A Study on Cost-Benefit Analysis of XBRL Reporting on Financial Data Ecosystem

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Abstract

XBRL is a financial reporting language which is based on XML. As a new language of financial reporting adopted worldwide this paper is to look at implementation of XBRL and any known costs associated with these procedures. The benefits of XBRL adoption, implementation, and use are also examined. A cost-benefit analysis approach is being utilized to examine XBRL, as a working concept. In theory, due to the removal of data entry repetition and standardization of financial data, costs should be greatly diminished. Reducing the likelihood of errors will also constitute a cost savings. This paper sets out to establish the benefits of XBRL use and promote the adoption and implementation of the XBRL system in India.

Keywords: XBRL, XML, Financial Ecosystem, ERP, XFRML

Introduction

A data ecosystem represents effective transmission of structured data by the data providers to the data consumers. In the financial data ecosystem the financial information providers may be the central bank, SEBI and the consumers may be investors, credit agencies etc. The financial information required by the users in making economic decisions consists of accurate information about the financial position, performance and changes in financial position. This information can be disseminated through financial statements. The financial statements may include the balance sheet, income statement, statement on retained earnings, cash flow statement. These financial statements are prepared with a set of rules and regulations known as accounting standards in order to avoid the incompatibilities between financial statements prepared by different companies. For different financial reports the data required will often spread out in different documents in different formats throughout the organization. In order to fit to a given report the data may be required to be re-typed, reformatted and manipulated manually. The manually entered data will pose certain issues like - error prone, difficult to retrieve; verification of data accuracy is costly and time consuming.

The above mentioned flaws in financial reporting can be avoided through implementing XBRL. This is being regarded as a new way to business reporting. XBRL (Extensible business reporting language) is an XML based vocabulary for electronic transmission of business and financial data. XBRL can be better understood as a bar code for financial statements. Through this an electronically readable tag (bar code) is put on each financial statement element that provides additional information. Staying with this analogy, if one looked at the bar code on an item in the grocery store, the code would contain a series of bars with little relevance. However, with the proper tool to read the code, it would tell the product, the size, the cost, the vendor and the expiration date. XBRL operates in a similar fashion. The electronic tag assigned to each financial statement element contains further information or context regarding that element. This will benefit the users of financial statement information that they can now electronically retrieve data in a matter of seconds with the additional context that is provided by the tags and with greater assurance of accuracy given the standardized context of the tags. XBRL uses standardized XML technology; that can be read by multiple, diverse software systems.
As standardized, the expandability of the taxonomies allows company specific and unique information to be captured and reported accurately. XBRL also helped in reducing the processing cost and time, bringing consistency and providing flexibility. In this context, financial reporting through XBRL is a step in the right direction towards transparency, timeliness, and relevance of financial reporting information. Thus, the regulators, government alike make XBRL financial reporting as mandatory, so that they can keep vigil on the business performances thereby reducing the fraud. Making the XBRL filing mandatory means investors will be relying on and comparing the available data in taking investment decisions.

Objective and Methodology

As a new tool for financial reporting in the digital world, the present work has embarked on the theoretical aspects of the costs and benefits of financial reporting through XBRL on financial data ecosystem. In this respect our methodology is based on the articles published in scholarly journals. Therefore, leading journals of finance, auditing, accounting and information science domain were identified and searched. Thus scholarly databases covering all domain journals are queried using the search term “XBRL”. For this purpose, the databases like Pro Quest, Science Direct and EBSCO are queried with the search term.

Literature Review

The revolution in Information and Communication Technology has given birth to ERP systems to deal with the complexities in the accounting process of an MNC. Thus preparation of consolidated financial statements now-a-days is not a time consuming affair. The financial statements are being prepared to cater to the diverse needs of stakeholders, who always try to get the right information on a company performance in a timely and consolidated way. But the information is provided in many different proprietary data formats, making it difficult to access, integrate and analyze in a timely, complete and accurate manner. Therefore the need was felt for a universal financial reporting system that will wade away the deficiencies in the traditional reporting system. This has given birth to XBRL, through set up of XBRL International Inc., and the XBRL Steering Committee in August 1999 by AICPA. The original Steering Committee was comprised of twelve member companies, along with the AICPA. Currently, membership has grown to include over 400 companies and agencies worldwide. The group was formed as a non-profit global consortium of companies and agencies with one common goal, the development of XBRL and the widespread acceptance and use of the new global coding standardization process for financial information. But prior to AICPA’s endeavor, Charles Hoffman, the Certified Public Accountant (CPA) is known as the founder of XBRL. In 1997 “Charlie Hoffman (CPA, Knight Vale & Gregory, Washington, US) proposes using XML for financial reporting” [1]. Hoffman’s “idea was quickly supported by the American Institute of Certified Public Accountants (AICPA) in developing the first prototype” [2]. In order to start a controlled development of the XBRL technology a steering committee was set up with granted funds.

