Internet, XBRL, and Online Business Reporting Challenges and Opportunities

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< EXECUTIVE SUMMARY >

◆In view of the growing importance of Internet and online reporting by companies, as also the SEBI requirement to file electronic copies of financial and other business reports, the objectives of the present paper are two-fold. First, the paper aims at examining the regulatory issues and reporting practices concerning supply of electronic annual reports by the Indian companies. And second, based on the findings for the first objective, the paper aims at building-up and arguing a possible case for preparing and supplying electronic annual and other business reports in XBRL environment.

With regard to the stated objectives, the paper has inferred the following. First, for the sample of 100 most actively traded companies, the paper has found that a large proportion of Indian companies are yet to begin complying with the SEBI requirement to supply electronic annual reports through the EDIFAR system. In this regard, the paper has highlighted several weaknesses in the prevalent practices of corporate reporting through the Internet. One such weakness is the excessive amount of time on a per company basis that is taken to locate, extract, and assemble information for analysis purposes. With regard to this weakness, second, the paper has inferred that XBRL-coded electronic reports should bring faster, cheaper and more reliable information to the decision-making processes of both the external (as well as internal) users. In this context, the paper has discussed and illustrated the building blocks of the XBRL technology. The paper has also made a policy recommendation and suggested a roadmap for establishing the XBRL environment in India.

Information technology (IT) with a bouquet of tools including Internet has radically transformed the decision-making processes and business environment. As a 'decision-support system' to internal management, it has enabled business managers to collect, process, store, transmit, retrieve, and use data / information with enhanced speed and greater efficiency. And, also, it has provided businesses with a new (electronic) media in the form of Intranet and Internet (in simple terms, a world-wide network of computer systems) for communication both within and outside the entity. As an electronic media for communication, Internet has provided businesses with a capability to deliver financial and other business information to the external users for a period ranging from the usual annual, to quarterly, to, theoretically, real-time. In fact, use of Web for information reporting purposes, commonly termed as 'on-line reporting', has gained immensely in importance in recent past. For instance, eBay is supplying such business information as the latest auction prices for various products through its web site in real-time. These auction prices can be accessed by the 'public at large', in a transparent manner and without much cost, in real-time. It is reported that some companies like Cisco, with the necessary support of IT and Internet, have already acquired the capabilities for supplying financial statements to the external users on a daily basis.

However, the aforesaid spectacular growth in electronic information delivery capabilities of companies has been accompanied by some problems. Two of such prob-

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lems are, first, a variety of incompatible languages in which electronic information is currently being encoded, and, second, a whole range of incongruent platforms through which this electronic information is being collected, processed, disseminated, retrieved, and analysed along the information-supply-chain. These problems, as a consequence, impair the speed and efficiency of decision-making processes. At times, reliability of information communicated under the prevalent system may also be doubtful. As an aid to the decision-making processes, therefore, a need (and an opportunity) exists to evolve a language or a support technology for making electronic exchange of business information faster, efficient, and reliable across different software and varied computing platforms. And, herein lies the genesis of eXtensible Business Reporting Language (XBRL). As a technology, XBRL has been (is being) developed for standardising, enhancing, and improving the content and capabilities of information reported electronically, for both internal and external users. In fact, parallel to accounting being labeled as the 'language of business', XBRL has been hailed as the 'digital language of business'.

In the above background, the primary objectives of the present paper are two-fold. First, the paper has examined the regulatory aspects and corporate reporting practices of Indian companies with respect to supply of electronic annual reports through the Internet. And second, based on the findings for the first, the paper has built-up and argued a case for (preparing and) supplying electronic information in XBRL. While arguing a case for XBRL, some advantages accruing from the XBRL environment to the management in general are also discussed.

INTERNET AND EXTERNAL INFORMATION REPORTING

The current business trends show that companies all over the world are using Internet as a medium for electronic delivery of business information. In this regard, India is no exception. A search launched on the Internet for this study has shown that each of the 'Top-10' Indian companies (ranked in terms of sales revenues), in both private and public sectors, is currently maintaining a web site. In fact, companies like Reliance Industries, Hindustan Petroleum and several others are supplying an electronic version of their respective annual reports, besides other business information, to varied stakeholders through their respective web sites. It is envisioned that, with time, almost every publicly traded company shall be supplying information on all dimensions of reporting - mandated / voluntary, financial / quantitative / textual - through the Web. This indeed marks beginning of a new era in faster, cost-effective, and adequate delivery of financial and other business information to various stakeholders of businesses. Though, it may be stated here that studies published by FASB and IASC a few years ago have raised some pertinent questions on the qualities of electronic information delivered through the Internet.

Like elsewhere in the world, Securities and Exchange Board of India (SEBI) has already taken some initial steps in introducing, mandating, and regulating the supply of electronic information by companies listed on the Indian Securities Market. In this direction, SEBI has institutionalised a system called Electronic Data Information Filing And Retrieval (EDIFAR) since July 2002. This system is modelled on the lines of EDGAR (Electronic Data Gathering, Analysis and Retrieval) system of the US, and SEDAR (Sytems for Electronic Document Analysis and Retrieval) in Canada, and is being hosted on the SEBI web site (www.sebi.gov.in). And, like EDGAR and SEDAR, EDIFAR system is a repository of business information for listed Indian companies. The system makes mandated business information available at a unique site for all kinds of users, including the investors. This regulatory environment is discussed further in the following Section of the paper, followed by an examination of the electronic reporting practices in Section 3.

