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Essential Features of XBRL Reporting Software

Introduction

eXtensible Business Reporting Language (XBRL) is an XML-based standard (eXtensible Markup Language) which has the potential to play an important role in the generation and use of financial information. XBRL is an Internet-based non-proprietary open standard which is used for the preparation, exchange and publishing of financial information among disparate computer platforms, software applications, and accounting standards. XBRL facilitates continuous auditing, thereby maximizing the transparency with which financial information is reported while also facilitating the enforcement of corporate accountability legislation. In general, with XBRL, the efficiency of the entire information supply chain is considerably enhanced.

XBRL is a derivative of XML and as such it takes advantage of the 'tag' notion which associates contextual information with data points in financial statements. When formatted with tags, financial statements are called XBRL instance documents. The tags themselves are based on accounting standards and regulatory reporting regimes and are defined in XBRL taxonomies These are developed for specific countries, accounting jurisdictions, and even specific organizations Sometimes, multiple instance documents produced using different taxonomies need to be processed by the same software tool.

Taxonomies for Financial Reporting

Taxonomies can be created by any reporting entity and may span national jurisdictions, industries, or even individual companies. Taxonomies that have received official recognition by XBRL International are publically available in the Financial Reporting Taxonomies section of its Web site. Extending these taxonomies enables organizations to create financial statements that are valid and/or compliant without any loss to the integrity of their data.

Taxonomies enable the following,

- **Taxonomies describe any type of data**: from numeric and monetary data to dates, Booleans, texts and any other XML data types. The X in XBRL brings extensibility so that virtually any data type can be created and added to the taxonomy.
- **Data validation**: validation rules can be included in taxonomy along with definition of data types, for

instance to provide rules for min-max values, max occurs, allowed enumerated lists.
- **Aggregation rules**: one can describe the aggregation rules in the taxonomy to calculate totals and subtotals
- **Relationships**: XBRL allows the definition of many interrelationship models between ranges of elements. The X in XBRL means - in this perspective - that existing hierarchies and relationships can be extended to specific needs
- **Presentation structures**: for presentation purposes taxonomy can contain the many presentation structures and hierarchies
- **Data dependencies**: dependencies between elements can be described in the taxonomy

In India, XBRL taxonomies have been created and mandated by Reserve Bank of India (RBI), Securities and Exchange Boards of India (SEBI), and Ministry of Corporate Affairs (MCA). It is expected that many other regulatory and national jurisdiction bodies such as Sales Tax and Income Tax authorities will be coming up with their specific reporting requirement using XBRL.

Financial reports are laden with a large number of business rules, or formulae, which are infinitely important to the accuracy and validity of the data being reported. Many of the business rules are defined in XBRL taxonomies. These are commonly referred to as Calculation Rules. There are certain other business rules which are defined by the regulator which may not

be part of the taxonomy and XBRL software tool need to provide the means to ensure that they are being followed.

XBRL Instance Document and Software Tool
XBRL instance documents contain the actual content that is being reported and are validated by XBRL taxonomies. They are inherently subject to the rules of the XML specification and the XBRL instance schema and can also be assigned any number of additional extended taxonomy documents for validation.

Instance documents contain the following general business reporting information based on the concepts defined in associated taxonomies:
• Business facts or measurements, abstract elements expressed as items and/or Tuples
• Contexts, containing information about the entity being described
• Units, which specify the simple or complex numeric terms by which an item has been measured (e.g., INR)
• Footnotes, used to express irregular associations between elements

All of the power and functionality that XBRL brings to financial data is useless without XBRL-conformant software tools to interpret and process this data.

XBRL is quite complex, and producing instance documents manually is a practical impossibility. Consequently, the benefits of XBRL cannot be delivered without software tools. These are generally developed by software vendors and used for XBRL report generation.

Each XBRL software consists of number of layers, including data definition, application logic, business rules, formatting information and more. Each application has its own way to store data definition, meta data, data dictionary or repository. Most applications have a structured way to define and store business rules and calculations and all have application logic. Some also include formatting or layout information.

