

## **Corporate Environmental Reporting on the Web – An Exploratory Study of Chinese Listed Companies**

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### **Abstract**

While the literature has given a considerable attention to internet financial reporting, limited studies mainly from developed economies have emerged to explain and predict corporate behavior relating to corporate environmental reporting on Websites. This preliminary study attempts to fill a gap by investigating Internet environmental reporting (IER) in China and examining the current IER practice of Chinese top listed companies. This study finds that IER is increasingly used in China to disclose corporate social and environmental activity and policy. Companies are increasingly using the phrases of ‘sustainability’ and ‘corporate social responsibility’ in their IER. Website-specific reporting concerning social and environmental issues, performance and activities has growingly been adopted by Chinese top listed companies as the main approach to IER. Both the quantity of disclosure and the areas of coverage have steadily increased. While IER in China is developing, there remains a considerable discrepancy in terms of reporting practices and the levels of social and environmental information disclosed. There are no generally accepted standards and guidelines for IER in China, and the data/information disclosed are largely incomparable. External auditing of IER remains a problem.

**Key words:** *Accounting; China,, Chinese Listed Companies, Corporate Social and Environmental Disclosure, Internet Environmental Reporting, Sustainability, Website.*

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## **I. Introduction**

With the increases in the awareness of environmental issues, both the level of environmental disclosure and stakeholder demands for environmental information are increasing (Sumiani et al., 2007). In 2005, 52 per cent of the world 250 biggest companies issued separate reports on corporate environmental (including social) information, compared to 45 per cent in 2002 (KPMG, 2002; 2005). Environmental disclosure is broadly defined as the disclosures of social and environmental information, both qualitative and quantitative made by organizations to inform or influence a range of audiences (Matthews, 1993; O'Dwyer, 2002). Corporate environmental reporting (CER) is an extension of traditional reporting in that it broadens the scope of the discipline by addressing more issues, such as employee-related matters, and the environment and concerned audiences, including employees, consumers, and the general public (Matthews, 1993).

Typically, CER has been developed to measure environmentally induced financial impacts or the ecological damage (Guo, 2005). By adopting these measures it can transfer the power of knowledge to the society and increase the transparency of the organizations as regards the impacts of their activities to a wider range of stakeholders. Indeed, CER presents an image of all possible interactions between the world and an organization (Gray et al., 1995). Over the past three decades CER has been growing rapidly across the world and over 1000 companies in all major business sectors have been engaged in environmental reporting (Scott & Jackson, 2002).

CER differs from financial reporting (Cormier & Gordon, 2001). The former is largely voluntary with little formal rules available and backing of quantitative measures and benchmarks; the latter is to a large extent based on the prescribed rules and standards with the disclosure of substantial quantitative information. The understanding of CER and corporate behavior towards CER is mostly subject to the local phenomena where the corporations conduct businesses. CER is influenced by the economic development, as different stages of social and economic development prompt different national concerns over social and environmental issues and different types and levels of demand for social and environmental information (Xiao et al., 2005). As Xiao et al. (2005) document that people in developed economies are less concerned about their basic material needs, but more concerned about their social and cultural needs, quality of life, equity, justice, and issues arising from polluted air, water, land, etc. People are more aware of, and sensitive to, these social and environmental issues, compared with citizens in developing or less developed countries (Xiao et al., 2005).

As one of the largest developing economies, China has made significant progress in its economy over the past two decades. Environmental issues which were suffering from industrialization and economic transformation have attracted attention in China (Ling & Isaac, 1996). China's Environmental Protection Law was promulgated in 1989 which stipulates environmental protection responsibilities at various levels, including the corporate environmental responsibility. The government and public bodies have increasingly pressured Chinese busi-

nesses to consider the environmental impacts of their operations and to disclose such information (Xu, 1999; Ma & Ortolano, 2000).

