

XBRL: The Language of Finance and Accounting



CA Mehul Shah
Partner
Rasesh Shah & Associates

Preface

Organizations store much of the same information in their own internal systems, but in widely varying formats and granularity. This is common, even between businesses that share the same financial software products. This inconsistency makes it difficult for organizations to share information reliably or cost effectively when performing many aspects of their business, including applying for credit, reconciling accounts, or reporting to investors, or many other common activities. To further complicate the problem, the way a single field or element of information is defined can be affected by jurisdictional regulations. The value of an asset may be defined quite differently in the U.S. than in other parts of the world that observe different accounting principles and practices. Hence, there may be many different actual definitions of a single element type such as "asset value", or "price", or other seemingly simple bits of data. These distinctions affect a wide range of organizations since there aren't many large companies that operate in a single regulatory jurisdiction anymore. Companies can use XBRL to save costs and streamline their processes for collecting and reporting financial information. Consumers of financial data, including investors, analysts, financial institutions and regulators, can receive, find, compare and analyse data much more rapidly and efficiently if it is in XBRL format.

XBRL creates a vocabulary for describing exactly which bits of information are being included in a report, even to the point of taking regulatory jurisdiction and other variances into consideration. XBRL uses tags to describe and identify each item of data in an electronic document. The tags allow computer programs to sort through data and analyze relationships quickly and generate output in various formats. Because the tags are standardized, analysis can be conducted across multiple documents from multiple sources, even if the text in the documents is written in different languages.

The idea behind XBRL, eXtensible Business Reporting Language, is simple. Instead of treating financial information as a block of text - as in a standard internet page or a printed document - it provides an identifying tag for each individual item of data. This is computer readable. For example, company net profit has its own unique tag.

The introduction of XBRL tags enables automated processing of business information by computer software, cutting out laborious and costly processes of manual re-entry and comparison. Computers can treat XBRL data "intelligently": they can recognise the information in a XBRL document, select it, analyse it, store it, exchange it with other computers and present it automatically in a variety of ways for users. XBRL greatly increases the speed of handling of financial data, reduces the chance of error and permits automatic checking of information.

XBRL provides major benefits in the preparation, analysis and communication of business information and is fast becoming an

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accepted reporting language globally. It offers major benefits to all those who have to create, transmit, use or analyse such information. XBRL can handle data in different languages and accounting standards. It can flexibly be adapted to meet different requirements and uses. Data can be transformed into XBRL by suitable mapping tools or it can be generated in XBRL by appropriate software.

XBRL: The Future Language of Finance & Accounting

What Is XBRL?

The eXtensible Business Reporting Language ([XBRL](#)) is a language for capturing financial information throughout a business' information processes that will eventually be reported to shareholders, banks, regulators, and other parties. It is an [XML](#)-based computer language for the electronic transmission of business and financial data. The goal of XBRL is to standardize the automation of business intelligence and to make the analysis and exchange of corporate information more reliable and easier to facilitate.

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.

The best definition of XBRL can be found on Wikipedia. That definition is:

"XBRL (eXtensible Business Reporting Language) is an open standard which supports information modeling and the expression of semantic meaning commonly required in business reporting."

A key term here is the "**information modeling**". Many people associate the phrase "automating data exchange" with XBRL

which is a mistake. Also, many people erroneously think of the term "data" when trying to get their heads around XBRL. Further, the name "XBRL" tends to get in the way of understanding what XBRL is, rather than helping one understand it. Left out of this definition though is the notion that XBRL is a formal agreed upon way to model information and the notion that the information model is readable by both humans and by computers.

Business reporting is only one type of information exchange, it is not the only type of information exchange. Further, the information exchange is a by product of what XBRL really does which is define the information model. That information model is what makes the information exchange possible. But the information model also makes a lot of other things possible!

Business people don't generally grasp the true meaning of terms such as "syntax", "semantics", "meta data", "business rules" or the difference between "structured" and "unstructured" information. Yet, these terms are critical to the understanding of what XBRL really is and why it is important.

Technical people tend to think that XBRL is just another form of XML. That is a big mistake. Technical people tend to confuse the term "extensible" and think that the way XML uses the word and the way XBRL uses the word is the same. It is not.

Notice that no where in the Wikipedia definition of XBRL does the word "exchange" or the term "financial reporting" exist. These are mis-perceptions people have. XBRL enables exchange; that is only ONE of the things it does. **More importantly is the understanding that XBRL enables INFORMATION exchange, not just DATA exchange.** Sure, you can use XBRL to exchange data.

But to truly grasp the importance of XBRL, this understanding of fundamental concepts and using them correctly is important.

To think about this in another way, imagine a world where XBRL is pervasive. As an example, imagine a repository of information available in XBRL for all U.S. public companies (i.e. the SEC Idea system). Imagine that everything works and that there is 10 years of data available in XBRL. How would other things which we do today be different if that data exists in XBRL? If you can answer that question for yourself, then you really "get" XBRL. XBRL has been described as a transformational technology by Gartner.

In a nutshell,

XBRL is:

- A freely available, market driven, open, global standard for expressing and exchanging business information.
- An XML based language.
- A global consortium of more than 600 members
- A means of modeling business information in a form understandable by computer applications

XBRL is not:

- XBRL is NOT a standard chart of accounts. In fact, it is the opposite because XBRL is extensible.
- XBRL does not represent a set of accounting standards, which remain the prerogative of the regulatory standards bodies. It is just a platform on which reporting standards content will reside and be represented.
- XBRL does NOT require companies to disclose additional information.
- 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.

- 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.
- 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.

A History of XBRL: The story of our new language

XBRL originally began as work in the American Institute of Certified Public Accountants (AICPA), the U.S.-based national professional organization serving the accounting profession for more than 100 years. One aspect of the AICPA mission is to establish professional standards, in how accountants behave, perform, and communicate information. In other words, they define the principles and terminology used in that jurisdiction and all developed countries have an equivalent organization setting standards for their constituency.

Since a goal of XBRL is to facilitate data interchange globally, and AICPA is focused on the United States, the XBRL folks quickly resolved to form an international organization, XBRL International, which would coordinate similar activities in each jurisdiction, where a local XBRL "chapter" would represent its specific needs. The structure of XBRL now recognizes both regional jurisdictions as well as various industry domains involved in business reporting.

There are currently 13 active jurisdictions listed on the XBRL web page as well as instructions for establishing new ones. Ten jurisdictions are active within XBRL. These are Australia, Canada, Denmark, Japan, Netherlands, New Zealand, Singapore, U.K., U.S., and the International Accounting Standards Board (IASB), with four additional provisional members in Spain, Hong Kong, Ireland, and Korea

The short history of XBRL is traced back to 1998. In April 1998, Charles Hoffman, a CPA with the firm Knight Vale and Gregory in

Tacoma, Washington investigated XML for the electronic reporting of financial information. Charlie began developing prototypes of financial statements and audit schedules using XML. Charlie informed Wayne Harding, Chairman of the AICPA High Tech Task Force, in July 1998 about the potential of using XML in financial reporting. Wayne asked Charlie to brief the AICPA High Tech Task Force on XML in September 1998.

The AICPA High Tech Task Force created a "Product Description" proposing the creation of a prototype set of financial statements using XML by the AICPA. Karen Waller, CPA, AICPA staff and member of the High Tech Task Force helped perfect this product description. On October 2, 1998, Wayne Harding presented the results of the High Tech Task Force to the AICPA Committee on Committee Organization. As a result of this presentation, the AICPA determined to fund the project to create a prototype set of financial statements in XML.

On December 31, 1998 the prototype developed by Charlie Hoffman and Mark Jewett (Erutech) was completed. Jeffery Ricker (XML Solutions) contributed to the initial prototype. The CPA firm of Knight, Vale and Gregory, underwrote 50% of the development cost of this initial prototype. On January 15, 1999, this prototype was presented to the AICPA. Wayne Harding and Charlie Hoffman convinced the AICPA that XML was important to the accounting profession.

The AICPA requested that a business plan be prepared to look into the business case for XML and in particular XML-based financial statements. The project was code named XFRML. That business plan was completed on June 15, 1999.

This business plan was created by Charles Hoffman, CPA (Independent CPA); Wayne Harding, CPA (Great Plains); Eric Cohen, CPA (Cohen Computer Consulting); and Louis Matherne, CPA (AICPA Director of I.T.).

On July 17, 1999 the AICPA Board of Directors determined to fund the XFRML effort.

In August, 1999 12 companies quickly joined the effort (along with the AICPA) as members of the XFRML Steering Committee. The initial steering committee included: The AICPA, 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, Microsoft Corporation, PricewaterhouseCoopers LLP, and The Woodburn Group.

The AICPA began implementing the business plan on August 30, 1999 when it announced that an XML financial reporting specification would be created. Charles Hoffman created an Experimental Prototype of XFRML beginning in July 1999. This prototype was completed October 13, 1999. The financial statements of 10 companies were created to further test the concept of XML-based financial statements.

The first meeting of the XFRML Steering Committee took place in the offices of the AICPA New York City on October 14, 1999. The name of the organization was officially changed to the XBRL steering committee on April 6, 2000. On July 31, 2000, the XBRL committee announced the on-time release of the first specification for U.S. companies, *XBRL for Financial Statements*. Membership in the XBRL steering committee

grew to more than 50 entities, including several International professional organizations.

[1999](#) Oct 1999 - *xbrl.org*, the AICPA hosted the first meeting of the *XBRL* Steering Committee in *October 1999*. *XBRL-US* is the jurisdiction of *XBRL* International in the United States. *XBRL* International is made up of companies, associations, and agencies involved ...

[2000](#) Jul 31, 2000 - The shaded section at the top of the page shows a segment of the taxonomy *XBRL* for Financial Statement for US Commercial and Industrial Companies, released *July 31, 2000*, and modified by Great Plains, Inc. *XBRL* uses elements to name accounting, business ...

[2003](#) Aug 4, 2003 - In an expansion of the organization, *XBRL* International recently announced a number of new appointments. ... applications In addition users can configure applications to request individual financial variables and analysis from a set of more than 100 variables with a six year *history* ...

[2004](#) Oct 1, 2004 - *XBRL* grows fast in Europe. (*XBRL*) (Extensible Business Reporting

Language) ... find Strategic Finance articles. EUROPEANS HAVE A *HISTORY* OF DOING TWO things that will continue to be favorable for the adoption of *XBRL*. Fir...

[2005](#) 2005 - The SEC began an *XBRL* pilot program in 2005, and 76 companies have signed up to deliver data using *XBRL* since then, SEC staffers said. The average cost for companies to file their first reports in *XBRL* was about \$30000, but the costs fell ...

[2006](#) Dec 6, 2006 - *BWNYXBRLINTERNATIONAL* *XBRL* International Inc to Host 14th International *XBRL* Conference in Philadelphia Dec 46th 2006 Keynotes by SEC ... gathering of *XBRL* users customers and partners in its *history* attendees can learn more about available and upcoming *XBRL* technology hear about ...

[2008](#) Dec 15, 2008 - EDGAR Online also uses its I-Metrix platform to continually build the largest US equities *XBRL* dataset - continuously converting the 8-K, 10-Q and 10-K filings of all US public companies into *XBRL*. This database now contains over 10 years of *history* in *XBRL* format with an unprecedented ...

[2009](#) Aug 5, 2009 - the Securities and Exchange Commission provided notice to NRSROs that they can satisfy the requirement in Rule 17g-2(d) to make publicly available ratings *history* information in *XBRL* format by using an *XBRL* format or any other machine ...

[2010](#) Jun 24, 2010 - The merger would combine EDGAR Online's position as the leading provider of US Securities and Exchange Commission SEC public company *XBRL* filings and *XBRL* data and UB matrix's experience as the leading *XBRL* software provider to independent software vendors and major US and international ...

In the world of vertical industry groups, Accounting & Tax Preparation is one of the biggest categories, and should be thought of as a mega-category of sorts. Every business has to account for and report information, whether private or public, profit or nonprofit, and regardless of what types of products or customers or location you work in. That is why several nearly distinct "industries" fit together in this larger grouping. There are currently six officially recognized, related industry domains called Supply Chain Communities (SCCs) that are actively involved in business reporting as well as several others not yet formally recognized by XBRL. Those officially recognized include Accountants, Analysts, Intermediaries, Software & Service Providers, Regulators, and Investors/Creditors. Each of these types of

organizations perform a role that are either suppliers, recipients, or both, of business reporting information.

As you may have realized from this background information, the job of creating the taxonomies and processes to be used for reporting business information globally is a large undertaking. Currently, the work is divided into eight general Working Groups (WG) with domain-specific working groups being created as needed. The eight general WGs are Specification, Domain Basel II (Taxonomy), Marketing & Communication, Education, Research, Grants, and General Ledger. Over 170 organizations have joined XBRL from around the world and interest is high.

