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## E-RETAILERS AND ENVIRONMENTAL SUSTAINABILITY

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*'Technology will make shopping more personalised, connected and accessible but will it improve environmental impact?' (P. Madden 2012, webpage)*

### **Abstract**

The aim of this paper is to offer an exploratory review of the extent to which the world's leading e-retailers are communicating the environmental impact of their business and their environmental sustainability agendas to their customers. The paper begins with brief outlines of how the internet is transforming consumer behaviour and retail operations and of the possible environmental impacts of e-retailing and a short discussion of environmental sustainability. The paper draws its empirical material from the most recent information on environmental sustainability posted on the world's leading e-retailers' corporate web sites. The findings reveal that the majority of the world's leading e-retailers publicly report or provide some information on their commitment to environmental sustainability which embraces climate change and greenhouse gas emissions, energy efficiency, waste management, water management, bio-diversity and nature conservation. However the authors argue that these commitments can be interpreted as being constructed around the search for operational efficiencies and cost reductions and being driven by business imperatives as by any genuine commitment to environmental sustainability. More critically the authors argue that these commitments are driven more by the search for efficiency gains, that they are couched within existing business models centred on continuing growth and that as such the world's leading-retailers are currently pursuing a 'weak' rather than a 'strong' model of sustainability.

**Keywords**-Sustainability; e-retailers; sustainable consumption; economic growth; external assurance.

### **Introduction**

There is a broad consensus that the internet is revolutionising the ways companies do business in nearly all sectors of the economy and nowhere is this more apparent than in the retail sector. Vize et. al. (2013, p.909) for example have argued that *'the Internet's commercial influence is highly visible in the retail industry'* while Ernst and Young (2012, p.2) has suggested that Internet, and increasingly widespread mobile access to it, are *'reshaping the retail environment faster than ever, causing retailers and brands to rethink how they currently do business.'* More specifically Doherty and Ellis-Chadwick (2012, p.945) suggest that *'the Internet's capacity to provide information; facilitate two-way communication with customers; collect market research data; promote goods and services and ultimately to support the online ordering of merchandise provides retailers with an extremely rich and flexible new channel.'* Doherty and Ellis-Chadwick (2012, p.944) further argue that *'in so doing the Internet gives retailers a mechanism for; broadening target markets; improving customer communication; extending product lines, improving cost efficiency, enhancing customer relationships' and delivering customised offers.'* The academic and commercial

business literature abounds with reviews and forecasts of how the internet is and will continue to transform consumer behaviour and retail operations, suggesting that shopping will become more efficient and more informed and that it could effectively be 'dematerialised' with fewer journeys to shops and stores as ever more people buy online. At the same time while people are certainly being presented with seemingly ever more opportunities to consume, less work has been undertaken on the environmental consequences of e-retailing.

More generally, writing over a decade ago Fichter(2003, p.37) reported that *'research on the environmental effects of e-commerce is still in its infancy'* but suggested that there are *'three developing approaches to the development of sustainable e-commerce solutions'* namely *'the extension of environmental performance measurement and management to e-commerce activities, the use of new cooperative forms of innovation management, and the provision of customer choice'* (Fichter 2003, p.33) About the same time Sui and Rejeski (2002, p.156) in reviewing the *'environmental impacts of the emerging digital economy'* enquired *'do the demands for the development of a sustainable economy compete or coincide with the new reality of the digital economy?'* More specifically Sui and Rejeski (2012, p.156) posed the questions *'Is e-commerce a truly clean, environmentally benign economy which will simply lead to the substitution of information for physical resource flows along energy and transportation networks?'* or *'alternatively does e-commerce encourage new movements by generating new demands for material and energy that will further deteriorate the fragile environment?'* Since then research into the environmental impacts of e-commerce (and Internet retailing) has gathered momentum (e.g. Yi and Thomas 2007; Edwards, McKinnon and Cullinane 2011; Tiwari and Singh 2011; and Bull and Kozak 2014) but the ways in which individual internet retailers are addressing the environmental impact of their business operations has, to date, received little or no attention in the literature. With this in mind this paper seeks to offer an exploratory review of the extent to which the world's leading e-retailers are communicating the environmental impact of their business and their environmental sustainability agendas to their customers.