During the economic reform, many Chinese state-owned enterprises were transferred into stock-holding companies and listed on the 'newly' established stock exchanges of Shanghai and Shenzhen. Given the maximization of shareholders value being the ultimate objective, many corporations began to actively engage with investors and considered the disclosure of information as an inseparable part of investor relations. In China many corporations (in particular the top listed companies) are influenced by the state as the state is one of the major stockholders in these corporations. Yet, China maintains its own characteristics of the socialist system. The influence of the Communist party and its nationwide network rooted in the corporate world has been widely witnessed, which could drive China's CER somewhat in line with the Communist's agenda. Therefore, the study of China's IER will enhance our understanding of CER in a different social and economic environment. This has motivated the current study.

China has an Internet user population of 173 millions (CNNIC, 2007). However, there is little known on the level of use of internets to report corporate social and environmental information by China's listed companies. As the second largest internet population in the world, an understanding of Chinese corporate behavior towards the adoption of the Internet as an environmental reporting means clearly contributes to the knowledge of IER. This preliminary study attempts to make a contribution by reveal-

ing the recent trends of IER in China and examining the current IER practice of Chinese listed companies. In this study, environmental reporting was broadly defined to include the disclosure of social and environmental information by an organization. This study offers an analysis of the subjects reported and the formats adopted in IER by Chinese top listed companies. However, as a preliminary study it does not intend to analyze specifically the details of the contents of disclosures on the Internet and their relevance and consequence.

Based on the sample of 20 companies within the top 50 listed firms over the period from 2002 to 2006 this study examines the usage of the Internet as a reporting media by Chinese listed companies. This study reveals that IER is increasingly used by Chinese listed companies to disclose corporate social and environmental activity and policy. Companies are growingly using the phrases of 'sustainability' and 'corporate social responsibility' in their IER. Website-specific reporting concerning social and environmental issues, performance and activities has gradually been adopted as the main approach to IER. Both the quantity of disclosure and the areas of coverage have steadily increased. While IER in China is developing, there remains a considerable discrepancy in terms of reporting practices and the levels of social and environmental information disclosed across the sampled firms. There are no generally accepted standards and guidelines for IER in China, and the data/information disclosed are largely incomparable. External auditing of IER remains a problem.

The paper proceeds as follows: The next section presents a literature review con-

cerning CER, followed by a general review of IER in Section 3. Section 4 is concerned with the research method and results. The final section concludes the study.

## II. Corporate Environmental Reporting (CER)

While the literature has given a considerable attention to internet financial reporting over the last few years (e.g., Debreceeny et al., 2002; Oyelere et al., 2003; Marston & Polei, 2004; Xiao et al., 2004), a limited number of studies have emerged to explain and predict corporate behavior relating to CER on Websites. At an international level, a few studies have examined the state-of-the-art of CER in the hard copy format (e.g., Gamble et al., 1995; Wiseman, 1982). Using a media such as the Internet allows a greater flexibility, capability and availability for disclosure of environmental information. Indeed, this has been demonstrated in a number of studies, such as the United Nations Environment Program (and Sustainability) (1999) and the Environmental Resources Management (2000).

The literature has suggested that the research of environmental reporting should focus on 1) the reasons of reporting, 2) issues that are facing the reporting organizations and 3) what distinguishes the environmental reports from the other reports (Schaltegger et al., 1996). The reasons of a company engaging in environmental reporting can be explained with the likely benefits that environmental reporting brings to the corporation. Salancik & Meindl (1984) identified the benefits of disclosing environmental information as “pre-empting

attacks from pressure groups, enhancing corporate reputation, providing opportunities to lead debates, to secure endorsements, demonstrate strong management principles and demonstrate social responsibilities” (p. 351). The ACCA (1997) stated that companies publishing reports frequently seek to achieve a number of objectives via their environmental reports, including:

- Corporate commitment – To comply with a corporate commitment to report on environmental performance, such as the requirement placed on signatories to the International Chamber of Commerce Business Charter for Sustainable Development.
- Competitive advantage - To gain market advantage, linked to corporate or product reputation.
- Corporate positioning – To state a position on environmental issues, whereby the report represents a policy document as well as the outlining performance.
- Demonstrate progress – To demonstrate progress against targets and performance, going beyond compliance.

