EXPLORING THE USE OF ONLINE CORPORATE SUSTAINABILITY INFORMATION

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Abstract

Whilst the supply, exclusivity and prominence of online corporate sustainability information has increased in recent years, comparatively little is known about what information is used by whom. This paper explores which user groups access online corporate sustainability information, and assesses the relative use of sustainability reports and other forms of social and environmental information disseminated on corporate Websites.

To collect the necessary empirical data, the paper analyses 4,652,471 successful requests for information made by the users of 10 UK FTSE 350 corporate Websites.

The paper finds that the majority of requests for online sustainability information originate from the reporting company indicative of an inward focus to sustainability reporting. In examining access to different online information sets, distinct profiles of corporate Website users begin to emerge. Requests from employees, private individuals, ISPs and consultants represent the vast majority of the online sustainability reporting audience and the corporate Website in general. Contrastingly, a professional financially-orientated profile of users characterised by professional investors, creditors, accounting firms and lawyers make significantly more use of the Annual Report but significantly less use of sustainability reporting information and other online disclosures.

Although prior literature notes how companies have yet to utilise the potential of the online medium in disseminating corporate sustainability information, disclosures are found to attract approximately a tenth of all corporate Website requests. Environmental and ethical disclosures outside the Annual Report are the most popular sources of online corporate sustainability information whilst ‘standalone’ Sustainability and/or Ethics Reports attract very few requests.

Keywords: Internet Reporting, Sustainability, Corporate Social Responsibility.

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1 We gratefully acknowledge the comments of journal reviewers and the financial support of the UK Economic and Social Science Research Council.
1. Introduction

Information provided by companies on the wider economic, environmental, social and ethical impacts of their activities is currently described as ‘sustainability’ information². Although the provision of corporate sustainability information has a long history, (for example, see Guthrie & Parker, 1989) research indicates that more companies are generally supplying greater volumes of sustainability information in recent years (for example, see ACCA, 2004; KPMG, 2002, 2005).

The Internet has developed as a key communication channel for disseminating corporate sustainability information since the late 1990’s (Guthrie et al., 2008; GRI, 2006; Campbell, 2004; ACCA, 2001). Information is commonly presented on corporate Websites within Annual Reports, within specific Sustainability Reports and/or on other Web pages which may include press releases, speeches, case studies and ethical codes. Increasingly, it is used by companies as the sole source of some corporate sustainability information, and companies now increasingly provide more sustainability information on their corporate Website than they do in traditional ‘hard copy’ reports (Guthrie et al., 2008; Hoskins, 2005; Trabelsi et al., 2004; Williams & Pei, 1999).

Whilst research has documented the supply of online (or Internet based³) corporate sustainability information (see for example, Guthrie et al., 2008; Patten, 2002; Rikhardsson et al., 2002; Maignan & Ralston, 2002; ACCA, 2001; Williams & Pei, 1999; Jones et al., 1999; Esrock & Leichty, 1998), comparatively little is known about the users of this increasingly popular communication medium. Hence, this paper targets this deficiency by providing a first attempt to empirically capture who uses online corporate sustainability information. Specifically, it analyses which user groups, if any, successfully access and/or download online corporate sustainability information, and assesses the relative requests for Sustainability Reports and other forms of social and environmental information disseminated in Annual Reports and elsewhere on corporate Websites.

The next section proceeds to review the development of online sustainability reporting and the ability (both actual and potential) of the Internet as a communication channel before

² Although derived from the United Nations definition of sustainable development (World Commission on Environment & Development, 1987), the term has evolved from prior terminology such as corporate social responsibility or triple bottom line reporting to describe forms of social and environmental accounting. For a discussion of the development of the term, sustainability, and a critique of its appropriateness, see O’Dwyer & Owen (2005), Lamberton (2005), Buhr (2007) and Milne & Gray (2007).

³ The term, online reporting, refers to the communication of information via the World Wide Web and the wider Internet.
generating specific research questions to guide the analysis. Section 3 describes the research
design whilst analyses and conclusions are presented in sections 4 and 5.

2. Online Corporate Sustainability Reporting

The attributes that have supported the growth in the supply of online corporate
sustainability information are the reach, cost and flexibility of the medium. In comparison to
hard copy reports, online disclosures have the ability to reach a wider proportion of
geo-graphically dispersed users with greater volumes of customisable information incorporating
dynamic audio and visual communication. Online dissemination is significantly cheaper than
hard copy reporting as printing and some distribution costs are transferred to the end user.
Finally, online reporting can offer instantaneous, two way communication and provide direct
linkages between different disclosures.