### ***Environmental Sustainability***

The concept of sustainability can be traced back as far as the thirteenth century but in more recent times it re-appeared in the environmental literature in the 1970's (Kamara et. al. 2006) and since then it has attracted increasingly widespread attention. However there is little consensus in providing a definition of sustainability. On the one hand there are definitions that look to include ambitious social and economic, as well as environmental goals and to meet human needs in an equitable manner. For the United States Environment Protection Agency (2014, webpage), for example, *'sustainability creates and maintains the conditions under which humans and nature can exist in productive harmony , that permits fulfilling the social, economic and other requirements of present and future generations.'* On the other hand there are sets of definitions that acknowledge that all human beings live on one planet with finite quantities of natural resources and fragile ecosystems on which all human life ultimately depends. Goodland (1995, p.10), for example, defined environmental sustainability as *'the maintenance of natural capital'* arguing that it *'seeks to improve human welfare by preserving the sources of raw materials used for human needs and ensuring that the sinks for human waste are not exceeded in order to prevent harm to humans.'* From a

business perspective environmental sustainability is typically defined as making responsible decisions that reduce a company's impact on the environment and on preserving the capability of the environment to support human life (Smallbiz.com undated). Thus environmental sustainability ideally forces companies to look beyond short term gains at the long term impact they are having on the natural world.

More critically Hudson (2005, p. 241) argued that definitions of sustainability range from *'pallid blue green to dark deep green.'* The former Hudson (2005, p.241) suggests centre on *'technological fixes within current relations of production, essentially trading off economic against environmental objectives, with the market as the prime resource allocation mechanism'* while for the latter *'prioritizing the preservation of nature is pre-eminent'* (Hudson 2005, p.241). Hudson (2005, p.241) also suggests that the dominant view of sustainability *'is grounded in a blue-green discourse of ecological modernization'* and *'claims that capital accumulation, profitable production and ecological sustainability are compatible goals.'* Further he contrasts this view with the *'deep green'* perspective which *'would require significant reductions in living standards and radical changes in the dominant social relations of production'* (Hudson 2005, p.241). In a similar vein a distinction is often made, for example, between *'weak'* and *'strong'* sustainability and Roper (2012,p.72) suggests that *'weak sustainability prioritizes economic development, while strong sustainability subordinates economies to the natural environment and society, acknowledging ecological limits to growth.'*

During the past two decades growing numbers of companies have begun to develop environmental sustainability agendas as an integral component of their business strategies. A number of factors seem to be important in helping to explain this trend. These include the need to comply with a growing volume of environmental legislation and regulation; concerns about the cost and scarcity of natural resources; greater public and shareholder awareness of the importance of socially conscious financial investments; the growing media coverage of the activities of a wide range of anti-corporate pressure groups; and more general changes in social attitudes and values within modern capitalist societies. More specifically a growing number of companies are looking to publicly emphasize and demonstrate their commitment to environmental sustainability in an attempt to help to differentiate themselves from their competitors and to enhance their corporate brand and its reputation.

As interest in sustainability has grown so a number of attempts have been made to conceptualise sustainability and to theorize about the connections between the natural world and society. Amsler (2009, p.123-125), for example, has argued that *'the contested politics and ambiguities of sustainability discourses'* can be embraced to develop a *'critical theory of sustainability.'* She further argues that current debates should be located *'within a broader tradition of social criticism'* and that *'competing interpretations of sustainability'* should be viewed as *'invitations to explore the complex processes through which competing visions of just futures are produced, resisted and realized.'* Castro (2004) has sought to lay the foundations for a more radical theory of sustainability by questioning the very possibility of sustainable development under capitalism and arguing that economic growth relies upon the continuing and inevitable exploitation of both natural and social capital.

