

An insight into XBRL [eXtensible Business Reporting Language]

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1.0 INTRODUCTION

XBRL stands for eXtensible Business Reporting Language. It is one of a family of "XML" languages which is becoming a standard means of communicating information between businesses and on the internet. XBRL provides major benefits in the preparation, analysis and communication of business information and is fast becoming an accepted reporting language globally. It offers major benefits to all those who have to create, transmit, use or analyse such information.

Let us take a closer look at the meaning of the term:

a. **Extensible:** means the user can extend the application of a particular business data beyond its original intended purpose and the major advantage is that the extended use can be determined even by the users and not just the ones who merely prepare the business data. This is achieved by adding tags which are both human and machine readable – describing what the data is.

The property of extensibility is very handy in situations when list of items reported for various elements of the financial statements are not the same across firms, industries, and countries. For example, many an item constituting non-current assets in Oil and Gas Industry (items like rigs, exploratory oil and gas wells) may not be applicable to companies in general. In a situation of this kind, XBRL may prepare a taxonomy called a 'Global Common Document' (GCD) for items common to all the firms, industries, and countries. And, any country specific, industry specific and firm-specific variations (extensions / limitations) can, then, be written as independent taxonomies that can be imported and incorporated with the GCD.

b. **Business:** means relevant to the type of business transaction. XBRL focus is on describing the financial statements for both public and private companies.

c. **Reporting:** the intention behind promoting use of XBRL is to have all companies report their financial statements in a consolidated manner using the specified formats.

d. **Language:** XBRL is based on XML, which prescribes the manner in which the data can be “marked-up” or “tagged” to make it more meaningful to human readers as well as to computers-based system.

Potential XBRL applications:

- a) XBRL for Financial Statements - financial statements of all sorts used to exchange financial information
- b) XBRL for Taxes -specification for tax returns which are filed and information exchanged for items which end up on tax returns
- c) XBRL for Regulatory Filings – specifications for the large number of filings required by government and regulatory bodies
- d) XBRL for Accounting and Business Reports - management and accounting reporting such as all the reports that are created by your accounting system rendered in XML to make re-using them possible
- e) XBRL for Authoritative Literature - a standard way for describing accounting related authoritative literature published by the AICPA, FASB, ASB, and others to make using these resources easier, "drill downs" into literature from financials possible

There is a dramatic improvement in processing of Financial Statements as XBRL documents can be prepared efficiently, extracted reliably, published more easily, analyzed quickly, retrieved by investors simply, and enables smarter investments.

XBRL solves two significant issues. The first issue is that preparing a financial statement for printing, for a Web site, and for filing today means that a company could typically enter information three times. With XBRL, information will be entered once and the same information will be “rendered” as a printed financial statement, an HTML document for a Web site, an EDGAR (Electronic Data Gathering, Analysis, Retrieval) filing file, a raw XML file, or a specialized reporting format such as periodic banking and other regulatory reports.

The second issue is that earlier, extracting specified detailed information from a financial statement, even an electronic financial statement like a regulatory filing, was a manual process. For example, a company cannot tell a computer program to “Get the prepaid expenses for 2008” from an electronic financial statement. If a financial statement is prepared using XBRL, computer programs can easily extract every piece of information in that statement

2.0 EVOLUTION OF XRBL

Brief History

The inception of XBRL can be traced back to **April 1998**, when **Charles Hoffman**, a CPA with Knight Vale and Gregory, a Washington based firm, investigated how XML could be used for electronic reporting of financial information. Charles Hoffman along with the High Task Force of the AICPA began developing prototypes of financial statements and audit schedules using XML.

In **January 1999**, the completed prototype (ultimately named XBRL) was handed over to the AICPA, which agreed that XBRL was important to the Accounting profession. Later in **June 1999**, Charles Hoffman along with his associates created a business plan for XML-based financial statements, originally code named **XFRML** (later changed to XBRL).

In **August 1999** an **XBRL Steering Committee** was formed comprising twelve companies along with the AICPA as its members. These twelve companies were Arthur Andersen LLP, Deloitte & Touche LLP, e-content company, Ernst & Young LLP, FreeEDGAR.com, Inc. (now Edgar Online, Inc.), FRx Software Corporation, Great Plains, KPMG LLP, Cohen Computer Consulting, Microsoft Corporation, PricewaterhouseCoopers LLP, and The Woodburn Group.

In **October 1999**, the XBRL Steering Committee’s first meeting took place in New York, where the development began on the **first taxonomy** namely - **XBRL for Financial Statements for the Commercial and Industrial Sector**, which represented about 80% of all publicly-traded U.S. companies.

In **April 2000**, the **new brand** for the technology namely “**XBRL**” was unveiled for the first time in a press conference held in New York.

In **July 2000**, the Steering Committee released **Specification 1.0**, the first XBRL Specification for Financial Statements for Commercial and Industrial Companies in the United States.

Around the same time, the Committee also announced the formation of a non-profit international organization namely **XBRL International**, for rapid global expansion and adoption of XBRL. Membership in the XBRL Steering Committee grew to more than 50 entities, including several international professional organizations.

In **August 2000**, **Bill Gates** declared XML to be the next revolution on the Internet and announced the .net strategy, which included XML tools in upcoming Microsoft products.

In **June 2001**, XBRL International announced development efforts to create **XBRL for General Ledger** to allow tagged data to be moved into and out of the general ledger. This would serve as a bridge between business reporting and transaction reporting.

In **October 2001**, XBRL Australia, XBRL Canada, XBRL Germany, XBRL IASB, XBRL Japan, XBRL-Netherlands, and XBRL-UK formed the **first jurisdictions under XBRL International** to support the development of XBRL.

In **December 2001**, XBRL International finalised **XBRL 2.0**, the Enhanced XML Schema-Based Specification for Global Business Reporting. This release implemented the new World Wide Web Consortium (W3C) XML Schema Recommendation and utilised other new technologies such as XML Linking.

In **December 2003**, XBRL International issued a **Public Working Draft** of the **XBRL 2.1 Conformance suite**, which provided more than 200 tests to verify that applications processed XBRL 2.1 documents correctly. The **Financial Reporting Taxonomies Architecture (FRTA) 1.0**, which was also released at the same time, provided guidelines for the effective creation and use of taxonomies.

In **January 2004**, **TSX Group Inc. (TSX Group)** became the **first Canadian public company**, as well as the **first publicly-listed stock exchange globally**, to publish its annual financial results in XBRL.

In **March 2004**, the **total jurisdictions** under XBRL International **increased to 9** with Ireland and Spain too joining in. Subsequently, over the **years 2004-05**, the Steering Committee released **new taxonomies for GL as well as for US GAAP and UK GAAP**

3.0 XBRLS (XBRL Simple Application Profile)

In 2008 Charlie Hoffman and Rene van Egmond proposed a simplified, more user-friendly XBRL application profile of XBRL that makes using XBRL easier for most business users, improves the potential for interoperability, and improves the potential for comparability needed by most business users, business communities, regulators and independent software vendors.

The stated goals of XBRLS are "to maximize XBRL's benefits, reduce costs of implementation, and maximize the functionality and effectiveness of XBRL. XBRL is a general purpose specification, based on the idea that no one is likely to use 100% of the components of XBRL in building any one solution. XBRLS specifies a subset of XBRL that is designed to meet the needs of most business users in most situations, and offers it as a starting point for others. This approach creates an application profile of XBRL (equivalent to a database view but concerned with metadata i.e. text, voice, or image that describes what the audience wants or needs to see or experience).

