INTERNATIONAL JOURNAL OF ACADEMIC RESEARCH IN ACCOUNTING, FINANCE AND MANAGEMENT SCIENCES
www.hrmars.com
ISSN: 2225-8329

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To Link this Article: http://dx.doi.org/10.6007/IJARAFMS/v2-i1/9880 DOI:10.6007/IJARAFMS /v2-i1/9880

Received: *13* January *2012, **Revised:** 17* February 2012*, **Accepted:** 01* March 2012

Published Online: 22 March 2012

In-Text Citation: (Bhasin, 2012)
To Cite this Article: Bhasin, M. L. (2012). Environmental Disclosures on the Internet: An Exploratory Study. *International Journal of Academic Research in Accounting Finance and Management Sciences*, *2*(1), 205–230.

Vol. 2, No. 1, 2012, Pg. 205 - 230

http://hrmars.com/index.php/pages/detail/IJARAFMS	**JOURNAL HOMEPAGE**

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ISSN: 2225-8329

Environmental Disclosures on the Internet: An Exploratory Study

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Abstract
Environmental disclosure (ED) is now considered to be a 'key' medium through which to communicate a corporations 'environmental' performance to its stakeholders. The rapid growth of 'Internet' technology has created the ability for firms to 'disseminate' information to the 'global' audience by removing all 'geographical' barriers. In this study, we explore the status of ED made by 39 corporations during the year 2005-06, by using "content" analysis methodology. In order to examine the quality of ED by these corporations on their Websites, we followed Technology Adoption Model. The empirical data used in this study is based on the online Annual Reports, and disclosure made on their Websites. A careful analysis of the information collected indicates that corporations provide more ED on their Websites, in sharp contrast, to reporting made within their Annual Reports. Fortunately, most of the corporations making ED on their Websites consider 'environmental' information to be 'very' significant to the 'visitors' of their Websites. However, ED in Annual Report is general, broad and narrative in nature, without specifically discussing the "environment management policy" followed by the corporation and/or "statement of assurance" from the corporate management regarding compliance with the external standards, if any. We feel that this needs to be improved soon, since narrative comments do not reflect the contribution of the corporation towards the betterment of the environment. However, corporations are still adapting ICT, and as yet, do not fully exploit all of its capabilities. Thus, there is considerable scope for corporations to improve their Internet- and Web-based corporate EID.
Keywords: Financial Disclosure, Internet, Web-Based Disclosure, Voluntary Disclosure, Er, Annual Reports, Indian Corporations

Introduction

Application of information and communication technology (ICT) to gain a 'competitive' advantage is well-known, and often used by business firms, both in developed and developing countries. Nowadays, 'Internet' has become one of investors' most frequently used sources of information, and many corporations are disclosure all or part of their financial information on their corporate Websites (Hindi, 2010). Therefore, a fairly recent technological development is use of the

'Internet' to provide corporate financial information, often labeled as, "Internet financial reporting (IFR)". Simply stated, "IFR refers to the use of a corporation's Website to distribute information about the financial performance of the corporations." According to the Financial Accounting Standards Board (FASB, 2000, 2001), corporations have several potential motives to provide financial information on the Internet, among others: reducing the cost of and time to distribute the information; communicating with previously unidentified consumers of the information; supplementing traditional disclosure practices; increasing the amount and type of information reported, and improving access to potential investors for small corporations. As Hunter and Smith (2009) observe, "Use of Internet financial disclosure is effectually a method of marketing a corporation to shareholders and investors. IFR disclosure has at least two major 'economic' effects. First, the Internet alters information processing costs, and with it the demand and supply of financial information in 'capital' markets. Second, IFR creates a demand for 'standardization'; this led to development of XBRL (www.xbrl.org). In fact, XBRL stands for "eXtensible Business Disclosure Language". Corporations can use XBRL to save costs and streamline their processes for collecting and disclosure financial information. Consumers of financial data can receive, find, compare and analyze data, much more rapidly and efficiently if it is in XBRL format. Moreover, XBRL can handle data in different languages and accounting standards.

Business organizations across the globe are facing the challenge of disseminating 'environmental' information as the 'public' concerns regarding these issues have increased. For instance, Wilmshurst and Frost (2000) have defined "environmental disclosure as those disclosures that relate to the impact corporation activities have on the physical or natural environment in which they operate." Therefore, environmental disclosure (ED) aims to communicate whether natural resources have been used responsibly by the corporate world. In fact, corporate ER is growing in importance due to the increased demand for environmental performance information, and the prospect that such information will improve financial performance. However, there are wide variations in ED across-corporations, and divergent views on why corporations 'voluntarily' provide ED. In this context, Dawkins and Fraas (2011), lucidly explains: "Voluntary disclosure includes information that is not required by law or code of practice (e.g., Annual Reports and proxy statements), or goes beyond what is required, and is useful for stakeholder decision-making." Essentially, there are two explanations for voluntary disclosure that are termed as 'legitimacy' theory and 'voluntary' disclosure theory: voluntary disclosure approach focuses on "acclamations of good performance," while the legitimacy approach is directed toward "excusing poor performance."

Now-a-days, the Internet has been widely employed by several 'progressive' corporations for providing their ED information. Many of the largest corporations usually have an Internet and Website for making their financial and ER. Compared with the 'traditional' printed Annual Reports, the Internet offers many more opportunities to communicate corporate information, and allows a wealth of up-to-date, unofficial, critical, and alternative channels of accounting information to compete with the official channels. In this context, Abdelsalam and Street (2007), very appropriately observes, "Internet is serving as an important tool to facilitate a better functioning of financial markets by enhancing corporations' ability to prepare investors' with up-to-date, timely information. As the financial market is facing globalization, liberalization, and economic crisis and downturn, timely information is frequently required to assist users in decision-making." In this case, the most valuable information is the one that can reduce information "asymmetry". Business firms are always looking for a new tool for disseminating information to external users. One of the 'innovative' tools that are available in the market is 'Internet' technology (Alarussi et al., 2009).

Through enhanced disclosure on the Internet, the "agency risk" that usually results from information 'asymmetries,' would be considerably reduced. Moreover, firms disclose additional information about the managers' actions, and the economic reality of the corporation in order to "reduce agency conflicts between managers (the agent) and owners (the principal)." Thus, apart from the importance of reducing information asymmetry to the capital market, sufficient information is also essential for the shareholders to monitor the behavior of the management (Fortes, 2002). In the opinion of Hughes et al., (2001), "Information on the firm's performance and the firms' future prospects is, therefore, likely to reflect how-well management runs the corporation. With regards to the directors, the information on the directors (such as, their independence, shareholding qualification, and related-party transactions) will enable the shareholders to assess the directors' performance and to monitor their behavior." Furthermore, the disclosure of information not only serves as a mechanism for control on behalf of corporations' shareholders, but also as a mechanism of 'legitimacy' for managers (Alvarez et al., 2008). Under 'signaling' theory, adequate and quality disclosure is said to stem from management's desire to disclose its superior performance because, good performance will enhance the management's reputation and position in the market for management services, and 'good' disclosure is considered as one aspect of 'good' corporate governance.