## **Methodology**

In an attempt to obtain a preliminary picture of the extent to which the world's leading e-retailers are reporting on their environmental sustainability commitments and agendas within the public realm, the top ten 'e-retailers' (Table 1), ranked by e-commerce sales, in the report '*Global Powers of Retailing 2014*' (Deloitte) were selected for study. The country of origin of these e-retailers varies, though 5 of them are based in the US, but their trading activities are potentially global and the percentage of revenue derived from e-commerce as a percentage of total revenue varies from 1.6% to 100%. Wal-Mart, the world's largest retailer, is ranked as the world's third largest e-retailer though its online turnover accounts for less than 2% of the company's total turnover, and while Tesco and the Casino Group (ranked 2<sup>nd</sup> and 20<sup>th</sup> respectively in Deloitte's (2014)' *top 250 global retailers* 'generate the vast majority of their turnover from conventional store operations they are major e-retailers. Four companies, Amazon, Beijing Jingdong, Dell and Jia, trade exclusively on line. The Otto Group, a German company founded in 1949, trades via conventional stores, catalogues and online and its e-retailing, which is run via 60 companies including bonprix, SportScheck and Witt, is now the Group's most important sales channel accounting for some 57% of total revenue.

Companies use a wide variety of platforms to communicate and report on environmental commitments and programmes and the European Commission Directorate-General for Enterprise lists a number of methods that businesses currently utilise including '*product labels, packaging, press/media relations, newsletters, issue related events, reports, posters, flyers, leaflets, brochures, websites, advertisements, information packs and word-of-mouth*' (European Commission Directorate-General for Enterprise undated). That said the vast majority of large companies increasingly use online communications to report on their environmental sustainability strategies, commitments and achievements. With this in mind the authors adopted a simple two stage approach using Google as the search engine in February 2014. Firstly an internet search was undertaken of each of the selected e-retailers' corporate web sites using the key word 'sustainability' and the aim here was to discover the selected e-retailers publicly communicated their corporate commitments to sustainability. Secondly each of the e-retailers' home page was reviewed with the aim of discovering if, and how, the selected e-retailers communicated environmental sustainability messages to online customers at the point of sale.

The precise patterns of search and subsequent navigation varied from one e-retailer to another but the information revealed by these two simple procedures provided the empirical material for this paper. The specific examples and selected quotations from the selected e-retailers' websites within this paper are used primarily for illustrative rather than comparative purposes, with the focus being on conducting an exploratory examination of the sustainability commitments and programmes being pursued by the leading e-retailers rather than on attempting to provide a systematic analysis and comparative evaluation of these programmes. The authors recognise that this approach has its limitations in that there are issues in the extent to which a company's public statements realistically, and in detail, reflect strategic corporate thinking and whether or not such pronouncements are little more than thoughtfully constructed public relations exercises. However given the need to drive forward exploratory research such as this and to begin to understand the extent to which leading e-retailers are addressing environmental sustainability the authors believe that the

Internet based analysis adopted in this paper offers an appropriate entry point for analysis and a readily accessible pool of data to underpin the current study.

### **Findings**

The first stage search revealed considerable variations in the volume and detail the selected e-retailers provided on their environmental sustainability commitments and achievements. Five of the selected e-retailers, namely Wal-Mart, Otto, Tesco, Dell and Casino, provided sustainability/corporate social responsibility reports, a further two, namely Amazon and Apple, provided some limited information on their approach to environmental sustainability while the authors found no information on sustainability on the remaining three e-retailers' corporate web sites. The majority of the leading e-retailers explicitly recognise that their businesses activities have an impact on the environment but there are variations in their corporate commitment to sustainability commitments designed to address these impacts. In Wal-Mart's 2013 *'Global Responsibility Report'*, for example, Mike Duke, the company's President and Chief Executive Officer claimed *'going forward you can expect even deeper integration of our responsibility initiatives into our business'* and that the company looks *'to put sustainability right at the heart of what we do as a retailer'* (Walmart 2013). Apple claims to take *'a comprehensive approach to environmental responsibility'* and Otto recognises that the consumption of resources associated with its business activities *'causes considerable stresses on the environment'* and reports that *'pursuing sustainable business practices is a fundamental principle.'* Amazon offered arguably more limited commitment arguing that while *'online shopping is inherently more environmentally friendly than traditional retailing'* the company claim to be *'constantly looking for ways to further reduce our environmental impact.'* In a similar vein, Dell claims to be *'building a strong foundation for sustainability'* namely *'one that allows us to succeed as a business while encouraging positive change and reducing our own environmental impact.'*