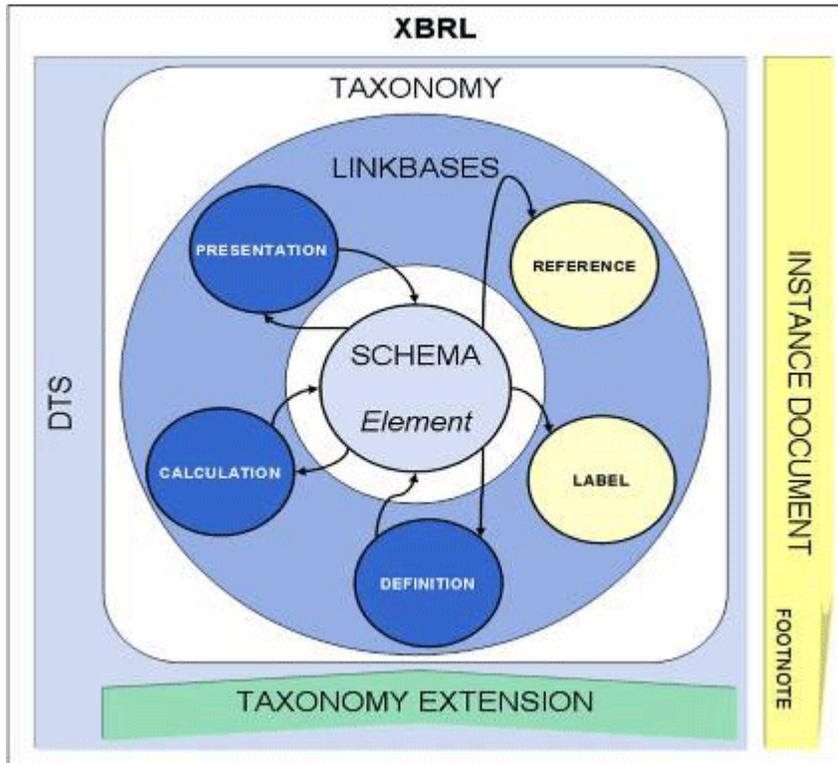
What Else Is There?

XBRL is envisioned as a standard that can be used in just about any business, and the hope is that many vertical industries will avoid reinventing the wheel when they try to define common components not unique to their particular area. But some areas already have invested a lot of time and effort in creating vocabularies and applications that use them that fit easily into the scope of XBRL. One of the best examples is the Financial Services Industry (actually another one of those mega-industries that is made up of several sub-industries such as Banking, Bonds, Securities, Risk Management, Software & Services, Regulation, and so on). There are many standards and specifications that have come out of Financial Services that overlap or relate to XBRL. These generally focus on executing specific financial transactions using a single vocabulary (for example, RIXML, FIXML, MDDL, IFX, and OFX). Some view XBRL as the logical opportunity to serve as a unifying common language to either enhance

these specific standards or serve as an interchange format between them.

Similarly, other standards from organizations such as OASIS and other bodies have overlaps that could benefit from a common language for business information. For instance, there is some interest in rationalizing, if not actually coordinating, work being done in the OASIS UBL (Universal Business Language) TCs and [ebXML](#) (Electronic Business eXtensible Markup Language) TCs. UBL and XBRL have established formal liaison relationships to coordinate and communicate activity. In fact, XBRL has many official liaison relationships and is interested in working with other groups in the hope of leveraging and building upon standards from such groups as, for example, the UN GREFIS (part of the UN electronic commerce standards organization that focuses on insurance risk standards and processes).

XBRL Fundamentals



XBRL

XBRL stands for eXtensible Business Reporting Language. It is an XML (eXtensible Mark-up Language) dialect developed for business reporting purposes.

In XBRL, financial data is tagged so that it can be easily understood and processed by computers, for example <Asset>1000</Asset>.

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word Asset together with brackets "<" and ">" is called a tag. We distinguish opening tags: <...> and closing tag: </...>. Between the tags there is a value. What computers understand from the example above is that something called an Asset has the content "1000". But how do they know what an Asset is?

This is where XBRL uses computer scientists' concept of metadata. In brief, metadata is data about data. For example, a programmer has to explain to a computer how it should understand the term Asset and what kind of values could be assigned to this concept.

From the accounting perspective, Asset should have a monetary value (type attribute) and its balance nature is debit. This refers to the basic rule of double entry accounting that Assets and Expenses have normal balance of a debit while Equity, Liabilities and Revenues have a normal balance of a credit (see balance attribute).

Another characteristic of an Asset is that it is a resource available to an entity at a particular point in time. It appears on the Balance sheet which is a snapshot of an entity's financial position at a specified date. The opposite of a resource presented at a point of time is a flow which occurs during a period (see period type attribute).

The description above shows that information about at least three characteristics must be provided to a computer so that it can understand <Asset> in an accounting manner.

Of course, thousands of hours spent on developing XBRL were not devoted to only tell computers what an Asset is. In accountancy there are many concepts that could be described using XBRL. Moreover, there are different regulations concerning financial reporting which means that the definition of an Asset under IFRSs (International Financial Reporting Standards) could be different to the one provided

by some national GAAPs (Generally Accepted Accounting Practices/Principles).

Therefore, there is a need to describe interactions between financial concepts for each regulation of GAAP. This is to define whether or not there is any relation between Assets and for example Receivables and if there is, how it looks in terms of accounting knowledge and create references for elements to express to which accounting act they apply to. To do that, XBRL uses technology called XML Linking (XLink).

To relate the information provided above to the main drawing at the top we could say that:

- Values between tags (for example <Asset>100</Asset>) are found in instance documents;
- Information on what an Asset is and how a computer should treat it is provided in schema files;
- Relationships are described in linkbases which are segregated into different categories depending on what is described and how it is done.

The following sections discuss each of the elements of the diagram in more detail.

Taxonomy

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?

In XBRL, a taxonomy consists of the core part which is a schema (or more schemas) and linkbases. If you compared it to the physique of a crab, the schema would be its head and trunk (where all the major organs are situated) and the linkbases would be its limbs. Of course, a schema could exist without linkbases in the same way as that a crab could theoretically live without limbs but in order for crab to survive and for the taxonomy to be optimal both parts of the body are necessary.

Relating the XBRL taxonomy to the general taxonomy term explained above the schema is the part that contains definitions of elements (such as Assets) whereas linkbases provide relationships between them. In the example of the classification of living things, the explanation of what is an Organism, Domain, Kingdom, Division and Class would be placed in the schema while the hierarchical relationships between them would appear in the linkbases.

Click on the links to learn more about schema and linkbases and see some examples.

Schema

An XBRL schema stores information about taxonomy elements (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.

From the technical point of view the XBRL Schema is an XML Schema tailored to particular business and financial reporting needs. The schema itself represents a set of unrelated elements. Schemas are created using XML Schema technology and their physical form is a file with an extension .xsd. Together with linkbases it creates an XBRL taxonomy.

The root element (the most general one) of all schemas is <schema>. It opens (<schema>) and closes (</schema>) every schema document. It contains some attributes describing it. Because the same element could be defined in many schemas each of which would assign it a different meaning (for example under various GAAPs the concept Assets may be defined differently), to distinguish between the elements we use namespaces. Namespace look like Internet addresses (for example *http://xbrl.iasb.org/int/fr/ifrs/*) but they are not.

The reason for using names that look like www locators (URIs) is that they are unique and therefore are appropriate to identify the elements that are unique to a schema. Instead of using the whole, long address we can assign it a prefix. If we define for example that *ifrs=http://xbrl.iasb.org/int/fr/ifrs/* then, instead of quoting the whole

URI before an element name, we can simply use ifrs (for example <ifrs:Assets/>).

To summarize, the main purpose of XBRL schemas is to provide the computer with information on how it should represent and process accounting terms. As explained in the XBRL section, computers do not have built-in accounting knowledge so they have to be taught what a particular concept means and what its characteristics are. To learn more on how to explain accounting to a computer go to the Element section.

Element

An element is a business concept (such as Assets, Liabilities, Income...) presented to a computer in a way that it could learn its main characteristics. To achieve this, definitions of elements that appear in schemas are constructed according to a specific set of rules. The example below describes simplified (prefixes have been omitted) definition of the element Assets.

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

The most important parts provided in this example, from a business perspective, are name, type, balance and periodType.

It is easy to guess that the first component assigns an element a unique name. To distinguish between elements defined in different schemas we use namespaces and their prefixes (see schema section). A name must meet several criteria and cannot contain spaces and

other characters that are 'illegal' in XML. XML distinguishes between upper and lower case so 'assets' and 'Assets' are different elements.

Apart from the name, for an accountant, the concept Assets is associated with a set of characteristics that are defined by other components presented in the example above.

periodType relates to the accounting distinction between flows and resources. Since it is natural to provide a value of Assets for a particular date and time (usually the end of the year), the value of this attribute for this concept is set to "instant". Flows such as Payments, Revenue or Profit would have "duration" as periodType.

Another characteristic of accounting that computers have to learn is the balance nature of an element. According to the basic rule of double entry accounting, Assets and Expenses have normal balances in 'debit' while Equity, Liabilities and Revenues have normal balances in 'credit'. So to increase an Asset or Expense, you 'debit' the account and to decrease them you 'credit' the account.

To reflect this feature in XBRL, each element (or more precisely: each item) than falls into one of these categories and has a monetary value should contain in its definition a specification of whether it has a normal 'debit' or 'credit' balance. This requirement was introduced because of the need of having comparable data and because it is necessary in order to perform accounting calculations.

For example the element Cost of sales (an Expense) could be assigned negative value and added to Revenue ('credit') in order to calculate Gross profit or it could be a positive figure which by subtraction from Revenue would give the same result.

	No balance attribute assigned		Balance attribute assigned		Balance attribute assigned	
Revenues	+	1,000	+	1,000	+	1,000 (Cr)
Cost of sales	-	1,200	+	- 1,200	-	1,200 (Dt)
Gross profit (loss)	=	-200	=	-200	=	-200 (Cr)

Although using a balance attribute is useful and straight forward in the case of Balance Sheets or Income Statements, it creates difficulties in calculating some Cash Flows in which elements do not necessarily obey 'credit'/'debit' rules. There are new technologies under development such as formulas and functions that make XBRL more programmable and so are likely to be helpful with the problem.

Last but not least important characteristic of an element that has to be defined is its type. In financial reports companies include information that are in the form of figures with monetary units (e.g. £100), numbers (for example number of employees), percents (interest rates), strings (regular text) and others.

To help computers know how to treat each of these, XBRL developers decided to use (with small adjustments) XML built-in types. By doing so, computers can check the validity of data entered according to the type as well as make calculations. The most common types that appear in financial statements are `monetaryItemType`, `stringItemType` and `decimalItemType`.

There are some concepts in business reporting that are expressed in XBRL using elements whose definitions and constructions differ significantly from presented above. They are called tuples and were

designed to express, for instance, tables with unknown number of rows or columns. A simplified (prefixes have been omitted) example is provided below:

```
<element
  id="Deposit"          name="Deposit"          substitutionGroup="tuple"
  nillable="true">
  <complexType>
    <complexContent>
      <restriction base="anyType">
        <sequence>
          <element ref="Description" />
          <element ref="Amount" />
          <element ref="EffectiveInterestRate" minOccurs="0" />
        </sequence>
        <attribute name="id" type="ID" use="optional" />
      </restriction>
    </complexContent>
  </complexType>
</element>
```

The first feature that distinguishes them from regular elements is that their substitutionGroup value is set to tuple (in contrast to the previous example where this attribute was assigned the value item).

Secondly, the definition of the element Deposit lacks many of the components described above such as balance attribute, periodType or type. Instead, this element contains other elements which are, in the example provided, Description, Amount and EffectiveInterestRate. The definition of the content a tuple may hold includes additional

information concerning the order of elements contained and their minimum number of occurrences (minOccurs) and maximum number of occurrences (maxOccurs).

Unlike regular items, tuples (and items that they contain) may appear in instance documents several times in the same context. Relating this to the example above, the reporting entity may define a list of deposits by providing the Description, Amount and Effective Interest Rate of each.

Once elements and their features are defined in a schema, taxonomy creators face the task of providing computers with knowledge on relations between elements and their links with human readable resources. These constitute components of linkbases.

Linkbase

As described in the taxonomy section, linkbases (often referred to as 'layers') are the components of a taxonomy that provide information about relationships between elements and link them with specified external resources. So typically, as well as defining XBRL elements, the creation of an XBRL taxonomy, regardless of its purpose, also involves performing following actions:

- labeling elements in specified languages in order to make taxonomy readable for humans;
- referencing elements to the external resources that justify their existence and that contain an explanation, definition or example of the use of the particular financial concept,
- defining relations between elements according to different criteria.

The figure at the top of the page presents how linkbases relate to the schema. There are unidirectional arrows to the label and reference

linkbases and bidirectional ones to the presentation, calculation and definition layers.

The actions listed in the bullet points above are the five types of linkbases represented in the diagram. Label and reference linkbases connect elements to external resources, while presentation, calculation and definition layers provide descriptions of relationships between elements.

Linkbases use two XML technologies. The first is known as XLink (XML Linking Languages) which as its name suggests, allows for the creation of hyperlinks in XML documents. The second is XPointer (XML Pointing Languages) that helps to localize specific parts of XML and XBRL documents (e.g. elements' definitions in schemas).