Yuen & Yip (2002) consider environmental reporting as a management tool to keep track of environmental performance, a vehicle for continuous improvement, and a means of recognition of performance. Spencer-Cooke (1994) believes that environmental reporting can help a business to boost its reputation, attract the best employees and differentiate itself from less proactive competitors. It can be used to display commitment and responsibility, good relation and partnership with stakeholders, alignment with international best practice and

external recognition. Jenkins and Yakovleva (2006) document that environmental reporting has several roles including assessing the social and environmental impacts of the corporate activities, measuring the effectiveness of corporate social and environmental programs, reporting on corporate social and environmental responsibilities, and external and internal information systems allowing the comprehensive assessment of all corporate resources and sustainability impacts. Despite the benefits, the level of environmental reporting in many countries, particularly developing countries, is very low and the reporting itself is rather general and descriptive in nature (Xiao et al., 2005; Gao et al., 2005).

In the literature, legitimacy theory, stakeholder theory and accountability theory have been proposed to explain the corporate behavior of environmental reporting. For example, Gray & Bebbington (2001) note that corporations use environmental reporting to develop corporate image, to legitimize the current activity, to distract attention from other areas, to discharge accountability and to forestall legislation. The first companies to issue environmental reports were from the chemical and oil industries which were among the first to experience heavy pressure from the external stakeholders (Schaltegger et al., 1996). Presently, environmental reporting has been widely considered part of the corporate communications and investors relations (Campbell & Beck, 2004).

Indeed, a good report is essentially a reflection of the strength of an organization's environmental strategy (Line et al., 2002). In the past, environmental

information was quite often part of the financial annual reports. Gray & Bebbington (2001), Line et al. (2002) and the Accounting Advisory Forum (1995) found that environmental disclosure in the annual report tends to be fairly superficial and a very few companies give intense, brief summaries of the background and data relating to their environmental performance. Gray & Milne (2004), therefore, criticize that voluntary environmental reporting (as part of the annual reports) will not work.

Today, environmental reporting comprises the communication of environmentally induced financial impacts and environmental impact added (Schaltegger et al., 1996; Deegan, 2002). Most of the environmental reports no longer include product-oriented information, but focus on the sites as well as on the businesses and firms, in particular on issues which powerful stakeholders attempt to influence (Schaltegger et al., 1996; Schaltegger & Burritt, 2000). Fleischman & Schuele (2006) and Gray & Bebbington (2001) document that today, external reporting as to environmental performance typically occurs primarily through stand-alone corporate reports, traditional annual reports, and the internet. Fleischman & Schuele (2006), Gray & Bebbington (2001) and Scott & Jackson (2002) find that only a few countries (such as Denmark, Sweden and the Netherlands) currently have regulations in place requiring companies to issue a company-wide, stand-alone report on environmental performance at the site level. Simms (2002) sums up three potential problems of the environmental reporting. First, many of the companies do not clearly understand what the environmental reporting is. Second, activities of many environ-

mental reporting are largely defensive. Third, many of the reports themselves are not independently audited. Overall, the disclosures have been largely accidental, un-audited and expressive, with very little potential for comparability.

At the beginning of 21 century, a primary focal point in environmental reporting development was the desire to publish the report online (Shepherd et al., 2001; Scott & Jackson, 2002; Line et al., 2002; Adams & Frost, 2004). This is because the Internet facilitates rapid communication of information at very low cost (Gowthorpe, 2004), and therefore it becomes an important tool used by companies to engage with their stakeholders.

### **III. Environmental Reporting Though the Internet**

Corporate use of the Internet for a variety of business purposes is now commonplace (Scott & Jackson, 2002; Coupland, 2006; Jenkins & Yakovleva, 2006). Owning and occupying Internet space is almost essential for publicly traded companies, either as a place to do business or as a place to exchange information about business. The Internet also provides a global meeting ground for those interested in environmental information (Jenkins & Yahovleva, 2006). The attractions of such internet reporting of environmental data are obvious in terms of the cost savings and the ease of access for an increasing number (Gray & Bebbington, 2001). Not only can IER reduce the costs of companies (e.g., reduced use of resources such as paper, printing and postage), but also IER offers the potentiality "to improve public access to information on company per-

formance and to offer an unlimited quantity of information, allowing the user to download as much of the published material as they want" (Scott & Jackson, 2002, p.195). The Internet can be used to transmit as much or as little environmental information as there is available (Line et al., 2002). Also, IER can enable on-line feedback concerning the environmental report (Scott & Jackson, 2002) and make possible for companies to reach more stakeholders (Yuen & Yip, 2002).