Accounting for environment helps in accurate assessment of costs and benefits of environmental preservation measures of corporations (Schaltegger, 2000). Also, it provides a common framework for organizations to identify and account for past, present and future environmental costs to support managerial decision-making, control, and public disclosure (KPMG and UNEP, 2006). The severity of environmental problems, as a global phenomenon, has its adverse impact on the 'quality' of our life. Therefore, various types of measures are being taken, both at the national and international levels, to reduce, prevent and mitigate its impact on social, economic and political spheres (GRI, 2002; 2006). For instance, environmental governance 'strategies' of many countries require "mandatory" corporate ED. As Creel (2010) lucidly explains, "Triple Bottom Line creates a business strategy in which an organization does not focus exclusively on the financial aspects of its business. An organization that applies the triple bottom line analyzes its business performance based on the social, environmental, and financial bottom line." Of course, such mandates facilitate the availability of environmental data in 'public' domain through corporate ED. Thus, business organization uses the environmental disclosure as a vehicle to enforce the value of environmental concern to their stakeholders (Buniamin, 2010).

The emergence of corporate ED in India has been an important development, both for better environmental management and overall corporate governance (Banerjee, 2002). Global awareness of stakeholders on corporate environmental performance has already made 'traditional' disclosure mechanisms redundant. Corporate houses run in to the risk of loss of faith of their stakeholders, if in future, environmental performance information is not included in their main stream disclosure (Swift, 2001). Indeed, simple adherence to the 'mandatory' ED is not sufficient to meet the disclosure expectation of stakeholders. However, 'mandatory' disclosure is nothing but a 'minimum' prescribed disclosure requirement: just ticking the check-box items. Corporations around the world aspire consciously for improved 'transparency' in disclosure as their core competence (Williams et al., 2000).

It is universally accepted that ER through the Internet would be the future of scientific disclosure. To quote Isenmann and Lenz (2002, 2004), "In terms of corporate disclosure, professional Internet use will enhance the way in which corporations give information, communicate and manage their business internally and externally, benefitting all members involved that are disclosure corporations, addressed key target groups and other stakeholders, such as standard setting institutions and benchmarking organizations." Thus, a number of recent 'national' and 'international' surveys have identified increase in growth of corporations' disclosure on Internet. Internet disclosure is perceived as a powerful disclosure tool by contemporary reporters. Corporate entities of today are, therefore, moving towards "socially-responsible" disclosure.

Basically, ED done by the Indian corporations can be broadly categorized into two types—mandatory and voluntary disclosure. Preliminary investigation of this study shows that Indian corporations practice more of "voluntary" ED in the form of satellite disclosure, sustainability disclosure, GRI disclosure, Internet disclosure, etc. As Homayoun and Rahman (2010) asserts, "Despite the growing use of the Internet in financial markets by corporations, academic research into the use of the Internet in financial disclosure is still in its infancy in developing countries." The International Accounting Standards Committee (IASC, 1999) has predicted, long back, that in the near future, "business disclosure to stakeholders will move almost entirely from the current primarily print-based mode to using the Web as the primary information dissemination channel, with the print-based mode as secondary channel." Keeping this in view, the main objective of this study is "to understand the ED practices followed by the Indian corporations on their Websites, using the 'Internet' technology as their communication medium." Further, while conducting this study, we observed that Indian corporations follow diverse disclosure practices on the Internet, viz., standalone environmental information disclosure (satellite accounts), or disclosure along with the Annual/Financial Reports, or Sustainability Disclosure (which include the economic, environmental and social issues).

Legal Framework for Environmental Disclosure in India

According to the "Indian Constitution" (Article 51A of Directive Principles), "It shall be the duty of every citizen of India, to protect and improve the natural environment (including forests, lakes, rivers, and wildlife) and to have compassion for living creatures." However, the Constitutional provisions, from time to time, are backed by a number of laws — acts, rules, and notifications. In 1980, the Department of Environment was established in India to ensure a healthy environment for the country. This later became the Ministry of Environment and Forests (MOEF) in 1985. The EPA (Environment Protection Act), 1986 came into force soon after the "Bhopal Gas Tragedy," and is considered an umbrella legislation as it seeks to fill many gaps in the existing laws. Similarly, the MOEF has brought a number of regulatory and non-regulatory initiatives, in its efforts in harmonizing environmental protection with economic development. As Chakrabarti and Mitra (2005) rightfully observes, "In order to control emissions from the production processes, air quality regulations lay down stringent equipment specifications that are required to be implemented by the polluting industries. To minimize the global environmental problems, India has made the production and abatement technology mandatory." In 1991, the GOI had made its first 'public' announcement about the need for an ED in Annual Reports (Malarvizhi and Yadav, 2009). It is encouraging to know, the GOI has pronounced that "every corporation shall in the report of its board of directors, disclose briefly the particulars of compliance with environmental laws, steps taken or proposed to be taken, towards adoption of clean technologies for prevention of pollution, waste minimization, waste recycling and utilization, pollution control measures, investment on waste reduction, water and other resources conservation."

In addition to the above notifications, corporations are required to prepare director's report as per "Director's Report Rules, 1988." Furthermore, the Corporations' bill 1993 and 1997 had proposed the amendment of Section 173, to "disclose through its board of director's report the measures taken for protection of environment." There is also a mandatory requirement for Indian corporations to report on conservation of energy, technology absorption, etc., in accordance with the provisions of Section 217 (1) (e) of the Indian Corporations Act 1956. In India, financial accounting and disclosure guidelines are solely issued and governed by the "Institute of Chartered Accountants of India (ICAI)." Corporations Act, however, mandates the preparation of annual accounts of corporations in accordance with the Accounting Standards issued by the ICAI (Chatterjee, 2005). Specific environmental accounting rules or ER guidelines, for communication to different stakeholder groups, are not available for Indian corporations.

Unfortunately, there is no mandatory requirement for 'quantitative' disclosure of (financial) environmental information in the Annual Reports, neither under the Corporations Act nor as per Indian Accounting Standards. Furthermore, there are over 23 stock exchanges in India, which are governed by the Securities and Exchange Board of India (SEBI) Act 1992, and each of them have different "listing" requirements (Venkateswaran, 2005). However, there is no 'mandatory' SEBI listing requirement for Indian corporations, from these stock exchanges, to disclose environmental information. Therefore, any ER made by the Indian corporations is purely 'voluntary' in nature.

Literature Review

Numerous research studies were carried out in the past, both by academicians and researchers, to assess the level of corporate environmental commitment; vehicles used for communicating their performance (print medium or web-based disclosure), and reasons for ED, across corporations and countries. Unfortunately, empirical research on corporate ER is available largely for the developed nations and very few studies are available for the Asian countries. For example, Chris and Jill (2007) have used the theoretical framework of "legitimacy" theory to understand the association between corporations with environmental impact and disclosure rate. This research used both the hardcopy and Web site disclosure to find a positive correlation between environmental responsiveness and disclosure.