However, despite the potential ability of online reporting, prior literature expresses
doubts as to whether it is designed or used effectively to disseminate corporate sustainability
information. For example, Unerman & Bennett (2004) warn that online corporate sustainability
information may not be accessible to some user groups most greatly affected by corporate
activity, due to a lack of technology, infrastructure, education and/or linguistics necessary to
utilise company Websites\(^4\). It is argued that accountability can only be achieved where there is
an open equal dialogue/discussion with stakeholders (Cooper & Owen, 2007; Unerman &
Bennett, 2004) and stakeholder engagement is recommended in established corporate
sustainability reporting guidelines (Owen et. al, 2001). Although the Internet has the ability to
enable such dialogue with geographically dispersed users, it is rarely used for this purpose. For
example, Adams & Frost (2006) find that only one company Website enabled (delayed) two way
communication with stakeholders via general (not sustainability specific) online feedback forms.
More tellingly, one company declined to use an online discussion forum as it would imply that
the company might have to respond to stakeholder concerns with action, whilst another company
suggested that its ‘stakeholders’ would not necessarily be the ones providing online feedback.
Hence, it is suggested that companies supply online sustainability information to legitimise
corporate activity. For example, Cooper (2003) and Williams & Pei (1999) opine that online
corporate sustainability information can promote a positive corporate image, communicate an
unedited opinion on selected sustainable development issues and deflect criticism or government

\(^4\) See also Brown (2007) and Jones et al. (1999).
scrutiny. Coupland (2006) also reports how the language, presentation and location of online corporate sustainability information enables the company to construct its own ‘legitimate’ image (see also Aernetic & Craig, 2000). Online sustainability reporting may also be divorced from corporate activity that affects sustainable development. For example, Jones et al. (1999) report that in 14% of 275 surveyed companies, the ‘environmental’ department had no involvement in what sustainability information was supplied on the corporate Website. PwC (2007a,b) report that whilst 83% of FTSE 350 companies include a specific corporate responsibility statement in their Annual Report, only 17% identify aspects of corporate responsibility as a strategic priority. Sustainability sections within corporate Websites have been found to house gimmicks such as environmental screensavers, games, ‘ecovoyages’ and ‘environmental adventure stories’ (Jones et al., 1999). Overall, this suggests online content may not be designed to provide a serious indication of the corporate impact upon sustainable development and may not be used. For example, Adams & Frost (2006) reveal one company who find online corporate sustainability information users were a small proportion of overall online users where 50% did not go beyond the first Web page. This suggests that online corporate sustainability information may be supplied to benefit the reporting company rather than specific Website users consistent with the overlapping theoretical perspectives offered by political economy, legitimacy theory and institutional theory5 (for example, see Gallhofer et al., 2006). Yet, no prior research has examined whether anyone uses online corporate sustainability information nor identified who those users might be, despite the growing popularity of the Internet as a communication medium.

In considering information needs of users, prior research generally indicates that a range of different user groups or stakeholders either use or wish to use corporate sustainability information (for example, see Deegan & Rankin, 1999). In respect of shareholders and investors, Epstein & Freedman (1994) find that between 67% and 85% of ‘individual investors’ wanted disclosure on employee relations, ethics, community involvement, product quality and environmental activities. For professional users such as institutional investors and analysts, the findings are less clear. Recent initiatives from representative bodies suggest a demand exists for sustainability information. For example, the UN backed Investor Network on Climate Risk (INCR, 2008), representing institutional investors with approximately $1.75T under management, has called for the SEC to issue guidance requiring full corporate disclosure of

5 For example, see Gray et al. (1995), Mathews (2004), Owen et al. (2000).
climate change risk (see also EAI, 2006). However, prior literature suggests professional users have less interest in using sustainability information currently supplied by companies (KPMG, 2007; McInnes et al., 2007; PwC, 2007a,b). For example, Campbell & Slack (2008) find that sustainability disclosures are the least read section of the Annual Report by analysts whilst Dawkins & Lewis (2003) find that 43% of analysts and 54% of investors believed corporate sustainability information to be of poor quality. Surveys indicate that employees expect to view sustainability information (Dawkins & Lewis, 2003) to both assess their employers and to advocate them in communications with external parties (McInnes et al., 2007). In respect of other user groups, suppliers are found to use corporate sustainability information to understand the social and environmental policies of their clients although little use is made by customers (McInnes et al., 2007). O’Dwyer et al. (2005) finds strong interest amongst surveyed non-governmental organisations (NGOs), the majority of whom prefer dissemination via a corporate Website whilst campaign groups and NGOs running ‘counter-accounting’ sites⁶ are found to extensively use online corporate sustainability information (Gallhofer et al., 2006).

Whilst literature suggests that different user groups use (or wish to use) corporate sustainability information, there is little indication of whether they use information specifically disseminated via the corporate Website. Companies are generally found to target online corporate sustainability information at external, more distant stakeholders presumably due to the wide geographical reach enabled by Internet-based dissemination. For example, Adams & Frost (2004) find that surveyed companies across 3 countries and multiple industries ranked their most important online target audience as NGOs, government, customers, shareholders/investors, academia, employees, suppliers and competitors. Knox et al. (2005) find that online sustainability information disseminated by smaller companies within the FTSE 4Good index is targeted at customers and Aerts et al. (2006) note that executives perceive their target audience as the general public. In contrast, Cooper (2003) finds online sustainability information in the electricity industry is focused mainly on shareholders and prospective employees. Therefore, this paper aims to explore which users, if any, are motivated to access and/or download online corporate sustainability information. In doing so, the paper aims to compare the actual users of online corporate sustainability information with the perceived target audience and understand which users seek to fulfil their information needs, expressed in prior research, through the online medium. The paper also explores whether differences exist between the users of specific

⁶ Websites used to disseminate independent sustainability information on particular companies in the form of ‘counter’, ‘shadow’ or ‘silent’ accounts (see for example, Dey, 2007).
Research Question 1: Who uses online corporate sustainability information?