Basically, in order to create a relation, we need to point to elements or resources that we are interested in and define the type of relationship. A simplified example of a hierarchical relation from a presentation linkbase is provided below.

```
<loc xlink:type="locator"
  xlink:href="schema.xsd#Assets"
  xlink:label="Assets_Locator"/>
```

```
<loc xlink:type="locator"
  xlink:href="schema.xsd#CurrentAssets"
  xlink:label="CurrentAssets_Locator"/>
```

```
<presentationArc xlink:type="arc"
  xlink:arcrole="http://www.xbrl.org/2003/arcrole/parent-child"
  xlink:from="Assets_Locator" xlink:to="CurrentAssets_Locator"/>
```

Let's analyze this example. First, we create a locator (<loc>) which we label Assets_Locator and we point to the element that is defined in the

schema stored in the file schema.xsd whose id attribute value is Assets. Lines three and four repeat this action for the element CurrentAssets. The last three lines describe the relation between the “located” elements by describing the type of connection. An arcrole attribute defines the type of relation which in this particular case is “../parent-child” (hierarchical order). The attributes to and from point to locators. In the example the relation says that <CurrentAssets> is a child of <Assets>.

To sum up, linkbases provide descriptions of connections between elements by localizing them and defining the type of relationships (utilizing arcrole attribute). Each of the five linkbases (layers): presentation, calculation, definition, reference and label contains definitions of different types of relations.

Presentation linkbase

Business reports are in general prepared in the form of tables or statements or other structures. The presentation linkbase stores information about relationships between elements in order to properly organize the taxonomy content. This allows the elements to be arranged in a structure that is appropriate to represent the hierarchical relationships in particular business data.

These groupings can be performed in many ways. For example, a typical Balance Sheet contains Assets, Equity and Liabilities. Assets consist of Current Assets and Non-current Assets. Current Assets are split in Inventories, Receivables and so on. The presentation linkbase, using parent-child relations organizes elements in this way and helps users find concepts they are interested in.

The main drawback of a tree-like (hierarchical) structure in a presentation linkbase is that it only allows the presentation of flat lists

of elements, while financial statements also contain more sophisticated reports such as Changes in Equity or Movements in Property, Plant and Equipment . The XBRL Consortium is currently working on rendering solutions that would provide for the automatic creation of such reports.

Calculation Linkbase

The idea of the calculation linkbase is to improve the quality of an XBRL report. It contains definitions of basic validation rules, which apply to all instance documents referring to a particular taxonomy. A hierarchically calculation linkbase sorts all monetary elements in this way so that lower level elements sum up to or are subtracted from one another so that the upper level concept is the result of these operations.

[-] Gross Profit [by function]	
> Revenue, Total [by function]	1
> Cost of Sales [by function]	-1

The sign of the relationship depends on the weight attribute that is assigned to the arc connecting two elements. An example is provided below.

```
<calculationArc xlink:type="arc"
xlink:arcrole="http://www.xbrl.org/2003/arcrole/summation-item"
xlink:from="GrossProfit" xlink:to="RevenueTotal"
order="1" weight="1" use="optional"/>
```

```
<calculationArc xlink:type="arc"
xlink:arcrole="http://www.xbrl.org/2003/arcrole/summation-item"
xlink:from="GrossProfit" xlink:to="CostOfSales"
order="2" weight="-1" use="optional"/>
```

The example shows that there are defined two calculation arcs providing details concerning relations between Gross profit, Revenue and Cost of Sales. In Income Statements, Gross profit is a difference between the other two.

Therefore, we assign weight attribute value to "1" on the arc connecting Gross profit and Revenue and "-1" between Gross profit and Cost of Sales.

The reason why there is a difference between calculation and presentation linkbases, is that the total element that stands for the summation of all others usually appears at the bottom in the financial statements whereas in the calculation linkbase it must be placed as the top concept.

Presentation

Assets (Presentation)
Assets, Non-Current
Assets, Current
Assets, Total

Calculation

Assets, Total	
Assets, Non-Current	+1
Assets, Current	+1

There two major of rules concerning calculation relations in XBRL. Firstly, we cannot carry out operations on elements that have different values of the periodType attribute. This is often called the cross-context rule and relates to defining some elements as "For period" (duration) and others as "As of date" (instant). For example, concepts that appear on Balance Sheet are instant which means that their value is presented for a specified day, while elements in the Income Statement or Statement of Cash Flows are duration because they

represent actions that took place over a period of time. The problem emerges for example in the Statement of Changes in Equity or Movements in Property, Plant and Equipment where instant elements mix with duration. The solution to this problem is a formula linkbase that will provide taxonomy creators with many more functions than just simple addition or subtraction.

Secondly, the double entry accounting rule requires XBRL taxonomy creators to define the credit/debit nature of monetary elements appearing in the Balance Sheets and Income Statements. This rule does not allow the addition of elements with opposite balance attributes (they must be subtracted). It also defines whether the value contained by an element should be positive or negative.

Definition linkbase

The definition linkbase provides taxonomy creators with the opportunity to define different kinds of relations between elements. There are four standard types of relationships supported by the definition linkbase.

The first one is referred to as “general-special”. It distinguishes between concepts that have more generic or more specific meaning. For example Zip Code is the US representation of Postal Code which is used worldwide. Therefore, to indicate that connection, taxonomy creators define Postal Code as a general term to which there is more specialised concept Zip Code.

Second available relation type is “essence-alias”. By using it, taxonomy creators are able to indicate that two concepts have similar meaning. For example, some airlines may want to use the term Planes to describe their main component of their PPE while other would prefer Aircraft. To state that meaning of these two is the same and that they

can be used interchangeably, taxonomy creators may connect them using “essence-alias” arcrole.

The third standard type of relation is called “requires-element”. As its name indicates, taxonomy builders use it to force instance creators to enter the value of one element, if they provide the content of another. For instance, a regulator may want to require disclosures on a particular component of Assets if it appears on the Balance Sheet. In order to achieve that, the definition linkbase defines “requires-element” relationship between them (for example, Property, Plant and Equipment, Net and Property, Plant and Equipment Disclosures).

The fourth relation is “similar-tuples”. It resembles “essence-alias” relation but is applied for tuples. It connects two tuples that are equivalents in terms of definition (documentation from label linkbase or reference in reference linkbase) but are diverse from XML perspective i.e. do not have identical content models, for example contain different elements. One of the reasons that this type of relation was introduced is prohibition of schema redefinition which disallows for changes in tuple's content model.

Reference link base

Financial concepts appearing on business reports more often than not stem from regulatory documents issued by authorities. For example, the IFRS Taxonomy describes financial reports prepared based on IFRSs (Bound Volume).

Elements defined by this taxonomy refer to the specific terms and concepts explained in the standards. For this reason, a taxonomy is often provided with a reference linkbase that presents relationships between elements and external regulations or standards (the other solution is to enclose documentation in label linkbase). This helps

instance creators and users understand the intended meaning of each element and provides support for its inclusion in the taxonomy.

The reference layer does not contain the full text of the regulations. Instead, it points to source documents by identifying their name and indicating the relevant paragraphs and clauses. This connection is created using “concept-reference” arcrole.

There are several types of references that could be provided for each element.

```
<reference xlink:type="resource"
  xlink:role="http://www.xbrl.org/2003/role/presentationRef"
  xlink:label="CashFlowsFromUsedInOperationsTotal_ref">
  <ref:Name>IAS</ref:Name>
  <ref:Number>7</ref:Number>
  <ref:Paragraph>14</ref:Paragraph>
```

```
</reference>
```

```
<reference xlink:type="resource"
  xlink:role="http://www.xbrl.org/2003/role/measurementRef"  xlink:label="CashF
  <ref:Name>IAS</ref:Name>
  <ref:Number>7</ref:Number>
  <ref:Paragraph>18</ref:Paragraph>
  <ref:Subparagraph>a</ref:Subparagraph>
```

```
</reference>
```

The example above indicates references for Cash Flow from (Used in) Operations. First, it provides a reference to a document which explains how and where the element should be presented in terms of its placement and labeling. In IAS 7, paragraph 14 we read that the concept Cash Flows from Operating Activities exists and what it is derived from. Second, the measurement reference provides explanations about what determines the value of the element and how

it should be calculated. This description can be found in IAS 7 paragraph 18.a.

XBRL also allows an element to be assigned other types of references containing examples, commentaries, etc

Label linkbase

XBRL aims to become a world-wide standard for electronic business reporting. This requires taxonomies to present business data in many different languages. Therefore it is important to be able to create an element that is assigned with labels for different languages. There may also be different labels for different purposes. All labels are stored and linked to the elements in a label linkbase.

Elements defined in a schema are built to convey accounting meaning to computers. In order to make it easier for computers to process their names, they have to obey some rules. For example, the use of spaces is not allowed so 'Cash and Cash Equivalents' would be named 'Cash And Cash Equivalents'. Additionally, big taxonomies such as IFRS obey specific rules of naming and labelling to ensure consistency within the schema. For example, there could be a list of words that are excluded from the names (e.g. 'and', 'of' ...) or words that appear only in a particular order (i.e. 'Net' or 'Total' at the end of the label after a comma).

In the label linkbase, elements are connected to human readable labels using "concept-label" arcrole.

As mentioned above, elements can be assigned to labels in different languages. An example that describes definitions of labels of the IFRS element AssetsTotal in English, German and Polish is provided below.

```
<label xlink:type="resource"  
xlink:role="http://www.xbrl.org/2003/role/label"  
xlink:label="ifrs_AssetsTotal_lbl" xml:lang="en">Assets,  
Total</label>
```

```
<label xlink:type="resource"  
xlink:role="http://www.xbrl.org/2003/role/label"  
xlink:label="ifrs_AssetsTotal_lbl" xml:lang="de">Vermögenswerte,  
Gesamt  
</label>
```

```
<label xlink:type="resource"  
xlink:role="http://www.xbrl.org/2003/role/label"  
xlink:label="ifrs_AssetsTotal_lbl" xml:lang="pl">Aktywa,  
Razem</label>
```

To distinguish between languages, XBRL uses the XML attribute lang. Taxonomy creators may also define different labels for one element. One of the ideas of XBRL is that the information about the period and currency for which the element is reported is not contained within an element definition but is described by a context in instance documents. In financial reporting on the other hand, many terms express the date for which they are being reported, for instance Property, Plant and Equipment at the beginning of year and Property, Plant and Equipment at the end of year. XBRL allows the creation of different labels depending on the context in which an element will be used.

```
<label xlink:type="resource"
xlink:role="http://www.xbrl.org/2003/role/label"
xlink:label="ifrs_AssetsTotal_lbl"
xml:lang="en">Property, Plant and Equipment, Net</label>
<label xlink:type="resource"
xlink:role="http://www.xbrl.org/2003/role/periodStartLabel"
xlink:label="ifrs_AssetsTotal_lbl"
xml:lang="en">Property, Plant and Equipment, Net, Beginning
Balance</label>
<label xlink:type="resource"
xlink:role="http://www.xbrl.org/2003/role/periodEndLabel"
xlink:label="ifrs_AssetsTotal_lbl"
xml:lang="en">Property, Plant and Equipment, Net, Ending
Balance</label>
```

The example above shows how three different labels are assigned to one element by applying different role attributes on labels.

Taxonomy Extension

Public taxonomies, such as IFRS, define elements and relationships between them according to particular legislation or standards, for example “International Accounting Standards” (IAS) or “International Financial Reporting Standards” (IFRS). These XBRL-described concepts allow companies to create financial statements that are valid and compliant with the requirements of regulators.

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, as its name

indicates, allows for such extensions without loss of comparability and integrity of data.

Extending the taxonomy may involve performing the following operations:

- Adding an element that was not described in the base taxonomy but is required;
- Modifying the relationship between elements in terms of their order, addition or deletion.

Taxonomy extensions are built for different purposes mainly by regulators, local authorities or simply by reporting companies.

There are several rules that have to be obeyed while building an extension taxonomy. The most important one states that the extension should not physically modify the content of any of the files of the base taxonomy. This is usually made impossible by locating the base taxonomies on their website which prevents other users from making changes to the files.

Building an extension that involves the modification of linkbases requires that the creators are familiar with the attributes use and priority as well as the concept of equivalency. With these attributes you can prohibit a relation (an arc) or override it. The use attribute may take the values "optional" and "prohibited" of which the latter implies that the relationship will not be processed by a computer. priority assigns relations with ranks that inform the computer about the processing order.

DTS

DTS stands for 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.

A complete set of the IFRS Taxonomy (which graphical presentation can be viewed on the diagram placed on the summary page) consists of 47 files (including three schemas). Moreover, this taxonomy is usually approached using another entry schema generated by the ITMM (IFRS Taxonomy Modules Manager).

This so-called 'shell' schema imports IFRS main schema that defines all elements and refers to selected linkbases containing presentation and calculation relationships as well as labels in different languages.

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.