Use of world-wide-web, as a medium for ED by the Australian minerals industry, was studied by Lodhia (2004). Results indicate that the full potential and benefits of Web-based disclosure has not been effectively utilized for ED. Findings suggest that the motive for ED is more to maintain their legitimacy than gaining or repairing it. Web based environmental communication has not yet been recognized as a strategic consideration while designing and developing corporation Websites. For instance, Adams and Frost (2004) carried out a comparative study of digital environmental communication in Australia, United Kingdom (UK) and Germany. They too concluded that there was limited use of Websites for environmental communication by corporations. Similar work was done by Bolívar and Garcia (2003, 2004), who carried out a study on Web-based ED of publicly listed Spanish corporations. This research analyzed the use of Internet by environmentally sensitive industries and their transparency in corporate ED. Results showed that the sample firms widely use

Internet as a channel of communication to manage corporate legitimacy and stakeholder pressure, yet there remain differences in disclosure.

Isenmann et al., (2004, 2007) studied the online disclosure for sustainability issues through three conceptual elements — stakeholder information requirements, XML-based document engineering, and disclosure system. It concludes that more corporations use Internet for improving their disclosure methodologies. The study expects Internet disclosure to benefit small and medium size corporations more, due to its fast, easy, instantaneous cost effective disclosure, as it could reach a wide spectrum of stakeholders. Similarly, Dutta and Bose (2008) investigated the Web-based ED of listed corporations in Bangladesh through a sample of 17 corporations. They conclude that Bangladesh is yet to develop and improve Web-based ED practices. Corporate Websites are not well structured to handle the information technology based disclosure. Further it shows that corporations follow more of qualitative disclosure by providing only positive details of their environmental performance.

From the above descriptions, it is apparent that majority of the surveys and studies that have been reported, so far, have focused primarily on corporations operating in the developed world, like the USA, the Europe and Australia. Moreover, some studies conducted by the various professional accounting bodies, such as the Institute of Chartered Accountants in England and Wales (ICAEW, 1998; 2004), the International Accounting Standards Committee (IASC, 1999), the Canadian Institute of Chartered Accountants (CICA, 1999), and the Financial Accounting Standards Board (FASB, 2000; 2001), continued this trend by covering other aspects of Internet financial disclosure, such as the formats used for posting Annual Reports over the Internet, and the availability of real time stock quotes, and press releases. However, there are very few studies that document the ED practices of organizations, especially in developing nations like India. Fortunately, three studies have been undertaken in India, and they are outlined below.

Sahay (2004) surveyed the ED done by the Indian corporations. His study revealed that ED in India is unsystematic, piecemeal and inadequate due to poor environmental awareness of stakeholders. Furthermore, he finds that comparison of reports between corporations and across sectors are increasingly becoming impossible due to unregulated and public relations type of disclosure. He concludes that the prevailing environmental regulation needs rigorous enforcement and implementation. Similarly, Chatterjee and Mir (2008) explored the state of ED by the Indian corporations on their Websites, and also in their Annual Reports. The Websites of the corporations in the sample were visited to examine the ED there. The Annual Reports available online were selected to investigate the extent of ED in them. The authors conclude that most of the Indian corporations have reported relatively more environmental information on their Websites compared to the information provided in their Annual Reports. In another research study conducted by Singh and Joshi (2009), authors examined the environmental management and disclosure practices employed by the various corporate enterprises in India. Simple random samples of 100 corporations from the BSE Index have been selected. ER has been measured by constructing "Index of Disclosure" for the corporate enterprises in India. They conclude: "ED practices by Indian corporations are of a casual nature. Environmental information disclosure is yet to find a permanent position in the financial sections of the annual report. Positive relationship exists between the profitability, size of the corporation and EDS."

Three studies described above show a steady increase in the use of Internet-based environmental performance disclosure on Websites in India, along with traditional method of disclosure in the corporate Annual Reports. It is important to note that all these prior research studies affirmatively suggest that firms have not been forthcoming with adequate financial ED. However, India as a developing nation is no different from this 'global' disclosure pattern. Monitoring and disclosure on environmental issues is found to be limited. This research is probably one of the few initial research works with respect to 'Internet' ED on Websites done by the Indian corporate sector. Hence, the extent of prior research literature available on Internet disclosure by Indian corporations is limited. The purpose of this study is "to explore the state of environmental information disclosure by Indian corporations on their Websites and also in their online Annual Reports available there." This research aims to address this gap by studying the ED practices employed by the various corporate enterprises in India, both on their Websites and Annual Reports.

Environmental Disclosure on the Internet: An Emerging Area

The Internet is a new medium which is able to reduce the distortion in communication channel and diminish the trade-off between reach and richness of information (Perera et al, 2003). The OECD (2004) suggests that the use of the Internet and other information technology improves information dissemination, resulting in more equal, timely and cost efficient access to relevant information by investors. Undoubtedly, growth in ICT has revolutionized 'global' accessibility of required information beyond national boundaries. In fact, exchange of information through Internet is more 'efficient' and 'flexible' than other channels of communication. The potential role of the Internet, as a relatively new means of communicating information to general public in developing countries, is to meet stakeholder demands for greater speed and volume of timely information, in better and more effective ways (Aly et al., 2010). Moreover, use of Internet brings more transparency, removes geographical barriers, and provides fast access to corporate information, without any selective disclosure as is the case with printed reports (Gandia, 2008). As Debreceny et al., (2002) states, "Due to Internet's capability in disseminating information at a high speed, many corporations are now taking advantage to disclose not only financial but also non-financial information to their stakeholders." One of the non-financial information is "environmental" information. This is also due to the increase of public awareness on environmental issues.

The Indian corporations have faced strong 'international' competition over the past few decades, especially after the opening of the Indian economy in the early 1990s, as international competitors tried to establish their footholds in India. These international firms were disclosing non-financial information (including ED) leading to an enhanced expectation from Indian corporations, to act responsibly towards the environment and be accountable to their society beyond the traditional role of providing financial account (specifically referred to as "bottom line" perspective by Elkington in 1997) to the shareholders. Hence, to improve corporate image concerning socially responsible behavior, it is expected that an increasing number of Indian corporations will report about their environmental performance information and social issues. To quote Gray et al. (2001), "Most of the available literature in regard to environmental performance disclosure has concentrated on developed countries, and little attention has been given to the state of ED of developing countries." Despite the rapid growth of Internet usage in the financial markets, academic research in this area is still in its 'infancy' stage. To fill this gap, the aim of this study is "to explore the state of ER made by the Indian corporations." Accordingly, this study contributes to the existing body of literature by focusing on the accessibility of environmental information on corporate Websites, whereas the available literature only focuses on the extent of ED in Annual Reports. However, only a few studies concentrate on the extent of ED on the Websites of corporations. For example, Ahmed and Sulaiman, (2004) has emphasized the significance of investigation beyond Annual Reports to examine the extent of ED by corporations.