The e-retailers look to evidence their general environmental commitments across a range of issues including climate change and greenhouse gas emissions; energy efficiency and conservation; waste management and recycling; water management; environmentally friendly packaging; eco-friendly building design; bio-diversity and nature conservation; and helping customers to adopt more sustainable patterns of consumption. In identifying *'climate protection'* as one of its *'Fields of Action'* Otto, for example, reports aiming to reduce carbon dioxide emissions from transport, facilities and business trips by 50% (against the 2006/2007 base level) by 2020 and in achieving this target the company's focus in on an increase in energy efficiency. In recognising that *'climate change is the biggest environmental threat the world faces'* Tesco reports a number of commitments designed to enable the company to become a *'zero carbon business by 2050.'* More specifically Tesco outlines its approach to reducing emissions from its property portfolio, which focuses on energy efficiency, reducing hydro-fluorocarbon leakage from refrigeration systems and using renewable energy wherever possible, and from distribution and reports on its *'energy management system'* which monitors energy usage across all the company's UK stores.

Dell claims to *'use resources responsibly avoiding waste in all its forms, and to work with our supply chain to do the same'* and that the company's *'easy localized recycling programs help keep more electronics out of landfills and personal stockpiles.'* The company

emphasises its goal is *'to offer safe, responsible recycling solutions to all our customers globally'* and reports, for example, on the provision of free mail-back recycling of Dell branded electronic equipment in 79 countries and on printer supplies recycling in 51 countries. Dell also reports on its use of recycled plastics to create the plastic housing of desktops and backing for monitors and progress in improving packaging recyclability. Apple reports on its initiatives to reduce packaging waste including software programmes developed to determine the *'right sized box'*, based on an item's weight and dimensions, for any given item being shipped to a customer. Tesco recognises that *'whilst we need water to run our own business, nearly 30 times as much water is used to grow, process and manufacture the products we sell.'* With this in mind Tesco reports both on the measures it is taking to measure its direct water footprint and to increase the efficiency of its water usage and on its efforts to address water usage throughout its supply chain including to *'support water management and efficiency projects in areas where we have high sourcing demands and where water is scarce.'*

*'Environmental protection and conservation'* is one of the *'priorities'* within Otto's *'corporate responsibility strategy'* and this is evidenced in the company's *'durable goods strategy.'* Here Otto report that only Forestry Stewardship Council certified timber is used in furniture and in pursuing this strategy the company is demonstrating its commitment to *'protecting forests through responsible felling and the associated conservation of biodiversity.'* More generally Otto's guidelines on *'sustainability in procurement'* include provisions on wildlife and species conservation and a ban on the sale of goods that contain real fur. Casino reports on the development of *'ecofriendly stores'* which meet *'Leadership in Energy and Environmental Design'* standards in the use of natural materials, energy and water efficiency, air quality and recycling. Dell reports on its initiatives in *'helping customers reduce environmental impact'* particularly in terms of greater energy efficiency and reduced energy use. Such initiatives include the delivery of a new data centre for Amerijet, a Florida based cargo shipping company, which dramatically reduced operating costs and major improvements in the computer network management capacities.

The second stage search revealed that none of the selected e-retailers online shopping home pages contained any headline information on environmental sustainability for potential customers. The focus was almost exclusively on sales promotion and enticements to consume rather than on any attempt to encourage shoppers to consider the environmental impact of their buying behaviour or the adoption of more sustainable patterns of consumption. This was reflected in messages on product range and product information; price comparisons and price reductions; sales; seasonal events; and promotions targeting items proving to be popular with other customers. Tesco, for example, advertises its Dyson vacuum cleaners with a *'Save £50'* banner with the price being reduced in from £249 to £199 while a number of televisions are advertised for sale with *'triple clubcard points.'* bonprix (one of the companies within the Otto Group), for example, describes its fashion range as offering *'remarkable clothing that you can't find anywhere else on the high street, at prices that are simply irresistible'* and the company's website offers a wide range of men and women's fashion and flexible payment options. The online home page of Backcountry.com, one of the companies within the Liberty Interactive Corporation, carries the banner *'up to 50% off'* in its *'semi-annual sale'* to advertise its range of *'clothing and outdoor gear.'* discount, one of the trading companies within the Casino Group,