XBRLS is intended to enable the non-XBRL expert to create both XBRL metadata and XBRL reports in a simple and convenient manner. At the same time, it seeks to improve the usability of XBRL, the interoperability among XBRL-based solutions, the effectiveness of XBRL extensions and to reduce software development costs.

The profile was created by Rene van Egmond and Charlie Hoffman, who was the initial creator of XBRL. It borrows heavily from the US GAAP Taxonomy Architecture.

4.0 WHAT XBRL IS NOT?

- a. It needs to be clearly understood that XBRL does not represent a set of accounting standards, which remain the prerogative of the regulatory standards bodies. XBRL is merely a platform on which reporting standards content will reside and be represented.
- b. XBRL is not a detailed universal chart of accounts. Formulation of a company's chart of accounts is an exercise conducted by its management with regard to its specific business intricacies. XBRL can facilitate the implementation of such structures through its ability to transport data between disparate software applications that might be used within an organization's operational structures.
- c. XBRL is not a GAAP translator. It does not provide a mechanism for facilitating a drilldown of existing GAAP information into lower levels of information that would be necessary for

translating financial statements from one GAAP to another. The business-reporting document contains the same GAAP information, be it in an XBRL format or an MS word or PDF format.

d. XBRL is not a proprietary technology. XBRL is freely licensed and available to the public. XBRL is XML-based and therefore is expected to be widely available in software applications.

e. XBRL is not a Transaction Protocol. XBRL is designated to address issues related to generation and usage of information contained within business reports and begin at the accounting classification level. XBRL is about business reporting information, not about data capture at the transaction level.

5.0 USERS OF XBRL

A) Corporations:

Since XBRL was designed to handle corporate financial information, it logically follows that corporations would be one of the primary users. These days most major corporations provide some sort of company financial information via the Internet. Both the corporations providing this information and the investors who are receiving it need an easy way to do so. XBRL provides a method via which financial information can be delivered to end users quickly and easily.

The main benefit to the corporation is that the information can be entered once and maintained in a standard format. Required forms and documents can then be automatically generated from the XBRL formatted document. This prevents the duplication of financial data and thereby helps prevent errors and inconsistencies.

B) Investors, Accountants and other users of Corporate Financial Data:

Having a standardized and machine-readable format is invaluable to consumers of corporate financial information. XBRL provides just such a format. Without it, consumers of the data would be stuck trying to negotiate a format for a data feed with each corporation they wished to receive data from or would be forced to manually enter data obtained from a non-machine-readable source. In addition to the lessening the time and expense involved with either of the alternatives, XBRL also helps prevent the errors they can cause. By having a standardized format, developers can share code designed to read XBRL or purchase tools with XBRL support built in. On top of preventing errors, being able to use previously tested XBRL tools also

increases productivity and brings the data to those who might otherwise not have the time, money, know-how to retrieve it on their own.

6.0 ADVANTAGES OF USING XBRL

A) Overall Advantages

XBRL offers major benefits at all stages of business reporting and analysis. The benefits are mainly by way of automation, cost saving, faster, more reliable and more accurate handling of data, improved analysis and better quality of information and decision-making. These overall advantages of XBRL have been briefly discussed below:

i. **Automated Data processing:** XBRL enables automation of financial data thus making it computer readable. This eliminates the laborious manual process of data collation, re-entry, comparison as well as the inaccuracies that go with it.

XBRL allows very efficient handling of business data by computer software and supports all the standard tasks involved in compiling, storing and using business data. XBRL software also facilitates automatic checking of information and thus makes the entire process of data collection and analysis more reliable and accurate.

For example, data from different company divisions with different accounting systems can be assembled quickly, cheaply and efficiently if the sources of information have been upgraded to using XBRL.

ii. **Cost Saving:** A lot of effort would be expended if all the tasks ranging from data collection to analysis and reporting were to be done manually. This entire process would prove to be very expensive and tedious. However adoption of XBRL for data processing will reduce the manpower involved and result in considerable amount of cost saving.

iii. **Time Saving:** Use of manual workforce for gathering and collating financial information will be a time consuming affair and will delay the process of analysis and meaningful reporting of data. However the powerful XBRL software increases the speed of handling the data and completes all aspects of data processing in quick time. This time reduction will allow users to increase their focus on analysis and help in prompt decision making.

For example, searches for particular information which might normally take hours can be completed with XBRL in a fraction of a second.

iv. **Better Financial Reporting:** XBRL also facilitates preparation of quality and timely reports to suit different needs. Once data is gathered in XBRL, different types of reports using varying subsets of the data can be produced with minimum effort.

A company finance division, for example, could quickly and reliably generate internal management reports, financial statements for publication, tax and other regulatory filings, as well as credit reports for lenders.

XBRL also does not enforce any standardisation in financial reporting. Its language is flexible and supports all current aspects of reporting in different countries and industries. It can also be adjusted to meet particular business requirements of individual organizations. Taxonomy extensions also permit diverse companies to include additional concepts in their business reports besides meeting the accounting regulations of their respective countries.

v. **Multi Language Capability:** XBRL can read and understand data in different languages and accounting standards and can be flexibly adapted to meet different needs of various users. The taxonomies and tags associated with the system allow for speedier multi-language data reads and also enhance transmission of data across the globe. Software and mapping tools allow businesses to transfer existing information into XBRL quickly and efficiently.

vi. **Improved Data Analysis:** The XBRL software helps to automatically validate and manipulate data received electronically. XBRL facilitates a deeper and accurate analysis of the automated data to meet the requirements of all types of end users. This thorough analysis will equip business leaders with greater confidence to make financial decisions that impact their companies,

For example, banks and other financial institutions can analyse loan applications as well as a borrower's financial records more quickly and more accurately which may increase the approval of good loans and significantly lower the acceptance of loans to high risk borrowers.

B) Advantages to Individual Stakeholders

All types of organisations can use XBRL to save costs and improve efficiency in handling business and financial information. Due to its flexible nature, XBRL can be adapted to suit a wide variety of requirements of preparers as well as users of financial data.

The prominent entities that can benefit from use of XBRL are government regulators, stock exchanges, investment analysts, banks, financial companies, accountants, auditors, accountancy software vendors, and information technology companies.

The ways in which some of these main organisations benefit by use of XBRL are given below:

Regulators and Government Bodies: By introducing XBRL for reporting, regulators and other government authorities can:

- Obtain data which can be entered automatically into systems without reformatting or other "translation" effort.
- Dramatically reduce costs by automating routine tasks.
- Quickly and automatically identify problems with filings.
- Analyse and compare data much more quickly, efficiently and reliably. Benefit from the use of software in validation and analysis.
- Monitor data and activities and reach judgments with far greater speed and confidence.
- Focus effort on analysis, decision-making and dealing with counterparties rather than on data manipulation.
- Provide a much faster and focused response to counterparties.
- Promote efficiencies and cost savings throughout the regulatory filing process.

(i) Stock Exchanges: Stock Exchanges can use XBRL to

- Make their process of company data collection more efficient, comprehensive, and reliable.
- Increase the value and competitiveness of the data products which they offer to institutions and private investors.

- Strengthen the transparency and robustness of information on their markets.

Depending on the circumstances, Exchanges may be able to encourage or mandate the filing of information by companies in XBRL or convert company data into XBRL. They can then offer data in XBRL form, benefitting all consumers of investment information. The result is a set of more competitive and valuable exchange data products as well as improved exposure for the Exchange.