Research Method used and Sample Selection

This study investigates the current state of ED made by the Indian corporations on the Internet. Here, the "secondary" sources of data available in the "public" domain are primarily used. Indeed, the scope of this research is 'exploratory' in nature, and we have used a suitable combination of content and discourse analysis, in examining the ED made available in official documents (digital) and Websites. Specifically, three areas are studied: (1) the disclosure of non-financial environmental information; (2) the disclosure of financial environmental information, if any; and (3) the analysis of some aspects of the corporate Websites that, in our opinion, could affect the availability of the corporate ED.

Accordingly, the research method used in this study requires an 'exploration' of Websites of 45 Indian corporations. At first, the Websites of all these 45 corporations were visited, from time to time, to examine the accessibility and extent of ED provided on their Websites. Secondly, online Annual Reports for 2005-06, as available on the corporations' Websites, were selected to investigate the extent of ED made in them. The sample of corporations consists of 45 top Indian corporations as listed on www.indianinfoline.com and selected in accordance with the "market-capitalization" order. A list of the sample corporations is provided in Appendix 1. The use of market-capitalization is an accepted measure of firm size. However, from this sample of 45 corporations, 6 corporations belonging to the financial sector were excluded as it seemed that they have no impact on the environment. Finally, 39 corporations were left for analysis. From the sample, a subset of corporations that produce "environmental report (ED)" was utilized as it is more likely to be disclosing sophisticated environmental information in their Annual Reports than non-disclosure corporations. Sample corporations are, however, representative of major sectors. It is a preemptive assumption that "bigger firms would disclose their environmental performance information more than smaller firms, as they are visible (Cornier and Magnan, 2003, 2004; Simon et al., 2005). Based on this, sample corporations were also classified into manufacturing and non-manufacturing categories. This research made use of online search for the "Website survey and "content analysis" by physical observation of the environmental information made available on the Websites of these selected corporations.

Content analysis is the primary tool used for analyzing the published information available on the Internet. It is a technique for making inferences by objectively and systematically identifying specified characteristics of messages. As a research tool, it is used to investigate if certain words and concepts are present within texts. Content analysis has been widely used in corporate social and environmental responsibility research. The content analysis method that is used in this research is conceptual analysis, which involves choosing certain concepts for examination and analysis and then quantifying and tallying their ER presence in the chosen texts. The procedures involve three steps. First, the document was scrutinized to check if any environmental information exists. Second, identifies and count the number of sentences of environmental information. Third, assign disclosure score based on the sentences identified earlier.

Study of Environmental Disclosure made by the Indian Corporations

As described earlier, this study seeks to investigate the current state of ED made by the Indian corporations on the Internet. For this study, the secondary sources of data available in the 'public' domain, and content analysis as the primary research methodology is used for analyzing the published information available on the Internet. Accordingly, the research method used here requires an 'exploration' of Websites of 45 Indian corporations. This study is split into two parts: (a) Disclosure of environmental information on the Websites, and (b) Disclosure of environmental information in the Annual Reports. They are presented below.

(A) Environmental Disclosure on the Websites: Willman (2007) very strongly argued that "corporations are failing to exploit the enhancement of Web technologies in disseminating the financial reports, which makes the presentation of financial disclosure via Internet similar to paper-based disclosure except for its much greater speed of distribution." The ED on Websites of respective corporations has been examined in two different categories. First, an analysis has been done on the level at which environmental information has been reported: at the 'home-page' level, or under any 'specific' category level. Secondly, 'content analysis' has been used to analyze the extent of ED. Following Yang (2005) research work, these two examinations together provide a measure of the 'quality' of the Websites of these corporations concerning ED.

The well-known, technology adoption model (TAM) was developed by Davis. It suggests that users' decision to adopt an information technology is primarily determined by their attitudes towards: (1) usefulness, and (2) ease of use. First, a user must have a reason to adopt the Internet as an information and communication channel. Thus, the TAM is embraced. Second, an IP Web portal consists of digital information and an information delivery infrastructure. However, browsers, search engines, encryption, networking systems etc. are outside the limit of Websites. Accordingly, information quality (IQ) and system quality (SQ) are of prime importance for IP Web portal users. McKinney et al. (2002) defined Web-based IQ as "users' perception of the quality of information presented on a Web site." The dimensions suggested include usefulness of content, and adequacy of information. However, system quality (SQ) refers to "customers' perception of a Website's performance in information retrieval and delivery." Here, the four key attributes are: usability, accessibility, privacy/security, and interaction. For this study, we aim to measure the 'quality' of Websites of Indian corporations concerning environmental information accessibility and extent of disclosure. Therefore, the model of Yang has been slightly modified to fit into our research objective (Chatterjee and Mir, 2008). Therefore, Figure 1 provides the measure of quality of Websites of respective Indian corporations to obtain environmental information items. For the purpose of this study, we measure IQ by examining 'adequacy'. However, the measurement of 'usefulness of content' is not possible in the context of ED on the Websites of these corporations, as most of the ED is narrative in nature, and does not refer to a specific time period. Similarly, SQ has been measured by 'usability' only for the purpose of this study, as other dimensions are not relevant to the research objective, and data analysis of this study.

(B) Environmental Disclosure in the Annual Reports: As mentioned earlier, "content analysis" has been used to analyze the extent of ED in the Annual Reports of selected 39 sampled corporations. Previous studies in regard to ER have analyzed Annual Reports by using content analysis (Ahmed and Sulaiman, 2004; Cunningham and Gadenne, 2003; Harte and Owen, 1991). Accordingly, this study also uses content analysis to be in line with the available literature. According to the US General Accounting Office (GAO, 1982), "Content analysis refers to a set of procedures for collecting and organizing information in a standardized format." Content analysis can provide the answer to question "what?" As this study examines the particulars of ED made by sampled corporations, this method has been found to be quite suitable.