prominently advertises a range of household and electrical goods, home furnishings, and wines and spirits with discounts of between 11% and 73% on its online homepage. At the time the website search was conducted, seasonal events included Valentine's Day, the Chinese New Year and Presidents Day. Dell, for example, advertised the *'Presidents Day Presale: Members save up to 42% on select PCs and electronics'* while Amazon was offering *'free one day shipping on jewellery, watches and more'* as part of its *'Amazon Fashion Last minute Valentine's'* promotion.

Four of the selected e-retailers, namely Amazon, Wal-Mart, Tesco and Dell provided either direct or indirect links to their corporate reports or information on environmental sustainability. Amazon, for example, provides a direct link to the *'Amazon and Our Planet'* site under the *'Get to Know Us'* banner at bottom of the company's online home page but it is just one of twenty such links, the majority of which are sales related. Wal-Mart also provided a direct link to its 2013 *'Global Responsibility Report'* mentioned earlier while Dell's online home page included a link to the company's 2013 *'Corporate Responsibility'* report. The Tesco link to its most recent *'Tesco and Society'* report, which includes material on how the company is *'reducing our impact on the environment'*, is indirect in that shoppers first have to access the *'Tesco PLC'* link at the bottom of the company's online home page and this link then offers access to the report mentioned above. Apple also provide a direct link to its *'Reuse and Recycling'* service which gives details of *'The Apple Recycling Program'* which *'offers free and environmentally friendly disposal of your iPod and any manufacturer's mobile phone.'* A further link outlines how items sent for recycling are disassembled, so that key components, such as glass and metal, that can be reused are removed and reprocessed for use in new products, and the company claims to be able to achieve up to a 90% recovery rate, by weight, of the original product.

## **Discussion**

In the light of these exploratory findings a number of issues merit discussion and reflection. Firstly the findings reveal considerable variation in the extent to which the leading e-retailers look to address issues of environmental sustainability. While seven of the selected e-retailers explicitly recognised that their business activities have an impact on the natural environment and provided reports and/or some information on their environmental commitments and achievements on their corporate websites. The other three selected e-retailers publicly provided no information on environmental sustainability. That said there was some variation in the extent to which the seven e-retailers claimed to be committed to integrating environmental initiatives and programmes into their corporate strategies and business models. At the same time such environmental commitments and initiatives can be interpreted as being constructed around business efficiency and the search for competitive advantage and as such they can be interpreted as being driven as much by business imperatives as by any concern for environmental sustainability. Thus many of the environmental initiatives to increase energy efficiency and to reduce water consumption, packaging and waste generation also reduce the e-retailers' costs.

In reporting, and posting information, on their environmental agendas and sustainability these seven e-retailers have predominantly provided a narrative of their commitments and achievements often illustrated with simple statistics and micro case



studies with associated pictures and simple diagrams being used to illustrate general themes. While some of e-retailers, which publicly provided sustainability /corporate social responsibility reports, sought to comply with the Global Reporting Initiative (GRI) others adopted their own house style. Overall the lack of common and agreed frameworks and standards and the use of simple case studies make it difficult to make any meaningful comparisons between one e-retailer and another or to chart collective progress on environmental programmes over time.