Research Question 2: Do the users of specific online corporate sustainability information differ from the users of other online corporate reporting information?

The type of sustainability reporting information disclosed by firms is found to be associated with their perceptions of stakeholder concerns (Cormier et al., 2004; Henriques & Sadorsky, 1996; Roberts, 1992). Yet, no prior research has examined what types of online corporate sustainability information stakeholders are motivated to use. In offline settings, users consider environmental information to be the most important type of sustainability information. For example, Deegan & Rankin (1997) find that environmental information is generally more important than disclosures on community involvement amongst different user groups. Epstein & Freedman (1994) also find that the demand for product quality and environmental information to be significantly higher than information on corporate ethics, community involvement and employee relations amongst private shareholders. Surveying a range of users, Eccles & Mavrinac (1995) find that employee reporting information is considered to be the least important. However, in aggregate, corporate sustainability information is consistently ranked below traditional financial information in terms of importance (for example, see KPMG, 2007; Deegan & Rankin, 1997; Buzby & Falk, 1978). Therefore, this paper seeks to quantify the use of different types of online corporate sustainability information relative to other traditional reporting information disseminated online.

Research Question 3: What is the use of different types of specific online corporate sustainability information relative to other available online corporate reporting information?

Research documenting the location of corporate sustainability disclosures indicates that companies are supplying more sustainability information online than in traditional ‘hard copy’ forms such as the Annual Report (for example, see Guthrie et al., 2008; Hoskins, 2005; Trabelsi et al., 2004; Williams & Pei, 1999). Furthermore, several studies note that sustainability disclosures within the online Annual Report are generally different and less detailed than in other parts of the corporate Website such as a sustainability section or a standalone Sustainability Report (Guthrie et al., 2008; Williams & Pei, 1999) suggesting different disclosures may be
targeted at different audiences. For example, the UK Accounting Standards Board (ASB, 2005 para 8) opine that corporate sustainability information within management commentary statements such as the Operating & Financial (or Business) Review, is directed at shareholders and should not ‘be seen as a replacement for other forms of reporting to a wider stakeholder group’. Therefore, users other than shareholders may choose to use information provided within a standalone Sustainability Report. For example, O’Dwyer et al. (2005) find that NGO’s prefer to use corporate sustainability information within a standalone report which is subject to some form of assurance. Alternatively, other users have been found to want sustainability reporting information integrated into the Annual Reporting process (ABI, 2006; KPMG, 2008). Studies that predate the widespread growth of online corporate reporting suggest users prefer Annual Report disclosures (Deegan & Rankin, 1997; Epstein & Freedman, 1994). The location of disclosures may influence the perceived reliability of online corporate sustainability information. For example, placement within a formal, traditional Annual Report may be perceived to be more reliable as it is subject to a weak form of assurance under ISA 720 where auditors must judge whether all corporate disclosures within the Annual Report are consistent with the audited financial information (see Fisher et al., 2004). Therefore, the paper explores whether online users choose to access corporate sustainability information within the Annual Report, a standalone Sustainability Report or sections within the wider corporate Website.

Research Question 4: Do users choose to access online corporate sustainability information within the Annual Report, a standalone Sustainability Report or on the wider corporate Website?

In order to empirically answer these questions, the remainder of this paper analyses the use of large corporate Websites that supply corporate sustainability information using a Web log research design described in the following section.

3. Research Design

The empirical data used in this study captures those users accessing online corporate sustainability information disclosed by large companies listed on the London Stock Exchange. Access to corporate Web logs was provided by 37 companies from which a purposive selection sought to investigate users from a cross section of the largest public companies in the UK.
supplying online corporate sustainability information\textsuperscript{7}. Therefore, the selection criteria identified those companies which a) were a member of the FTSE 350; b) supplied online corporate sustainability information; and c) supplied a full set of Web logs for the sample period. The UK provides an appropriate setting for the study because the proportion of UK companies supplying sustainability information is found to be amongst the highest in the world (KPMG, 2005; 2002). The selected companies represent 9 FTSE industrial sectors as shown in Table 1\textsuperscript{8}.