The benefits of XBRL as a means of financial reporting come in the future when tagged information is readily available from all companies and can be accessed electronically for analysis, benchmarking, and reporting uses and financial modeling. Various literature has highlighted the potential benefits of XBRL in cost efficiency, automated exchange, great scope and reach of business information, frequency, timeliness, accuracy, reliability and accessibility of information [3]. XBRL has the potential to support most of the goals of corporate governance stakeholders and to significantly improve governance. The literature has also acknowledged that these benefits can only be realized under satisfactory IT and social environments. It is argued that XBRL will increase transparency through the use of official taxonomies so the reported facts are clear and well documented for the users [3]. Not only can XBRL enhance external financial reporting, but it can also be applied internally for cost accounting, performance measurement, analysis and decision-making purposes. Analysts and investors will be able to dramatically increase their breadth of knowledge with financial data readily available that does not require hours of manual manipulation for improved financial decision making.

A study conducted on the financial reporting through XBRL by the working group of the American Accounting Association’s Information System claim that XBRL is vital to market democratization. The group contends that XBRL can help to level the playing field by making it easier and less costly, especially for smaller investors, to obtain and analyze financial information [3]. XBRL filling will not only reduces information processing cost but its adoption will significantly cut the firm’s cost of equity capital.

Development of XBRL
In the early 1990’s it was discovered that Hypertex Markup Language (HTML) was not adequate for all users, since HTML could not interpret the content of a Web site; it was only capable of altering the appearance of a Web site. A group of engineers, with the help of the World Wide Web Consortium (W3C) developed eXtensible Markup Language (XML), and version 1.0 was released in 1998. XML uses generalized codes for tagging data, and these tags better represent the data and make it easier to utilize and manipulate [4]. Members of the accounting industry became early adopters of XML and they created a prototype language called Extensible Financial Reporting Markup Language (XFRML), specialized for their specific industry requirements [5].

Charles Hoffman, a CPA, and Wayne Harding, chairman of the AICPA’s high tech task force; had partnered and realized a need for a tagging system that identified financial data and directed the computer, in respect to the handling of the data. Relationships between the tagged data would be established by the tags, and the data would be linked to other locations [4]. They started the development of financial statements in XML, which helped lay the foundations for XBRL. In 2000, an accounting industry specific language was released, this was version 1.0 and it was renamed the eXtensible Business Reporting Language (XBRL). Currently, the industry standard is XBRL 2.1.

XBRL is a language, which has its own set of special words (codes) that make up a communications system. The XBRL specification is explained to computers through the use of two computer files, which contain the fundamental building blocks of XBRL; and these are the XBRL core schema and the XBRL meta-model. The XBRL specification describes how XML elements and attributes are organized and structured to create XBRL instance documents and taxonomy documents. The XBRL core schema describes, via a computer language called document type definition (DTD), how XBRL instance documents will be created; while the meta-model describes, via a computer language called XML Schema, how XBRL taxonomy documents will be created [6].

The instance documents contain the data of a business report, such as a financial statement, and the taxonomy documents describe the financial facts used in the business reports. The taxonomy documents contain the vocabulary of financial facts or dictionary of terms that will be used in an instance document. More than one taxonomy document may be used to describe an instance document. The instance document might have to derive information from the company taxonomy, media taxonomy, taxonomy for financial report, taxonomy for industry sector/jurisdiction, and various other taxonomy documents. After the instance document has been created, the taxonomies are checked to be XBRL compliant and the instance document has been validated; the resultant is you have a valid XBRL document. Now the information can be shared with others and can be used by computer applications. When you wish to present the information in another form, then you need to create a style sheet to express the XBRL instance document in the desired format. Different style sheets render information in different ways, for instance, financial information would need to be in HTML form before being placed on a Web site. The real benefit and associated cost savings results from the fact that no information needs to be re-keyed at any time during these style sheet applications.