Schema

Element's definition:

```
<element
  id="ifrs_ProfitLossBeforeTax"
  name="ProfitLossBeforeTax"
  type="xbrli:monetaryItemType"
  substitutionGroup="xbrli:item"
  xbrli:periodType="duration"
  xbrli:balance="credit"
  nillable="true" />
```

Instance Document

Business fact:

```
<ifrs:ProfitLossBeforeTax
  contextRef="Current_ForPeriod"
  unitRef="U-Euros"
  decimals="0">661000</ifrs:ProfitLossBeforeTax>
```

Unit:

```
<unit id="U-Euros">
  <measure>iso4217:EUR</measure>
</unit>
```

Context:

```
<context
id="Current_ForPeriod">
  <entity>
    <identifier
scheme="http://www.sampleC
ompany.com">
  SAMP</identifier>
  </entity>
  <period>
    <startDate>2004-01-
01</startDate>
    <endDate>2004-12-
31</endDate>
  </period>
</context>
```

The example above states that Sample Company's *Profit Loss Before Tax* for the year 2004 amounted to 661,000 EUR. As you can see, element's definition is contained in the schema. The instance

document assigns it a value and provides additional information about the currency in which it is disclosed and defines a period and the entity that it refers to.

Footnote

Footnotes appear on instance documents and provide additional information for some of the elements. If for example, in a business report, several concepts refer to the statement “For more information see Disclosures on Assets”, it is possible to create linkages between them and a footnote element containing this block of text.

```
<Assets id="Assets"
  decimals="0" contextRef="Current_AsOf"
  unitRef="GBP">20000</Assets>

<link:loc xlink:type="locator" xlink:href="#Assets"
  xlink:label="Assets"/>

<link:footnoteArc xlink:type="arc"
  xlink:arcrole="http://www.xbrl.org/2003/arcrole/fact-footnote"
  xlink:from="Assets" xlink:to="AssetsFootnote" order="1.0"/>

<link: footnote xlink:type="resource" xlink:label="AssetsFootnot"
  xlink:role="http://www.xbrl.org/2003/role/footnote"
  xml:lang="en">For more information see Disclosures on
  Assets</link: footnote>
```

XBRL – The Future Language of Finance and Accounting

In the example above, the first lines provide us with a description of the fact that Assets reported in the current period amounted to 20,000 GBP and creates a locator that point to this statement. The element footnote contains the text of a footnote and the footnoteLink connects the element with this reference.

Additional Benefits from XBRL

The standardized internal reporting process environment creates additional advantages and capabilities:

Leverage existing ERP systems – A somewhat ironic fact of ERP today is that many enterprises have multiple enterprise planning systems for a wide variety of reasons. This can include different versions of an ERP system from the same vendor. The traditional approach to integrating multiple ERPs to have a “true ERP” is to add layers of ERP software on top of what already exists. XBRL makes it possible to achieve the same level of “integration” in a much quicker and cheaper way. For example, the Japanese apparel manufacturer with operations in 23 countries Wacoal leveraged XBRL in 2003 to breathe new life into 32 old and disparate ERP systems by creating a “virtual warehouse” in about 16% of the cost and 33% of the time that would have been required to create an actual global warehouse.

Reduce costs of future ERP investments - Standardization at the information layer rather than the software layer provides greater flexibility in changes to and lowers future investments in the underlying software applications.

Lower reporting and compliance costs - Standardized information, processes and rules drives significantly lower internal and external reporting and compliance costs. On December 11, 2006 at the AICPA SEC and PCAOB Update Conference held in Washington D.C., John Stantial, Director of Financial Reporting at United Technologies Corporation, outlined his plans to reduce reporting time and costs by 20% via XBRL enabled-process enhancements and this from a

company with one of the largest and most successful Hyperion installations in the world.

Improve decision making – Standardized processes enable greater degrees of automation and information flow, thereby significantly increasing the timeliness, accuracy and completeness of information available for management decision making. Additionally, the scope of information from outside the company is dramatically expanded as any internal or external information source exposed via a Web service and published in the XBRL standard can be immediately included in management's analysis.

XBRL is now sufficiently developed that companies can use it today for internal purposes. For example, the XBRL Global Ledger Taxonomy provides a powerful platform on which to create a standard chart of accounts. A diverse range of tools are also available, with more being introduced to the market every month¹⁰. Furthermore, numerous implementation case studies are available on the XBRL Website¹¹ discussing the application of standardization to eliminating the constraints discussed above that are occurring at virtually every segment of the business reporting supply chain.

The additional benefits of XBRL outlined here are only the beginning of how a large number of stakeholders can take advantage of this powerful new information standard. Analysts and investors will be able to perform much more sophisticated benchmarking analyses comparing companies' financial and market performance. Executives will be able to do the same with their performance vis a vis their major competitors.

Implementation of XBRL in Banking System: -

In India Reserve Bank of India is working as Central Bank having Supreme Authority over banking operations. For XBRL implementation Reserve Bank of India is the initiator in India. Within the Reserve Bank, XBRL has been viewed as a natural evolution of its existing Online Returns Filing System (ORFS). While ORFS does the job of data capturing and transmission of returns from banks to the Reserve Bank, it incorporates no in-built standardization. XBRL enables standardization and rationalization of elements of different returns using internationally recognized best practices in electronic transmission. In the process, XBRL also facilitates rationalization of number of returns to be submitted by the banks, thus reducing the reporting burden on banks. Standardization of data elements is achieved in XBRL by defining a set of 'taxonomies'. Taxonomies have to be in sync with the global taxonomy as recognized by XBRL International Inc (XII), which is a consortium of regulators, financial standards bodies and technology providers. XBRL is an open standard.

The responsibilities of forming XBRL national jurisdiction and implementation of the standards for financial reporting in India have been entrusted to the Institute of Chartered Accountants of India (ICAI). The Reserve Bank is responsible for implementing the XBRL standard for banks' reporting. Within the Reserve Bank, XBRL implementation is being regularly monitored by a High Level Steering Committee appointed by the Governor. Currently, besides Form 'A', a statutory return under Sec 42(2) of RBI Act 1934, a return on Gap, Positions and Balances (GPB) and a set of returns for monitoring capital adequacy (called RCA-2) have been implemented using XBRL.

Taxonomies used for the three returns have the core taxonomy as Commerce & Industry taxonomy developed by ICAI and have been extended appropriately. Further, the RCA-2 taxonomy is broadly based on Co Rep Taxonomy of the European Union and is also in sync with Commerce & Industry taxonomy.

Background of Implementing XBRL in India: -

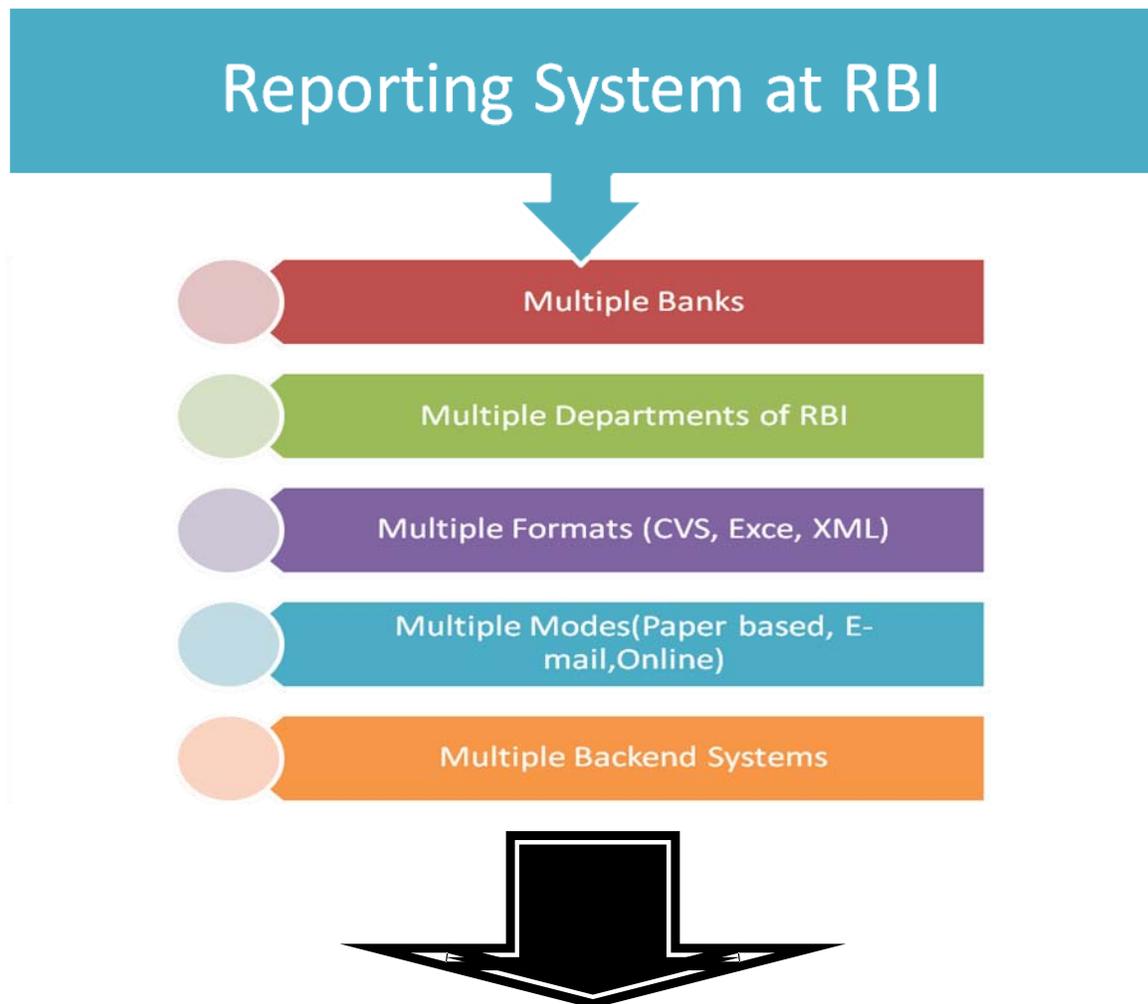
1. Composition of Banks:-

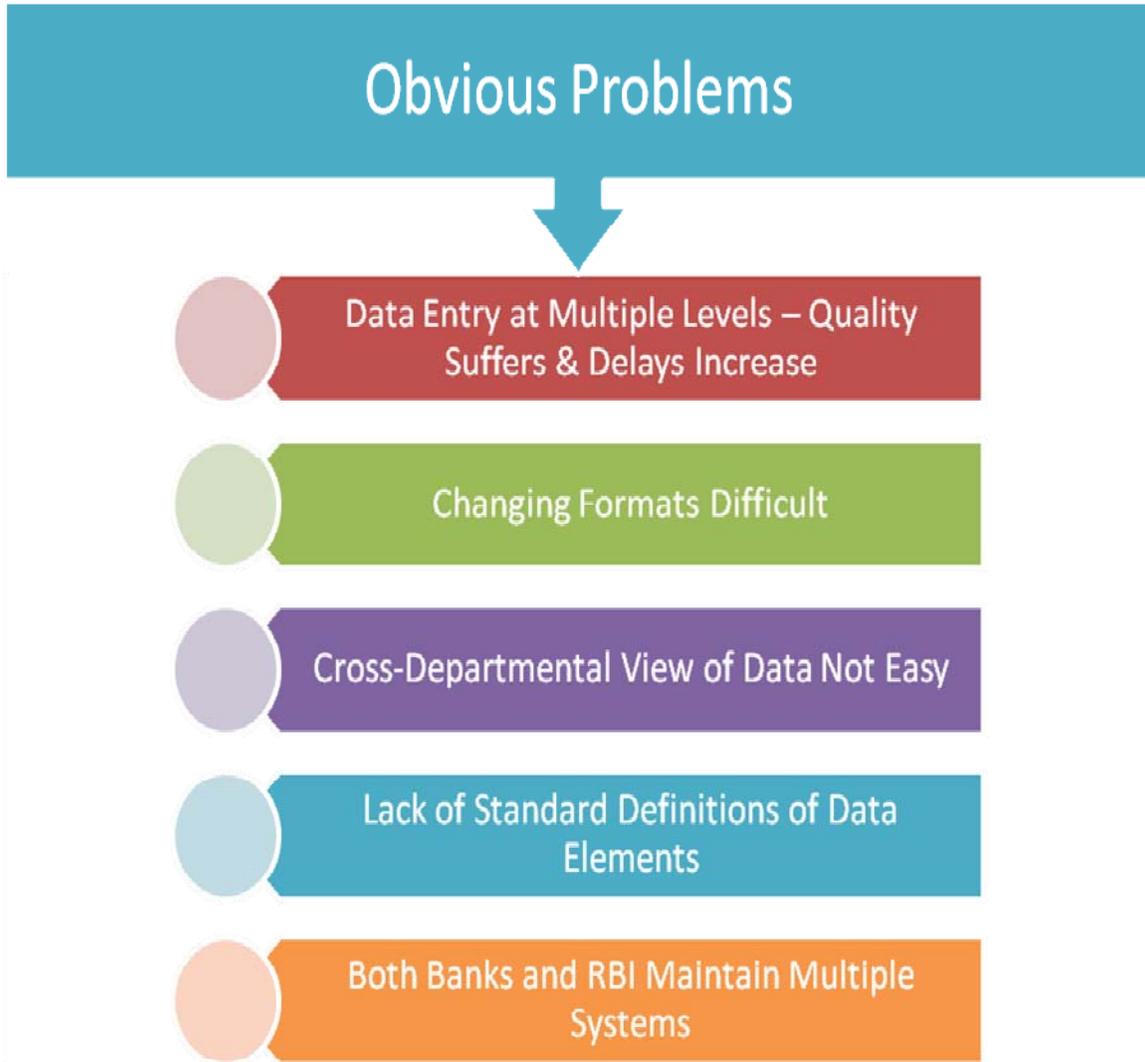


Thus, it becomes a lengthy job monitor such large volume of banks. To have a close monitoring system on banks large manpower required.