2. ELECTRONIC BUSINESS REPORTING - INDIAN REGULATIONS

As stated above, SEBI has created a repository of information called EDIFAR system in India. This repository is an electronic information filing system that aims at centralisation and accelerated dissemination of business information on listed companies. This system promises to enhance transparency and to bring greater efficiency in the Securities' Market, thus, benefiting various market participants including investors. The system is being implemented in a phased manner by amending the listing agreement of the listed companies with the Stock Exchanges (Clause 51). EDIFAR seeks to replace physical filing of the business information with the stock exchanges for all

actively traded companies, over a period of time.

Till now, SEBI has notified names of the companies covered under the EDIFAR system in three phases. In the first phase, effective July 2002, 200 companies were required to file online, among others, the full version of their respective annual reports. Companies covered in the first phase are the ones constituting the BSE Sensex, S&P CNX Nifty, and BSE 200 indices. In the second phase, effective September 2002, a total of 700 companies were covered for submitting electronic information at the web site. And in the third phase, effective December 2002, 1196 companies are covered under the system. That is, one-out-of-seven listed Indian companies is required on date to electronically file its financial and other business information (including annual reports) with the EDIFAR system. Though still in its nascent stage, ever growing number of companies covered in the EDIFAR system proves the point that electronic information reporting through Internet has come (is coming) of age in India.

3. ELECTRONIC ANNUAL REPORTS - INDIAN EVIDENCE

In this section, first, an attempt has been made to explore the reporting practices of companies with respect to electronic annual reports (e-annual reports) filed by them under the EDIFAR system. For this purpose, an experiment has been conducted on the electronic reporting practices of 100 companies, two samples of 50 companies each, as at the end of calendar year 2002. Analysis of findings for this experiment, besides generating some preliminary evidence on the reporting practices of Indian companies, has provided inputs for conducting the second experiment arguing a case for supplying of XBRL coded information through Internet.

As already stated, for the first experiment, electronic annual reports of 100 companies constituting two samples of 50 companies each have been examined. The first sample consists of companies included in the NIFTY Fifty index, and the second sample consists of companies covered in the NIFTY Junior index. Findings of this experiment have led to drawing of the following inferences.

For 50 companies constituting the NIFTY Fifty index, first, it is found that 26 (52%) companies have filed electronic documents with the EDIFAR system. Since all of these companies were included in the first notification of SEBI in July 2002, non-supply of electronic information by 48 percent companies even after a lapse of half-a-year reveals a lack of seriousness, and laxity on the part of these leading and most actively traded companies. This finding has serious regulatory and policy implications. Second, out of 26 companies reporting through EDIFAR system, only 16 (32%) have filed substantial or complete electronic copies of their annual reports. That is, 10 (20%) companies have filed some electronic documents but these are other than their annual reports. Third, an interesting finding is that electronic annual reports of all the 16 (32%) companies are in 'pdf' format. Fourth, it is observed that size of the electronic annual reports filed with EDIFAR system has varied widely, between a minimum of 234.9 KB for Indian Petrochemicals Corporation to a maximum of 17.68 MB for Shipping Corporation of India. In terms of size of the electronic annual reports, top three ranks are occupied by Shipping Corporation of India (17.68 MB), Sun Pharmaceuticals (11.16 MB) and Bharat Petroleum (9.61 MB). It is an accepted fact that, for a given software, time taken to access, scan, and process an electronic document varies directly with its size.

On the other hand, for the 50 companies constituting the NIFTY Junior index, the findings are as follows. First, only 20 (40%) companies have filed some electronic documents with the EDIFAR system. Since 47 of these 50 companies were included in the first notification of SEBI in July 2002, non-supply of electronic information by 27 (57%) of the required companies even after nearly half-a-year indicates a lack of seriousness and laxity on the part of these leading and most actively traded companies. This finding is similar to the one noted above for NIFTY Fifty companies, and has associated regulatory and policy implications. Second, it is found that out of 20 companies filing electronic documents, only 10 (21%) have filed substantial or complete copies of their electronic annual reports. In other words, the other 10 companies have filed some electronic documents but these are other than their electronic annual reports. Third, electronic annual reports of all the 10 (21 %) companies are found in 'pdf' format. Fourth, like the NIFTY Fifty companies, the empirical analysis for NIFTY Junior companies shows that size of the electronic annual reports filed with EDIFAR system varies widely, between a minimum of 336 KB for Merck to a maximum of 4.00 MB for Madras Cement. While wide enough, this range is less than that observed for the NIFTY Fifty companies. Among the NIFTY Junior companies, top three ranks in terms of size of the electronic annual reports are occupied

by Madras Cement (4.00 MB), Ashok Leyland (2.82 MB) and Global Trust Bank (2.27 MB).