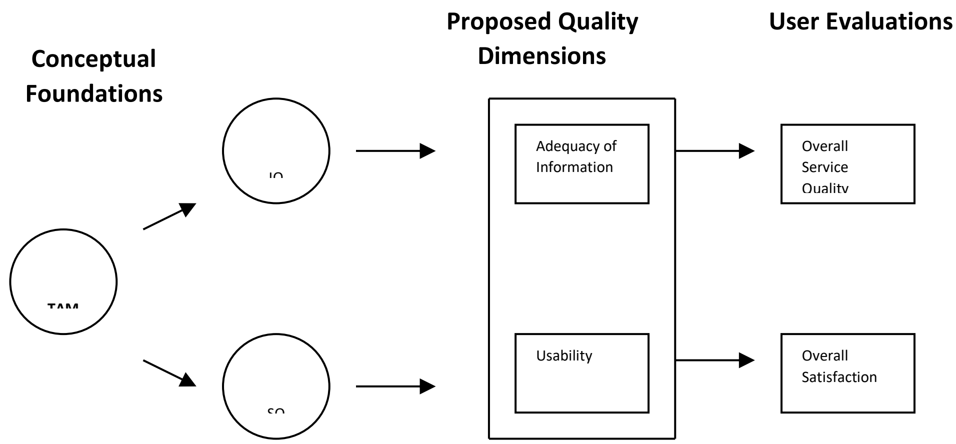

Figure 1. Measurement of quality concerning environmental disclosure on the Websites

A significant step in content analysis is the selection of the recording unit for analysis. 'Recording unit' refers to a specific segment of the context unit in the written material that is placed in a category. There are several choices in regard to determining the recording unit, such as, a word, a group of words, a sentence, a paragraph, or an entire document (GAO, 1982). This study uses 'number of sentences' as a recording unit because on a corporation's Web page, there can be a mix of environmental information, along with other information. Similarly, there can be a mix of other information with environmental information on a 'specific' page in a corporation's Annual Report. Therefore, we believe that "a paragraph' is not the right method, unless the whole document is about environmental information." On the other hand, the use of words has been discarded, as 'words' do not convey any meaning without sentences (Milne and Adler, 1999). However, graphical diagrams, pictures and captions for pictures of activities in relation to the environment were excluded from the analysis, as their inclusion would involve a high level of 'subjectivity'. Finally, categories need to be provided as they provide the structure for grouping recording units (GAO, 1982). A number of categories have been developed by taking previous literature as the basis of analysis. These categories are as follows:

1. Evidence, e.g., monetary and non-monetary.
2. Monetary, e.g., provision for clean-up costs; contingent liability data; management forecasts of the impact of environmental expenditure on future results; prospective environmental expenditures; historical environmental expenditures; fully integrated environmental financial statements; statement of progress on environmental performance against quantified targets; others.
3. Non-monetary, e.g., statement of assurance from management of compliance with external standards; summary of results of environmental audits; corporate environmental policy statement; external verifier's report on the environmental audit; environmental impact assessments and site level reports; a statement of intent with regard to environmental audits, specific accounting policies

for environmental issues; narrative environmental information disclosure; management's responsibilities for monitoring environmental performance; others.

4. News type, e.g., good news; bad news; and neutral.

5. Location, e.g., directors' report and/or chairman's statement and/or management discussion and analysis; other section of annual report only; both in director's report and other sections.

Environmental Disclosure: Research Findings, Discussion and Analysis of Study

Keeping in view the above outlined structure of this study, therefore, the findings are analyzed and presented under the following two broad categories in the forthcoming sections.

(A) Environmental disclosure on the Websites: According to Yang et al., (1995), adequacy of information relates to the completeness of information. Websites should supply information that will facilitate the understanding of users' in regard to products and systems decision-making. This study examines 'adequacy' of information by comparing the extent of environmental information items available on Websites of respective Indian corporations, with the extent of disclosure in Annual Reports.

In this study, one out of the 39 corporations selected for investigation had no Website, thus, leaving a 'valid' sample size of 38 corporations. Out of these 38 corporations, 15 corporations did not provide ED on their respective Websites. The remaining 23 corporations reported a total of 468 sentences. However, the differences in reported sentences among corporations concerning 'adequacy' of environmental information items is 'significant'. The 'lowest' number of sentence reported is just 1, and with the 'highest' being 129. Therefore, the 'mean' number of sentence reported works out to 20. On the other hand, out of the 38 corporations with Websites, unfortunately, Annual Reports could not be obtained from the Websites of 9 corporations, thus, leaving a valid sample of 29 corporations. Out of these 29 corporations, 10 corporations did not provide any ER in their Annual Reports, hence, leaving a sample of 19 corporations. In total, these 19 corporations provided all together 257 sentences, therefore, with an average of 14 sentences. Moreover, the 'minimum' number of sentences reported is 2, and the 'maximum' number of sentences reported is 41. A comparison of the ED of these corporations (between their Websites and disclosure in Annual Reports, for the year 2005-06) suggests that "a greater number of corporations have made ED on their Websites rather than in their Annual Reports." Moreover, the total number of sentences reported on Websites is 'significantly' more than in Annual Reports. However, the difference in the number of sentences reported on Websites among the corporations is higher (23) than in Annual Reports (19). Table 1 and Table 2 given below summarize these findings.

Table 1. Environmental disclosure on Websites

Number of sentences reported	Number of corporations
1 to 20	17
21 to 40	3
41 to 60	1
61 to 80	1
81 to 100	0
More than 100	1
Total 468 sentences reported	23
Average sentence reported	20
Minimum sentence reported	1
Maximum sentence reported	129

(Source: Compiled by the author from the ER provided by the sampled corporations on their Websites)

Table 2. Environmental disclosure in Annual Reports

Number of sentences reported	Number of corporations
1 to 20	14
21 to 40	4
41 to 60	1
61 to 80	0
81 to 100	0
More than 100	0
Total 257 sentences reported	19
Average sentence reported	14
Minimum sentence reported	2
Maximum sentence reported	41

(Source: Compiled by the author from the ER provided by the sampled corporations in their Annual Reports on their Websites)

On a careful examination of these two Tables reveals that 17 corporations have made 1 to 20 sentences disclosure, while one corporation has surprisingly reported more than 100 sentences on its Website concerning ED items, which has led to a 'high' average number of disclosure for all corporations. On the other hand, Table-2 shows that the difference in regard to the extent of ED in Annual Reports for 2005-06 among corporations is very "minimal," with 14 of the corporations disclosure disclosing on an average between 1 to 20 sentences. Overall, 21 corporations reported 1 to 60 sentences on their Websites, while 19 corporations reported the same number of sentences in their Annual Reports.

Table 3. Environmental disclosure of corporations on Websites

Sector	No. of corporations in sample	No. of corporations not reported	No. of sentences reported in total	Average number of sentences reported
Oil & Gas	6	--	56	9
Diversified	3	--	168	56
Pharmaceutical	4	2	23	12
Manufacturing	14	3	198	18
Technology	8	7	23	23
Media and entertainment	1	1	0	0
Services	2	2	0	0
Total	**38**	**15**	**468**	**--**

(Source: Compiled by the author from the ED Reports provided by the sampled corporations on their Websites)

However, Table-3 provides a comparison across the various “industry-sectors” concerning the ED made on their Websites. On an average, the ‘highest,’ 56 number of sentences concerning ED have been reported by the ‘diversified’ sector, which was followed by the ‘technology’ sector, with the second-highest, 23 sentences reported. However, manufacturing sector, having the largest number of corporations in sample of study, reported on an average 18 sentences. Unfortunately, just 12 sentences were reported by the ‘pharmaceutical’ sector corporations. To our utter surprise, the ‘least’ 9 number of sentences has been reported by the ‘oil & gas’ sector. Really speaking, this is beyond our expectation, since this sector was expected to provide more disclosure compared to other sectors. Furthermore, it is widely accepted that the oil & gas sector operation affects the environment more adversely, as compared to other sectors, especially the ‘technology’ sector. Similarly, both manufacturing and pharmaceutical corporations in India are most probably making a significant effect on the environment.