2. Reporting by Banks to Reserve Bank of India: -

There are many issues regarding reporting to RBI on various reports to various Departments of RBI in different formats. This requires manual interruptions at the time of reporting. Thus, issues regarding integrity of data, mathematical accuracy was questioned, also lot of efforts required from RBI's end to cross-check the reportings.



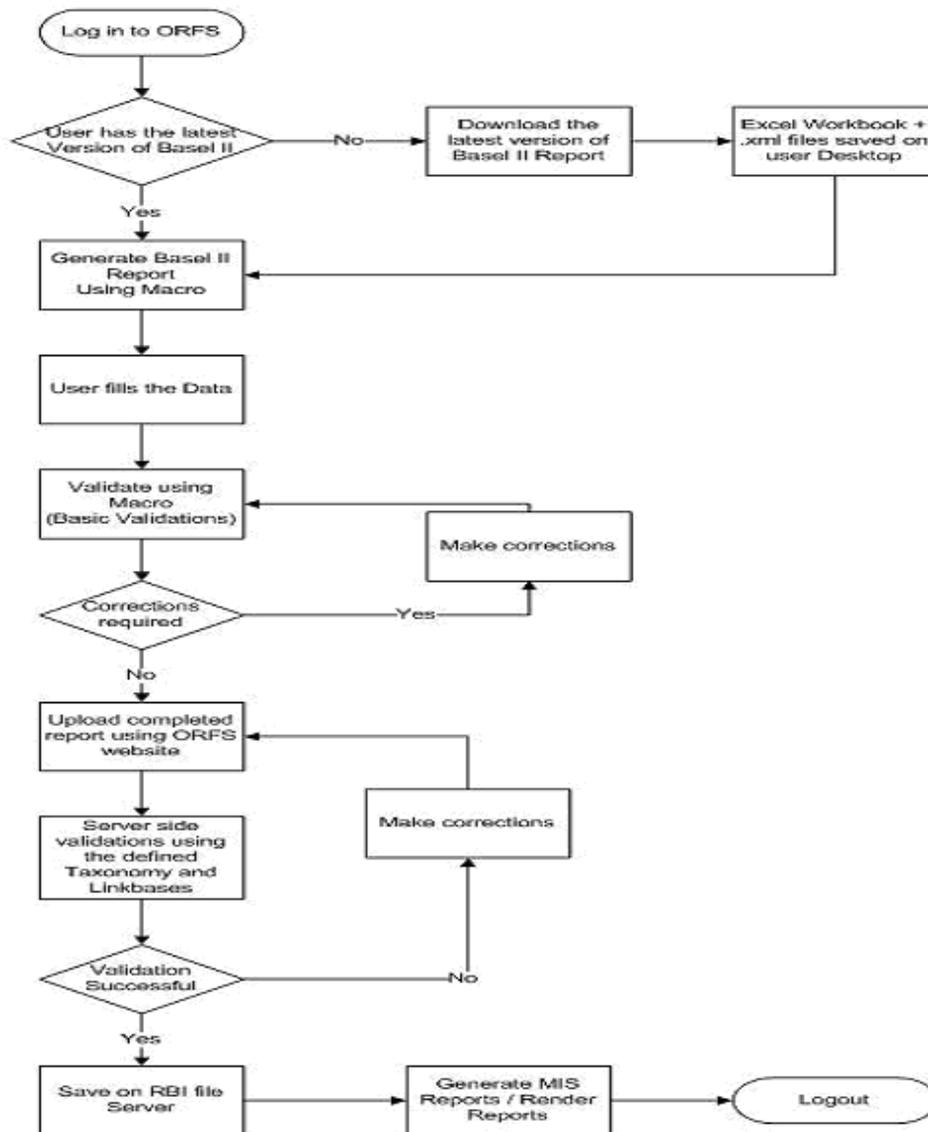


3. Implementation of Basel II Norms: -

To cope up with international pressure RBI has accepted Basel II norms issued by Bank for International Settlement (BIS). The Basel II compliance requires Robust Information Technology support for successful implementation. Due a addition of two segment i.e. Market Discipline & Supervisory Review it becomes necessary to establish compatible & advanced IT Solutions. Also, RBI is quite serious about Capital Adequacy requirement which is like solvency ratio in case of Insurance Sector.

The credit of implementing XBRL first time in India goes to implementing Basel-II norms. Also, in near future regulatory bodies like, Insurance Regulatory & Development Authority (IRDA) & Security Exchange Board of India (SEBI) will implement XBRL. It is solution for saving efforts, data duplication ultimately time & cost.

Basel II Return – Process Flow



To come out of these problems RBI took following steps: -

- RBI introduces on-line returns filing system (ORFS) for important statutory returns.
- Banks file returns through secured channels.
- All concerned departments receive data.
- Straight-through Processing implemented.
- Banks developed XML-based reporting systems from their core banking solutions.
- RBI interacts with other stakeholders on XBRL.
- Attempt for rationalization of returns.

XBRL Implementation at RBI: -Issues

- Varying technology maturity levels across banks.
- Lack of Awareness.
- Skill Set Requirement.
- Local XBRL jurisdiction yet to be formed.
 - Creation or Extension of Taxonomies.
- Protection of existing technology investments.
- Data accuracy and the availability of the granular data.
- Data validation at the data capture stage.

Approaches followed by RBI in XBRL implementation: -

RBI formally launched on October 6, 2008.

1. Commitment:

- Top Level Commitment has maintained as the Governor set up a High-level XBRL steering committee headed by the Deputy Governor in-charge of Regulation, Supervision and Technology.
- Members from RBI, Commercial Banks, Technology Firms, Institute of Chartered Accountants of India (ICAI). Also, a core group comprising relevant technical and functional expertise representing different departments within RBI.

2. Phased manner:

- Pilot project for studying a few banks' and RBI's existing systems and demonstration of the new technology and tools for a few returns. Based on this pilot project, preparation of approach paper and a roadmap for bank reporting using XBRL.
- The first report was the Basel II reporting return, which was being newly introduced.

3. Co. Operation

- Work with vendors having XBRL skills.
- Discuss with XII and European Central Banks.
- Specialist training to core group on XBRL.
- Study the process at Bank of Belgium and Bank of Spain.
- Coordinate with other Indian stake holders like ICAI.

- Work towards formation of Indian jurisdiction.

4. Extension of OFRS- Online Return Filling System:

- OFRS, which has been developed on XML, is being extended to adopt XBRL standards.
- Investment at RBI and banks is reasonably protected.
- Both RBI and banks are familiar with the system.
- Training through workshops, seminars and demonstrations.
- Conversion software made available to banks – with an option for banks work on their own solutions.

5. Development:

- Development of taxonomies – a project within project.
- Both development of taxonomies and system outsourced – the vendor works closely with the core group of RBI.
- Taxonomies vetted by experts in RBI, experts in India and also experts from other countries.
- User Acceptance Tests to involve the concerned departments of RBI and also a few banks.
- Training to banks and departments.

Benefits to Banks: -

- Efficiency gains in external reporting processes.
- Savings in cost/resources for redundant data related work - XBRL ensures data re-usability.
- When providing XBRL data for capital markets, potential for decrease in capital costs for relevant firms since better assimilation of data by investors/market.
- Sharing/Using XBRL data with / of other banks/borrowers can help quicker and better assessment/monitoring of credit risk / counterparty credit risk and also management of moral hazard issue.
- Can enable more frequent review/updating of internal credit rating system.
- Due to better credit risk assessment, can enable enhancement and diversification of credit to sections like SMEs, microfinance institutions etc.
- In the event of pulling/pushing data across disparate systems, say for risk management information systems, XBRL can help in technology independent seamless movement of information.
- Exchange of fraud details / caution advices with Frauds Monitoring Cell of RBI can enable banks further implement fraud control measures expeditiously.
- Reporting/exchanging XBRL enabled information to/with Credit information Bureau/s can lead to better credit assessment process and better management of adverse selection problem.
- In the event of mergers / acquisitions or for consolidation of MIS/accounts, XBRL can be of help in integrating different systems and provide for easier generation of complete, consolidated and centralized information.

- Enhanced internal controls/audit processes if XBRL is extensively leveraged.
- Can facilitate rural initiatives since can XBRL can link disparate applications/systems.
- Since both quantitative and qualitative information can be represented in XBRL, over a period of time potential for enhancing “market discipline” through use of automated tools for crunching XBRL data.
 - Taxonomy for incorporating market discipline Pillar 3 requirements would prove very beneficial.
- Incorporating XBRL capability in core banking and other important systems – can enable direct mapping of taxonomy elements to elements in the specific system and generation of required XBRL instance document as output.

Benefits to RBI

- Generating standard and ad-hoc reports as required.
- Maximum possible automation of processes.
- More analysis facilitated since less of data related issues expected.
- Ease of incorporating data for various analytical studies and periodic reports.
- Quicker access to bank analysts and inspection officials.
- Provision for automated signalling of “red flags” in submitted data which would need further analysis.
- Access of the centralized data repository by other departments like banking policy department, monetary policy department, financial markets department etc. as required.

- Use of business intelligence tool for advanced analytics and drill-down/roll up facility.

XBRL: The Solution for Carbon Credit and Smart Grid Accounting

Measuring carbon emissions is not always a straightforward proposition - especially in situations (as is usually the case) where you have a systemic pipeline of production each of which may contribute in some way to a carbon footprint. In order to develop a standard for such emissions trading, then, you need to have some way of providing a consistent measure across different jurisdictions and even markets for what a carbon credit warrant specifically looks like.

One solution, and one that's being scrutinized at both the private and public levels, is a standard that is already in use for business financial reporting elsewhere - the XML Business Reporting Language, or XBRL. The XBRL standard uses an XML-based language to specify a given business accounting vocabulary. XBRL made headlines recently with the announcement by the Securities and Exchange Commission (the SEC) that the largest 500 publicly traded companies by market cap would be required to submit XBRL by 2009, and that all companies that followed either generally accepted accounting principles (GAAP) or the International Financial Reporting Standards (IFRS) by 2010 and 2011 respectively.

Because of this adoption, many see XBRL strictly as a reporting language. However, it's worthwhile to understand that XBRL is in fact an *accounting* language standard. It was originally conceived of as an XMLized version of GAAP, though it has evolved considerably since then. What this means is that XBRL is ideally suited for the task of transmitting the "state" of a business - or a market transaction - between participants in a market.

This has huge implications both for a credit market and an energy smart grid. In both cases, it can be useful to think of each participant as a node in a network. At any given point, the state of that node - how much energy they have available for transmission at that point in time, how much energy they currently need to fulfill demands upon them - can be represented as an XBRL accounting document.

Any intelligent network in turn should be seen as a series of contracts made, fulfilled or cancelled. As demand increases at a particular node in the network, that node can negotiate new contracts for immediate supply that would be in force only for a limited period of time (perhaps a day, or even an hour). A supplier in turn would be able to ascertain its price based upon both its own capacity as well as upon other demands acting upon it.

Currently power supply prices are usually set up well in advance of actual usage, simply because the number of primary providers is relatively small. In the worst case scenario, this can lead to a situation much like what occurred with Enron, in which the state of California was essentially held captive to a market monopoly that was artificially manipulated. In a distributed "smart grid" however, the power providers may be wind farms, solar arrays, geothermal sinks, hydroelectric power and so forth, in addition to primary natural gas, coal, oil or nuclear providers.

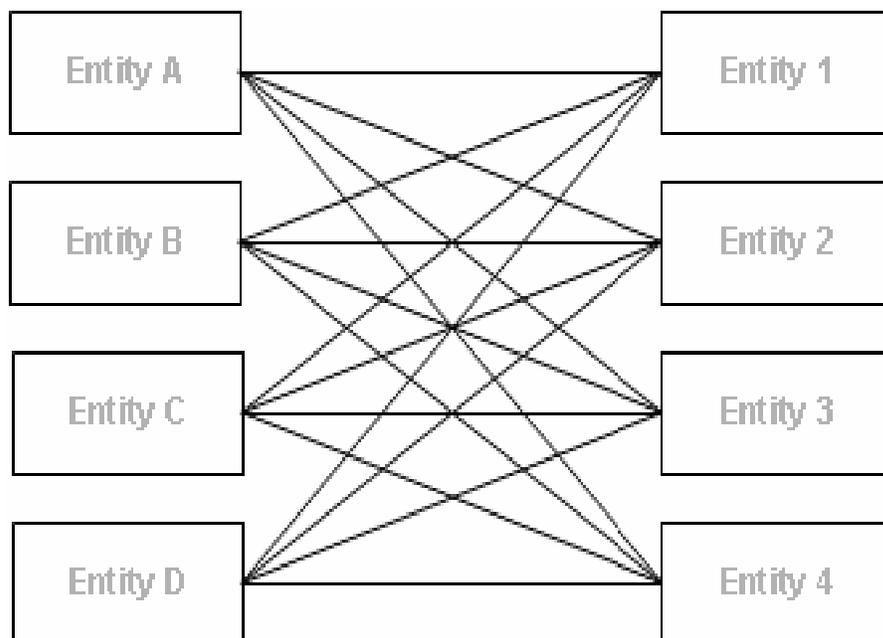
There is no doubt that some standard will arise to be able to accomplish these ends. The advantage of XBRL is that it already exists, is extensible, has been proven in projects worldwide, and is becoming the de facto accounting standard not just for the United States but for the governments of major economies in Europe, Asia, South America and elsewhere.