As stated earlier, bigger is the size of an electronic document, more is the time taken to access, scan, and extract information out of it by a given software. This is true in general. However, as against an existing software, it is possible to design a new language or software that could save on the time required to harvest electronic data from the Internet. If accomplished, new language or software should be termed as more efficient compared to the former. In this background, the second experiment has been conducted. The experiment appraises current practices of supplying electronic annual reports in terms of an efficiency (time-) metric, and, thus, argues a case for XBRL coded business reports.

Under the second experiment, three biggest sized electronic annual reports (as found from the first experiment) in the two samples of companies are accessed once again. But, this time the experiment is performed as follows. First, a time-metric recording the time taken (in minutes) to access electronic annual reports is introduced. And, second, in order to control external environmental factors, reports of the companies are accessed in one sitting. Results of this experiment have shown that, partly due to the fact that electronic annual reports of five of the six companies are in color, a total of nearly seventy minutes (approximately twelve minutes on an average) are used for merely displaying the annual reports from the EDIFAR system. Add to this, the time required in searching a data item (say, the amount of 'R & D expenditure') in a 'pdf' file, and extracting and assembling it in a work-file for further analysis. And the whole exercise has taken about one-and-a-half-hours (on an average, approximately fifteen minutes per company). Obviously, fifteen minutes per company is too much of time for preparing data for financial analysis in this electronic age. However, this finding should be read along with the following fact. Since inputs for a query at the EDIFAR system are demanded (and accepted) in three sequential steps (one on completion of the other), a slice of the total time - approximately fifteen minutes per company - can be apportioned to the sub-optimally designed querying method of the EDIFAR system.

As against the findings of the second experiment, observers opine that, if data-items are coded in XBRL, a specially designed financial reporting browser can access, extract, and organise information on a data-item(s), say the amount of 'R & D expenditure', into a spreadsheet for, say, 100 companies in less than a minute (a small fraction of an-hour-and-a-half). This would be so because XBRL coded electronic annual reports (called XBRL Instance Documents) are, in a loose sense, akin to data kept in a database that is uniformly structured and applied across the firms. The efficiency (both in terms of speed and cost), reliability and thrill of information management of this kind can be experienced with the model XBRL coded data for select companies that NASDAQ has made available through its web site. In this perspective, an elementary discussion on the XBRL technology is attempted in the following sections.

XBRL - BUILDING BLOCKS

XBRL is variously envisioned as (i) a consortium of persons, XBRL International, or (ii) a programming language / software, or (iii) a technology for exchange of information. It is in the second and the third senses that XBRL is defined in this paper.

As a language and a technology, XBRL aims at increasing the usefulness of business information delivered in an electronic form, say through Internet. Accordingly, XBRL has been widely acclaimed and endorsed as the 'digital language of business' by various professional bodies like the AICPA (American Institute of Certified Public Accountants) of the US on the west-end and the Institute of Chartered Accountants of Australia on the east-end of the world map. As an e-technology, XBRL is based on the eXtensible Markup Language (XML), very much like EBXML (Electronic Business XML), CML (Chemical Markup Language) and AIML (Astronomical Instrument Markup Language). A discussion (alphabetical) on some of the key concepts that form the building blocks and background to the development (and understanding) of XBRL is given below.

(i) eXtensible - The first key term in XBRL is the property of 'extensibility'. This property is alternatively termed as 'expandability' of the language. Conceptually, extensibility refers to the capability of the XBRL in permitting incorporation of new language elements. This capability of the language allows users to enrich the language by introducing new features and modifying the existing ones.

To illustrate, let 'Current Liabilities' in the balance sheet be divided into seven items with 'Sundry Creditors' being one (see Schedule VI of the Companies Act, 1956). Now, let it be presumed that two additional items dividing the

amount of 'Sundry Creditors' into (i) 'Total outstanding dues of small scale industrial undertaking(s)'; and (ii) 'Total outstanding dues of creditors other than small scale industrial undertaking(s)' are additionally required to be presented (see Companies Act (Amendment) 1999). The extensibility feature of XBRL permits linking-up of the instructions for the two new items to the XBRL instructions already written for the earlier set of items (called XBRL taxonomy). That is, XBRL taxonomy (accounting concepts and their inter-relationships) need not be written once again for the enlarged list of data-items. Rather, linkbase feature of the XBRL allows linking up of the accounting concepts and relationship(s) of the new items (defined in an independent supplementary taxonomy) with the accounting concepts and relationship(s) defined in the earlier taxonomy.

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 items 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. This blended set of instructions is then used for validating an 'instance document' (an XBRL coded electronic business report), say a balance sheet or a profit and loss account or a cash flow statement. Such an arrangement is illustrated in Figure 1 with reference to the taxonomy framework proffered by the International Accounting Standards Committee Foundation (IASCF).

(ii) Markup Language - The second important feature of XBRL is that it is a markup language. In simple words, a markup language is a collection of codes (or tags). These tags may refer to the 'structure' and 'format' of an electronic document as well as 'context' of data. Notably, the source of all markup languages is the Standard Generalized Markup Language (SGML).