Table 1: Reporting companies by industry class / index

<table>
<thead>
<tr>
<th>FTSE industrial classification (ICB code)</th>
<th>FTSE 100</th>
<th>FTSE 250</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beverages (3530)</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Construction &amp; materials (2350)</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Food &amp; drug retailers (5330)</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Food producers (3570)</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>General financial (8770)</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>General retailers (5370)</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Industrial transportation (2770)</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Media (5550)</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Software &amp; computer services (9530)</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>Total (10)</strong></td>
<td><strong>7</strong></td>
<td><strong>3</strong></td>
</tr>
</tbody>
</table>

All reporting companies include a sustainability menu or ‘home’ page beyond which further information is organised by content and format, whilst 7 companies also disclose sustainability information within a separate section in their Annual Report. Separate ‘standalone’ reports distinct from the Annual Report are supplied by 6 companies, 2 of which produce a Sustainability Report whilst 4 produce both a Sustainability Report and an Ethics Report.

To explore the users of online corporate sustainability information, Web server logs are used to quantify and detail requests made by online users for content disclosed on the corporate Websites of the reporting companies – that part of the company’s Web presence dedicated to corporate communications which accommodates sustainability information both within the Annual Report, within specific sustainability Web pages and where supplied, standalone Sustainability Reports.

Each request for content (e.g. a particular Web page or downloaded document) received by a company’s Web server is recorded as separate lines of code in Web server log files. More

\textsuperscript{7} Prior research has shown that size is positively related to the volume of sustainability reporting (for example, see Adams et al., 1998; Cormier et al., 2005).

\textsuperscript{8} Due to the commercial sensitivity of corporate Web server logs, our conditions of data access prevent the disclosure of company names.
specifically, log files maintain a record of the Internet Protocol (IP) address of the requesting computer, the date and time of the request and the name, size and Universal Resource Locator (URL) address of the requested page. Using software developed by the researchers, these logs were parsed and aggregated to identify the nature of the content requested and some user identification characteristics.

To explore who is accessing information, the IP addresses of those successfully receiving information during each visit to the Website are analysed using IP registries and are anonymously classified into broad stakeholder groupings that proxy for online users. ‘Page Views’ or ‘Page Impressions’, identifiable from Web server log files, provide a proxy for online use. Page Views measure the number of discrete Web pages requested and successfully delivered to users by removing ‘frames’, and other additional multiple linked files provided when a particular Web address is requested. In addition, Page Views are filtered to remove any computer generated requests and those originating from the researchers.

The central advantage of this research approach is that it enables the direct measurement of information requests, as distinct from estimating information usage indirectly. As Web server logs capture what information is actually accessed without the explicit knowledge of the user, external validity is enhanced thereby providing an alternative perspective to traditional research methods employed to assess user behaviour such as questionnaires and interviews. This method also more easily monitors the information requested by large numbers of online users. Whilst the Web server log research method gives comparatively greater breadth in investigating online information seeking behaviour, it does not indicate how information is used and whether it is useful. It assumes that where information has been actively requested, demanded and successfully delivered, it is at least partially read and provides a proxy for online use (Hodge & Pronk, 2006). Furthermore, the proxy for online users, the IP address, identifies a network node rather than an individual, and does not detail why the Website is being accessed. Although companies use Web logs to analyse the usage of corporate Websites, findings are seldom reported (for example, see Adams & Frost, 2006; Gallhofer et al., 2006) and Web logs have rarely been employed in corporate reporting research despite their popularity in assessing online usage in other disciplines (see for example, Nicholas et al., 2002).

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9 ‘Visit’ or ‘session’ is commonly defined as a series of information requests made within 30 minutes of each other (Rowbottom et al., 2005; Zawitz, 1998).
10 For example, automated agents such as ‘Robots’, ‘Spiders’ and ‘Pushed Pages’.
11 The data will be subject to noise if Web pages have been mistakenly requested by users.
12 Adams & Frost (2004) find that 41% of surveyed firms track individual users whilst 77% identified the number of Web site visitors.
The dataset covers the period 1 January 2003 – 30 April 2004\textsuperscript{13}, in which 12,610,042 Web server log entries were captured. After filtering, 4,652,471 successful requests for pages were processed, identified and classified. The next section presents the results from the study, organised by the four research questions, and discusses their significance in investigating the users of corporate sustainability information.

4. Results & Analysis

In addressing the first research question – who uses online corporate sustainability information – the first column of Table 2 displays the relative proportion of sustainability information requests originating from different stakeholder groups. The majority of requests (37%) originate from computers registered to the company hosting the Website – classified as ‘employees’. Such requests were frequently from countries other than the company’s domiciled nation and represented different parts of the company’s group structure. Approximately 32% of requests emanate from computers registered to private individuals or under Internet Service Providers (ISPs). Private individuals were commonly registered in the UK whereas requests from ISPs are predominantly from the UK and US. As medium and larger organisations tend to own or lease fixed IP addresses, it is likely that many of the ISP-based requests will represent individuals or small businesses that are not granted fixed IP addresses and are registered en masse under their ISP who allocates IP addresses on demand. However, other stakeholder groups such as employees or professional investors may also access corporate reporting Websites via their private ISPs rather than via their place of employment. The third largest stakeholder group, accounting for approximately 9% of requests, are consultants, mainly originating from large international practices based in the UK, USA or Europe. Specialist Investor Relations, Website design, information technology and, to a lesser extent, environmental practices are also commonly identifiable. Requests originating from (generally higher) educational institutions (6.65%) represent the fourth largest stakeholder group consistent with Adams & Frost (2004) who find that academia are ranked in a similar position as the most important online audience by companies. Information requests originating from customer, supplier and competitor organisations\textsuperscript{14}, plus other unaffiliated companies represent the next most frequent user groups.