(ii) Investment Analysts: By using XBRL, investment analysts and advisers can benefit from:

- Much greater transparency, clarity and consistency in company financial data.
- The ability to handle and compare a broader range of companies and deeper set of information.
- More powerful software tools for analysis, comparison and benchmarking.
- Far more efficient means of finding specific company data.
- The ability to select data from a variety of companies within seconds for comparison and analysis.

In short, XBRL can help the analyst community provide quicker and better quality investment advice and decisions.

(iii) Financial Companies: Through the adoption of XBRL, companies in the financial information industry will be able to:

- Obtain company financial data in a standardised and predictable form.
- Significantly reduce costs by automating many aspects of the gathering and storage of financial data.
- Switch efforts from routine data gathering to analysis.
- Provide a faster, clearer, deeper and more accurate view of company financial performance.
- Produce richer and more usable products containing XBRL data.

(iv) Banks: Through XBRL, loan and credit management departments of banks can:

- Obtain data quickly and reliably via automated reporting.
- Reduce costs in processing data.
- Compare and analyse financial information much more reliably, fully and effectively using automated processes.
- Track financial performance more quickly and efficiently.
- Reach decisions more confidently and provide a quicker response to clients.

In particular, Credit Risk Assessment companies are already working within XBRL International on the introduction of XBRL in this area. XBRL also facilitates Credit Insurance Underwriting decisions through a high-quality assessment of the concerned data.

(v) Accountants: The development of XBRL software and its implementation all over the world has helped the community of accountants and auditors immensely. Through the use of XBRL in companies, accountants will be able to:

- Obtain more rapid and reliable data on company financial performance.
- Greatly reduce effort and costs in gathering and analysing data.
- Simplify and automate tasks.
- Focus effort on analysis and value-added work.
- Make better use of software to improve efficiency and speed.
- Facilitate paperless financial reporting.

As XBRL software allows for automated machine-to-machine communication, accountants, data entry clerks, and auditors can receive and begin to review and study blocks of data at significantly reduced speeds. Auditors around the world can also devote more of their time to reviewing data received from another country rather than focusing on validating the accuracy of the information. In short, XBRL can speed up, reduce effort and increase reliability in accounting and auditing tasks.

The accounting community can play an important role in explaining and encouraging the adoption of XBRL. Major accounting companies are important members of the XBRL Consortium.

(vi) Software, Systems and IT Companies: XBRL offers software, systems and IT companies a range of opportunities to enhance existing products, develop new ones and expand their business. It enables these companies to:

- Adopt a data standard for transferring business and financial information, avoiding the commercial conflicts and client aggravation caused by competing proprietary standards.
- Create software to support the preparation, publication and collection of data in XBRL.
- Create software to select, compare and analyse financial data in XBRL.

Software, systems and IT companies are among key members of the XBRL consortium. Their areas of activity range though general software and data handling, accounting, data analysis and validation, business systems, data publishing, to specialist XBRL and XML products.

7.0 XBRL INTERNATIONAL

XBRL International is a not-for-profit consortium of approximately 550 companies and agencies worldwide working together to build the XBRL language and promote and support its adoption. It is comprised of jurisdictions which represent countries, regions or international bodies and which focus on the progress of XBRL in their area. The number of established jurisdictions has grown from 7 to 22 over the years. Around 5 jurisdictions, including India are presently in the provisional stage.

It operates mainly through the XBRL Steering Committee and has over the years produced a variety of specifications and taxonomies for digitizing financial information in accordance with the accounting rules and other regulations prevailing in different countries. The consortium members meet periodically in international conferences and conduct committee work regularly throughout the week.

This collaborative effort began in 1998 and has produced a variety of specifications and taxonomies to support the goal of providing a standard, XML-based language for digitizing

business reports in accordance with the rules of accounting in each country or with other reporting regimes such as banking regulation or performance benchmarking

8.0 INTERNATIONAL SCENARIO

Development of XBRL is taking place all over the world with increasing participation from individual countries and international organisations. Today, around 15-18 countries have already established jurisdictions for promotion of XBRL and a few more are in the process of doing so.

- United States has been the pioneer in the development of XBRL. So far in the US, XBRL has been used mainly in the capital markets. To expand the use of XBRL in the country, the SEC has framed rules in January 2009 making it compulsory for all companies to file returns in the XBRL format in a phased manner over a three year period 2009-2011. These rules will apply to domestic and foreign companies using U.S. GAAP and to foreign private issuers using IFRS.
- In Europe, XBRL development started with government wide and cross-border applications with public and private sector working together for this purpose. Tax regulators drove development in Ireland, Municipalities in Germany, the Banking Sector in Spain, the Water Board in the Netherlands, and the Companies House in Denmark. In 2004 the Committee of European Bank Supervisors started using XBRL for Basel II reporting across all 27 member states, while the European Commission too formally urged its member states to register their taxonomies with XBRL International.
- The Bank of Spain has developed an XBRL-based financial information exchange system to support XBRL-based reporting of the public financial statements by credit institutions to the Bank of Spain.
- The Dutch Taxonomy project team issued the first version of the taxonomy that will be used to contribute to the effort to reduce administration burden. Dutch municipalities are filing quarterly reports in XBRL.
- U.K. Inland Revenue is using XBRL in electronic filing based on XBRL-UK GAAP Taxonomy
- Australian lending information being collected from all Australian banks in XBRL

- Sumitomo Mitsui Bank of Japan integrated XBRL as interchange format for letters of credit for international trade as part of complex supply chain application
- The Tokyo Stock Exchange has been accepting corporate financial information in XBRL format since early 2003.
- In the Netherlands, all government agencies, from the justice department to bank regulators to tax collectors are working together on a national taxonomy of business reporting items.
- The Toronto stock Exchange publishes its financial statement in XBRL since 2003.
- The Australian Prudential regulation Authority has been collecting regulatory data in XBRL since 2005.

9.0 XBRL INDIA

The development of XBRL technology in India started mainly around the period 2005-07. India is probably the first among developing countries to introduce XBRL standard in its reporting system.

XBRL India is the provisional jurisdiction of XBRL International and is facilitated by the Institute of Chartered Accountants of India (ICAI). XBRL India is governed by a Steering Committee which is headed by the President, ICAI.

Its objectives are:

- To promote and encourage the adoption of XBRL in India as the standard for electronic business reporting in India
- To facilitate education and marketing of XBRL
- To develop and manage XBRL taxonomies
- To keep the developed XBRL taxonomies updated with regard to international developments
- To represent Indian interests within XBRL International
- To contribute to the international development of XBRL

ICAI has been actively working on to develop and promote a standard taxonomy for XBRL, currently based on the Indian Generally Accepted Accounting Principles (GAAP) while incorporating the architectural features of the IFRS. It also has a dedicated group working on XBRL since January 2007, under the chairmanship of its President.

XBRL India has developed Draft General Purpose Financial Reporting XBRL taxonomy for Commercial and Industrial Companies. This taxonomy covers the financial statements like Balance Sheet, Statement of Profit and Loss, and Cash Flow Statement and related non-financial information. The draft taxonomy has been developed conforming to Indian Accounting Standards and Company Law. XBRL India is currently developing XBRL Taxonomy for the Banking Sector.

Other Organisations in India using XBRL

Members of XBRL India among others include regulators such as Reserve Bank of India (RBI), Insurance Regulatory and Development Authority (IRDA), Securities and Exchange Board of India (SEBI), Ministry of Corporate Affairs (MCA), stock exchanges like Bombay Stock Exchange Limited (BSE) and National Stock Exchange of India Limited (NSE), and some private sector companies.