Moreover, XBRL is an open standard - no one company has a monopoly on the standard, no tool vendor controls the only tools to view, create or manipulate it. It is in fact relatively easy to create XBRL manipulation tools using open source software, even to the extent of incorporating such software into social network mashups. One potential of this in either the carbon credit or smart grid network is that it also becomes possible for something as simple as a Firefox extension running JavaScript to put together, in real time, a map of where power usage is currently highest throughout the US, or where carbon credits are most heavily needed. In essence, it turns such networks into the stuff of mashups.

Algorithms at the collector would determine the best power sales distribution, in order to try to maximize the profits to the collective, using XBRL contracts to determine these. Every financial transaction would then be logged into an account, and when the transactions are finally settled, the resulting profit is credited automatically to each household in turn based upon their ability to provide excess power.

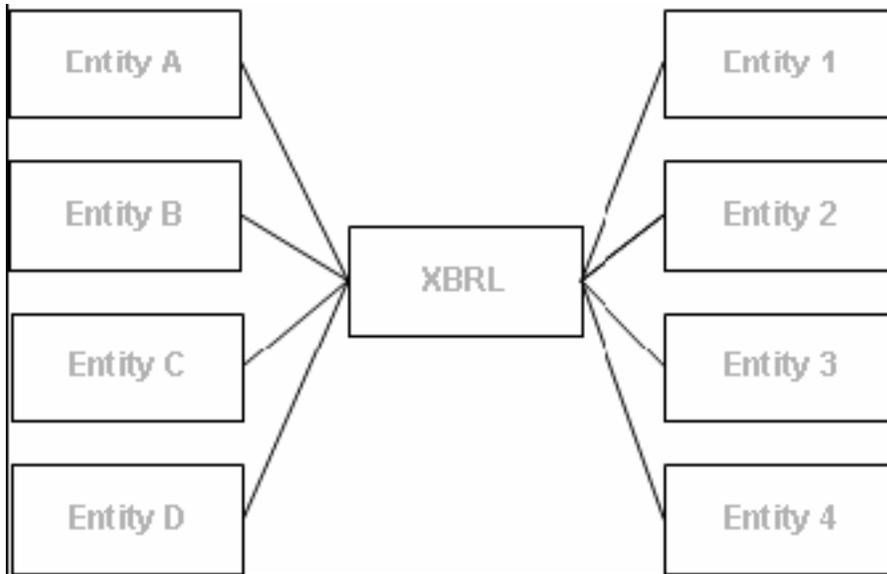
ADVANTAGES OF USING XBRL

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.



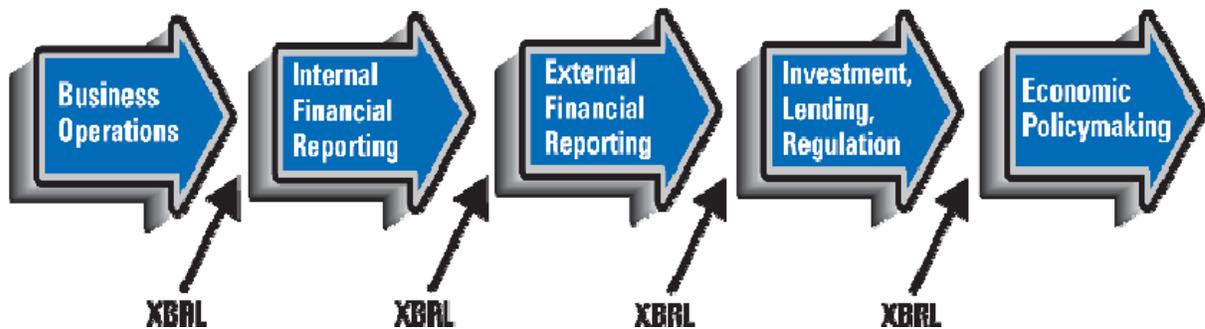
Information Exchange in Traditional Reporting without Reuse

XBRL – The Future Language of Finance and Accounting

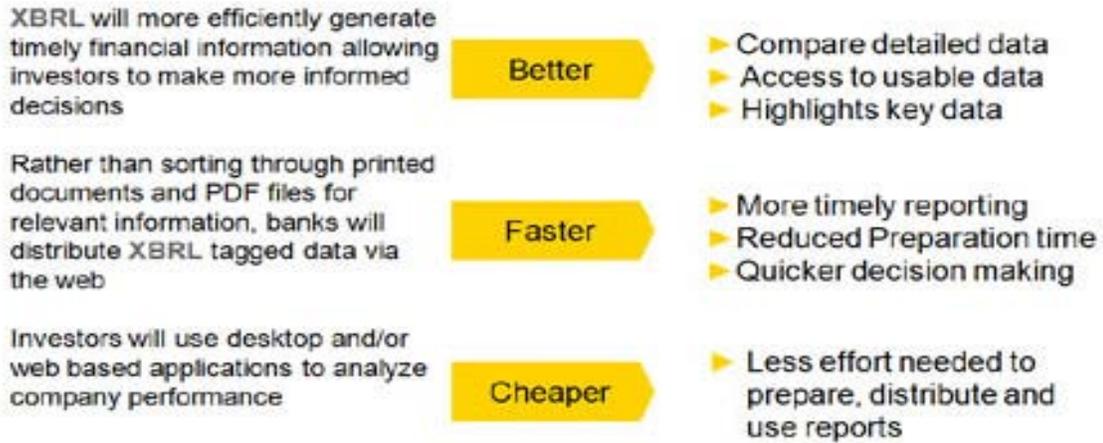


Information Exchange via XBRL with Reuse

Specific Benefits



Investor reporting: Meeting investor and analyst needs



Borrowers reporting



Fundamental Benefits

- Accuracy
- Consistency
- Efficiency
- Flexibility
- Traceability
- Visibility
- Reuse

Detailed Analysis

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. The [detailed analysis of benefits](#) accrued from using XBRL has been briefly discussed below:

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.

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.

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.

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.

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.

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.

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.

Advantages to 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.

Advantages to 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.

Advantages to 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.

Advantages to 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.

Advantages to 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.

Advantages to 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.

Financial Information Companies and XBRL

Through the adoption of XBRL, companies in the financial information industry will be able to:

- Obtain company financial data in a standardized and predictable form.
- Significantly reduce costs by automating many aspects of the gathering and storage of financial data.
- Provide a faster, clearer, deeper and more accurate view of company financial performance

Company Reporting and XBRL

Companies of all sizes can gain benefits from XBRL. By using XBRL, companies will be able to:

- Save costs by preparing data in one form and automatically generating many outputs. Companies will avoid re-keying of data and other manual tasks.
- Consolidate results across divisions and subsidiaries with much greater speed and reliability.
- Improve accuracy and reliability of financial data.
- Focus effort on analysis, forecasting and decision making, rather than on laborious tasks in gathering, compiling and preparing data.
- Achieve quicker and more efficient decisions.
- Simplify the process and reduce the costs involved in regulatory reporting to tax and other authorities.

XBRL : Pervasive at All Levels

The advantages of XBRL are substantial for financial information users at every level. These include U.S. government agencies, governments overseas, large companies, small companies, security analysts, auditors, and individual investors.

The results were impressive:

- 100% of the submitted data added up correctly, compared with just 70% previously;
- The case load of each analyst could be increased, from 450-500 to 550-600;
- Agencies received the data sooner and could publish it immediately. Previously, publication took several days;
- In the first quarter of adoption, the number of audit flags dropped dramatically, from 33% to 5%. Such successes will encourage other government agencies to adopt interactive data for filing requirements.

Governments

Interactive data enjoys similar appeal to government entities worldwide. As a global data format, XBRL eliminates the language barriers of international reporting and ensures consistent data, regardless of the country of origin. Thus XBRL is becoming the de facto standard for defining, exchanging, and storing financial information by regulators and stock exchanges in nations as varied as South Africa, Abu Dhabi, and Brazil.

In Europe, central banks are adopting XBRL for Basel II (COREP) reporting, which is used for computing solvency ratios for the Continent's financial institutions. The Dutch Tax Office collaborated with several of the nation's other agencies to find duplicate requests for information and simplify the information demanded of taxpayers. This work resulted in a huge decrease in data points, from 180,000 to 4,000. And in the UK, plans have been announced to make XBRL mandatory for filing of tax returns, which includes full financial statements, from March 2010.

In Asia, Japan provides an excellent example of the advance of XBRL. In February 2006, the BOJ introduced a data transfer scheme based on XBRL technology that gathers monthly balance sheet data. The next month, the Financial Services Agency (similar to the SEC) issued a plan that would require disclosure documents filed through EDINET (similar to EDGAR) to be prepared in XBRL beginning in 2008. The following month, the Tokyo Stock Exchange stated its commitment to XBRL and said that it too would introduce an XBRL reporting system.

Securities Analysts

Securities analysts at the big investment houses evaluate thousands of companies in dozens of countries. Research staff must often plow through company PDFs, text files, and even paper to extract financial information, with the substantial possibility of human error.

The corporate scandals of a few years ago have led to the downsizing of equity research departments at these institutions. There are far fewer sell-side analysts, and there's much pressure to streamline operations and reduce data manipulation. When XBRL becomes the international data standard for financial reporting, investment banks

will be able to obtain and use data easily for both intra-country and cross-border analysis.

Meanwhile, global fund managers have an ever-expanding universe of stocks to cover, as poor countries become emerging economies and emerging economies become developed nations. But with fewer sell-side analysts, fund managers must depend on in-house staff to do more research on more names. In this environment, portfolio managers are eager to reduce data manipulation and eliminate data re-entry.

Large Multinationals

Several trends point to the increased adoption of XBRL by large multinationals:

- They must deal with enormous amounts of business data, both internally and externally generated.
- Their regulatory burdens are growing. Overseas, demands for transparency and improved corporate governance are raising the regulatory bar. In the U.S., companies must dedicate more resources to the requirements of the regulatory regime dictated by Sarbanes-Oxley.
- Competition from BRIC (Brazil, Russia, India, and China) corporations is mounting. U.S., European, and Japanese firms cannot compete on labor, so they must exploit their advantage in advanced information technology.
- The pace of business is accelerating. Management teams are in desperate need of correct, actionable data as quickly as it becomes available.

Smaller Companies

The downsizing of equity research departments noted earlier has had major ramifications for smaller listed firms. Fewer analysts means fewer companies get covered. The Independent Research Network reports that about 33% of all US public companies with analyst coverage have two or fewer analysts following them, and approximately 42% of all public companies have no analyst coverage at all.

No analyst coverage means lower share prices and less liquidity, which translates into a higher cost of capital. Companies that can reduce the cost to analysts by adopting XBRL will have a better chance of being covered.

Individual Investors

XBRL is the language of financial democracy. The EDGAR system made SEC filings widely available to all investors. Now XBRL promises to make financial statements easy to download and analyze.

These benefits are especially important for the small investor, who has always been at a disadvantage to institutional investors. The dismal economics of sell-side research could easily expand that gap, since big institutions will always have the resources to do their search they need. The easy availability of accurate data that's simple to manipulate makes it much easier for small investors to level the playing field.

XBRL will also make it easier for individuals to buy mutual funds, the preferred investment vehicle of small investors. The prospectuses that lay out all the details and risks are too long and difficult for the average person. In response, the SEC is taking steps to provide one-page summaries of mutual funds' key data in XBRL. These can also be

drilled for the more detailed information required by more sophisticated investors and financial professionals.

Auditors

An old joke among auditors is that their CPA credential really stands for "cut, paste, and attach." Even in the computer age, auditors spend an inordinate amount of time getting company data into their work papers and government reports. This is true of some key areas like tax compliance, which is often nominally integrated in the company's systems but frequently demands much manual re-entry.

Moreover, auditors face increased regulatory burdens, such as the SOX requirement that they report on the reliability of management's assessment of internal control. They are therefore eager to spend less time on data manipulation and more time on analysis.

Automated data transfer, tailored search, "enter once, format many," and many other advantages of XBRL have special relevance to the audit profession.

The SOX Effect

Spurring the drive to enterprise-wide adoption of XBRL is an enhanced internal control regimen, as required by SOX and encouraged by the movement toward greater transparency. Under SOX, CEOs and CFOs are now required to evaluate the adequacy of the company's Internal Control Over Financial Reporting (ICOFR) using suitable criteria. The SEC specifically mentions the COSO (Committee Of Sponsoring Organizations of the Treadway Commission) framework as fulfilling these requirements. Accordingly, COSO has become the de facto standard for assuring ICOFR.