Two popular and widely used markup languages are 'Hyper Text Markup Language' (HTML) and 'eXtensible Markup Language' (XML). Notably, HTML uses tags that govern appearance - size, shape, colour etc. - of data on the Web. These tags are generally used in pairs and are enclosed within angle brackets, with tag in the closing angle bracket preceded by a slash. To illustrate, HTML uses tags '<H1> and </H1>' through '<H6> and </H6>' for headings, with former for the most important heading and the latter for the least. Similarly, tags '<B> and </B>' are used by HTML for displaying data, say a number '4233390000', in boldcase.

As against HTML, XML is a markup language that 'describe' data. In describing data, XML offers the feature of flexibility. For instance, to describe data for amount owed to a supplier, a company may adopt the tags '<seller> and </seller>'. However, to describe the same kind of data, another company may choose some other tags, say '<vendor> and </vendor>', or '<creditor> and </creditor>'. Since XBRL is based on XML, it too offers the flexibility in devising the tag names. Hence, to describe data on, say, 'Current Liabilities', two different bodies developing XBRL taxonomies may devise different tag names. But, as is obvious, for achieving comparability of business data across different taxonomies, an interface equating two different sets of tags would be required.

It may be stated in the passing that Charles Goldfarb, one of the inventors of SGML, has likened HTML, to use a simile, to a 'word processor' i.e., concerned with display or presentation of information, and XML to a 'database' i.e., concerned with providing context to the data. Since XBRL is based on XML, business data coded as per XBRL, thus, carry all the advantages of data kept in a typical database.

(iii) XML - As XBRL is based on XML, some additional important features of XML are discussed here. Since XML (and hence XBRL) describes data, it is a technology that is aptly designed to store, carry, and exchange data. XML (and XBRL) achieves this capability by storing data in plain text files with the addition of markups or tags. And, storing of data in plain text files, in turn, permits smooth and efficient exchange of data amongst incongruous operating systems (say Windows, Unix and GNU/Linux.) and other software, and incompatible computer systems (say Macintosh and IBM PC). This is arguably one of the important reasons for several companies converting their HTML coded business informa-

tion into XML coded ones (as reported in recent years through the print media) for delivering them electronically, both through the Intranet and Internet.

To continue with the example discussed earlier under the second building block (Markup Language), as against HTML tags governing the appearance of a number in 'boldcase', XBRL describes a number '4233390000' as follows. That the number is (i) monetary data, (ii) in rupees, (iii) on 'Current Liabilities' (actual), (iv) of ONGC, and (v) for the year ended as at March 31, 2002. This is achieved in XBRL by using appropriate tags. Once coded, and validated against the applicable XBRL taxonomy, movement of this number along the information supply chain, regardless of the application software or computing platform used, shall always carry the description associated with it. This description or contextualising of data is a cutting-edge feature of XML (and hence XBRL) over HTML. And, it is a property that not only enables 'talking' of computers with each other, but is also at the root of designing and operationalisation of intelligent software such as FRAANK (Financial Reporting And Auditing in Network-enabled Knowledge).

XBRL - PROCESS

The major building blocks of XBRL are discussed in the previous section. In this section, first, a synoptic review of how XBRL conducts itself is done and, second, a case in favour of XBRL is argued, with reference to the said building blocks.

As stated in the preceding section, XBRL is a technology that describes business information in a manner such that, irrespective of the operating systems and computing systems involved in the information supply chain, information can be exchanged with greater speed, higher efficiency, and improved reliability. In fact, XBRL enables gathering (and analysis) of business information to match precisely to the needs of the users. This is accomplished in XBRL with the help of following two instruments: an instance document and an XBRL taxonomy. These two instruments of the XBRL are discussed in the following paragraphs.

Instance Document: In simple terms, an electronic version of the XBRL-tagged business report is called an 'instance document'. That is, an electronic (digital) version of each of the financial statements (such as a balance sheet, a profit and loss account, or a cash flow statement) and other business reports (such as a budget) created within the XBRL environment. This instance document essentially contains the factual data.

In operational terms, an 'instance document' is created through the active intervention of the preparers of financial and other business reports. These preparers, in the initial stage of information supply chain, assign contextual meaning to individual items of business data (both numerical and textual) in terms of the XBRL tags. It may be stated here that some software packages are currently available for accomplishing the task of coding business data with the XBRL tags. In the next stage, XBRL-tagged business data contained in an instance documents are validated against the relevant XBRL taxonomy(ies). This validation is done with a view to ensure that accounting concepts and inter-relationships among them, and other business rules have been duly observed in constructing an instance document. An 'instance document' pertaining to summarised balance sheet of ONGC for the year ended as at March 31, 2002, conforming to the International Accounting Standards Committee Foundation (IASCF) taxonomy, may appear as illustrated in Appendix-I (upper portion). The instance document in raw XML is also given in the lower part of the Appendix.

XBRL taxonomy: At the root of an instance document is the core XBRL technology in the form of XBRL taxonomy(ies). XBRL taxonomy is essentially an XML Schema document. And, as an XML Schema document, taxonomy is an extensible dictionary or vocabulary of financial and business terms. It maps and pre-defines various accounting concepts and inter-relationships amongst them (each accounting concept is referred as an 'element' in taxonomy). For instance, XBRL taxonomy may predefine the accounting concepts (termed elements) 'Receivables' (Gross), 'Provision for Doubtful Debts', and 'Receivables (Net)' and establish inter-relationships amongst these elements in terms of XBRL tags. A computer, in turn, accesses this XBRL taxonomy for validating and understanding factual data on various elements that constitute an 'instance document' (say, amounts of assets, liabilities and equity in a balance sheet coded with XBRL tags). In short, XBRL taxonomy enables a computer (program) to talk to the business reports.