The format of internet reporting generally depends on the expected use of the report (Shepherd et al., 2001). Currently, there are two file formats typically used for IER (Scott & Jackson, 2002; Shepherd et al., 2001). One is Adobe Portable Document Format (PDF). PDF can be opened, viewed and printed with the free Adobe Acrobat Reader. It retains the layout and appearance of a hard-copy publication and can also incorporate most of the interactive and design features of a Web page (Scott & Jackson, 2002). The PDF version is hence recommended only for the documents that users are likely to print (Scott & Jackson, 2002; Shepherd et al., 2001). Another is Hyper Text Mark-up Language (HTML). HTML is the most common file format used on the Web, whereby the content appears on linked pages (Scott & Jackson, 2002). IER incorporates most of the basic elements found in the company websites (Scott & Jackson, 2002). These basic elements include Navigation (to allow users to "drill down" through several levels of information with varying levels of detail), Menus, Search Facilities, Sit maps (to provide a diagrammatic summary of site contents), Location, and Hyperlinks (to take the reader elsewhere).

While IER is adopted rapidly by companies in developed countries, contents of reports vary according to sector, geographical boundaries and company priorities (Jose & Lee, 2007). Line et al. (2002) find that a noteworthy number of companies now include social reporting in their environmental report; some produce a fully integrated corporate sustainability reporting (e.g., the Shell Report). Many companies describe their reports as environment health and safety reports (e.g., Lucent and Exxon Mobil). Mostly companies have their own style of IER. Some design their reports according to different stakeholders; others disclose according to sections of their business, or environmental and social issues. Some companies just follow externally developed guidelines, such as the Global Reporting Initiative (GRI) guidelines (e.g., Ford, General Motors) and the Public Environmental Reporting Initiative (PERI) Guidelines (e.g., IBM, Texaco).

IER can be in the form of Online Annual Reports, Stand-alone Internet Environmental Reports, and Website-specific Reports (Jenkins & Yahovleva, 2006; Line et al., 2002). Online annual reports are the most publicized and visible documents produced by companies (Santema & Rijt, 2001). Over the years, the level of IER has raised as companies increasingly include social and environmental information in their online annual reports (Jose & Lee, 2007). Typically companies use online annual reports to highlight specific aspects of their corporate social responsibility programs, and to describe environmental activities (e.g., certification of the environmental management standard ISO 14001), environmental and social policies, or sponsorship programs (Line et al., 2002; Jose

& Lee, 2007). Some companies also highlight particular areas of their business that have a specific environmental or social relevance, such as Exxon Mobil reports on safety (Line et al., 2002).

Moreover, an increasing number of companies publish stand-alone Internet Environmental Reports (Davis-Walling & Batterman, 1997). This is because some companies prefer to keep financial reporting and environmental reporting separate in order to give financial analysts easy access to the bare financial data and meanwhile to make available to other interested stakeholders environmental information through a separate environmental report (Line et al., 2002). Companies often include health and safety in their stand-alone IER, which gave rise to Health, Safety and Environmental Reports. Also, it becomes a trend that various sustainability issues were integrated into one report (Jenkins & Yahovleva, 2006; Jose & Lee, 2007). Besides, a number of companies post their environmental reports as website-specific reports, and updated news relating to the environmental, social, employee and community matters (Jenkins & Yahovleva, 2006).