COSO defines internal control as a process that ensures:

- Effectiveness and efficiency of operations.
- Reliability of financial reporting
- Compliance with applicable laws and regulations

Notably, this is the same definition used by CPAs in conducting their attest function in external audits. Although ICOFR itself is not so broadly defined, these objectives are clearly essential to a successful internal control system. They require a broad, integrated, company-wide approach that extends from raw material procurement to revenue recognition.

XBRL Can Improve Internal Control

In the face of these increased burdens, companies are seeking efficiencies that will provide more assurance at lower cost. Where possible, they want to eliminate human intervention, with its costs and possibility for error, in internal control procedures. As companies adopt XBRL to fulfill financial reporting requirements, they will be eager to leverage that investment by applying resources to internal control objectives.

The urgency to upgrade and rationalize the internal control function dovetails with the trend toward business process management (BPM). The primary motivations for BPM are higher profits and greater efficiency, but improved internal control is a key catalyst. The traditional focus of management accounting on cost components like materials and labor atomized information in individual departments. Business processes, as opposed to business functions or specific applications, emphasize information integration.

XBRL is a key component of the Next-Generation Architecture, which includes Service-Oriented Architecture (SOA) and Web Services, that

will underpin BPM in the future. SOA provides the overall picture of business processes and workplace flows. Using open standards, Web Services allow web applications to interact with one another for data exchange. They can potentially be used by anybody to access, edit, or validate their data, wherever the data resides and from whatever application it was generated. As an XML language that is not tied to any proprietary application and has the ability to supply supporting data, XBRL is ideally adopted to these emerging technologies.

Interactive Data Is a Boon to M&A

XBRL is especially useful for the exchange of information in large organizations that store data in widely varying formats and degrees of granularity. Interactive data allows vital information to be easily transferred between the disparate internal and external systems that often occur within large organizations. Given these qualities, XBRL will become a vital force in accelerating the M&A consolidation process.

The ability to consolidate acquisitions and integrate business systems have historically presented enormous challenges, reflecting differences in data and account structures. XBRL can substantially reduce the time and effort required to integrate new acquisitions if both acquirer and target use the same data standard. In that preferred state, integration primarily requires consistent classification of the already tagged information. The large information gathering and consolidation effort that have traditionally accompanied business combinations would be unnecessary.

XBRL GL Integrates External and Internal Systems

To gain a greater appreciation of how XBRL can strengthen internal control and facilitate M&A, it's useful to distinguish between two breeds of XBRL. For external users who primarily require summary financial information, the focus is on XBRL FR (for Financial Reporting), which can express only a limited amount of detail, such as the unit of currency, reporting unit, etc. For internal and external users who require highly specific data, the emphasis is XBRL GL, which can express both financial and nonfinancial information at the detail level at all stages of the information supply chain.

The GL in XBRL GL originally stood for General Ledger, and you'll still sometimes see that terminology. But the current, more expansive term of Global Ledger is much more suitable, because XBRL GL isn't simply a place to collect journal entries. It is a single framework for standardizing all information of business reporting systems for both internal and external users. XBRL GL can bring together data from disparate operational, reporting, and accounting systems and consolidate it through Web Services, high bandwidth networks, and petabyte storage systems. It is therefore ideal for system integration, consolidation, data migration, and data archiving. Since it encompasses both financial and nonfinancial information, XBRL GL can be used for employee timesheets, purchase order processing, invoicing, and all other elements of the manufacturing workflow. It can easily transfer unposted and posted information back and forth from branch offices to consolidating systems. Externally, XBRL GL enables companies to share data on receivables with their bankers, and inventory levels with their suppliers.

The Technology Advantages of XBRL

What technical features of XBRL will contribute to its adoption as the international data standard for companywide activities?

XBRL is highly extensible, meaning that it can be modified and added to by IT staff and business analysts to suit their specific requirements. XBRL-enabled solutions provide methods for normalizing data (ie, eliminating duplicates) across the organization, yet remain highly interactive with both internal and external systems. With XBRL, developer scan build tools that can be used in a wide variety of systems, with no need to customize the interface for the company.

The implementation of XBRL for large organizations enables them to:

- Apply business rules to data from disparate sources;
- Gain greater efficiency in applying changes to either data or analysis;
- Enjoy additional transparency and control over enterprise business rules; and
- Perform analysis with a significantly broader pool of data (both from internal and external sources).

How shall XBRL improves Business Reporting-Transparency?

The accelerating adoption rate of XBRL within the regulatory community has had some very positive benefits such as the building of taxonomies, increased training and the development of software. However, the fact that most of the application of XBRL has been in the regulatory realm has also created some skepticism and concern by companies. Management teams commonly view XBRL as a technology that has to be implemented when mandated by regulatory agencies. As a result, many are taking a “wait and see” approach to internal adoption and implementation.

This approach is reasonable; however, it reflects a narrow view of XBRL and the process enhancements this information standard makes available. The pervasive problems within the business reporting supply chain don't exist only at the reporting and regulatory end of the supply chain. They exist within the companies themselves and between companies and their trading partners. When assessing adoption of XBRL and other supply chain standards, management teams should consider the typical economic consequences of standardization:

- Lower costs
- Improved accuracy
- Higher volumes of information are available for analysis
- Accelerated frequencies of availability

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- Improved resource allocation
- More efficient processes

Current Constraints

Before discussing the process enhancements enabled by XBRL, it is useful to clearly understand the pervasive problems that XBRL is specifically designed to address. Below is a list of some of the primary constraints on reporting and compliance processes as they exist today:

- ✓ Proprietary software formats inhibit reuse - Business information contained within a proprietary software format (e.g., .doc, .pdf, .xls, etc.) is not reusable by other proprietary software applications in a cost effective manner. The information can be “exported” to another application, but in this transfer process virtually all contextual information relevant to processing the information is lost. This simple problem results in manual, costly, slow, time-consuming and complex compliance and analytical processes as data are transferred from one application to another. Additionally, the related compliance controls and completeness assessments are also often manual.

- ✓ Business information concepts are application specific - Many companies have “Standard General Ledger” and/or “Corporate Entity” concepts; however, these internal accounting and reporting standards are typically applied within a single software application, global data warehouse or other proprietary application.

- ✓ Although these concepts are valid across the full range of company-wide disparate software applications, the proprietary nature of these applications makes it impossible to share data and analysis across them. “Systems Integration” is only a partial solution but

does not provide a cost effective adaptable and sustainable solution. The pervasive problem here is the need for information to carry with it across disparate applications its full contextual structure.

- ✓ Analytical formulas are physically defined - Analytical formulas embedded in spreadsheet and other proprietary software applications are described based upon the physical location of the data within the specific application. This is true with large ERP tables, data cubes and even spreadsheets (e.g. "D10/G10"). As a result, analytical formulas are opaque, not sharable across applications and costly to manage. Accountants spend significant resources rebuilding common analytical formulas across common spreadsheet applications and disparate software applications just because the information is physically located in different positions in each application.
- ✓ Controls are embedded within applications - Similar to the limitations of physically-defined analytical formulas, automated controls are applied to data contained within specific software applications. Enterprise environments that have disparate applications containing operational and reporting data—and all do—require either the redundant application of controls across the full range of disparate applications and/or the migration of data to specific software applications (e.g. the global data warehouse) for application of controls.
- ✓ Relationships are implicit - Relationships between business information concepts and the relevant company policies, reporting

standards, auditing standards, instructions, regulation, etc. are all implicit. Experienced management accountants, CPA's, and managers have developed their understanding of company-specific policies, GAAP standards, regulation, laws and GAAS requirements related to specific reporting issues based upon their years of experience. Inexperienced accountants, managers, investors, creditors and other users with limited knowledge of these policies, standards, laws and regulations may be unaware of or confused about these implicit relationships.

- ✓ Opaque validation and business rules - In today's business reporting and compliance processes, validation and business rules are opaque and not sharable between software applications. This results in compliance processes wherein validation and analysis typically become the user's problem. This situation results in redundant cyclical information exchanges between users and preparers as the cycle of error identification/error correction and analysis/question/answer continues until an acceptable solution is found.

- ✓ "Spreadsheet Hell" – The incredible flexibility of electronic spreadsheets has solved many business reporting problems; this flexibility has also created many new problems. Spreadsheets enable data aggregation and analysis for many business processes. Spreadsheets can also be used to eliminate a lot of re-keying and re-calculating, but they are also often difficult to control and manage in highly dynamic processes where the input processes are manual. Also, linking models together is not sustainable in a dynamic process. Adding one row or one column "breaks" the

relationships between relevant data and the physically defined analytics.

In sum, internal and external reporting processes are severely affected by these constraints, all of which stem from the inability to reuse information across a wide range of disparate software applications. The XBRL standard was specifically designed to address these constraints and improve reporting processes and their associated controls.

What XBRL Delivers

Leveraging the XBRL standard, companies can more cost effectively create efficient and flexible internal and external reporting processes that are not subject to the constraints discussed above. By harnessing the power of standardization, XBRL provides a way to describe:

- Business information for external reporting purposes
- Business information for internal reporting purposes at the general ledger, subledger and transaction ledger levels
- Validation, analytical and other business rules
- Entity definitions and relationships between entities
- Relationships between business information and other relevant resources (e.g. company policies, reporting standards, regulations, references, and many other resources)
- Presentation and labeling alternatives

As a consequence of these attributes, XBRL creates an information processing environment that has the following benefits:

Universal information reuse - Business information represented in XBRL is easily reusable across compliant software applications. Information can be moved from one application to another in a seamless manner. This enables the minimization of pervasive manual, costly, untimely and complex compliance and analysis processes currently used as information is transferred from one application to another.

Interoperable business information concepts - Company standardized general ledger and corporate entity concepts are applied across the full range of disparate software applications within the enterprise and even across the company's entire supply chain. The universal interoperability of these concepts dramatically increases the breadth, depth and timeliness of information available for management decision making and the efficiency of the processes that rely upon this critical information.

Universal and transparent analytical rules and formulas - Analytical and validation rules and formulas are articulated in a universal and transparent manner and executable across a wide range of software applications. This enables consumers to not only articulate their information needs but also their validation and analytical rules in a manner that is transparent and executable by preparers. This enables consumers to not only access the information in a more complete, accurate, timely and cost effective manner, but also enables them to share their analytical modelling concepts (e.g. macros) with other analysts, thereby providing a more relevant and richer analytical environment.

Centrally managed controls - Managers should anticipate that controls articulated in a universally reusable manner can be centrally and transparently managed and executed across all the disparate applications in the enterprise. This provides a dramatically more adaptable control environment, as well as one that is both more structured and transparent thereby enabling more automation in its architectural constructs and assessments.

Explicit Relationships - Relationships between business information concepts and the relevant company policies, reporting and auditing standards, instructions, regulations, company policies, etc. are all explicit and executable by disparate software applications. Any user and consumer of business information can transparently access contextually relevant policies, standards, instructions, regulations, expertise, etc.

Transparent validation and business rules - Validation and business rules are transparent, sharable and executable across disparate software applications. This enables streamlined compliance and risk management processes wherein validation and analytical rules are developed by users and shared with and executed by preparers. Higher data quality and analysis result from the preparer providing the requested information in accordance with the specifications of the user's request. Manual data correction and analysis requests are minimized by the preparer's ability to provide the requested information the first time, thereby eliminating the cycles of error identification/error correction and analysis/question/answer between users and consumers.

"Spreadsheet Heaven" – Electronic spreadsheets leveraging the capabilities described above will behave more like self-populating modelling and visualization platforms than manual worksheets. Spreadsheets using these features can share analytical formulas, controls and data from across a very diverse set of information sources. Additionally, not only can these spreadsheets receive exports from any ERP warehouse, they can also provide analysis and calculation functions where the results, after review, are automatically uploaded

back into the proper ERP platform. This will provide a more controlled and documented audit trail along the way.

Internal and external audit processes will be greatly enhanced and the accounting profession is already exploring the implications of XBRL for audit methodologies. Importantly this includes being able to do a better job of detecting accounting anomalies and unusual and other types of inappropriate transactions and ledger activities.

The list of benefits and applications could go on. For now, suffice it to say that all senior executives and board members have a fiduciary responsibility to learn about XBRL and how this powerful new information standard can be used to improve governance, risk and compliance processes.

Latest Developments

-Internationally

- [US Securities and Exchange Commission \(SEC\)](#)

On 30 January 2009, the US Securities and Exchange Commission (SEC) published a final rule for the mandatory use of eXtensible Business Reporting Language (XBRL) in reporting financial information to the SEC. From mid June 2009, primary financial statements, notes and schedules filed with the SEC for certain companies are required to be submitted in XBRL.

- [The National Bank of Belgium](#)

Filing of accounts by Belgian companies to the National Bank of Belgium, which is responsible for collecting financial statements from the nation's firms, switched to XBRL from April 2007.

- [The Bank of Japan](#)

Financial services companies in Japan have been reporting monthly data in XBRL to the Bank of Japan since February 2006.