It may be emphasised once again that an instance document might be governed by two or more XBRL taxonomies. For example, an instance document (say a balance sheet of an Oil and Gas company) may be governed

by the following. A 'global common document' (GCD) taxonomy of IASCF (for items common to all firms worldwide), a national taxonomy (for items unique to a country), an industry taxonomy (for items unique to an industry, say Oil and Gas), and firm-specific taxonomy (for items voluntarily disclosed, and, hence, unique to a firm). Thus, validation of an instance document may require a referencing to multiple XBRL taxonomies. This is exhibited in Figure-1.

In building an XBRL taxonomy, due examination of the authoritative literature is done. To illustrate, development of an XBRL taxonomy for the balance sheet of Indian companies should refer such authoritative literature as the relevant provisions of the Companies Act 1956, accounting standards issued by the Institute of Chartered Accountants of India (ICAI), and best accounting practices. Based on this examination, a detailed checklist of XBRL elements (various accounting concepts), and their inter-relationships, should be prepared. These elements and their inter-relationships should, then, be incorporated in a taxonomy with XBRL tags (as per norms and conventions generally accepted and endorsed by an authoritative body) such that computers are able to understand and interpret these tags. XBRL tags can be written as description for an element name only (say, 'liab-cur-total' for '(Total) Current Liabilities'), or as description in terms of two element names related with one another as a parent and a child (say, 'currentLiabilities.sundryCreditors' establishing that element 'Current Liablities' is a parent to the colloquially named element 'Sundry Creditors'). Appendix-1 illustrates the former convention for naming the accounting concepts in an XBRL taxonomy.

The recent versions of XBRL taxonomy(ies) published by various authoritative bodies around the world have very widely used a tool called Xlink (linbkbase) for representing the accounting concepts and their inter-relationships. These linkbases make XBRL taxonomy document (main) appear more manageable and neat by placing information on each of the attributes - labels, reference, definition, presentation and calculation - of elements into separate documents. With the help of linkbase tool, these separate documents are then linked to the main taxonomy document. An extract from the XBRL taxonomy document developed by IASCF and using the tool of linkbase is illustrated in Appendix-2.

XBRL AND ELECTRONIC FINANCIAL REPORTING

As discussed above, XBRL taxonomy contextualises or describes business data (elements) and their inter-relationships at a conceptual level in terms of several attributes. But, an 'instance document' also adds further context to the data. In specific terms, an instance document describes data in terms of the following attributes - entity (name of the company), segment (business segment within the entity), scenario (budget or actual), period (as at a date or for a period), unit (currency), and precision (for numerical data). Taken as a whole, contexts to the data (contained in both the taxonomy and the instance documents) enable computers to perform a contextual search on the Web. Theoretically, data on an item (say 'Current Liabilities') from XBRL coded business reports (say a balance sheet) can now be harvested and profiled for 'n' number (6, as for the experiment conducted in Section 2 above) of companies by simply clicking a few buttons! This is so because XBRL-enabled software locate and assemble the required business data (textual, quantitative or monetary) into a spreadsheet by executing a simple command.

The aforesaid capabilities of XBRL deserve to be recognised against the findings for the time-metric experiment performed in Section 3 of this paper. Accordingly, findings of the second experiment are considered once again here. As discussed, the experiment has shown that approximately one-and-a-half-hours were taken for locating, extracting and assembling of data on a single item (amount of 'R & D expenditure') from the 'pdf' files of 6 companies from the EDIFAR system, the repository of electronically filed annual reports in India. As against this, no more than a minute may be required in the XBRL environment to complete the said experiment. This comparison clearly highlights the efficiencies (in terms of both time and cost) that can be achieved in the decision-making processes of the external users while using electronic annual reports from the Internet.

XBRL AND FUTURE DIRECTIONS

In addition to introducing efficiencies in the decision-making processes of the external users, XBRL environment also yields tremendous benefits to the management in general. Figures 2(a) and 2(b) highlight these benefits graphically by comparing the overall processing and dis-

semination of information under the conventional vis-a-vis the XBRL environments. Figure 2(a) exhibits that the traditional reporting system may identify, mine, and assemble accounting data from the accounting system and other sources a number of times, each time specific to a purpose. Obviously, this is not the most efficient approach to information management. On the other hand, Figure 2(b) shows that under the XBRL reporting environment, once accounting data from all the sources has been coded in XBRL, various accounting reports can be generated for multiple uses in a very efficient manner.