Corporations post their financial information on the Internet to make their information more ‘transparent’. It is universally accepted that ‘usability’ is related to ‘friendliness’. This includes the appearance of the Website, visual design, readability (or comprehension or clarity), search facilities, and ease of navigation (Yang et al. 1995, Sriram and Laksmana, 2006). Usability in this study has been measured by taking the ease of navigation into consideration. Broadly speaking, environmental information available on the ‘home’ pages of corporations is easier to review rather than those that can be obtained by two or three ‘clicks’. In fact, the home page has been considered as level one for the purpose of current study. If another ‘click’ is required to obtain environmental information, this has been designated as level ‘two’, and so on. Most of the corporations making ED on their Websites disclose these information items at level 2, which can be obtained by clicking on another information item at home page level, which is easily accessible. Based on careful observations made during this study, only three corporations provided their ED items on their ‘home’ page, and accordingly, they are labeled as “level 1”. The main ‘headings’ under which these corporations provided environmental information are: safety, health & environment, vision & mission, and corporation profile, respectively. However, one corporation provided environmental information under the category 'community'. Again, by clicking on environment, various type of information concerning the environment (such as, environmental achievements, environmental awareness program, environmental management services, training programs, and greenery development, etc.) can be obtained. This study reveals that many Indian corporations clearly have not implemented policies to ensure that the drivers of quality investor communication are incorporated in their Websites disclosure.

(B) Environmental disclosure in the Annual Reports: The Annual Reports has always been a 'preferred' place for disclosure because of its perceived credibility and accessibility. It has been associated with management's accountability and the same expectation is considered for the environmental stewardship. Wilmshurst and Frost (2000) found that most disclosure were related to the shareholders' or investors' right to information; legal obligations and due diligence requirements, and community concerns. Table 4 and Table 5 provide a 'snapshot' of the status of ER made by the Indian corporations. From Table-4, it is apparent that "ER is made by 65 percent of sample-size, 19 out of 29 corporations, and unfortunately, around 35 percent of corporations have not bothered to make any ER disclosure. The findings and analyses of this study shows (see Table-5) that, on an average, corporations in the 'oil & gas' sector provides the highest, 16 number of sentences concerning the environment, which is followed by the second-highest, 15 sentences reported by the 'manufacturing' firms. Undoubtedly, this can be justified by the fact that there is a 'high' chance that corporations belonging to these two sectors 'highly' interfere with the environment. The finding of this study is also consistent with that of Gamble et al., (1995), and Chatterjee and Mir (2008). An interesting and surprise finding is that some technology firms have provided an average of 9 sentences each, although this was not at all expected, since corporations in this sector have 'less' interference with the environment. However, most of the corporations belonging to the 'technology' sector, unfortunately, do not provide any environmental information in their Annual Reports.

Table 4. Status of disclosure of environmental information

Particulars	**Number**	**Percentage**
Corporations disclosing at least one environmental information	19	65.52
Non-disclosing corporations	10	34.48
Total	**29**	**100**

(Source: Compiled by the author from the ER provided by the sampled corporations their Websites)

Table 5. Status of environmental information disclosure by sector in Annual Reports

Sector	**No. of corporations in sample**	**No. of corporations disclosing**	**No. of sentences reported in total**	**Average number of sentences**
Oil & Gas	4	4	65	16
Diversified	2	2	16	8
Pharmaceutical	4	2	24	12
Manufacturing	11	9	135	15
Technology	6	2	17	9
Media and entertainment	1	0	0	0
Services	1	0	0	0
Total	**29**	**19**	**257**	**---**

(Source: Compiled by the author from the ED Reports provided by the sampled corporations in their Annual Reports on their Websites)

It is significant to note that with the exception of ‘technology’ corporations, a higher number of corporations belonging to all other sectors have provided ER information on their Websites, compared to the disclosure provided within their Annual Reports. However, a significant ‘difference’ lies with regard to the ‘average’ number of sentences reported on Websites compared to the Annual Reports of corporations belonging to the ‘diversified’ sector. On an average, ‘diversified’ sector corporations have provided 56 sentences on their Websites (see Table 3), compared to just 8 sentences in their Annual Reports (see Table 5). This may be largely due to the fact that ‘diversified’ sector corporations find disclosure information on their Websites much cheaper and convenient as compared to disclosing in the Annual Reports, since Annual Reports usually involve considerable printing costs (Oyelere et al., 2003).

Out of the 19 corporations, who provided ED information within their Annual Reports for 2005-06, merely 4 corporations have provided both ‘monetary’, as well as, ‘non-monetary’ information in the same sentences, respectively, comprising in total of 4 sentences. Three of these four sentences were in the area of ‘historical’ environmental expenditure. However, none of the corporations have reported sentence that comprised of only ‘monetary’ information. However, these four sentences have been generally classified under the ‘monetary’ information category, as they mainly contained monetary information. Moreover, none of the corporations have reported ‘bad’ news. In fact, this may be due to the fact that they had no such news to disclose. Another reason may be, they were, by-and-large, ‘reluctant’ to disclose their ‘bad’ environmental news to the “external” users of Annual Reports. As expected, most of the corporations have reported both ‘good’ and ‘neutral’ news concerning the environment. The number of sentences reported to reveal a ‘neutral’ nature of news is, however, significantly more than the number of sentences reported to convey ‘good’ news. Most of the ‘good’ news usually comprises of obtaining ‘award’ and/or ‘compliance’ with the external standards. Moreover, majority of the corporations have provided ED under the ‘Director’s Report, Chairman’s Statement, or Management Discussion & Analysis.’ Only 5 out of 19 corporations have provided a ‘separate’ section to disclose environmental information. Out of them, one corporation belongs to the 'pharmaceutical' sector, two belongs to the 'oil & gas' sector, and two belongs to the 'manufacturing' sector, respectively. As usually expected, most of the 'non-monetary' information reported was 'narrative' in nature, comprising of 208 sentences. Unfortunately, these sentences did not specifically discuss "assurance from management of compliance with external standards, policy or environmental audits." Out of the 253 ER sentences, just 17 of them provided statements of 'assurance' from the corporate management concerning compliance with external standards, 8 sentences discussed the results of environmental 'audits', and 18 sentences discussed corporate environmental 'policy'. However, these numbers were insignificant compared to the total number of environmental information sentences that were included in the Annual Reports.