- [The Bank of Spain](#)

More than 400 banks are filing monthly financial statements in XBRL to the Bank of Spain, which is responsible for overseeing the country's banking system. The introduction of XBRL for this reporting has enabled automatic data validation, achieved better quality of data and reducing manual effort

- **The Tokyo Stock Exchange**

The Tokyo Stock Exchange has launched a pilot system which demonstrates the use of XBRL for company financial statements and the benefits it can offer. The exchange is aiming to promote wider understanding and acceptance of XBRL among investors, companies and public as a step towards the introduction of full XBRL reporting by all companies.

- **US Banking Regulation**

The introduction of XBRL for banking regulation in the United States has proved a major success. More than 8,000 banks have been filing quarterly Call Reports in XBRL since October 2005.

In India

- **The Institute of Chartered Accountants of India (ICAI)**

The ICAI has launched XBRL India website. It was launched in the International Conference held at Agra from July 3-5, 2009 by our former President CA. Uttam Prakash Agarwal. The URL of XBRL India website is www.xbrl.org/in.

- **Reserve Bank of India (RBI)**

Filing returns through RBI's legacy ORFS (Online Returns Filing System) which is XBRL enabled.

- **Securities and Exchange Board of India (SEBI)**

Filing of specified information by listed companies through the Corporate Filing and Dissemination System (CFDS) which is XBRL technology enabled.

- **Stock Exchanges**

Both BSE and NSE offer a XBRL-enabled platform 'CorpFiling', which enables the companies listed in either or both of the exchanges to electronically file their disclosures.

- **Ministry of Corporate Affairs (MCA)**

Its project MCA-21, using XBRL, targets to create an information sharing platform with regulators and ministries to provide an early warning system for the ministry.

Challenges faced by the companies in adoption and implementation 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.

XBRL Assurance & Audit Objectives

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.

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.

Control Issue And Risk Assessment

Although the application of XBRL has the potential to improve data analysis, accelerate the use of continuous auditing, reduce the proliferation of spreadsheets throughout the information supply chain, and enhance two-way audit trails, internal auditors interested in the use of XBRL need to be cognizant of the different challenges associated with its use.

Followings are the Risks which the organization may face while using XBRL for financial reporting.

1. Risk of Errors
2. Control Issues
3. Assurance Issues
4. Internal Control
5. Assessment Risk

Although CICA describes these risks as part of the financial reporting process, these risks can impact other kinds of business reporting as well. Below is a description of each risk and recommendations internal auditors can provide to organizations interested in implementing XBRL.

Risks of Errors

Error risks center around the accurate mapping of business information to tags and the use of appropriate [taxonomies](#) (i.e., XBRL dictionaries that define the specific tags for individual items of data). Hence, mapping tags accurately ensures that the data retrieved is correct. Consequently, without an effective internal control structure to ensure accurate tagging, the data retrieved can represent invalid and inaccurate transactions.

The importance of accurate tagging and mapping of information is increased when data is streamed in real time and automated; the risk of error in the statement or report increases, depending on existing change management controls and the effectiveness of the controls that oversee changes in the mapping of data to tags. This also creates additional risks because the data mapped to a particular tag may change without the organization's knowledge due to a faulty control, which increases the likelihood of errors. As a result, when XBRL instance documents are generated in real time, tests of the mapping algorithms captured in the conversion software used to turn business data into tags must be comprehensive to ensure that the converted information retains its accuracy and integrity.

Control Issues

XBRL control risks pertain to the use of appropriate taxonomies, tagging of data, and the integrity of the tagged data. "Ensuring that the client has used the appropriate taxonomy in the creation of their filings or financial reports is a major audit and control issue. Auditors, therefore, must be aware of the different taxonomies in existence and ensure that the appropriate one is being used.

Once the appropriate taxonomy is chosen, the next area of risk is the actual tagging of data. Correctly choosing what information to map to each tag can be difficult when learning how to navigate the tools and taxonomies in the tagging process." For example, organizations need to have a system in place that ensures the appropriate taxonomy was chosen when preparing a financial statement. Therefore, staff working on the business report need to be knowledgeable about the requirements of a particular report and the taxonomy used so they can pick the right taxonomy. Otherwise, the organization runs the risk that

tags are implemented incorrectly, which affects the accuracy of the reported information throughout the entire information supply chain.

When reviewing the taxonomy for its appropriateness, auditors should review the details of the taxonomy to determine whether they are up-to-date with current business and reporting requirements and whether the taxonomy is applied correctly. In addition, auditors need to determine whether there are procedures in place to ensure that the tagging of data is complete and accurate.

Assurance Issue

Where assurance is concerned, auditors need to pay close attention to the different issues that might impact XBRL use and its effectiveness. "Auditors should use multiple validation tools, to ascertain the quality of the data in the XBRL report and not just rely on the preparer's tool for validation assurance. As a result, testing the validity of the tags with another validation tool is a good practice when auditing XBRL business report filings.

Different assurance issues auditors need to pay close attention to include:

- Reviewing policies and procedures that describe how XBRL statements are generated at a point in time :- To make sure these policies and procedures are effective, auditors need to review the controls that oversee the use of an appropriate taxonomy, the tagging of data, and the integrity of tagged data. Auditors also need to document and test these controls for their effectiveness and determine if the appropriate taxonomy is used when generating the statement. Finally, auditors need to test the data tagging procedure to determine if it is appropriate and includes all the data required.

- Reviewing procedures that describe how statements are generated on a real-time basis :- When XBRL is used on a real-time basis, additional controls may be needed to ensure the integrity and accuracy of the tagged data. As a result, auditors need to identify and evaluate these controls. Furthermore, any online monitoring and exception reporting software used by the organization also can be used for assurance purposes. For instance, continuous audit procedures can be developed to flag conditions based on the most appropriate exception reports, such as unauthorized changes in selected data elements, while other audit software can be used to monitor selected conditions and generate periodic reports at random intervals for audit activities.

Internal Controls

As XBRL becomes more integrated in the company's information supply chain, internal controls and their evaluation become more critical. Internal controls will need to be in place for:

- Creating, using, testing, and maintaining extension taxonomies.
- Mapping data to XBRL instance documents.
- Automating subsequent mappings.

Consequently, internal auditors need to determine whether internal controls are documented properly and collect evidence to test those controls. Before this is done, the internal audit department should create an XBRL audit team to develop a technical understanding of XBRL and prepare an appropriate audit plan.

Auditors need to keep in mind that the XBRL instance document will influence the types of controls that need to be in place. For example,

appropriate internal controls should be integrated as part of the XBRL instance document, when creating extension taxonomies, and when testing and maintaining a taxonomy's processes and procedures. If errors are accidentally injected into the XBRL instance document, or a perpetrator purposely makes changes to commit fraud, internal decisions based on those XBRL instance documents will be distorted.

Risk Assessments

From a risk assessment perspective, XBRL risks can be divided in four categories:

1. Technology risks.
2. Mapping errors.
3. Fraud risks.
4. External risks.

Technology Risks

When examining technology risks, auditors need to determine whether XBRL is being used correctly and whether extension taxonomies are created and implemented correctly. Auditors also need to determine if extension taxonomies and instance documents were reviewed for their quality. One way to do this is by performing a *round trip*, a process in which the resulting XBRL instance document is rendered into human-readable text. Round tripping enables the auditor to compare the original document to the rendered document line-by-line to determine if the rendered document is a faithful representation of the original document.

Mapping Risks

The second kind of risk is related to mapping errors. For example, was the financial statement account mapped to the correct XBRL tag? Answering this question can help internal auditors determine whether the XBRL user who created the instance document made a judgment error (i.e., selecting an inappropriate XBRL tag) or a mechanical error (i.e., inadvertently mapping a concept to the wrong tag). Furthermore, because mapping risks are increased when the XBRL data is created in

real time, the auditor may not be able to review the XBRL output. Therefore, algorithms used to tag the XBRL data need to be evaluated during the risk assessment.

Fraud Risks

Fraud represents a third area of risk. A major question auditors need to ask is whether the XBRL instance document was used to commit fraud. This is because perpetrators know it is relatively easy for anybody to compare the official filing with the XBRL instance document and uncover any differences. On the other hand, the risks associated with XBRL instance documents increase when XBRL is used internally

by the organization because there may be no paper trails to compare instance documents, which also may not be reviewed by an independent third party (e.g., an external auditor).

External Risks

Finally, internal auditors need to be on the lookout for any external risks that might affect the accuracy of XBRL-generated reports. A major external risk includes hacking attempts or vulnerabilities. For instance, because XBRL documents may include internal and external links to the organization, hackers may try to change those links or the linked files. This would enable the hacker to view the source code of an XBRL instance document, identify the names and locations of extension taxonomies, and make changes to the instance document or extension taxonomy. To decrease hacking attempts, auditors need to recommend that organizations have the appropriate firewall encryptions in place and that all firewall security controls are tested for their effectiveness.

XBRL-INDIAN INITIATIVES

The Institute of Chartered Accountants of 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,

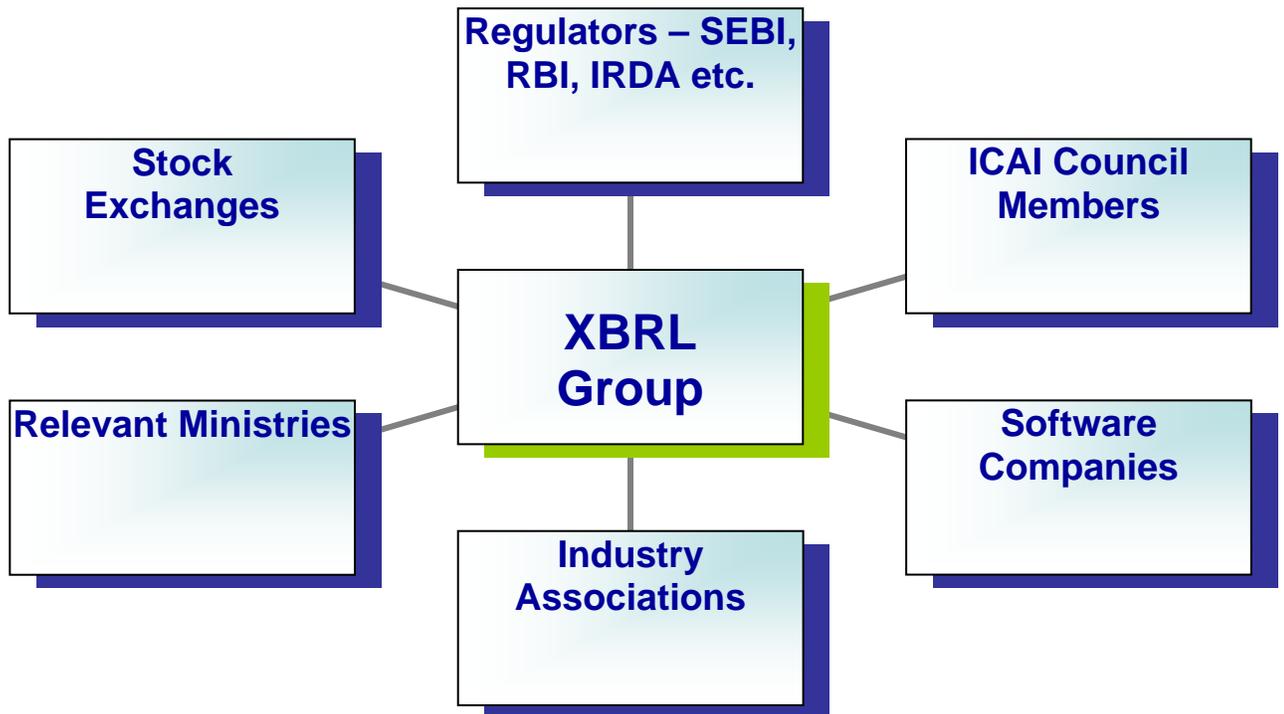
CA Mehul Shah

Rasesh Shah & Associates

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.

ICAI's XBRL Group

- ❖ Fairly broad-based participation from various sectors:



Objectives of the Group

- Establish forum for development of XBRL in India including its promotion
- To act as general body of membership of XBRL India jurisdiction of XBRL International.

Steering Committee membership

President ICAI, Chairman

- ❖ Vice President ICAI, Vice Chairman
- ❖ RBI nominee on XBRL Group
- ❖ SEBI nominee on XBRL Group
- ❖ Chairman ASB
- ❖ Chairman AASB
- ❖ Chairman, IT Committee
- ❖ Two representatives from Software Companies of the XBRL Group

DEVELOPMENT OF XBRL TAXONOMIES

- ❖ General Purpose Financial Reporting XBRL taxonomy for Commercial and Industrial Companies C&I taxonomy
 - To begin, the XBRL India jurisdiction has developed the general purpose taxonomy
 - The draft general purpose taxonomy which was exposed for public comment, has been finalised on the basis of comments
 - Expected to be sent shortly to XBRL International for accreditation
 - Will be released for use in India
 - Scope of C&I taxonomy
 - ✓ Financial statements-Balance Sheet, Statement of Profit and Loss & Cash Flow Statement
 - ✓ Related non-financial information, e.g., disclosures required in notes to accounts, additional disclosures required under company law
 - Features of C&I taxonomy
 - ✓ Based on Indian Accounting Standards
 - ✓ Conforms with requirements of Indian Company Law and SEBI Regulations
 - ✓ Adopts architectural features of the IFRS general purpose taxonomy

Other Organizations 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.

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.