At the same time there is only limited evidence of the independent external assurance of the information provided on environmental achievements. While Otto and Tesco, for example, undertake an element of independent external assurance, others do not. Tesco claims that it is *'committed to ensuring that each piece of information and data contained in this report is supported by robust evidence'* its focus on assurance in the 2013 report was restricted to measuring and reporting its greenhouse gas emissions at a group level and in a representative sample of markets namely in China, Poland, Thailand and the UK. In a similar vein Otto commissioned PricewaterhouseCoopers to undertake external assurance to the quantity of sustainable cotton, the number of articles including sustainable cotton and carbon dioxide emissions and energy consumption at the group's head office and within three of the group's trading companies. This exercise concluded that nothing came to the auditor's attention that led them to believe that the selected environmental information had not been prepared within the GRI guidelines. However PricewaterhouseCoopers recommended *'systematically expanding corporate responsibility management and reporting to include further German and international group companies'* and *'formalising and documenting the internal controls to ensure data quality at group-company level.'*

The general absence of more comprehensive independent external assurance can be seen to undermine the transparency, reliability and integrity of the information on environmental impacts and commitments posted by the leading e-retailers. That said it is important to remember that the leading e-retailers are large, complex and dynamic organisations. Otto, for example, reports that *'many of the factories of suppliers and licensed brands are located in countries where only weak legal and control systems exist to ensure compliance'* but claim to be *'committed to improving social, and increasingly, environmental standards in the production process.'* Capturing and storing comprehensive information and data across a diverse range of business activities throughout the supply chain in a variety of geographical locations and then providing access to allow external assurance is a challenging and a potentially costly venture and one which the majority of selected e-retailers currently demonstrably choose not to publicly pursue. Thus while data on carbon emissions from a e-retailer's head office and its own distribution fleet may be systematically collected, collated and audited as part of the company's environmental commitments similar information throughout both the supply chain and product life cycle is much more difficult to access, measure, collate, interpret and assure.

The majority of the leading e-retailers publicly provide reports and information on their corporate websites but there is no attempt to provide customers with any information on environmental sustainability at the point of sale on their online homepage. The dominant thrust of messages on the e-retailers' homepages is product range and price

reductions and thus on actively encouraging customers to consume rather than on fostering consumer awareness of the impact of consumption on the natural environment or on promoting more sustainable patterns of consumption. While a wide and complex set of factors influence buying behaviour price is always likely to be an important factor all the more so for e-retailing in that there is a widespread perception that prices are generally cheaper online than in stores. However if e-retailers, are strategically committed to environmental sustainability, they can enhance such commitments by providing information on products produced in a sustainable manner and on the life cycle impacts at the point of sale. In reality the messages on their online homepage can be seen to undermine, rather than to enhance, such commitments. As such e-retailers would currently seem to mirror operational practice in traditional retail outlets where evidence from the UK's major food retailers, for example, revealed that the dominant thrust of marketing messages within stores was designed to promote consumption rather than to foster more sustainable patterns of consumption (Jones et. al. 2011).

Finally and more fundamentally there are implications arising from the tensions between commitments to promoting environmental sustainability, and ultimately more sustainable patterns of consumption. There are issues about the tension between the efficacy of promoting more sustainable consumption, on the one hand and continuing economic and business growth and resource consumption on the other. In some ways the general position throughout the retail sector was epitomized by Sir Terry Leahy, the then Chief Executive Officer of Tesco, one of the world's leading retailers, in his *'Foresight'* contribution at the start of The Global Coca Cola Retailing Research Council Forum's report (2009 p.16). He argued that, at that time, Tesco was *'seeking to create a movement which shows that it is possible to consume, to be green and to grow'*. By way of a challenge to this position Forum for the Future (2010, p.62) a UK charity committed to sustainable development, suggested that *'Tesco's next big challenge is to address how it can continue to grow whilst respecting environmental limits'* and argued *'in the long term new retail business models are essential to meet the needs of customers and communities while respecting environmental limits.'* This reflects Jackson's (2006, p.1) belief that *the consumption patterns that characterize modern Western Society are unsustainable. They rely too heavily on finite resources and they generate unacceptable environmental impacts.'* Jackson (2009, p.57) has also argued that *'it is entirely fanciful to suppose that deep emission and resource cuts can be achieving without confronting the structure of market economies.'* More radically Castro (2004) has questioned the very possibility of sustainable development under capitalism arguing that economic growth fundamentally relies upon the continuing and inevitable exploitation of both natural and social capital.