Benefits of XBRL Adoption

Labour Savings: Due to the fact, that under the current non-XBRL financial reporting environment; data retrieval, extraction and input throughout the information supply chain is repetitive and results in astronomical costs. Based on Forrester Research data from 2002, U.S. companies spent $404 billion paying workers to find and re-key information, and this accounted for 11 percent of all wages paid in the United States [7]. This inefficient use of labour resulted in the SEC reviewing only 16% of the 14,000 annual corporate filings in 2001, and not having an opportunity to review Enron’s annual report or corporate filings since 1997 [8]. This inefficient use of labour resources wastes a lot of money, increases errors, and decreases worker productivity. In turn, corporate earnings can be reduced and the countries’ GDP can also be negatively affected.

Benefits of Communication

XBRL will provide tremendous benefits to the businesses at the time of data exchange or merger. This can be possible if XBRL is implanted within the businesses ERP system, then it will be easier to consolidate companies when it comes to merger and acquisitions and fair value can be arrived. According to Cotton [9], XBRL can be effectively used in consolidating subsidiaries proprietary accounting applications.

Benefits for Investors and External Analysts

There have been dramatic changes in how companies communicate with investors, customers and suppliers. The financial services
industry is dependent on the quality and timeliness of business information, perhaps more than any other industry, as it is both a user and producer of such information. Today, in many banks management information is buried under a mountain of irrelevant figures or is presented as complex raw data, whilst external sources are rarely available in reusable formats. The collection, collation and formatting of the information needed for running the business can be slow, prone to error and extremely costly. Proprietary data standards are often put in place for internal purposes but they require proprietary data translation schemes so that back-end systems are able to retrieve that information. Even less efficient, electronically delivered information on the web is today just a digital duplicate of a paper report; it is not possible to identify directly and therefore retrieve the information that is embedded in these formats (html, pdf, doc, etc). The link between format and content can only be broken by manual parsing (search and retrieval) processes, which are labour intensive, time-consuming and prone to inputting errors. These factors can drive the cost of producing information up to a level where, although the information is available, it is effectively redundant. XBRL provides a solution to many of these problems by making the reported information more flexible for interested parties to use.

Cost of XBRL Adoption

The cost of XBRL financial reporting can be divided into tangible and intangible costs. The tangible costs are easier to measure due to their physical nature, but the intangible costs, such as productivity, are more difficult to quantify, especially in the short-run. At this point in time, XBRL costs appear to be included in the financial statement under General and Administrative Expenses in the Accounting Expenses section. Therefore, to track the costs in any of the financial statements for the companies who submitted their financial reports in XBRL format is difficult if the financial reporting is being outsourced. But XBRL software can be purchased and training has to be imparted to the employees for effective filing. The only cost that can be traced is the software licence and installation cost as well as training costs, which can be capitalised. In India XBRL is available as royalty free open source software and the only cost remains is the training cost which may be very negligible.

Cost-Benefit Analysis (CBA)

The detailed analysis of costs and benefits from XBRL adoption highlighted on the fact that it is a universal information format that provides tremendous opportunities not only to the companies, investors, analysts but to the regulators also in terms of cost reduction, efficiency gains and data analysis. According to PWC, XBRL may be treated as one standard with many applications (Fig.-1).

![Diagram](source: Price Water House Cooper)
systems are able to retrieve that information. Even less efficient, electronically delivered information on the web is today just a digital duplicate of a paper report; it is not possible to identify directly and therefore retrieve the information that is embedded in these formats (html, pdf, doc, etc). The link between format and content can only be broken by manual parsing (search and retrieval) processes, which are labour intensive, time-consuming and prone to inputting errors. These factors can drive the cost of producing information up to a level where, although the information is available, it is effectively redundant. XBRL provides a solution to many of these problems by making the reported information more flexible for interested parties to use. These potential benefits will undoubtedly outweigh the cost involved in implementing XBRL reporting system [10-18].

**Conclusion**

The regulatory bodies around the world started mandating XBRL, in October 2008; Reserve Bank of India also issued its compliance for filing returns. Consequently, in early 2011, Ministry of Corporate Affairs made it compulsory to file financial statements in this format. Beyond regulatory compulsions, corporate houses should voluntarily adopt XBRL, since fully embracing of this technology offers unmatched benefits to the organisation. In India every organisation faces some teething problems while adopting a new technology, since employees are quite reluctant and do not like changes in their routine duties, processes or even in the work place. Thus it is imperative for the companies to conduct change management which help employees to embrace new technology openly.

Although, the implementation process will throw many challenges, yet it should not deter the company from the path of the bigger goal in sight. The obstacles in the path of its adoption are largely outweighed by its latent benefits to all the stakeholders of a business.

**References**

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