Both leading stock exchanges of India, BSE and NSE have migrated to XBRL from the paper based model and offer a unified electronic platform, popularly known as 'CorpFiling' system, which enables the companies listed in either or both of the exchanges to electronically file their disclosures. Approximately 100 top companies of India are using CorpFiling XBRL platform for filing mandatory information. BSE has played an important role in the initiation of XBRL reporting platform in India and was the first one to formally adopt XBRL in the country.

To attune to the new XBRL based reporting standards, legal and regulatory changes are required. SEBI has thus issued a mandate for select companies to submit their Financial Statements through the Corporate Filing and Dissemination System (CFDS) starting in the first phase in 2008.

Recently, RBI has also moved to XBRL based electronic filing system for the Basel II Reporting by Banks, wherein banks are required to submit their returns for capital adequacy returns data through the existing Online Return Filing System (ORFS). Banks are now upgrading to Core

Banking Solution (CBS) and also sprucing up their internal Management Information Systems (MIS), which will create a platform for the implementation of XBRL solutions.

Ministry of Corporate Affairs [MCA] is planning to use extensible business reporting language (XBRL) in an effort to work closely with SEBI and RBI, which are also migrating to XBRL. While MCA maintains a database of all registered companies, SEBI deals with listed firms and RBI with banks and non-banking finance companies. “Through e-filing, MCA has obtained a mass database which is available in public domain. So far its use is restricted to getting information on companies. But this data can be productively used for examining and analysing the direction in which companies are moving. XBRL, combined with a sophisticated technology, will further support these objectives

10.0 AN INTRODUCTION TO XML

Meaning of XML

XML stands for eXtensible Markup Language and is a markup language for documents containing structured information. Structured information contains both content and some indication of what role that content plays. Almost all documents have some structure. A markup language is a mechanism to identify structures in a document. The XML specification defines a standard way to add markup to documents.

A number of applications currently being developed that are based on, or make use of, XML documents include vector graphics, e-commerce transactions, mathematical equations, object meta-data, server APIs, and a thousand other kinds of structured information.

There are hundreds and thousands of computers programming language and one among them is XML. Also XML markup language has types of programming language. There are 187 types of XML markup language and amongst them one of them is XBRL.

Evolution of XML

Limitations of HTML gave birth to XML. The Limitations were as follows:

- Limited number of Tags
- Browsers are forgiving.
- Browser developers may be tempted to add new tags that only work with their product.

- Cannot customize layout from client side
- Product comparison.

The above limitations gave birth to XML. It was the World Wide Web Consortium (W3C) where XML group (originally known as the SGML Editorial Review Board) worked and invented XML. The work was started in 1996. On 10th February, 1998 XML version 1.0 recommendation was released. The Second Edition of XML was then released on 6th October, 2000.

The XML Working Group consists of about 14 companies and organizations with a strong interest in either providing or utilizing XML tools. This group includes Adobe, ArborText, DataChannel, Fuji Xerox, Hewlett-Packard, Inso, Isogen, Microsoft, Netscape, SoftQuad, Sun Microsystems, and the University of Chicago, along with W3C representatives and independent experts. The working group was chaired by John Bosak, Chief computer Engineer of Sun Microsystems.

Advantages of XML over HTML:

- HTML tells how the data should look whereas XML tells what it means.
- XML applies context to the data and separates data content from data presentation.
- XML provides a hierarchical structure. However XML is not designed to replace HTML.

XML Family of Languages

XML has been developed as an activity of the World Wide Web Consortium (W3C). Within W3C, a number of other XML-related language development activities have been going on, where the intent is to specify syntactic and semantic rules either for some specific kind of XML data or for data to be used together with XML data for a specific purpose. Therefore a group of languages evolved which together with XML, is called the XML family of languages.

Considering the purpose of the XML-related languages developed at W3C, four main categories can be identified. The first category consists of the different versions of XML itself. XML is intended for representing information as structured documents on the Web and for defining special languages for special purposes. The other three categories are called in this classification XML Accessories, XML Transducers, and XML Applications:

XML Accessories are languages which are intended for wide use to extend the capabilities specified in XML. Examples of XML accessories are the XML Schema language extending the definition capability of XML DTDs and the XML Names extending the naming mechanism to allow in a single XML document element and attribute names that are defined for and used by multiple software modules.

XML Transducers are languages which are intended for transducing some input XML data into some output form. Examples of XML transducers are the style sheet languages CSS and XSL intended to produce an external presentation from some XML data and XSLT intended for transforming XML documents into other XML documents. A transducer language is associated with some kind of processing model which defines the way output is derived from input.

XML Applications are languages which define constraints for a class of XML data for some special application area, often by means of a DTD. Examples of XML applications are MathML defined for mathematical data or XML-Signature intended for digital signatures. XML accessories and XML transducers are often XML-based languages and thus also XML applications. In this report a language is however classified as an XML application only if it has not been included in the accessories or transducers.

The languages in the XML applications category can be further divided into four subcategories according to the application area:

- **Non-textual forms** of data like mathematical data or voice.
- **Web publishing**, to replace HTML by XML-based representation format.
- **Semantic web.**
- **Web communication and services.**

11.0 DIFFERENCES BETWEEN XML AND XBRL

While it is true that XBRL is built on XML, and that all XBRL documents must also be XML valid, there are major differences between the two. The most important conceptual distinction is that XBRL provides a way to express and validate semantics. For example, $Assets = Equity + Liabilities$ can be expressed using XBRL but not using native XML.

XBRL accommodates change better than XML. For example, XBRL separates the schema from the data. XBRL instance (data) documents are simple, containing normalized data immune to

their sequence, and without hierarchy. Users can make changes to the XBRL taxonomy, such as changing parent-child relationships or adding new children, without having to reformat instance documents. Similarly, data in the instance document may be reordered without having an impact on the taxonomy. Normalized data also simplifies database storage.

Another unique feature of XBRL is its native support of multidimensional modeling, which is very similar to Microsoft Excel pivot tables. Consider the situation where you want a metadata model to support segmentation of product sales by country and also by product line. Assuming a simple example of product sales by three countries (US Canada, and India) and two product lines (software and hardware), a pure element-based approach would result in 12 elements:

- sales_US_software
- sales_US_hardware
- sales_US_allProducts
- sales_Canada_software
- sales_Canada_hardware
- sales_Canada_allProducts
- sales_India software
- sales_India_hardware
- sales_India_allProducts
- sales_allCountries_software
- sales_allCountries_hardware
- sales_allCountries_allProducts

Adding another product to the product line adds another four elements. Add another line item, such as cost of goods sold, and that one additional line item would result in another twelve elements. Such an approach quickly gets out of control, and is extremely frustrating to model and manage.

Using XBRL dimensions, there would be the single element of sales, along with the two dimensions of country and product line.

12.0 WORKING PRINCIPLE OF XBRL

XBRL is a member of the family of languages based on **XML, or Extensible Markup 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, a more powerful and flexible version of XML, has been defined specifically to meet the requirements of business and financial information. It enables **unique identifying tags** to be applied to items of financial data, such as say ‘net profit’ or say “Asset”. For example let us take the item “Asset”. It is defined in XBRL as follows:

```
<Asset>1000</Asset>
```

The word Asset together with brackets "<" and ">" is called a tag. Opening tags are denoted by <...> while closing tags are denoted by </...>.