\textsuperscript{13} This sample period covers the 2003 and 2004 year ends and attempts to cover a full ‘reporting cycle’. During this time, no specific legislation required UK companies to provide sustainability information.

\textsuperscript{14} No clear distinction is made between competitors, customers and suppliers where competitors were often collaborators in some markets or projects e.g. in banking syndication or joint ventures.
Key competitors were frequently identifiable, indicating that companies were regularly motivated to monitor the online disclosure practices of their industry peers. Requests originating from (predominantly big 4) accounting firms and large international information providers accounted for 2.22% and 2.10% of requests. Professional investors/creditors\textsuperscript{15}, mostly representing large international financial services providers, banks and pension funds generated 1.88% of requests whilst (generally municipal or federal) government accounted for 1.32%. Finally, non-profit organisations (predominantly NGO’s with sustainable development agendas) generate a small proportion (0.65%) of overall requests yet are ranked by companies as the top online target audience (Adams & Frost, 2004).

Overall, the significant proportion of requests originating from the company itself is indicative of an inward focus to online corporate sustainability reporting. Furthermore, a proportion of ‘external’ requests originate from those likely to be involved in producing or presenting online information such as Investor Relations and environmental consultants, and Website design agencies. This suggests that the use of online corporate sustainability reporting may be a substantially introverted process where the Website is used most regularly as an internal reporting mechanism, rather than a medium to reach more distant audiences. Although employee users are identified in prior research identifying target audience (for example, see Solomon, 2000; Adams, 2002) and user needs research (Dawkins & Lewis, 2003; McInnes et al., 2007) they are generally ranked below more distant, external stakeholders such as NGOs, government, customers and investors. Thus, it appears that the easy accessibility of the online medium is utilised predominantly by employees who may be aided or encouraged to access Website disclosures via internal newsletters or intranets (for example, see Adams 2002; McInnes et al. 2007).

Table 2: Proportionate Origin of Online Sustainability, Annual Reporting and Overall Information Requests Successfully Delivered by Reporting Companies (Jan. 03 – Apr. 04).\textsuperscript{16}

<table>
<thead>
<tr>
<th>Stakeholder Group</th>
<th>A. Proportion of total requests for corporate sustainability</th>
<th>B. Proportion of requests for Annual Reports</th>
<th>C. Proportion of total requests for all</th>
<th>Difference between the means ($H_0: A-C = 0$) t test statistic</th>
<th>Difference between the means ($H_0: A-B = 0$) t test statistic</th>
</tr>
</thead>
</table>

\textsuperscript{15} No separation is made between professional investors and creditors, as requests frequently originated from large financial services organisations providing banking, broking, analysis and asset management.

\textsuperscript{16} The analysis is based on the most frequent visitors to the specified Web pages, who account for 33% of total visits on average.
<table>
<thead>
<tr>
<th>Information</th>
<th>Employees</th>
<th>Private Individuals / ISPs</th>
<th>Consultants</th>
<th>Educational Institutions</th>
<th>Customers / Suppliers / Competitors</th>
<th>Other Commercial Organisations</th>
<th>Accounting Firms</th>
<th>Infomediaries</th>
<th>Professional Investors / Creditors</th>
<th>Government</th>
<th>Non-Profit Organisations</th>
<th>Lawyers</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>information</td>
<td>37.02%</td>
<td>32.41%</td>
<td>8.62%</td>
<td>6.65%</td>
<td>3.70%</td>
<td>3.52%</td>
<td>2.22%</td>
<td>2.10%</td>
<td>1.88%</td>
<td>1.09%</td>
<td>0.65%</td>
<td>0.14%</td>
<td>100%</td>
</tr>
<tr>
<td>corporate Web pages</td>
<td>23.31%</td>
<td>21.45%</td>
<td>4.26%</td>
<td>9.82%</td>
<td>6.27%</td>
<td>1.11%</td>
<td>7.39%</td>
<td>3.85%</td>
<td>21.13%</td>
<td>0.23%</td>
<td>0.08%</td>
<td>1.08%</td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td>35.55%</td>
<td>27.11%</td>
<td>6.93%</td>
<td>4.53%</td>
<td>4.48%</td>
<td>1.72%</td>
<td>3.51%</td>
<td>4.88%</td>
<td>10.75%</td>
<td>0.01%</td>
<td>0.04%</td>
<td>0.48%</td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td>0.264</td>
<td>1.553</td>
<td>0.849</td>
<td>0.608</td>
<td>-0.761</td>
<td>0.051</td>
<td>-2.844**</td>
<td>-1.381</td>
<td>-2.438**</td>
<td>3.273***</td>
<td>2.870**</td>
<td>-2.071*</td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td>2.006*</td>
<td>3.270***</td>
<td>1.367</td>
<td>-1.387</td>
<td>-2.146*</td>
<td>2.001*</td>
<td>-3.465***</td>
<td>-1.177</td>
<td>-4.347***</td>
<td>3.306***</td>
<td>2.517**</td>
<td>-2.196*</td>
<td>100%</td>
</tr>
</tbody>
</table>

