chain or for different stakeholders and countries lead to confusion and do not correspond to the increasing demand for standardization in the capital markets (Muller-Wickop, Schultz, and Nuttgens, 2012).

## **8. Conclusion and Recommendations**

XBRL, an accounting and a financial/business reporting tool, plays a central role in developing and redefining standards for communication globally now and in the future. In today's litigious business climate, all businesses are deluged with more requests to provide a wider variety of information, yet most businesses are ill-equipped to deliver it. XBRL is an XML based information format that places self-describing tags around discrete pieces of business information. Once tags are assigned, it is possible to extract only desired information, rather than having to download or print an entire document. It is platform-independent because it will work on any current or recent-year operating system, or any computer and interface with virtually any software. The flexibility of XBRL allows a financial report created in one software to be transferred to someone using an entirely different software. XBRL will allow the recipients to easily import the data right into their own

software application. The purpose of XBRL is not to redefine accounting terms or replace existing accounting principles but to provide universal definitions for existing terms so that business information on the Internet can be read and understood by disparate reporting and analytical software without any intervention by human hands and without regard to which system originates or consumes the information. The XBRL brings to bear beneficial effects such as lowering the cost of information production and consumption, increasing the speed of information exchange, and enhancing access and re-use of information so that reports become more relevant to their audiences.

In view of the great importance of XBRL to future reporting and accounting education in the 21st century, the following recommendations have been found appropriate by this research:

- (a) Professional accounting bodies, academic institutions, and research organizations should embrace the discovery, dissemination and adoption of the XBRL reporting concept.
- (b) Regulatory bodies such as the Securities and Exchange Commission (SEC), Financial Reporting Council (FRC), Central Bank (CB), National Universities Commission (NUC) etc should take the lead in charting the XBRL based new course for business reporting by conducting pivotal researches, creating awareness, and setting timelines for implementation.
- (c) Local organizations and institutions should become early XBRL based information filers by having early and detailed discussions with their boards, audit committees, legal counsel, auditors, and any third parties assisting them to help ensure that all parties understand the expectations, the timeline and the essence of XBRL adoption as well as the risks related to inaccurate or late submission of the XBRL Exhibits.
- (d) There is need for maximum and continuous support or cooperation from all stakeholder institutions interested in XBRL to join the XBRL international group for the design and adoption of seamless and universal XBRL taxonomies which will be useful to all and sundry.
- (e) All professionals in the Information, Communications, and Technology discipline as well as standards-setting bodies should be a part of the XBRL vanguard by updating themselves, the current standards, and the existing applicable software infrastructures across borders.

- (f) Accounting and business educators need to expand their knowledge and curricular horizons by integrating the revolutionary phenomenon of XBRL based global reporting.

## **References**

- [1] Adobe Systems Incorporated (2006) Accelerating XBRL Adoption: An Intelligent Approach to Business Reporting. Retrieved September 18, 2015 from [http://www.adobe.com/financial/pdfs/xbml\\_wp.pdf](http://www.adobe.com/financial/pdfs/xbml_wp.pdf)
- [2] AICPA (2013) The AICPA: Creating a 21st Century Profession. Retrieved September 21, 2015 from <http://www.aicpa.org/About/downloadabledocuments/aicpa-cpa-profession-21st-century-brochure.pdf>
- [3] Beers, A. (2011) XBRL Made Easy. Retrieved June 14, 2016 from [www.aicpastore.com/content/media/producer\\_producer/newsletters/articles\\_2011/CorpFin/XBRL\\_Made\\_Easy.jsp](http://www.aicpastore.com/content/media/producer_producer/newsletters/articles_2011/CorpFin/XBRL_Made_Easy.jsp)
- {4} BusinessDay Editor (2014) Hiring an Accountant is an Investment! BusinessDay September 1, Retrieved September 19, 2015 from <http://businessdayonline.com/2014/09/hiring-an-accountant-is-an-investment/#.VC1YRlcbZdg>
- {5} Faboyede S. and Mukoro, D. (2008) "Financial Reporting Using XBRL: A Roadmap To Vision 2020". Lagos Journal of Banking, Finance, and Economic Issues , Vol 2 No 1, July, pp 207-220.
- [6] Fisher, M. (n.d.) The Importance of Accounting in Today's World. Retrieved September 20, 2015 from [fisher.osu.edu/~young.53/Sample6.doc](http://fisher.osu.edu/~young.53/Sample6.doc)
- [7] Jones, A. and Willis, M. (2003) The Challenge of XBRL: Business Reporting for the Investor. Retrieved October 1, 2015 from [https://www.pwc.com/en\\_GX/gx/xbml/pdf/pwc\\_balsheet.pdf](https://www.pwc.com/en_GX/gx/xbml/pdf/pwc_balsheet.pdf)
- [8] Kernan, K. (2008) XBRL Around the World. Retrieved June 15, 2016 from [www.journalofaccountancy.com/issues/2008/Oct/XBRLAroundTheWorld.htm](http://www.journalofaccountancy.com/issues/2008/Oct/XBRLAroundTheWorld.htm)
- {9} Mehta and Mehta Legal Ltd (2014) Introduction to XBRL. Retrieved September 23, 2015 from <http://www.mehta-mehtaadvisory.com/wp-content/uploads/2011/09/XBRL-PPT.ppt>
- [10] Muller-Wickop, N., Schultz, M., and Nuttgens, M. (2012) XBRL: Impacts, Issues, and Future Research Directions. Retrieved September 23, 2015 from [https://www.wiso.uni-hamburg.de/fileadmin/wiso\\_fs\\_wi/Publikationen/FinanceCom\\_-\\_2012\\_-\\_XBRL.pdf](https://www.wiso.uni-hamburg.de/fileadmin/wiso_fs_wi/Publikationen/FinanceCom_-_2012_-_XBRL.pdf)
- [11] Naseem, D. (2011) eXtensible Business Reporting Language (XBRL). ACC 626 Term Paper, University of Waterloo. Retrieved September 24, 2015 from <http://uwcisa.uwaterloo.ca/Biblio2/Topic/ACC626%2520eXtensible%2520Business%2520Reporting%2>

- [12] PriceWaterHouse Coopers (2002) Corporate Communications for the 21st Century. Accessed September 24, 2015 from [https://www.pwc.com/en\\_GX/gx/xbrl/pdf/corporatecommunications\\_21st\\_century.pdf](https://www.pwc.com/en_GX/gx/xbrl/pdf/corporatecommunications_21st_century.pdf)
- [13] Sheridan, B. and Drew, J. (2012) The Future is Now: XBRL Emerges as Career Niche. Retrieved September 25, 2015 from <http://www.journalofaccountancy.com/Issues/2012/Jun/20124962.htm>
- {14} Simple Studies (2012) What are the Qualities of Accounting Information? Available September 19, 2015 from <http://simplestudies.com/what-are-the-qualities-of-accounting-information.html>
- {15} Solomon, G. (n.d.) Education for the 21st Century: The Basics. Available September 19, 2015 from <http://www.smlcs.org/publications/21stcenturyeducation.pdf>