However besides the numerical value of the asset, the computer needs to be told about accounting perspective of the term “Asset”, its normal balance nature of “Debit” as well its relationship with other financial terms like Equity or Liabilities etc.

This is done by the powerful XBRL tags. Besides being identifiers, these tags provide a range of information about the item, such as whether it is a monetary item, percentage or fraction. XBRL allows labels in any language to be applied to items, as well as accounting references or other subsidiary information.

XBRL can show how items are related to one another and can thus represent how they are calculated. It can also identify whether they fall into particular groupings for organisation or presentation purposes. Most importantly, XBRL is easily extensible, so companies and other organisations can adapt it to meet a variety of special requirements.

The rich and powerful structure of XBRL allows very efficient handling of business data by computer software. It supports all the standard tasks involved in compiling, storing and using business data. Such information can be converted into XBRL by suitable mapping processes or generated in XBRL by software. It can then be searched, selected, exchanged or analysed by computer, or published for ordinary viewing.

Working of XBRL is governed **mainly by two main features namely Specifications and Taxonomies.**

13.0 MAIN FEATURES OF XBRL

- i. **Specifications: Specifications** provide the **fundamental technical definition** of how XBRL works. The main, current specification for XBRL is **version 2.1**.
New specifications are developed from requirements statements. They are initially discussed as Internal Working Drafts within the consortium and then released as **Public**

Working Drafts. After a careful process of review, they are then finally released as **official XBRL Recommendations.** A Recommendation represents consensus within the XBRL International community as well as a stamp of approval for its widespread deployment.

ii. **Taxonomies:**

The word 'taxonomy', according to the Wikipedia, is derived from Greek verb tassein which means to classify and noun nomos that could be translated into English as law or science. Combined and interpreted word for word it would mean classification of some kind of knowledge. Initially, it referred to the science of classifying living things, but later it received wider meaning and is currently applied to either classification of things in general or rules governing this classification.

Frequently, taxonomies are given hierarchical structures or are built in the form of networks so, as well as the elements, they also represent relationships.

Virtually everything could be a subject of classification under some taxonomy. The most common example of taxonomy is classification of living creatures. The root element (the most general one) is Organism since all living things are of this group. Its first child is Domain which in turn is a parent of Kingdom whose subgroup is Division that is divided into Classes and so on.

One important characteristic of taxonomies is that children (lower level elements) may have many parents (upper level elements). In some classifications, spiders could be categorised as insects, in others as eight-legged creatures and in another as non-flying organisms.

Now, how does this term apply to XBRL?

Taxonomies are the dictionaries used by XBRL. They define the specific tags for individual items of data (such as "Asset"). Different taxonomies will be required for different financial reporting purposes. National jurisdictions may need their own financial reporting taxonomies to reflect their local accounting regulations. Many different organisations, including regulators, specific industries or even companies, may require taxonomies to cover their own business reporting needs.

Taxonomy has got the following components:

- a) Schema:** This is the core part of the taxonomy and stores information about taxonomy elements i.e. their names, ids and other characteristics. It can be regarded as a container where an unstructured list of elements and references to linkbase files are described. The main purpose of XBRL schemas is to provide the computer with information on how it should represent and process accounting terms.
- b) Element:** An element (which is a part of the Schema) is a business concept (such as Assets, Liabilities, Income...) presented to a computer in a way that it could learn its main characteristics. Definitions of elements that appear in schemas are constructed according to a specific set of rules.

For example say in the case of “Asset”

```
<element      name="Assets"      id="Assets"      periodType="instant"
balance="debit"      abstract="false"      substitutionGroup="item"
type="monetaryItemType"/>
```

The characteristics of “Asset” like its name, type, balance and periodType are described from a business perspective by the element to the computer.

- c) Linkbases:** are a collection of Links, which themselves are a collection of locators, arcs, and potentially resources. Locators are elements that essentially reference a concept and provide an arbitrary label for it. In turn, arcs are elements indicating that a concept links to another concept by referencing the labels defined by the locators. Some arcs link concepts to other concepts. Other arcs link concepts to resources, the most common of which are human-readable labels for the concepts. The XBRL 2.1 specification defines five different kinds of linkbases.
- Label Linkbase – This linkbase provides human readable strings for concepts. Using the label linkbase, multiple languages can be supported, as well as multiple strings within each language.
 - Reference Linkbase – This linkbase associates concepts with citations of some body of authoritative literature.
 - Calculation Linkbase – This linkbase associates concepts with other concepts so that values appearing in an instance document may be checked for consistency.
 - Definition Linkbase – This linkbase associates concepts with other concepts using a variety of arc roles to express relations such as is-a, whole-part, etc.

- Presentation Linkbase – This linkbase associates concepts with other concepts so that the resulting relations can guide the creation of a user interface, rendering, or visualisation.

Besides these, other features which also form a part of XBRL working are:

- iii. **Instance Document:** An XBRL instance document is a business report in an electronic format created according to the rules of XBRL. It contains facts that are defined by the elements in the taxonomy it refers to, together with their values and an explanation of the context in which they are placed. The instance document assigns a value to an element and provides additional information about the currency in which it is disclosed and defines a period and the entity that it refers to.

The instance document begins with the <xbrl> root element. There may be more than one XBRL instance embedded in a larger XML document. The XBRL instance document itself holds the following information:

- *Business Facts* – facts can be divided into two categories
 - *Items* are facts holding a single value. They are represented by a single XML element with the value as its content.
 - *Tuples* are facts holding multiple values. They are represented by a single XML element containing nested Items or Tuples.

In the design of XBRL, all Item facts must be assigned a context.

- *Contexts* define the entity (e.g. company or individual) to which the fact applies, the period of time the fact is relevant, and an optional scenario. Date and time information appearing in the period element must conform to ISO 8601.[an international standard covering the exchange of date and time-related data] Scenarios provide further contextual information about the facts, such as whether the business values reported are actual, projected, or budgeted.
- *Units* define the units used by numeric or fractional facts within the document, such as USD, shares. XBRL allows more complex units to be defined if necessary. Facts of a monetary nature must use a unit from the ISO 4217 [international standard describing three-letter

codes (also known as the **currency code**) to define the names of currencies established by the International Organization for Standardization (ISO) namespace.

- iv. **Footnote:** Footnotes appear on instance documents and provide additional information for some of the elements.
- v. **Taxonomy Extension:** Public taxonomies, such as IFRS, define elements and relationships between them according to particular legislation or standards and allow companies to create financial statements that are valid and compliant with their requirements.