Although the Internet is an attractive mechanism for disseminating environmental information, there are also disadvantages in connection with IER (Jenkins & Yahovleva, 2006). First, usability is a fundamental challenge for IER (Shepherd et al., 2001). If the audience cannot "use" IER effectively, the proposed benefits of the communication will not be realized. Secondly, companies which are using IER may have inability to target a specific audience because companies could not be guaranteed that all of a targeted audience was

reached (Adams & Frost, 2004; Scott & Jackson, 2002). This leads to the case where stakeholders are in 'remote locations' (including technical difficulty, language and inconveniency) or their environmental information needs could not be satisfied with the general information (Adams & Frost, 2004). Third, the credibility for the content of IER is questionable, given most IER lacks of external verification (Jose & Lee, 2007). Jenkins & Yakovleva (2006) argued that only annual reports hold a certain degree of credibility in comparison with other types of reports because they go through the same auditing process as a company's financial information. There are a number of concerns about IER. For instance, published data may be unreliable and many companies are selective about the material they include in their reports. Data are not comparable either within in a report, between reports of different years, or between reports from different companies even within the same sector. Scott & Jackson (2002) summarize the main advantages and disadvantages of using the internet for environmental reporting as shown in Table 1.

While limited research on internet financial reporting in China (e.g., Xiao et al., 2004) has highlighted some characteristics of the use of the internet by Chinese listed companies as a reporting medium, no research on IER in China can be found in the literature. China has remarkably built up its IT and telecommunications infrastructure since its economic reform in the 1980s. The population of Internet users has increased significantly in China with over 137 millions in 2007 as shown in Figure 1 and there was estimated to be more than 140 million at the end of 2008 (CNNIC, 2007). Given the large number of inter-

net users, it would expect Chinese companies to use the Internet to report on its financial and social and environmental information. However, studies related to IER in China are very limited. This preliminary study attempts to make a contribution by revealing the current status of IER by large Chinese listed companies with a view to understanding Chinese corporate behavior towards environmental reporting via the Internet.

#### **IV. Research Method and Results**

##### **Research Method and Sample**

The overall objective of this research is to examine the use of the internet as a reporting media by large Chinese listed companies from 2002 to 2006 for reporting corporate environmental information to their stakeholders. This study looks into the nature, contents, type and style of IER that have been adopted by Chinese listed companies.

Questionnaire survey and content analysis methods were frequently used in prior studies of CER. While the former has been widely used in examining the attitude and perception of disclosers (e.g., Tilt, 1997), the latter is the most commonly used research method to assess organization's social and environmental disclosures (Milne & Adler, 1999) and it is a research technique for making replicable and valid inferences from data to their context (Krippendorff, 1980). Although in content analysis, counts of sentences, lines, and pages are the most simple and convenient ways, the three types of counts have limitations for this particular research. For example, it is difficult to make a comparison between two internet reports if layouts

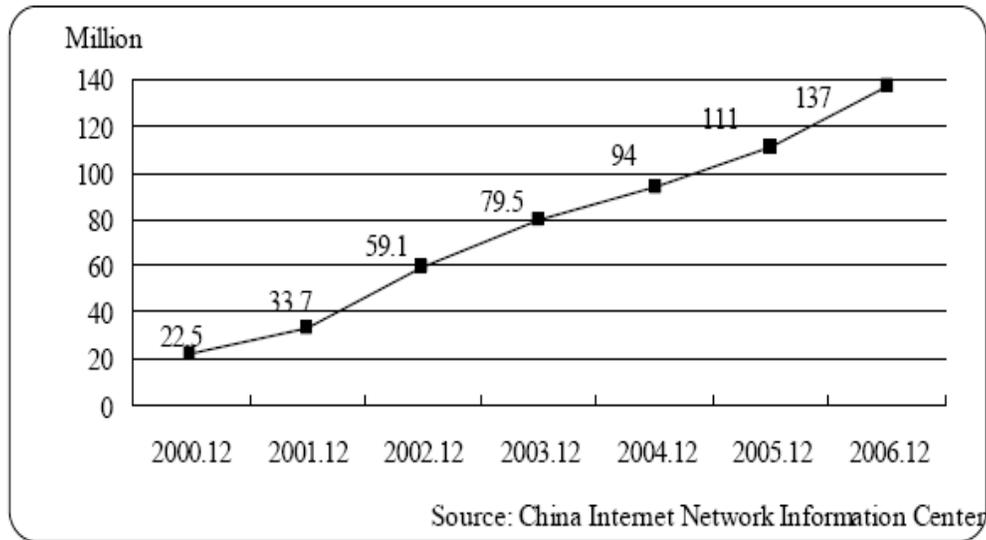
**Table 1 Major implication of using the web for reporting**