*=10%, **=5% and ***=1% statistical significance levels

After analysing the profile of those accessing online corporate sustainability information, the second research question seeks to ascertain whether this profile is significantly different from the profile of users accessing Annual Reports and the corporate Website in general. Table 2 presents t test statistics presuming no difference between the users of the different information sets to highlight distinct user profiles.

The dominant user profile, characterised by requests originating from the company, ISPs and private individuals (and, to a lesser extent, consultants), represents a greater proportion of the online audience for sustainability information in comparison to other parts of the corporate Website and makes significantly less requests for Annual Reporting content. These online users generate the vast majority (78%) of sustainability reporting requests and, to a lesser degree (70%), all Website requests.

An opposing profile, characterised by requests originating from professional investors, creditors, accounting firms and lawyers, make significantly more use of Annual Reports and significantly less use of sustainability and other online corporate disclosures. This group, consisting of stakeholders with predominantly economic relationships with the company, tend to focus mainly on quantitative disclosures within the traditional corporate reporting document. The
relative lack of use by professional investors and creditors of online sustainability information reflects some prior research identifying target audience, user needs and usefulness (see Adams & Frost, 2004; KPMG, 2007) but is inconsistent with initiatives representing a demand for sustainability information from the institutional investment community (for example, see INCR, 2008). This implies that either current corporate sustainability is of limited usefulness and/or that professional users rely on alternate communication channels such as private meetings and briefings (for example, see McInnes et al. 2007)\textsuperscript{17}. However, the relatively high proportion of requests originating from professional investors and creditors for online Annual Reports (21%) suggests that they are familiar with the corporate Website but choose not to access sustainability information. It appears that, in general, professional investors and creditors focus on online financially-orientated Annual Report disclosures and any perceived demand for sustainability disclosures is not expressed in their usage of the Website. The relative lack of use from professional investors and creditors suggests that the voluntary provision of online corporate sustainability information is not wholly consistent with the ‘business case’ where sustainability information is supplied to aid users estimate shareholder value (see ACCA, 2003).

A third distinct profile, characterised by requests originating from government agencies and non-profit organisations, constitute a small proportion of the online audience but make significantly greater use of sustainability disclosures and significantly less use of Annual Reports and other Website information. The interest in sustainability information by government and NGO’s supports prior research on target audience and user needs (see Adams & Frost, 2004; O’Dwyer et al. 2005; Gallhofer et al., 2006 in respect of NGO’s). Although such users represent a fraction of the online audience, this suggests that sustainability information is aimed at and used by those with the power to regulate corporate activity (government) and those with the ability to influence perceptions about the company and its legitimacy (NGO’s).

Overall, the distinct user profiles that emerge from analysing access to different online information sets suggest that users could be better served by forms of information customisation rather than the ‘one size fits all’ approach applied by companies. For example, KPMG (2008) find that ‘civil society’ readers of sustainability reports would prefer information to be tailored to specific stakeholder groups such as investors or communities.

\textsuperscript{17} Professional investors have been found to rely on private disclosure channels rather than public disclosures to collect corporate information (see for example, Solomon & Solomon, 2006; Holland, 2004).
To address research question 3 – what is the use of different types of specific online corporate sustainability information relative to other available online corporate reporting information – table 3 presents aggregated requests for all sustainability information as a proportion of all corporate reporting Website requests.

Table 3: Requests for Total Sustainability Content as a Proportion of all Corporate Reporting Website Requests (Jan. 03 – Apr. 04).

<table>
<thead>
<tr>
<th>Website Section</th>
<th>% of Total Requests</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial Reporting (exclusive of specific sustainability requests from the Annual Report)</td>
<td>24.1%</td>
</tr>
<tr>
<td>General Company Information</td>
<td>21.0%</td>
</tr>
<tr>
<td>Share Price Information</td>
<td>14.8%</td>
</tr>
<tr>
<td>Media &amp; Regulatory News Service Announcements</td>
<td>13.4%</td>
</tr>
<tr>
<td>Sustainability Information</td>
<td>10.6%</td>
</tr>
<tr>
<td>Website Services</td>
<td>7.6%</td>
</tr>
<tr>
<td>Contact Information</td>
<td>5.5%</td>
</tr>
<tr>
<td>Information for Shareholders</td>
<td>3.0%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