In fact, XBRL coded information provides viable opportunities, both to management and external users, for designing and implementing intelligent agents such as FRAANK (Financial Reporting And Auditing in Network-enabled Knowledge) for not only assembling but also analysing and interpreting the business information. That is, with XBRL coded data, the intelligent agents enable the computer (programs) to talk and understand the information contained in the published financial statements (such as a balance sheet and / or a profit and loss account) and other business reports. These intelligent agents locate, extract, assemble, analyse, and draw inferences for the decision-makers. Thus, XBRL environment offers vast opportunities for achieving higher speed, greater efficiency, and enhanced reliability in exchange of business information, and, thus, benefiting decision-making by various user-groups (both internal and external to an entity). Even for the auditors, XBRL environment offers several new opportunities such as rendering assurance services (like continuous auditing) for the XBRL coded business data that enters and moves along the information supply chain, both through Intranet and Internet.

In terms of adoption of XBRL, it is worth noting that at the level of an economic unit, some prominent bodies are already experimenting with the XBRL coded business data. These include entities (alphabetically) like the Australian Prudential Regulatory Authority (APRA), Bank of Tokyo Mitsubishi, Microsoft, Mitsui Banking Corporation, Morgan Stanley Dean Witter, Reuters, and Wacoal. In the domain of external reporting, the Morgan Stanley Dean Witter has taken a pioneering lead. The company has achieved the singular distinction in 2002 by becoming the first company to file an XBRL coded electronic document with the SEC in the US. In this regard, it is also worth noting that, beginning Spring 2003, Tokyo Stock Exchange has asked companies to file the highlights page of their financial statements in terms of XBRL.

Adoption of XBRL technology by a variety of entities and its endorsement by the Securities Market suggests that both the accountancy profession and SEBI in India should initiate steps for experimenting with this new technology, perhaps on the lines of Tokyo Stock Exchange. It is suggested that, to begin with, some of the most actively traded companies may be asked to file XBRL coded quarterly reports with the EDIFAR system on an experimental basis. This would, as a pre-requisite, require formation of a taskforce with members representing the disciplines of accountancy, IT, and others. The taskforce should deliberate and lay down a roadmap for implementation of the XBRL. This is considered highly desirable not only to keep pace with the evolving technological scene in the world, but also to realise such objectives as investors' protection, better corporate governance by making performance of public entities more transparent, and ensuring faster, and cheaper supply of business information for decision-making purposes.

SUMMARY AND CONCLUSION

In the background of growing importance of Internet and online reporting by companies, as also the SEBI requirement to file electronic copies of financial and other business reports, the paper has first, examined the practices of Indian companies with respect to supply of their electronic annual reports through the EDIFAR system. For a sample of 100 companies, the paper has inferred that a large proportion of actively traded Indian companies are yet to begin complying with the SEBI requirement to supply electronic annual reports through the EDIFAR system. In this regard, the paper has highlighted several weaknesses in the prevalent practices of corporate reporting through the Internet. Second, in terms of a time-metric (average number of minutes taken to locate, extract, and assemble information per company), the paper has argued a case in favor of XBRL-coded electronic annual and other business reports. It is inferred that XBRL coded electronic documents would bring faster, cheaper, and more reliable information to the decision-making processes of both the external (as well as internal) users. In this regard, building blocks of the XBRL technology are also discussed and illustrated in the paper. Some policy recommendations for establishing the XBRL environment are also made.

Figure 1 : International Accounting Standards Expressed in XBRL for Electronic Financial Reporting
(Source: International Accounting Standards Committee Foundation (IASCF) and XBRL International)