Report aspect	Advantages	Disadvantages
Visibility and accessibility	Web-based reports are accessible through an Internet connection anytime, any place. Their “visibility” can also be increased through hyperlinks from other organizations	Without active promotion, websites can be invisible off-line. Some stakeholder groups, such as employees and local residents, may not have Internet access. Reports are often hard to find from a company’s home page.
Timeliness of data	It takes much less time to upload a website than it does to publish a hard-cope report. Reported data is more current and therefore relevant as new information can be added to websites as soon as it is available	Users may not be convinced that Web pages and data verifications are up to date (thereby detracting from their credibility) without extensive “date stamping” or separate update reports
Ease of use	Interactive and can be fun to use, particularly if using cutting-edge Web technology. Multiple language – easier to offer multi-lingual versions	Most users like to read off-screen Web reports are hard to “shelve” and often require long downloading and printing times. A Web-only format will not meet the needs of all stakeholders.
Additional aspects of reporting	Websites can offer users the ability to tailor a report to their needs. By making feedback easier websites can achieve high response rates.	A Web report is not the “business card” a paper report can be. Some users will be more inclined to leaf through a hard-copy report arriving in the post, then to search for a Web page.
Environmental impacts of publishing	Reduced energy, pulp and ink-use from e-publishing. Avoid wastage from company printing excess hard-copies.	Reporting-company can manage the impacts of its printing operations, but has no control over the impacts of readers printing off personal copies.
Quantity of reported data	Avoids size restriction of paper reports. Larger quantities of information available	Navigation through many pages is often difficult, so careful design is needed to help the user.

*Source: Scott & Jackson (2002)*

(e.g., fonts, page margins) and components (pictures and graphs) differ. Also, one sentence, line or page may contain more than one category of information and the researcher may have difficulty in deciding which category the sentence/line/page belongs to (Xiao et al., 2005). Given the problems in the above content analysis, this research as a preliminary study measures IER on a dichotomous

basis of disclosure or non-disclosure; the method was previously used by Wiseman (1982) and Lynn (1992). The disclosure themes were initially based on the headings of reports on the corporate webs when the research began in August 2002. One author read the web-based reports and noted down the headings, and the second author repeated the same process and at the end both authors

**Figure 1** Statistical survey on the Internet development in China

Source: CNNIC, 2007 <http://www.cnnic.net> [Access 17 May 2007].

agreed the disclosed themes, which were considered as the main themes for the following year, but new headings found in subsequent reports were added into the existing themes. The same process carried out over the remaining years of this study and at least two authors analyzed and categorized the information each year. The data was collected over the years of 2002 and 2006, and in order to make sure the data are comparable the researchers got access to the websites of these companies at the end of August of each year. The annual reports listed on the web by the firms are the previous year reports.

Originally, when the research began in August 2002 top 50 listed companies were included in the sample measured by the market capitalization which was a commonly used selection criteria in prior studies (Tilt & Symes, 1999). The data sources of listed companies were

from the China's Securities Regulatory Commission ([www.csrc.org.cn](http://www.csrc.org.cn)) including the firms listed on both Shanghai and Shenzhen Stock Exchanges. Over the years, the positions of these companies changed as some companies were no longer in the top 50 due to mergers and acquisitions and the change of market capitalizations as shown in Table 2. Only 20 listed companies remained over the period as of August 2006 in the range of top 50. Ultimately, the information of these 20 firms was chosen as the basis for this study with a view to ensuring that data are comparable. The selection of top listed companies is because these companies act as leaders and guiders in their own industry and their actions toward IER can have the significant impacts to the rest companies in China. As noted previously, these larger corporations are much influenced by the state as the state holds a substantial amount of stakes in these forms. Most of

**Table 2** The sample firms in the top 50 over the period

	The number of the sample firms in top 50	Firms no longer in top 50 due to merger and acquisitions in a year	The number of firms dropped from the top 50
August 2002	50	2	5
August 2003	43	1	6
August 2004	36	1	7
August 2005	28	2	6
August 2006	20		

these firms were previously state-owned enterprises prior to their listing.