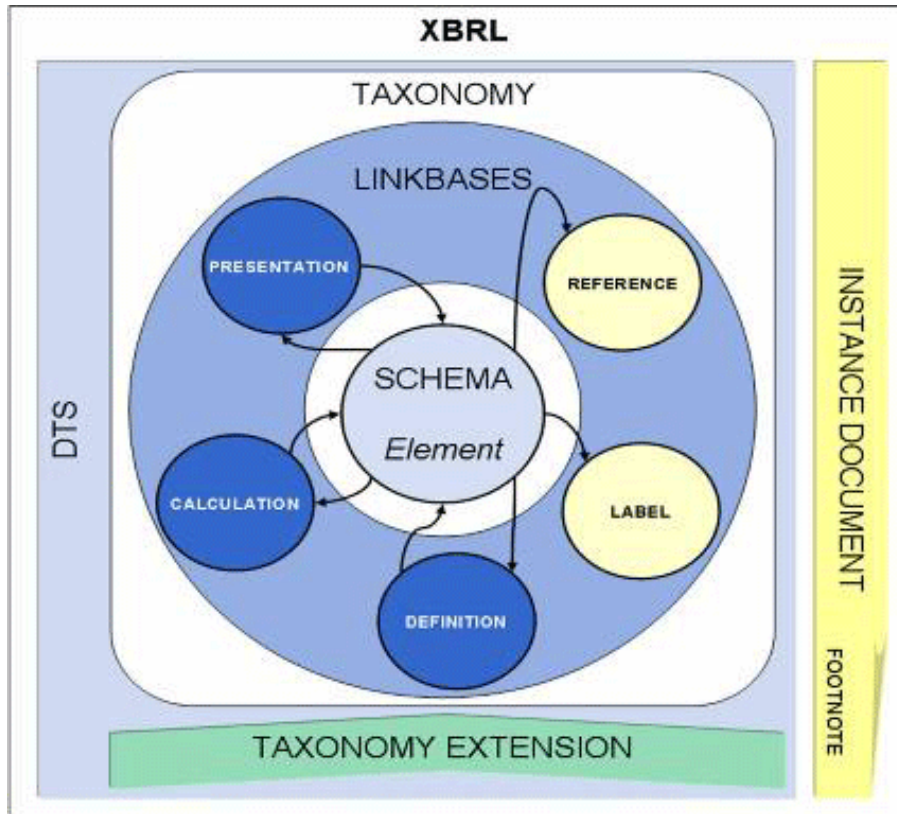
But in the diverse world of finance, companies are required to include in their business reports additional concepts (usually related to the area of their activity or the reporting purpose). XBRL allows for such extensions of taxonomy without loss of comparability and integrity of data.

- vi. **DTS (Discoverable Taxonomy Set):** It contains one or more taxonomies i.e. a number of schemas together with linkbases related to them. This term was developed as taxonomies became more complicated and more closely related to each other.

After describing the above features of XBRL, one can now mention with reference to the earlier example of `<Asset>1000</Asset>` that

- values between tags (`<Asset>1000</Asset>`) will be found in instance documents;
- information on what an Asset is and how a computer should treat it will be provided in schema files;
- Relationships will be described in linkbases.

Thus the above features of XBRL can be best illustrated by the following diagram:



14.0 TAXONOMIES

Types of Taxonomies

Types of taxonomies officially recognised by XBRL International are given below.

- i. **Financial Reporting Taxonomies:** These have been officially recognised by XBRL International and have two levels of recognition. **Approved Taxonomies** have to comply with the official XBRL guidelines for that type of taxonomy, as well as with the XBRL Specification. **Acknowledged Taxonomies** just have to comply with the XBRL Specification.

a) Approved Taxonomies must

1. Comply with the FRTA document.
2. Have been used to create a number of instance documents which confirm it adequately covers the data it purports to represent.
3. Have been through a period of open review following initial Acknowledgement.

- b) **Acknowledged Taxonomies** are recognised by XBRL International as being in compliance with the XBRL Specification. They are acknowledged against a specific

version of the Specification. Compliance is confirmed by testing taxonomy in a defined range of XBRL applications which may be upgraded and changed from time to time.

- ii. **GL Taxonomy:** This is a special taxonomy designed to support collation of data and internal reporting within organisations. It is intended to enable the efficient handling of financial and business information contained within an organisation. Often this is scattered across disparate accounting systems. XBRL allows it to be brought together, analysed and used in a highly cost-effective way, overcoming the inefficiencies of different accounting systems or approaches.

The XBRL Global Ledger taxonomy **allows the representation** of anything that is found in a **chart of accounts, journal entries or historical transactions**, financial and non-financial. It does not require a standardised chart of accounts to gather information, but it can be used to tie legacy charts of accounts and accounting detail to a standardised chart of accounts to improve communications within a business.

XBRL Global Ledger is **reporting independent**. It collects general ledger and after-the-fact receivables, payables, inventory and other non-financial facts, and then permits the representation of that information using traditional summaries and through flexible links to XBRL for reporting.

XBRL Global Ledger is **system independent**. Any developer can create import and export routines to convert information to XBRL GL format. This means that accounting software developers need only consider one design for their XML import/export file formats. Application service providers can offer to supply XBRL import and output so end-users can more easily use their own data. Companies developing operational products, such as point of sale systems or job costing, or reporting tools can link with many accounting products without needing specialised links to each one.

XBRL Global Ledger permits **consolidation**. Popular low-end products and mid-market solutions are not designed to facilitate consolidating data from multiple organisations. XBRL GL can help transfer the general ledger from one system to another, be used to combine the operations of multiple organisations, or bring data into tools that will do the consolidation.

XBRL Global Ledger provides **flexibility**, overcoming the limitations of other approaches such as Electronic Data Interchange (EDI). It offers an **extensible, flexible, multi-national solution** that can exchange the data required by internal finance, accountants, and creditors.

It complements **XBRL for financial reporting**, linking financial reports to the detail behind them, providing all the specific information required for audit work papers, budget planning, and detailed reporting.

15.0 US GAAP Taxonomy 2009

XBRL US has developed a number of current taxonomies which have been finalized and are available for use today. These are

- Mutual Fund Risk/Return Summary, Release 2008
- Schedule of Investments, Release 2008
- US GAAP Investment Management Taxonomy
- XBRL US GAAP Taxonomies, 2009 Release

XBRL US has published the 2009 edition of the interactive data tags that the Securities and Exchange Commission will accept for coding financial statements in accordance with U.S. GAAP.

XBRL technology allows investors and analysts to compare financial statements more easily across companies and industries, as well as load the data into spreadsheets and other software. It will be the basis of the Interactive Data Electronic Applications, or IDEA, system that the SEC is readying to replace its old Edgar system.

The SEC mandated XBRL for public company reporting, which will be phased in over two years. The largest public companies, those with a worldwide public float of \$5 billion or higher - a group of approximately 500 companies - must comply with the mandate starting with their June 15, 2009, quarter. All other large accelerated filers must comply starting with their June 15, 2010, fiscal quarter, and all other publicly traded companies and foreign private issuers will be required to comply starting with their June 15, 2011, fiscal

The 2009 release of the U.S. GAAP taxonomy in XBRL includes hundreds of accounting and industry-specific revisions to the 2008 release. XBRL US also plans to provide tools, training

programs and webinars to help companies work with the new taxonomies and comply with SEC requirements. FASB pronouncements incorporated since the 2008 release include FAS 141(R), 160, 161 and 163.

The Financial Accounting Standards Board (FASB) released the Accounting Standards Codification on July 1, 2009 and it is effective for financial statements with interim or annual periods ending after September 15, 2009. The Codification replaces existing authoritative accounting pronouncements including those issued by the FASB, EITF, AICPA, and other organizations. The current version of the US GAAP XBRL taxonomy references the superseded pronouncements. The 2010 release of the US GAAP taxonomies will be updated to include the latest Codification references. In the interim, XBRL US is providing an additional taxonomy reference linkbase and schema entry points that can be added to the 2009 taxonomy. This linkbase allows users of the 2009 taxonomy to access the Codification references.

16.0 IFRS Taxonomy 2009

On **April 02, 2009**, the IASC Foundation published the final IFRS Taxonomy 2009. The IFRS Taxonomy 2009 is a complete translation of International Financial Reporting Standards (IFRSs) as of 1 January 2009 into XBRL.