Essentials of XBRL Instance Creator
A very special and critical role in the reporting chain is the role of the software. For producing, validating,

receiving and analyzing financial and XBRL data, appropriate software is needed.

XBRL software is used to incorporate XBRL output, XBRL input as well as XBRL data management capabilities. This process is much more than just a 'import data' and 'save as XBRL' function. In order to serve the users well, software need to be able to provide a host of functionalities. They should manage applicable taxonomies, provide insight in these taxonomies and provide facilities to enhance taxonomies. These enhancements are called extensions and are necessary to communicate facts which are not defined in the provided taxonomy.

Further the software should be able to map taxonomy elements to data managed in the application or stored in its database. The software will be required to generate a report and facilitate editing, reviewing, auditing, verification and approval. Also the report should be sent out to external or internal stakeholders.

It is an illusion to think that any XBRL software will only need to handle a single taxonomy. A user always has to deal with a number of taxonomies and taxonomy extensions. Even if the user has to report only according to MCA (Ministry of Corporate Affairs) taxonomy, the user would still need to manage versions and components of the applicable taxonomy and company extensions to it.

It is important to highlight six key features of an XBRL software that one should look for choosing an appropriate XBRL technology solution. The below list of features is not an exhaustive review of all the functionality of a XBRL software solution but focuses on important and essential features.

1) Easy integration of source data

Organisations source data from wide variety of enterprise applications. Like in any other information system one has to deal with data sources in applications. These data sources can be in any format, such as databases, spreadsheets, xml files, csv files, etc. but also manual input is regarded as data source. It is important that the software provides an easy-to-use way of integrate these data. The software should enable automatic sourcing of data as well as user-initiated sourcing of data from different sources. For example, software should allow the user to mark certain sections

in a word document and enable the same to be integrated for XBRL purposes.

2) Smart Tagging of Information

Tagging requires a significant knowledge and understanding of the business and information requirements. To establish a data and subsequent mapping structure that is both logical and capable of being maintained requires careful analysis and definition of the information requirements in terms of data elements and their structure.

The result of the mapping process is a mapping file in which the relationship between the data elements at the source and the taxonomy is stored. The mapping file is used for the conversion process (from non-XBRL to XBRL and from XBRL to non-XBRL) and the instance document generation process. In theory mapping is not a difficult task. By using the appropriate software it is fairly straightforward for an end user to define the mapping structure. In practice, however the mapping process needs to be managed with great care. A correct mapping file is essential for the quality of the submitted data.

It is, therefore, very critical that the software is able to provide smart and intelligent ways to allow users to tag data to taxonomy elements. The software should provide for,

- *Intelligent Auto Tagging*
  This feature intelligently tags all the data based on set(s) of mapping dictionary. The software basically uses set(s) of standard mapping dictionary and applies intelligent pattern matching rules to provide the user with its recommendations which the user can approve or reject. A good and efficient auto-tagging rule should be able to automatically tag about most of the commonly used data with close to maximum accuracy.

- *Smart Search of Taxonomy Elements*
  In a tagging process, relationship is established between source data and the taxonomy. In MCA Taxonomy there are approximately 3,176 elements and US GAAP taxonomy has more than 16,000 elements. It can be challenging finding the most appropriate XBRL element for tagging. It is imperative that the software should provide an easy and context based search facility for the user to tag appropriate source elements. The software should present

only the elements needed by the user arranged in accordance with the user's statements and disclosures. Users can then avoid using the massive XBRL base taxonomy and limit their XBRL tag search to a much smaller selection without the clutter. As a result, usability is greatly increased and XBRL tagging errors is reduced .

• *Tagging in Source Documents*
Since statements and disclosures related to a financial report may exist in different spreadsheets and documents, there is a need to tag the information in its source documents. The software should be capable of allowing users to simply highlight the required information and assigning the appropriate XBRL tag. This feature will allow user to maintain the original source documents independently while still providing the ability to tag them as one document in the creation of a XBRL instance document.

• *Mapping Management*
The tagged information can be re-used across periods and different taxonomy version and in some cases across taxonomy. The software should allow for data to be tagged just once and future reporting periods automatically pick up the same tags. The data changes should be handled in smart manner so that there is no need to re-tag the document and the updated data automatically flows into the XBRL document. The tagging information should be able to be carried for future reporting. This will significantly reduce the risk of errors in the XBRL tagging process and increase the efficiency of creating the XBRL output.