Content analysis with the dichotomous approach is used to analyze the Annual Reports, stand-alone Social and Environmental Reports and other formats of IER by the 20 top listed companies in China in order to examine the types and the nature of environmental information being disclosed. The analysis focuses on methods of reporting, policy disclosed, reporting types and assessment of internet for reporting.

### Results of Dichotomous Analysis

Table 3 lists the number of the top listed companies in China producing IER. At

the end of August 2002, only five out of the 20 companies (including one company whose website was inaccessible) produced accessible online annual reports or site-specific reports containing environmental information. However, by the end of August 2006, 18 out of the 20 firms published online annual reports containing some environmental information or site-specific reports relating to environmental information. Over the period of five years, the number of companies producing IER has increased significantly from 25 per cent in 2002 to 90 per cent in 2006. In 2002 only two companies had their IER externally audited; the number increased to five in 2006.

The home-page is where most of the

**Table 3** IER by 20 Chinese top listed companies from 2002 to 2006

	2002	2003	2004	2005	2006
Working effectively	5	6	12	12	18
<i>Both English and Chinese Version</i>	5	5	7	9	16
<i>Only in Chinese</i>	0	1	5	3	2
<i>Both PDF and HTML</i>	3	5	6	9	13
<i>Only HTML</i>	0	0	5	2	0
<i>Only PDF</i>	2	1	1	1	5
<i>External Audited</i>	2 (40%)	2 (33%)	4 (33%)	4 (12%)	6 (33%)

visitors will enter to the website. For this reason, it is important for companies to use different languages to fulfill the language requirements of the internet users. English is considered the global business language. Therefore, most of the top listed companies in China produced both Chinese and English version of IER and only two companies in 2006 merely produced the Chinese version as shown in Table 3. Table 3 also shows the formats of the IER. An increasing number of the companies used both PDF and HTML formats.

Table 4 presents the number of companies disclosing environmental information in the online annual reports or site-

specific environmental reports. In 2002 only three companies were disclosing environmental information as part of the online 2001 Annual Reports and two companies produced site-specific Environmental Reports. No company produced stand-alone Environmental Reports by the time when the data was firstly collected in August 2002. However, in 2006 the figures increased to 8 and 14 respectively and eight companies disclosed environmental information both in the online annual reports and site-specific reports. Both Tables 3 and 4 show an increasing trend of the Chinese companies using the Internet to report environmental information.

**Table 4 Number of companies disclosing environmental information in online annual reports and corporate websites (2002–2006)**

	Online Annual Report Sample: 20					Site-Specific Report Sample: 20				
	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
No. of company	3	4	7	7	8	2	4	12	12	18
Percentage	15%	20%	35%	35%	35%	10%	40%	60%	60%	90%

During the period from 2002 to 2006, the titles of the environmental information of a company's annual reports changed from a simple titles such as 'Social Contribution' (e.g., Hair) to slightly longer titles such as 'Health, Safety, Environment and Corporate Social Responsibility' (e.g., China National Petroleum Corporation), indicating the progression nature of such reports. In 2006 various headings, such as Health & Safety, the Environmental Protection, Public Welfare Contribution, Corporate Social Responsibility (CSR), Social Responsibility and the Public-interest Com-

mitment were used by the firms as disclosure titles for IER. Over the years the amounts of information disclosed have increased for most of the firms. For instance, China National Petroleum Corporation, which did not disclose any environmental information in 2002, had two pages in 2003 and four in 2004. In 2005, it began to disclose CSR which contains more than five pages. In 2006, such a report became relatively sophisticated covering a wide range of areas. Table 5 presents the key subjects disclosed by the top listed companies. As indicated from the figures, most compa-

nies only provide information on events relating to social and environmental activities. Many of these events are to some extent associated with key political agenda, such as supporting ‘hope

schools’, sponsoring poor university students with scholarships, Beijing Olympic 2008, and promoting social harmony.