In considering aggregate information use, sustainability disclosures attract approximately a tenth of all corporate Website requests, indicating that sustainability information, increasingly and exclusively supplied online by large listed companies (see Guthrie et al., 2008; GRI, 2006; Campbell, 2004; ACCA, 2001), is accessed by users. However, the use of online sustainability information ranks below more traditional corporate disclosures as noted in prior research (see KPMG, 2007; Deegan & Rankin, 1997; Buzby & Falk, 1978). For example, sustainability information remains less popular than financial reports/preliminary results, general information about the business and its management team, share price data and company press releases/regulatory announcements. To analyse the use of different types of specific online corporate sustainability information, the third and fourth columns of Table 4 presents requests for specific sustainability information as a proportion of all page-specific

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18 Web pages are classified by their placement, name/description and the nature of information disclosed. The categories are informed by observed online reporting practice (for example, KPMG, 2005; Lymer et al., 1999) and by the involvement of the authors in projects enabling them to observe contemporary disclosures, including short listing Web sites for ‘sustainability’ and other awards on behalf of UK representative bodies. Whilst allocations introduce some ‘noise’ into the analysis, classifications were undertaken separately by three researchers, and the results were presented to a selection of reporting companies to assess their validity and conformity to company expectations. The allocations assume users are motivated to request information primarily by the name of the page/hyperlink.

19 This analysis provides average requests as a proportion of all total requests beyond the corporate Website ‘home’ page. The average monthly requests per individual company is 33,361.
corporate reporting Website requests. To enable this analysis, disclosures are classified into employee welfare information (e.g. health and safety, labour rights and labour practices), environmental information (e.g. waste management, emissions), societal and community information (e.g. impact on the local community, product responsibility, consumer safety) and ethical information (e.g. ethical codes of conduct, value statements, approaches to corporate responsibility).

Table 4: Requests for Specific Sustainability Content as a Proportion of all Corporate Reporting Website Requests (Jan. 03 – Apr. 04).

<table>
<thead>
<tr>
<th>Specific Sustainability Content</th>
<th>Annual Report Disclosures</th>
<th>General Website Disclosures</th>
<th>Total % of Page Specific Requests</th>
<th>Rank of Page Specific Requests</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environment Pages</td>
<td>0.18%</td>
<td>2.89%</td>
<td>3.07%</td>
<td>9</td>
</tr>
<tr>
<td>Ethics &amp; Values Pages</td>
<td>0.00%</td>
<td>2.96%</td>
<td>2.96%</td>
<td>10</td>
</tr>
<tr>
<td>General Sustainability Pages</td>
<td>0.13%</td>
<td>1.65%</td>
<td>1.77%</td>
<td>17</td>
</tr>
<tr>
<td>Society &amp; Community Pages</td>
<td>0.03%</td>
<td>1.54%</td>
<td>1.57%</td>
<td>22</td>
</tr>
<tr>
<td>Employee Welfare Pages</td>
<td>0.06%</td>
<td>1.11%</td>
<td>1.18%</td>
<td>23</td>
</tr>
<tr>
<td>Standalone Sustainability Report</td>
<td>-</td>
<td>0.68%</td>
<td>0.68%</td>
<td>36</td>
</tr>
<tr>
<td>Standalone Ethics Report</td>
<td>-</td>
<td>0.61%</td>
<td>0.61%</td>
<td>40</td>
</tr>
</tbody>
</table>

Environmental and ethics & values pages receive greater requests than other sustainability information, and are amongst the ten most popular individual pages requested from corporate reporting Websites. Whilst users most frequently request share price information (10.5%), company profiles (8.9%) and press releases (4.8%), requests for ethical and environmental information account for a significant proportion of all page specific corporate reporting requests. The popularity of environmental information is consistent with the prior studies of Deegan & Rankin (1997) and Epstein & Freedman (1994) who investigate offline user needs. The relative popularity of ethics & values Web pages is greater than found in Epstein & Freedman (1994) and may reflect the emphasis placed on corporate conduct following the series of high profile accounting scandals in 2001-2002. For example, the New York Stock Exchange (NYSE), on which 2 sample companies are listed, has required issuers to publish ‘a code of business conduct and ethics’ on their Website since 2003 (NYSE, 2006). The relative lack of use

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20 This analysis provides average requests as a proportion of all page specific requests (omitting requests for contents or index pages and full Annual Reports as a single pdf file). The average monthly page specific requests per individual company is 29,947.
of employee welfare information is consistent with Epstein & Freedman (1994) but is somewhat surprising given that requests from ‘employees’ account for 37% of the average online corporate sustainability information audience. The results indicate employees access more information about the company’s impact on the environment and reported ethical values than they do on issues of potential relevance such as health and safety and labour rights. This is consistent with McInnes et al. (2007) who find that employees use sustainability information to appraise their employers and understand corporate policy in communicating with external parties. The standalone online reports, both on ethics and on general sustainability issues, were the least used forms of information.