3) Complex Data Management
• *Formatted data tagging*
Financial reports contain information which contains both financial data and narratives. Most of this information is presented in tabular manner (also referred as formatted content) for better presentation and analysis. It is important that similar formatting in table format is retained in the unified instance documents. The software should have the capability to tag the formatted content in source document and maintain the same formatting in the instance document.

• *Efficient import of Tuples and Dimension*
When source data is relational or when the taxonomy makes use of relational structures with Tuples (multiple instances of the element), the issue of Tuple import needs to be considered. In Tuple import, the source data need to be imported and thus mapped to the Tuple structures. When the source data is relational by nature mapping is straightforward but if the source data is organized differently than is contemplated by the taxonomy it may require more sophisticated mapping. The software should be capable of providing efficient way to import and tag Tuple information.

In XBRL, each element can have a different dimensional structure, also called a "hypercube". Dimensional structures in XBRL are also highly extensible. So if the mapping for one regulatory demand is not sufficient for dimensional mapping to another, the dimension structure can be expanded. The software should provide a structured way of importing and tagging dimension data.

• *Ability to tag footnotes*
Footnotes form an integral part of any financial statement reporting. XBRL does provide the capability to assign footnotes to all elements. The software should capture and attach footnotes, in an efficient manner, to taxonomy elements.

4) XBRL Taxonomy Features
• *Customization of Taxonomy*
XBRL taxonomy allows for customization of taxonomy to individual company's requirements. The X in XBRL means extensibility so that virtually any data type can be created and added to the taxonomy. MCA, in the current year, does not permit extensions. The software should provide for simple way to extend taxonomy when the user while tagging data does not find appropriate element in the taxonomy. If the element does not exist, the user can simply create and record a new element for that concept. With the required concepts documented, the software automatically generates the required custom taxonomy including presentation and table relationships, as well as the calculation validations that exist with the XBRL files with only minimum required input form the user.

- *Taxonomy Version Management*
  The Regulators and Accounting Boards will deliver regular updates to the XBRL taxonomies and the organisation will be required to update a previously used tag with the newly updated version of the element as well as address any new reporting requirements from the accounting standards boards and regulators. The software should have the capability to roll the taxonomies forward from period to period. The tool also needs to rollover the taxonomy from the previous period's old taxonomy to the current period's new taxonomy. This significantly eases the effort required to maintain or update the taxonomy.

5) Comprehensive Validation

Validation of the instance document is an important function. Each regulator defines a set of validation rules that must be complied before submission of documents. Many of these rules form part of XBRL taxonomy. There are some rules that need to be managed outside of the taxonomy. The software should be capable of providing an integrated process of validating all the criteria and provide a user-friendly report for resolving errors, if any. The resolution process is as important as validating. An efficient validation error resolution process will save significant user's time and effort.

Some organisations may require a larger set of validation and business rules. This would require the software solution to have the capability to support defining of rules by the organization. These are in addition to those defined by the regulator.

6) Instance Generation

Once the tagging is completed and validated, the user would be required to go through the report before creating instance document and submitting to the concerned authority. It is essential that the software provides an easy instance previewer in order for the user to get a feel of how the information tagged will look in the instance document.

The software should provide for easy generation of instance document and allowing for proper naming conventions.

Conclusion

Organisation financial reporting errors not only impact the bottom line, but they can impact their reputation in the market. Regulators may even require company executives and statutory auditors to certify the accuracy of the organisation's XBRL financial statements or their reports. With so much at stake, organisations must ensure that they reduce the risks and costs of company filings, while increasing reliability, transparency and accuracy of financial reporting. In today's operating environment, undue risk for errors is intolerable.

Smart XBRL tagging and efficient integrating of source data can be a powerful way to accelerate processes and increase the reliability of financial information. But the organisation must consider their real-world reporting processes when they determine their approach to selection of the appropriate XBRL software solution that reduces the risk and costs associated with their current external reporting process.

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