**Table 5 Information subjects disclosed by the top listed companies of China**

	2002	2003	2004	2005	2006	
Health, Safety & Environment Protection	1	2	2	2	2	8.3%
Health, Safety, Environment Protection and Community/Society	1	1	1	1	3	12.5%
Corporate Social Responsibility (CSR)	0	1	1	2	3	12.5%
Corporate Social Responsibility (CSR) and Community	0	1	1	1	4	16.7%
Events	1	2	3	4	6	25.0%
Sustainability	0	0	1	2	4	16.7%
Environmental Regulatory	1	1	1	1	2	8.3%
<b>Total</b>	<b>4</b>	<b>8</b>	<b>10</b>	<b>13</b>	<b>24</b>	<b>100%</b>

Many Chinese companies use the Web to provide company policy with regard to major social and environmental issues. Table 6 reveals the policy issues that the top 20 listed Chinese companies reported in their IER, covering from health and safety, environmental protection, and employee well-being, community relations to CSR. The most recent subject additions are ethics and sustainability. Several companies have begun to disclose the sustainability and CSR policies. There is no evidence that a particular area had attracted special attention across the years, although environment, health and safety, social community relations and CSR were disclosed more in comparison with other subjects.

Among these top listed companies in China only one company was reporting in accordance with its own set of safety and environmental regulations. The rest of the companies did not follow specific sets of guideline. In 2006, most of the companies within the top 20 produced site-specific reports. However, site-specific reports just preset updated news relating to environmental, social, employee and community matters on the websites of companies. They did not follow any guideline and there was no evidence that external auditors were brought in to audit the site-specific IER. These reports also tend to make more reference to ‘CSR’ and ‘Community’ than the sustainable development.

**Table 6 Policy issues disclosed by the top listed companies over the Internet**

<i>Policy issues</i>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>
Environment	2	3	4	5	4
Social and Community Relations	0	3	4	3	4
Health and Safety	1	3	3	3	2
Employee well-being	0	1	1	2	5
CSR	1	2	2	5	6
Ethics	0	0	1	2	3
Sustainability	0	0	1	2	6
Environmental Regulatory	1	1	1	2	4

## V. Conclusion

This study aims to investigate the recent trends and practice of internet environmental reporting (IER) in China. Based on the sample of 20 top listed companies over the period from 2002 to 2006, this study has tentatively found:

1. IER is increasingly used by Chinese listed companies to disclose the events of social and environmental activities, and company policy relating to social and environmental concerns. Many of these events are linked with key political and social programs of the government.
2. Companies are increasingly using the phrases of 'sustainability' and 'CSR' in their IER. Website-specific reporting as regards social and environmental issues, performance and activities, instead of being part of annual reports, has been adopted increasingly by Chinese listed companies as the main approach to IER.
3. Both the quantity of disclosure and the coverage of areas of social and environmental information

have steadily increased; suggesting that IER is 'growing up' in China.

4. External auditing of IER remains trivial.

Overall, the above result might cautiously suggest that more Chinese larger companies began to disclose their environmental information and policy through the Web because of the increased pressure. Recently an increasing number of people have paid attention to environmental issues in China and various stakeholders have put pressure on Chinese companies concerning their policies towards these issues (Ma & Ortolano, 2000). In the meantime Chinese listed companies are increasingly aware of the need to engage with a variety of stakeholders and hold a social 'license to operate' to ease potentially-sensitive issues, such as health & safety and environmental protection (Guo, 2005). While IER in China is developing, there remains a considerable discrepancy in terms of reporting practices and the coverage of the social and environmental information disclosed. There are no generally accepted standards and guidelines for IER in China, and the data/

information disclosed are largely incomparable even within a firm across the five-year period.

The limitations of this study should be borne in mind in interpreting the above ad hoc findings. The results would be more conclusive if a longer time period was studied and more companies (including SMEs) were included in the sample. Clearly, a further research is needed to investigate the factors that cause corporate behaviors of Chinese listed companies in IER and the change of the reporting practice. As a developing country, China has made a significant progress in corporate reporting include environmental reporting. China's experience can be of valuable to other developing countries in developing their CER.

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