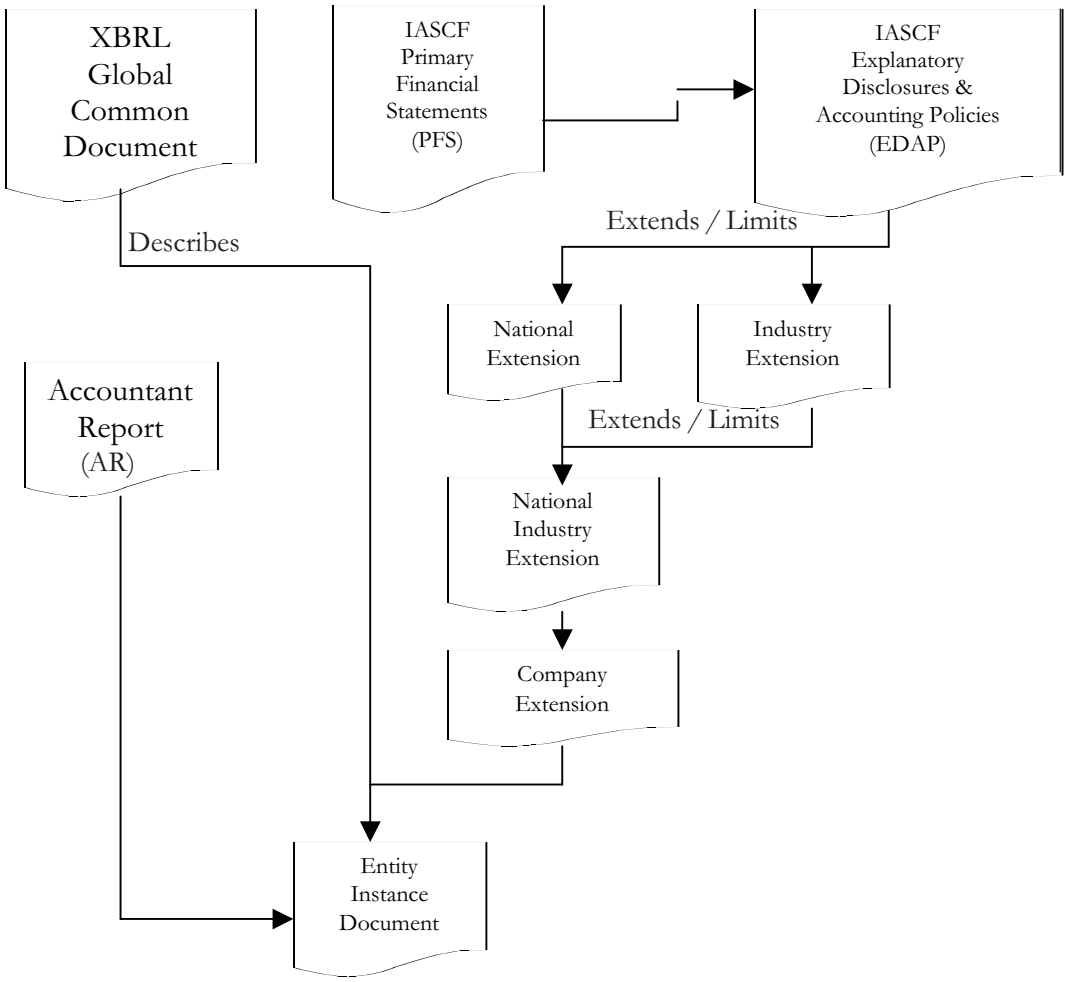
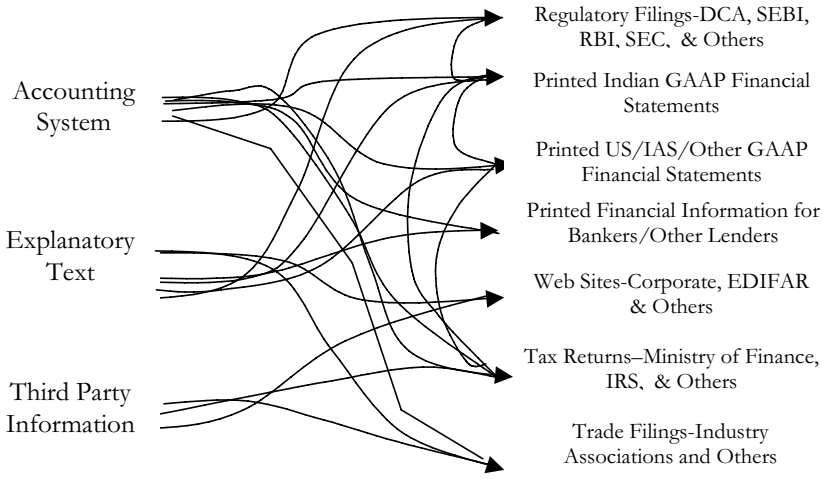
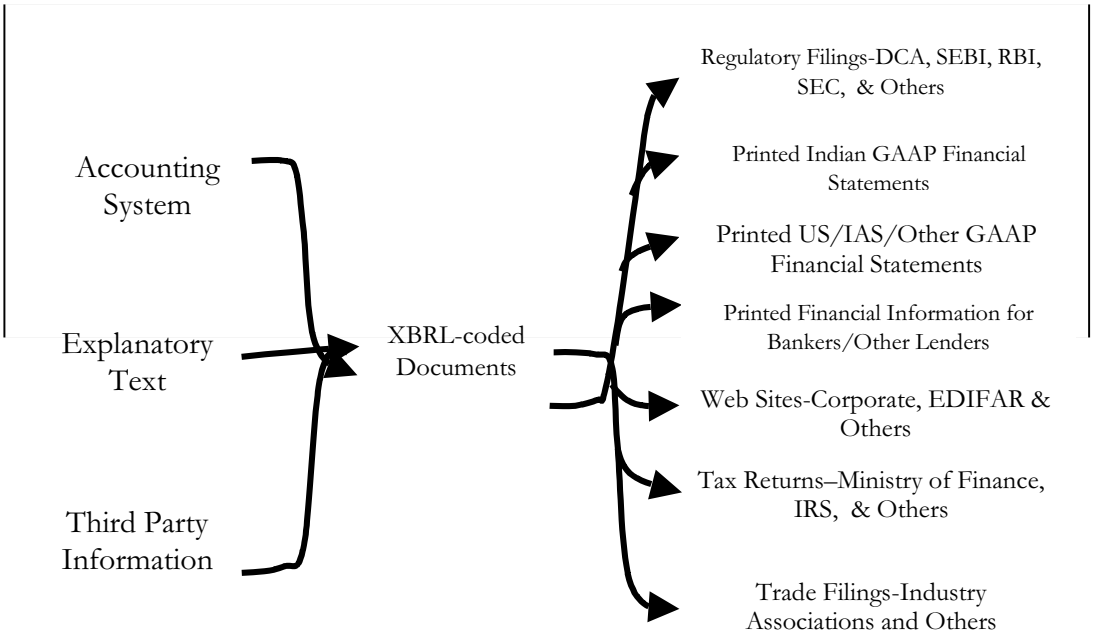


Figure 2 (a) Flow of Information in Tradional Reporting Process



(Adapted and modified from Haffman and Stand (2001) and Vasal and Srivastva (2002)

Figure 2 (b) Flow of Information under XBRL Reporting Process



(Adapted and modified from Haffman and Stand (2001) and Vasal and Srivastva (2002)

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Hoffman C., Kurt, C. and Koreto, R.J. The XML Files, Journal of Accountancy, May 1999.