## **Conclusion**

While the dynamic world of e-retailing is transforming retail operations and consumer behaviour it is also presenting ever more opportunities to consume and this potentially has implications for the consumption of environmental resources and for environmental sustainability. This exploratory paper reveals that the majority of the world's leading e-retailers publicly report or provide some information on their commitment to environmental sustainability which embraces climate change and greenhouse gas emissions,

energy efficiency, waste management, water management, bio-diversity and nature conservation. However these commitments can be interpreted as being constructed around the search for operational efficiencies and cost reductions and being driven by business imperatives as by any genuine commitment to environmental sustainability. Further there is only limited evidence of any independent external assurance of the reports and information the e-retailers provided on their environmental achievements. At the same time the e-retailers' public commitment to environmental sustainability is consistently being undermined at the online point of sale by the dominant thrust of their marketing messages where the accent is on price reductions and product ranges and which are designed to encourage consumption rather than to promote more environmentally sustainable shopping behaviour. As such the major findings of this paper suggest that the leading e-retailers are, at best, pursuing a 'weak' model of environmental sustainability which reflects the dominant model currently being pursued by traditional retailers and arguably more critically by price sensitive consumers.

## REFERENCES

Amsler, S. S. (2009) 'Embracing the Politics of Ambiguity: Towards a Normative Theory of Sustainability', *Capitalism, Nature and Socialism*, Vol.20, No. 2, pp.111-125.

Bull. G. and Kozak, R.A. (2014) 'Comparative life cycle assessments: The case of paper and digital media', *Environmental Impact Assessment Review*, Vol. 45, February, pp. 10-18.

Castro, C. (2004) 'Sustainable Development: Mainstream and Critical Perspectives', *Organisation and Environment*, Vol. 17, No.2, pp. 195-225.

Deloitte (2014) 'Global Powers of Retailing 2014', [http://www2.deloitte.com/content/dam/Deloitte/global/Documents/Consumer-Business/dttl\\_CB\\_Global-Powers-of-Retailing-2014.pdf](http://www2.deloitte.com/content/dam/Deloitte/global/Documents/Consumer-Business/dttl_CB_Global-Powers-of-Retailing-2014.pdf) last accessed 19/02/2014

Doherty, N. F. and Ellis-Chadwick, F. (2012) 'Internet retailing: the past, the present and the future', *International Journal of Retail and Distribution Management*, Vol. 38, No. 11/12. pp. 943-965

Edwards, J., McKinnon, A.C. and Cullinane, S. L. (2011) 'Comparative analysis of the carbon footprints of conventional and online retailing: A "last mile" perspective', *International Journal of Physical Distribution and Logistics Management*, Vol. 40, No. 1/2, pp. 103-123

Ernst & Young (2013) 'Digital Retail', [http://www.ey.com/Publication/vwLUAssets/Digital\\_retail:\\_analyzing\\_the\\_effect\\_on\\_retailers/\\$FILE/Retail\\_thought\\_leadership\\_Digital\\_Retail.pdf](http://www.ey.com/Publication/vwLUAssets/Digital_retail:_analyzing_the_effect_on_retailers/$FILE/Retail_thought_leadership_Digital_Retail.pdf) last accessed 31/02/2014

European Commission Directorate-General for Enterprise (undated) 'A Guide to Communicating about CSR', [http://ec.europa.eu/enterprise/policies/sustainable-business/files/csr-sme/communication\\_guide\\_en.pdf](http://ec.europa.eu/enterprise/policies/sustainable-business/files/csr-sme/communication_guide_en.pdf) last accessed 19/02/2014