In addressing the fourth research question - do users choose to access online corporate sustainability information within the Annual Report, a standalone Sustainability Report or on the wider corporate Website? – the second and third columns of Table 4 clearly indicate a lack of use of specific Annual Report corporate sustainability information. This is unsurprising as corporate sustainability information outside the Annual Report is generally supplied in greater volume and often contains information unavailable elsewhere (for example, see Guthrie et al., 2008; Williams & Pei, 1999). However, this marks a change in user behaviour since the growth of online corporate reporting in the late 1990’s when prior literature clearly demonstrated an explicit preference for Annual Report disclosures (for example, see Deegan & Rankin, 1997; Epstein & Freedman, 1994). Even though disclosures within the Annual Report or standalone reports are more likely to be (or perceived to be) subject to some form of assurance, they receive significantly fewer information requests from users despite calls for sustainability reporting to be integrated more centrally in the Annual Reporting process (ABI, 2006; KPMG, 2008). This is consistent with Table 2 where Annual Report users are more likely to include economically orientated stakeholders such as professional investors and creditors who demonstrate comparatively little interest in sustainability information. However, whilst the empirical dataset reflects the increasing prominence of disclosures outside of the Annual Report as the foremost location for online corporate sustainability information, it does not confirm the popularity of standalone reporting with users. Where companies supply Sustainability or Ethics Reports, usually as pdf files to replicate ‘hard copy’ disclosures, they receive a small proportion of the requests afforded to HTML-based sustainability Web pages, which generally offer more flexibility over content and layout. Given the small proportion of information requests, the
purpose of online standalone reporting may be questioned particularly where it has become an increasingly homogenised institutional process within large listed companies (for example, see KPMG, 2005). In itself, the level of use does not appear to justify the costs of online publication which suggests companies accrue benefits from the *supply* of standalone reporting, in terms of say reputation and legitimation, regardless of whether it is used.

5. Summary & Conclusions

Whilst the supply, exclusivity and prominence of online corporate sustainability information has increased in recent years, comparatively little is known about what information is used by whom. Hence, this paper explores which stakeholder groups’ access online corporate sustainability information, and assesses the relative use of sustainability reports and other forms of social and environmental information disseminated in Annual Reports or elsewhere on corporate Websites. To conduct the analysis, the paper uses Web log data to examine 4,652,471 successful requests for information made by the users of 10 UK FTSE 350 corporate Websites.

The paper finds that the majority of requests for online sustainability information originate from the reporting company suggesting that online sustainability disclosures are primarily used to inform those within the business as opposed to more distant stakeholders. Furthermore, the proportion of requests from within the company together with requests from consultants likely to be involved in the production and presentation are indicative of an inward focus to online sustainability reporting.

In examining access to different online information sets, distinct profiles of corporate Website users begin to emerge. Requests from employees, private individuals, ISPs and consultants represent the vast majority of the online sustainability reporting audience and the corporate Website in general. However, they make significantly less use of online Annual Reports. Contrastingly, a professional financially-orientated profile of users characterised by professional investors, creditors, accounting firms and lawyers make significantly more use of the Annual Report but significantly less use of sustainability reporting information and other online disclosures. The degree to which professional financially-orientated users make use of Annual Reports suggests that it is a disinterest in current sustainability disclosures rather than unfamiliarity with the communication channel which drives this finding. Finally, a third distinct profile, characterised by requests originating from government agencies and non-profit organisations, constitute a fraction of the online audience but make significantly greater use of
sustainability disclosures and significantly less use of Annual Reports and other Website information.

Sustainability information attracts approximately 10% of all corporate Website requests, where environmental and ethics pages are amongst the ten most frequently requested individual Web pages. Users generally choose to access disclosures outside of the Annual Report although standalone Ethics and Sustainability Reports were the least requested forms of online corporate sustainability information.

Overall, although prior literature notes how companies have yet to utilise the potential of the online medium in disseminating corporate sustainability information, it does generate a substantial proportion of Website use. Whilst the relative lack of use by professional financially-orientated stakeholders is not consistent with the ‘business case’, corporate sustainability information outside the Annual Report is used by other mainly stakeholders although this does not extend to standalone reporting. The predominantly inward focus of usage and largely symbolic nature of standalone reporting (given the small proportion of requests) characterises online sustainability reporting as a supply driven process whose benefits are secured primarily by the reporting company consistent with managerialist theoretical perspectives. Online corporate sustainability reporting may be seen as an easy, cost-effective way of influencing internal and wider stakeholder views of corporate activity whilst providing a highly observable appearance of accountability.

The findings of the study are subject to several limitations. The dataset records the successful delivery of information to those network nodes that have downloaded pages from corporate Websites which, it is argued, provides proxies for online use and online users. In terms of online use, it does not indicate the extent to which the information is read, used and useful and will introduce noise where information is downloaded but unused. In terms of online users, the IP address denotes a network node and does not specify why, and in what role, information is being requested. Although the research method employed captures large numbers of information requests with high external validity, further complementary investigation would help understand why and how online sustainability information is used.

References