Result of this study shows that Indian corporations extensively provide ER information on the 'Internet' as a powerful 'advertising' vehicle. Moreover, none of the corporations in the sample reported any 'adverse' environmental impact of their commercial operations. Hence, these disclosure corporations freely choose and decide "what and how" to report, and thus, leaving the stakeholders' wonder on what issues are not reported and why? (Beattie, 2003; Gray et al., 2001). The ED done by the Indian corporations lags significantly behind that found in the developed world, except for a few corporations (such as TISCO), which have not only reported in internationally recognized GRI format but have also obtained verification from the PWC. Thus, ED in India is still in its infancy, and appears to be more of a "Public Relations" work, devoid of 'strategic' intent. It does not provide relevant information to the stakeholders, or a database for continual improvement. The disclosure, in general, is "unsystematic, piecemeal and inadequate." The reason for inadequate ED is that less pressure is applied to Indian corporations by stakeholders, environmental groups, the general public, and most importantly, the government. These findings are 'primitive' and similar to those of other studies elsewhere in the world. Formulation of 'standard' disclosure framework holds the key to improve credibility and comparability among reports. To quote Bhate (2002), "Globally, corporations are using environmental reports to help secure investor confidence." Therefore, Indian corporations should undertake ED with more 'extensive' coverage and better 'quality' information as it can demonstrate a corporation's 'accountability' to its stakeholders. It is suggested that "Indian corporations should work closely with various local government and international organizations to mutually benefit each other for better environmental governance."

A major challenge to corporations making ED in India is to "improve comparability among environmental reports." Unfortunately, 'quantitative' information on environment is not common at all. This study finds that the sampled Indian corporations report only "positive" environmental information, with virtually 'no' disclosure on their "adverse or negative" environmental performance. As normally expected, the environmental disclosure is more prevalent among "manufacturing" sector as against "non-manufacturing" sector in India. As Banerjee (2001) states: "Incorporation of environmental costs, benefits, and concerns into mainstream financial disclosure in India is 'embryonic' at present, but it is certain to grow." Also, this study indicates that oil corporations are concerned about environmental protection and had given much effort in this field. They show some kind of 'qualitative' information on environmental issues and its impact in their Annual Reports. Unfortunately, the involvement and commitment of corporate accountants in environmental management appears to be limited due to lack of regional disclosure guidelines (KPMG, 2005). However, various governmental agencies in India could play a more active role in formulation of "comprehensive disclosure guideline" for its rapidly changing business environment. As per the recommendation given by the Sustainability Ltd and UNEP (1999) in their report, "Early disclosure in the Indian sub-continent need encouragement to report fully and regularly, only if country specific environmental disclosure guidelines are made possible. Inviting inputs from stakeholders, while formulating guidelines, will be a valuable means of engaging stakeholders and enhancing mutual interests and priorities. Such a bold participative approach would ensure benefits of enduring value both to the corporation and its stakeholders." However, the major difference between the Indian situation and studies of this nature in developed countries may be that "environmental awareness in India is still at a low level, though the country is quite vulnerable to environmental impacts." Further, the disclosures do not lend themselves to comparison between corporations and between sectors. This is because environmental disclosure is "unregulated and corporations are free to use it to publicize their good environmental performance without giving factual data and environmental trends."

Conclusions and Recommendations

In the 21st century, Internet has become one of investors' most frequently used sources of information, and majority of corporations are disclosure all (or part) of their financial information on their Websites. Corporations world-wide have become more responsive to investors' concerns about the environment by 'voluntarily' including the impact of their ER activities as evidenced in the increased disclosure in their Annual Reports in the late 1980s and the 1990s (Othman et al., 2010; Tagesson et al., 2009; Staden et al., 2007). Traditionally, the main medium for communicating corporate ER practices has been via corporation Annual Reports. Now, the Internet provides an additional communication tool to augment traditional corporate disclosure practices (Hooghiemstra, 2000). Internationally, web-based communication has been promoted to enhance traditional communication practices by enabling 'equitable' access to information for all 'interested' stakeholders. Unfortunately, disclosure practices followed by most of the corporations in developed and developing countries do not fully reflect the "environmental" impact of corporate operations. Therefore, ED is yet to attain the desired shape in terms of both the 'quantity' and the 'quality'. Periodic attempts have been made in this regard in different countries to streamline the ED practices. They have come up mainly in the form of 'legislations' and a 'comprehensive' accounting standard is yet to come up. In India, various legislations require submission of different type of environment statements to the regulatory bodies. But nothing as yet does exist, which requires disclosure of environmental information through the corporate Annual Reports. Under these circumstances, it is quite encouraging to note that some corporations are voluntarily making ER (how so ever inadequate that may be) using ICT as the medium of Annual Reports, as well as, on their corporate Websites.

In fact, ER on the Internet is at its nascent stage in India. This study finds that most of the Indian corporations have made some kind of ED, in full or part. However, these corporations provided more ER on their Websites (at Level 2), which is easily 'accessible' compared to similar disclosure provided in their Annual Reports. This further suggests that "these corporations consider ED to be significant to the visitors to these Websites." Moreover, one corporation belonging to the 'diversified' sector has provided the 'highest' number of ED in sentences. However, most of the sampled corporations have provided the news of a 'positive' and 'neutral' nature, and none of them provided 'bad' news. As usually expected, most of ED items have been reported under Director's Report and/or Management Discussion & Analysis section, which is due to the fact that management is trying to build a 'positive' public-image of their concern for the environment. Surprisingly, most of the ED in Annual Reports are "narrative in nature, without specifically discussing the policy of the corporation or statement of assurance from management of compliance with external standards." As a matter of fact, this need to be immediately improved as narrative comments does not reflect the contribution of the corporation towards the betterment of the environment. The findings of this study are also consistent with the 'public' impression aspect of "legitimacy" theory.

Clearly, the role of the 'Internet' within corporate communication 'strategies' has become more important, and this is reflected by the 'expanding' size and 'number' of corporate Websites. This study discovered that all corporations (except one) had Websites; no surprise. However, the Websites varied considerably in terms of both 'quality' of information provided and 'design'. Furthermore, this study has shown that ED on Websites is rapidly evolving, with the majority being updated at least once, every year. Recently, mounting pressures are put on corporations to produce more 'transparent' environmental information about their activities worldwide. It is worth noting here that the Websites of some corporations included in this study have increased the emphasis on "electronic commerce assurance logos or seals." In terms of the ability to analyze the financial information, a large majority of them provided their annual report in a 'PDF' format and also some of them provided 'quarterly' reports. Unfortunately, some corporations included the 'entire' annual report on their Websites in the same format as the 'hard-copy' Annual Report, while others 'omit' some information, or include 'additional' information not available in the hard-copy report. Shockingly, on many corporate Websites, the elements of the Annual Report and financial statements were not "hyperlinked". No doubt, the use of hyperlinks improves the "readability and usefulness of the presentation."