The release of the new IFRS taxonomy follows SEC rules release effective March 4, 2008, that allows foreign private issuers listed in the United States to file their financial reports in IFRS as issued by the International Accounting Standards Board (IASB). According to the SEC rule, foreign companies that choose to submit their financial reports in IFRS electronically to the SEC will have to do so using the IFRS Taxonomy 2009, says an IASC Foundation press release.

The IFRS Taxonomy 2009 builds upon the architecture of the IFRS Taxonomy 2008. Amendments to the 2009 IFRS Taxonomy mainly reflect changes in IFRS. However, technical improvements to the taxonomy have led to a decrease in size and download time.

The IFRS Taxonomy 2009 reflects the recent updates in the IFRSs and represents stable platform for future changes in the IFRSs. International Financial Reporting Standards (IFRSs) including International Accounting Standards (IASs) and Interpretations as issued at 1 January 2009 are included. Additionally, IFRS 3 and amendments to IFRS 7 are also included.

XBRL version used for these is based on XBRL Specification 2.1 dated 2003-12-31 (Recommendation) with errata from 2006-12-18 and Dimensions 1.0 Specification dated 2006-09-18

EXAMPLE OF XBRL TAXONOMY

An example of the use of XBRL is given below

```
<ifrs-gp: AssetsHeldSale contextRef="Current_AsOf" unitRef="U-Euros"
  decimals="0">100000</ifrs-gp: AssetsHeldSale>
<ifrs-gp: ConstructionProgressCurrent contextRef="Current_AsOf"
  unitRef="U-Euros" decimals="0">100000</ifrs-
  gp: ConstructionProgressCurrent>
<ifrs-gp: Inventories contextRef="Current_AsOf" unitRef="U-Euros"
  decimals="0">100000</ifrs-gp: Inventories>
<ifrs-gp: OtherFinancialAssetsCurrent contextRef="Current_AsOf"
  unitRef="U-Euros" decimals="0">100000</ifrs-
  gp: OtherFinancialAssetsCurrent>
<ifrs-gp: HedgingInstrumentsCurrentAsset contextRef="Current_AsOf"
  unitRef="U-Euros" decimals="0">100000</ifrs-
  gp: HedgingInstrumentsCurrentAsset>
<ifrs-gp: CurrentTaxReceivables contextRef="Current_AsOf" unitRef="U-
  Euros" decimals="0">100000</ifrs-gp: CurrentTaxReceivables>
<ifrs-gp: TradeOtherReceivablesNetCurrent contextRef="Current_AsOf"
  unitRef="U-Euros" decimals="0">100000</ifrs-
  gp: TradeOtherReceivablesNetCurrent>
<ifrs-gp: PrepaymentsCurrent contextRef="Current_AsOf" unitRef="U-Euros"
  decimals="0">100000</ifrs-gp: PrepaymentsCurrent>
<ifrs-gp: CashCashEquivalents contextRef="Current_AsOf" unitRef="U-
  Euros" decimals="0">100000</ifrs-gp: CashCashEquivalents>
<ifrs-gp: OtherAssetsCurrent contextRef="Current_AsOf" unitRef="U-Euros"
  decimals="0">100000</ifrs-gp: OtherAssetsCurrent>
<ifrs-gp: AssetsCurrentTotal contextRef="Current_AsOf" unitRef="U-Euros"
  decimals="0">1000000</ifrs-gp: AssetsCurrentTotal>
```

What it represents is given as under

CURRENT ASSETS

Assets Held for Sale	100,000
Construction in Progress, Current	100,000
Inventories	100,000
Construction in Progress, Current	100,000
Hedging Instruments, Current [Asset]	100,000
Current Tax Receivables	100,000
Trade and Other Receivables, Net, Current	100,000
Prepayments, Current	100,000
Cash and Cash Equivalents	100,000
Other Assets, Current	100,000
Current assets, Total	1,000,000

17.0 XBRL assurance

XBRL Assurance is the auditor's opinion on whether a financial statement or other business report published in XBRL is relevant, accurate, complete, and fairly presented. An XBRL report is an electronic file and called instance in XBRL terminology.

IFAC and other accounting organizations are discussing the topic to decide on a common approach and XBRL auditing standards. The auditor may give assurance to an XBRL financial statement, an XBRL business report and XBRL real-time reporting (often referred to as continuous reporting). The short term focus is on XBRL financial statements and regulatory reports, while the future focus is expected to be more on real-time reporting.

Audit objectives and approach

The following, mainly XBRL specific reporting steps serve as a basis for the audit approach. The auditor should check that:

1. The right standard (base) taxonomy has been used;
2. The custom (extension) taxonomy is complete, correct and accurate;
3. The source data used for reporting is reliable;
4. The correct and complete mapping (or tagging) of source data to taxonomy elements has occurred;
5. The XBRL report (instance) is technically correct and validates with the taxonomy;
6. The sending of the XBRL reporting was complete, accurate and timely.

The distinction between a standard (base) taxonomy and custom (extension) taxonomy is an important consideration for the auditor. A standard taxonomy is normally owned, created and published by the government or regulator. It is the responsibility of the government or regulator to create a taxonomy that is correct. The quality of a standard taxonomy is fixed input for the auditor. The auditor just needs to check -with help of software tools- that the right taxonomy is used. With custom (extension) taxonomy this is not the case. The auditor needs to validate the

custom (extension) taxonomy, a secondary audit object. He needs to perform an audit to check if this taxonomy complies with regulations and if it is accurate and complete.

A significant difference with paper based assurance is the concept of material misstatement. Material misstatement concerns the accuracy of the audit opinion on a financial statement or filing as a whole. An XBRL report contains a collection of individually identifiable business facts. The facts are building blocks of an XBRL report. Any Material misstatement in an XBRL report concerns the individually identifiable business facts.

18.0 XBRL Modules

XBRL International has issued and reissued a stability pledge in relation to the core XBRL 2.1 specification. In addition to the core 2.1 spec, work continues on the development of several new modules of XBRL that define new, compatible functionality.

- XBRL Dimensions 1.0 – This module has achieved the Public Recommendation status. It supports the use of XBRL taxonomies to define additional, structured contextual information for business facts. Each piece of contextual information is referred to as a "dimension." The base XBRL specification essentially defines three dimensions: reporting period, reporting entity (i.e. a company or a division thereof), and a loosely-defined reporting scenario, originally intended to distinguish between actual vs. projected facts. Taxonomies using XBRL Dimensions can define new dimensions, specify the valid values ("domains") for dimensions, designate which dimensions apply to which business concepts through mechanisms called "hypercubes", and relate other taxonomy metadata (labels, presentation information, etc.) to dimensions.
- XBRL Formula – This module supports the creation of expressions (using XPath) that can be applied to XBRL instances to validate its information or to calculate new XBRL facts in a new instance.
- XBRL Rendering – This module has two deliverables. One is "Inline XBRL", a specification for embedding XBRL inside XHTML. The other is a Rendering Linkbase specification. The Rendering Linkbase will leverage the label and presentation linkbases to provide a facility for more comprehensive report definition. For example, the label linkbase can tell you that the English name for the ifrs-gp:assets concept is "Assets", and the presentation linkbase can tell you that ifrs-gp:assets is the first concept in the

hierarchy named "Balance Sheet". The Rendering Linkbase would add the metadata that "Balance Sheet" usually runs the labels (in presentation order) down the left most columns, and then shows the two most recent periods in the next columns, in a particular order.