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Vasal. V.K. and Srivastava, R.P. eXtensible Business Reporting Language - Thr Digital Language of Business, Indian Accounting Review, June 2002,

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Appendix-I

(A Sample Instance Document - for illustration purposes only)

ONGC Limited

Balance Sheet as at March 31, 2002

(Amount in Rupees)

Sources of Funds	
Shareholders' Funds	297221750000
Loan Funds	88579000000
Total	385800750000
Application of Funds	
Non-Current Assets, Cost (Net)	274933490000
Current Assets	176658990000
Less : Current Liabilities	65791730000
Net Current Assets	110867260000
Total	385800750000

Line-items presented in the above instance document could appear in raw XML as given below (tagged with XBRL codes as per IASCF framework):

```
<group xmlns:xml="http://www.w3.org/XML/1998/namespace"
xmlns="http://www.xbrl.org/2001/instance"
xmlns:xsi="http://www.w3.org/2002/XMLSchema_instance"
xmlns:ias="http://www.iasb.org.UK/xbrl/2001-08-16/"
xsi:schemaLocation="http://www.iasb.org.UK/xbrl/2001-08-16/ias.xsd">

 <ias.bs>
<ias:eq-total numericContext="C1">297221750000</ias:eq-total numericContext="C1">
<ias:liab-nonCur-total numericContext="C1">88579000000</ias:liab-nonCur-total numericContext="C1">
<ias:liab-total numericContext="C1">385800750000</ias:liab-total numericContext="C1">
<ias:asset-nonCur-total numericContext="C1">274933490000</ias:asset-nonCur-total numeric Context=" C1">
<ias:asset-cur-tot numericContext="C1">176658990000</ias:asset-cur-tot numericContext="C1">
<ias:liab-cur-tot numericContext="C1">65791730000</ias:liab-cur-tot numericContext="C1">
<ias:asset-total numericContext="C1">385800750000</ias:asset-total numericContext="C1">
 </ias:bs>


</group>
```

Appendix-2

An extract of XBRLTaxonomy (IASCF Framework)

```
<schema xmlns:xml="http://www.w3.org/XML/1998/namespace"
xmlns:xhtml="http://www.w3.org/1999/xhtml"
xmlns:link="http://www.xbrl.org/2001/Xlink/xbrllinkbase"
xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xbrli=http://www.xbrl.org/2001/instance
xmlns:ias="http://www.iasb.org.UK/xbrl/2001-08-16/"
xmlns="http://www.w3.org/2002/XMLSchema"
targetNamespace="http://www.iasb.org.UK/xbrl/2001-08-16/"
elementFormDefault="qualified">
<annotation>
  <appinfo>
   <link:linkbase      Ref xlink:type="simple" xlink:href="linkbase\ias_presentaion.xml"
                       xlink:actuate="onRequest" xlink:role="http://www.xbrl.org/linkprops/linkRef/presentation"
                       xlink:arcrole="http://www.w3.org/1999/xlink/properties/linkbase">
                       <xhtml:p>links for presentation relationship</xhtml:p>
   </link:linkbaseRef>
   <link:linkbase      Ref xlink:type="simple" xlink:href="linkbase\ias_reference.xml"
                       xlink:actuate="onRequest" xlink:role="http://www.xbrl.org/linkprops/linkRef/reference"
                       xlink:arcrole="http://www.w3.org/1999/xlink/properties/linkbase">
                       <xhtml:p>links for references</xhtml:p>
   </link:linkbaseRef>
<link:linkbaseRef xlink:type="simple" xlink:href="linkbase\ias_label.xml"
                       xlink:actuate="onRequest" xlink:role="http://www.xbrl.org/linkprops/linkRef/ label"
                       xlink:arcrole="http://www.w3.org/1999/xlink/properties/linkbase">
                       <xhtml:p>links for Labels</xhtml:p>
   </link:linkbaseRef>
<link:linkbase         Ref xlink:type="simple" xlink:href="linkbase\ias_definition.xml"
                       xlink:actuate="onRequest" xlink:role="http://www.xbrl.org/linkprops/linkRef/definition"
                       xlink:arcrole="http://www.w3.org/1999/xlink/properties/linkbase">
                       <xhtml:p>links for definion relationship</xhtml:p>
   </link:linkbaseRef>
<link:linkbase         Ref xlink:type="simple" xlink:href="linkbase\ias_calculation.xml"
                       xlink:actuate="onRequest" xlink:role="http://www.xbrl.org/linkprops/linkRef/calculation"
                       xlink:arcrole="http://www.w3.org/1999/xlink/properties/linkbase">
                       <xhtml:p>links for calculation relationship</xhtml:p>
   </link:linkbaseRef>
  </appinfo>
 </annotation>

 </schema>
```