Unfortunately, the absence of disclosure standards severely affected the 'comparability' among ER reports in India. Moreover, corporations making such disclosure to 'public' are not clear about their intended 'audience'. Results of this study show that Indian corporations extensively provide ED on the Internet as a powerful "advertising vehicle". As Hasseldine et al., (2005), opine: "Corporations should undertake ED with more extensive coverage and better quality information as it can demonstrate a corporation's accountability to its stakeholders." This study also reveals that many Indian corporations are ignoring the views of FASB, AICPA and IFA, and hence, have a long-way to go with respect to enhancing disclosure on their corporate Websites. Specifically, many corporations clearly have not implemented "policies to ensure that the drivers of quality investor communication are incorporated in their Websites disclosure." So, ED has yet to attain the 'desired' shape, as per international standards, in terms of both 'quantity' and 'quality'. However, this lacking may be attributable mainly to: (a) the absence of any standard specifying the kind of information to be reported, and (b) the absence of any compulsion on the firms regarding such disclosures. In India, for some manufacturing industries the applicable legislation requires submission of different environment statements to the respective 'regulatory' bodies. Environmental legislation is adequate, but what is needed is its proper enforcement. But nothing exists, which require 'compulsory' ED through the Annual Reports and on corporate Websites. However, various governmental agencies in India could play a more 'proactive' role by formulation of "comprehensive disclosure guideline" for its rapidly changing business environment. Therefore, inviting 'inputs' from stakeholders, while formulating such guidelines, will be a valuable means of engaging stakeholders and enhancing mutual interests and priorities. Such a bold participative approach would ensure benefits of enduring value, both to the corporation and its stakeholders.

Last but not the least, it is recommended that "revision of existing corporate ED guidelines in India, at par with international standards, can be considered as a means of encouraging the development of ER amongst Indian firms." Corporations will need to look closely at three main issues: the geographical scope of future ED; full utilization of current and emerging ICT; and dissemination efforts required to 'proactively' engage with all stakeholders, and ensure that ER are highly 'visible,' whatever be the medium used. Not surprisingly, the results of this study shows "the quality and design of the Websites are not uniform." Although these corporations may not be representative of all publicly traded corporations in India, they have sufficient resources to warrant a top-notch Website. In addition to the information and capabilities to be included on the Website, we suggest the following recommendations to enhance corporations' Websites:

- Update information on the Website. Failure to update information may create legal liabilities.
- Be aware of legal implications. Hyper linking may create legal risks if the link leads to inaccurate or incomplete information.
- Prepare, update, and deliver financial information consistent with the provisions of the Securities laws (for example, SEBI) in the same manner as is done for paper documents.

In fact, corporations 'post' their financial information on the Internet to disseminate them to a wider audience and to make their information more 'transparent'. Initially, ED in the Annual Reports have been simple 'narratives' on the environmental aspects of the business, such as, production process hazards, while environmental damage or potential liability was rarely reported by most of the corporations. Disclosure can sometimes depend on what the CEO perceives as important. However, those utilizing the above stated suggestions and recommendations will facilitate the use of their financial disclosure on the Web. Finally, mobile technology is and will continue to be a very useful tool for sharing information. Corporations may want to make sure that their financial disclosure format is viewable on and compatible with mobile technology in the near future.

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Appendix 1

No.	Name of Corporation	Website Address	Sector
1	Oil & Natural Gas Corporation Ltd.	www.ongcindia.com	Oil and Gas
2	Indian Oil Corporation Ltd.	www.iolc.com	Oil and Gas
3	ITC Ltd.	www.itcportal.com	Diversified (FMCG, Hotels, Paperboards and packaging, Agri-business)
4	Hindustan Lever Ltd.	www.hll.co.in	Diversified (Home and Personal care products, Food and Beverages)
5	Ranbaxy Laboratories Ltd.	www.ranbaxy.com	Pharmaceutical
6	Steel Authority of India Ltd.	www.sail.co.in	Manufacturing (Iron & Steel)
7	Bharat Heavy Electrical Ltd.	www.bhel.com	Manufacturing (Engineering & Manufacturing)
8	Gas Authority of India Ltd.	www.gailonline.com	Gas
9	Wipro Ltd.	www.wipro.com	Technology
10	Tata Engineering & Locomotive Company Ltd.	www.tata.com	Automobile Manufacturer
11	Satyam Computer Services Ltd.	www.satyam.com	Technology (IT Services)
12	Hindustan Petroleum Corporation Ltd.	www.hindustanpetroleum.com	Oil and Gas
13	Infosys Technologies Ltd.	www.infosys.com	Technology (Consulting & IT Services)
14	Bharat Petroleum Corporation Ltd.	www.bharatpetroleum.com	Oil and Gas
15	National Aluminium Company Ltd.	www.nalcoindia.com	Manufacturing (Aluminium)
16	Grasim Industries Ltd.	www.grasim.com	Diversified (Textiles, Cement, Chemicals, Sponge Iron)
17	TISCO Ltd.	www.tatasteel.com	Manufacturing (Iron & Steel)
18	HCL Technologies Ltd.	www.hcltech.com	Technology
19	Bajaj Auto Ltd.	www.bajajauto.com	Automobile Manufacturer
20	Hindalco Industries Ltd.	www.hindalco.com	Manufacturing (Aluminium & Copper)
21	Hero Honda Motors Ltd.	www.herohonda.com	Automobile Manufacturer
22	Mahanagar Telephone Nigam Ltd.	www.mtnl.net.in	Technology (Telecom Services)
23	Zee Telefilms Ltd.	www.zeetelevison.com.	Media and Entertainment
24	Dr. Reddy's Laboratories Ltd.	www.drreddys.com	Pharmaceutical

25	Gujarat Ambuja Cements Ltd	www.gujaratambuja.com	Manufacturing (Cement)
26	Mahindra & Mahindra Ltd.	www.mahindra.com	Automobile Manufacturer
27	Indian Petrochemicals Corporation Ltd.	www.ril.com	Petro-Chemicals
28	Nestle India Ltd.	www.nestle.in	Diversified (Childcare, Cooking, Pet Care, Wellness)
29	Videsh Sanchar Nigam Ltd.	www.vsnl.net.in	Technology (Telecom Services)
30	Associated Cement Corporations Ltd.	www.acclimited.com	Manufacturing (Cement)
31	GlaxoSmithKline Pharmaceutical Ltd.	www.gsk-india.com	Pharmaceutical
32	Hindustan Zinc Ltd.	www.hzindia.com	Manufacturing (Zinc)
33	Bharat Electronics Ltd.	www.bel-india.com	Technology (Electronics)
34	Container Corporation of India Ltd.	www.concorindia.com	Logistics Services
35	Siemens Ltd.	www.siemens.co.in	Technology
36	Shipping Corporation of India Ltd.	www.shipindia.com	Transport service (Shipping)
37	Nicholas Piramal India Ltd.	www.nicholaspiramal.com	Pharmaceutical
38	Mangalore Refinery and Petrochemicals Ltd.	www.mrpl.co.in	No Web site in 2005
39	Bharat Forge Ltd.	www.bharatforge.com	Manufacturing (Automobile Components)