- XBRL Versioning – This module will support the creation of a standard versioning report, which will document the differences between two versions of the same taxonomy. Many large taxonomies (such as the IFRS taxonomy) change every year.

Extensibility

Besides the creation of additional modules, XBRL International supports several methods for continuing expansion of shared XBRL functionality.

- Link Role Registry – This registry, hosted at xbrl.org, collects link roles and arc roles to promote reuse across taxonomies.
- Functions Registry – This registry collects XPath functions for reuse in formula linkbases.
- Format Registry – This registry collects common numeric formats for reuse in Inline XBRL applications.
- Best Practice RFCs – These documents will share common practices among community members to improve interoperability of design.

19.0 XBRL Glossary

- **Concept**

Describes a discrete piece of business information. For example, "Assets, Total" label, documentation, or reference. A concept that defines a business fact, such as "Assets, Total," in XBRL is sometimes called an element—a term inherited from XML.

- **Context**

Entity, period, and scenario information which relates to fact values contained in instance documents.

- **Dimensions**

XBRL dimensions have now taken the place of tuples for associating concepts. Tuples are no longer permitted in the UGT or in a company's filing taxonomy for two reasons:

- Tuples insert schema information into the instance document. Consequently, changes to tuple definitions in the taxonomy can "break" the instance document.
- Nested tuples are extremely awkward to modify, both in the taxonomy and in the instance document.

Dimensions do not have these faults, and they provide flexibility in data modeling that tuples don't offer.

- **Discoverable Taxonomy Set (DTS)**

A set of all taxonomies used by an instance document

- **Extended Link**

A network of relations. An extended link is used to partition relations into different networks if needed for processing of say calculations or for the convenience of the taxonomy creator to make the taxonomy more visually appealing

- **Fact value**

By fact value what is meant is an XML element/concept as used within an instance document. The instance element is from an XBRL taxonomy and is an XBRL concept. The concept has a value which is expressed for that concept for a specific context and expressed within a specific unit.

- **Instance document**

Database of fact values. An instance document is a physical XML file or "in memory" or "virtual" which contains fact values which are related to XBRL concepts defined in one or more XBRL taxonomies.

- **Taxonomy document**

Dictionary of concepts. A taxonomy usually comprises a number of physical XML files which define XBRL concepts. This information is supplemented by additional information contained in linkbases. Resource type linkbases contain additional information, such as labels or references. Relation type linkbases contain relation information, such as presentation, calculation, or definition type information. Concepts in taxonomies are used by instance documents to communicate fact values.

- **Tuple**

A special kind of data type because it binds together a set of concepts, like a row in a relational database where fields in a single row are related. It used to be common usage to associate concepts through tuples.

For example, annual reports require the disclosure of stock holdings of company officers. A tuple would be used to associate each officer's name with age, shares owned, and options held. The individual facts are meaningless without this association

- **Units**

Such as "US Dollars", "Japanese Yen", etc. which relates to numeric fact values contained in instance documents.

20.0 XBRL Software Tools

XBRL member companies provide a variety of software tools specifically to assist those creating XBRL taxonomies and instance documents The following listing is limited to tools for taxonomy and instance creation.

Instance Document Creation

- Altova MissionKit
- Blast Radius (XMetal)
- CaseWare International
- CompSci Resources, LLC
- Creative Solutions
- Coyote Reporting
- EDGARfilings
- Fujitsu
- Fujitsu / Fujitsu (XBRL Tools for XBRL Consortium activities)
- J2R (Batavia)
- Hitachi Systems and Services
- Hyperion
- Microsoft (Microsoft FRx)
- NeoClarus
- Reporting Standard S.L.
- Rivet Software
- Savanet
- Semansys Technologies
- Snappy Reports
- UBmatrix

Taxonomy Creation

- [Altova MissionKit](#)
- [CoreFiling](#)
- [Coyote Reporting](#)
- [Edicom](#)
- Fujitsu
- [Fujitsu / Fujitsu \(XBRL Tools for XBRL Consortium activities\)](#)
- [Hitachi Systems and Services](#)
- [NeoClarus](#)
- [Reporting Standard S.L.](#)
- [Semansys](#)
- [Snappy Reports](#)
- [UBmatrix](#)

Taxonomy Exploration

- CoreFiling

XBRL Document Review

- CoreFiling

XBRL Validation

- [Altova MissionKit](#)
- [CoreFiling](#)
- [Coyote Reporting](#)

- [Fujitsu / Fujitsu \(XBRL Tools for XBRL Consortium activities\)](#)
- [J2R \(Batavia\)](#)
- [NeoClarus](#)
- [Reporting Standard S.L.](#)
- [Semansys Technologies](#)
- [Snappy Reports](#)
- UBmatrix

XBRL Viewer

- [Altova MissionKit](#)
- [CompSci Resources, LLC](#)

21.0 OPPORTUNITIES FOR CHARTERED ACCOUNTANTS

XBRL has become a necessary part to the forthcoming convergence and standardization of the financial reporting framework. All around the world the regulatory agencies have swiftly begun the process for adopting and enforcing XBRL as a reporting format. XBRL is expected to be used at various levels of information and also within organization and with the external agencies. XBRL is expected to be used for:

- Reporting to the regulators
- Internal reporting within company
- Reporting to various external agencies such as financial institutions etc.
- Easy exchange of information between government departments or regulatory bodies.
- Storing, Exchanging and analyzing business and statistical data.

Challenges faced by the companies on implementation and adoption of XBRL

The following are the Challenges faced by the companies on implementation and adoption of XBRL for which there would be need of Chartered Accountants:

- To assess the XBRL reporting requirements that will be applicable to the company
- To examine the options available for implementing XBRL
- To consider the impact of XBRL implementation on its internal controls and reporting systems
- To identify XBRL tools best suited to its processes and environment.
- To identify XBRL taxonomies and explore the need for extensions.

Each of the challenges faced by the companies in implementing and adoption of XBRL will be an opportunity for a chartered accountant. With the introduction and growth of reporting, XBRL format, there will be greater need for CAs in the following matters:

- Taxonomies:
 - Development of new taxonomies
 - Maintenance and updation of current taxonomies
- Regulatory Matters:
 - Defining the responsibilities of the preparers of financial statements and auditors
 - Determining the role of auditors
- Tool Evaluation:
 - Evaluation of available software tools
 - Development of new software tools
- Preparation of Guidance Documentation:

- User guidance as well as preparers Guidance Manual to be prepared
- For company specific extensions

There are diverse services which can be performed by a Chartered Accountant in implementation and reporting using XBRL. The diverse services can be from accountancy to taxation, Management accounting to share valuation, from risk assessment to company secretarial work etc. But it should be noted that working with any technology based program, there is a need to invest in developing the skill sets which are required.

The XBRL Framework is an interesting mix in developing mix of accounting and technology. For a Chartered Accountant accounting is the most familiar thing but for technology element is something which a CA would need to understand thoroughly. The degree of proficiency required for the technology element depends upon the area of service which the CA wants to focus on. For e.g. for developing taxonomies and extensions CA would require a significant degree of expertise in related tools

22.0 USEFUL WEBSITES

- 1. XBRL INTERNATIONAL- <http://www.xbrl.org/Home/>**
- 2. XBRL INDIA - <http://www.xbrl.org/in/>**
- 3. IASB - <http://www.iasb.org/XBRL/Resources/Fundamentals.htm>**
- 4. IRIS - <http://www.irisindia.net/xbrl/>**