- Fitcher, K. (2003) 'E-Commerce: Sorting Out the Environmental Consequences', Journal of Industrial Ecology, Vol. 6, No2, pp.25-41
- Forum for the Future (2010) 'A view from Forum for the Future', in Tesco (2011) Corporate Social Responsibility Report, p. 62  
[http://www.tescopl.com/files/pdf/reports/tesco\\_cr\\_review\\_2010.pdf](http://www.tescopl.com/files/pdf/reports/tesco_cr_review_2010.pdf) last accessed 12/09/2102
- Goodland, R. (1995) 'The Concept of Environmental Sustainability', Annual Review of Ecology and Systematics, Vol. 26, pp. 1-24
- Huesemann, M. H. (2003) 'The limits of technological solutions to sustainable development', Clean Technology Environmental Policy, Vol. 5 pp.23-34.
- Hudson, R. (2005) 'Towards sustainable economic practices, flows and spaces: or is the necessary impossible and the impossible necessary?', Sustainable Development, Vol. 13, No. 4, pp.239-252.
- Jackson, T. (2006) 'Readings in Sustainable Consumption' in 'The Earthscan Reader in Sustainable Consumption', Editor. Jackson, T., Earthscan, London.
- Jackson, T. (2009) 'Sustainability without Growth', Sustainable Development Commission, [http://www.sd-commission.org.uk/data/files/publications/prosperity\\_without\\_growth\\_report.pdf](http://www.sd-commission.org.uk/data/files/publications/prosperity_without_growth_report.pdf) last accessed 13/02/2014
- Jones, P., Hillier, D. and Comfort, D. (2011) 'Shopping for tomorrow: promoting sustainable consumption within food stores', British Food Journal, Vol. 113, no. 7, pp. 935-948.
- Kamara, M., Coff, C. and Wynne, B. (2006)'GMO's and Sustainability', [http://www.cesagen.lancs.ac.uk/resources/docs/GMOs\\_and\\_Sustainability\\_August\\_2006.pdf](http://www.cesagen.lancs.ac.uk/resources/docs/GMOs_and_Sustainability_August_2006.pdf) last accessed 14/05/2012
- Madden, P. (2012) 'Digital retail: A sustainability opportunity', The Guardian, Thursday March 13, 2012, <http://www.theguardian.com/sustainable-business/digital-retail-sustainability-opportunity-environment> last accessed 22/01/2014
- Roper, J. (2012) 'Environmental risk, sustainability discourses and public relations', Public Relations Inquiry, Vol. 1, No. 1, pp.69-87
- SmallBizConnect (undated) 'Environmental Sustainability', <http://toolkit.smallbiz.nsw.gov.au/part/17/86/371> last accessed 20/02/2104
- Sui, D. Z. and Rejeski, D. W. (2002), 'Environmental Impacts of the Emerging Digital Economy: The E-for-Environment E –Commerce?', Environmental Management, Vo. 29. No. 2, pp.155-163

The Global Coca Cola Retailing Research Council Forum (2009) 'Sustainability in Retailing', [http://www.cokesolutions.com/BusinessSolutions/CCRRC%20Related%20Items/Global\\_Report.pdf](http://www.cokesolutions.com/BusinessSolutions/CCRRC%20Related%20Items/Global_Report.pdf) last accessed 15/02/2014

Tiwari, S. and Singh, P. (2011) 'Environmental Impacts of E-commerce', 2011 International Conference on Environmental Science and Engineering, IPCBEE Vol. 8 , IACSIT Press, Singapore, <http://www.ipcbee.com/vol8/45-S10040.pdf> last accessed 19/02/2014

United States Environment Protection Agency (2014) 'Sustainability', <http://www.epa.gov/sustainability/basicinfo.htm> last accessed 07/05/2014

Vize, R., Coughlan, J., Kennedy, A. and Ellis-Chadwick, F. (2013) 'Technology readiness in a B2B online retail context: An examination of antecedents and outcomes', Industrial Marketing Management, Vol. 42, No. 6, pp.909-918

Yi, L. and Thomas H. R. (2007) 'A review of research on the environmental impact of e-business and ICT', Environment International Vol. 33 No. 6,, pp.841-849

**TABLE 1: E-RETAILERS CORPORATE WEB SITES**

Amazon.com <http://www.amazon.com>

Apple Inc. <http://www.apple.com/>

Wal-Mart <http://www.walmart.com/>

Otto Group <http://www.ottogroup.com/en/index.php>

Beijing Jingdong <http://en.jd.com/>

Tesco <http://www.tesco.com>

Liberty Interactive <http://www.libertyinteractive.com/>

Dell <http://www.dell.com/>

Casino <http://www.groupe-casino.fr/en>

Jia <http://www.jia.com/>

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