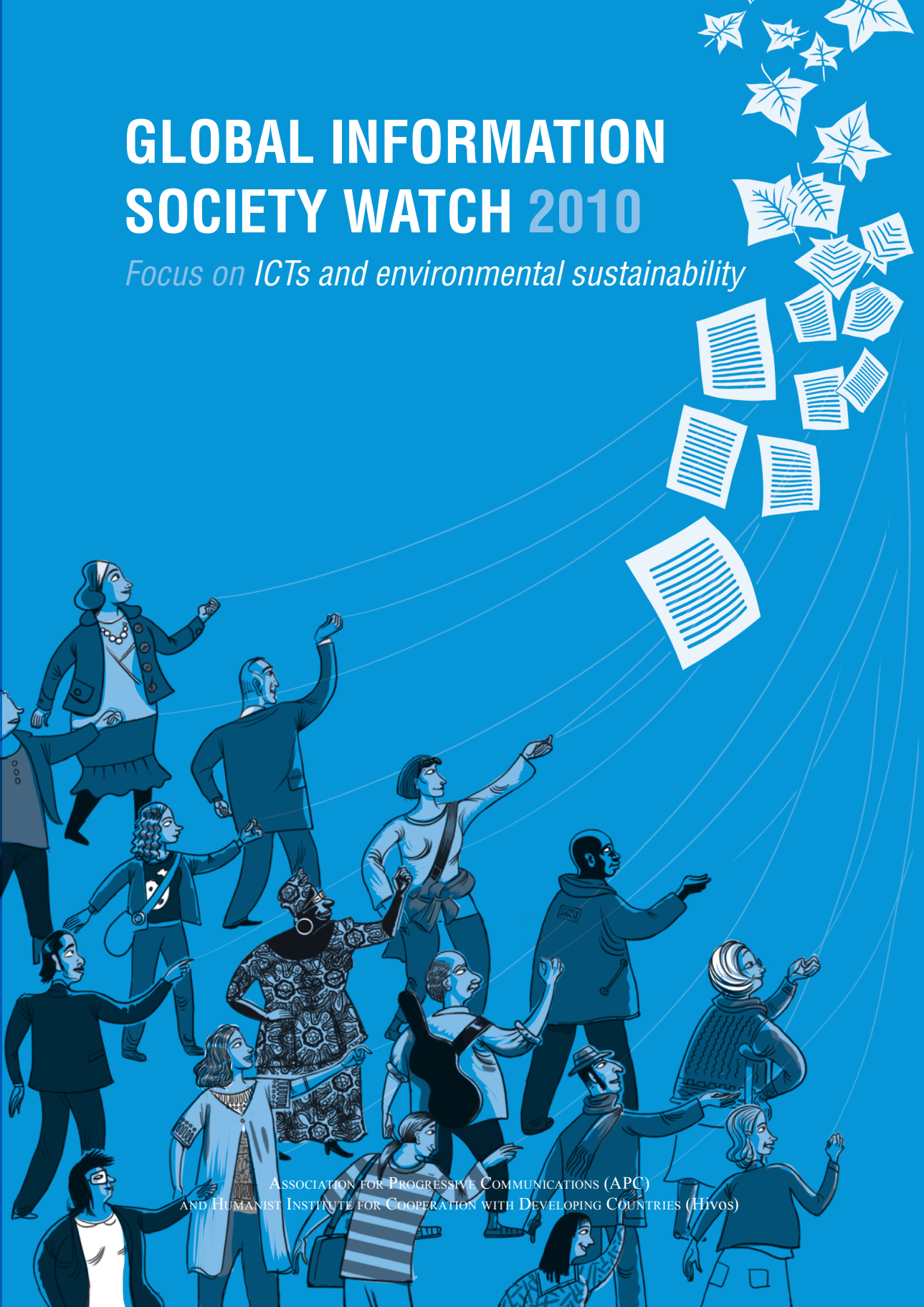
GLOBAL INFORMATION SOCIETY WATCH 2010

Focus on ICTs and environmental sustainability



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Project coordinator
Karen Banks

Editor
Alan Finlay

Assistant editor
Lori Nordstrom

Publication production
Karen Higgs

Graphic design
MONOCROMO
info@monocromo.com.uy
Phone: +598 2 400 1685

Cover illustration
Matías Bervejillo

Proofreading
Stephanie Biscomb, Lori Nordstrom, Álvaro Queiruga

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REGIONAL REPORT

North America

Émanuèle Lapierre-Fortin and Leslie Chan
University of Toronto
www.utsc.utoronto.ca

Introduction

Though not typically included under the "green-collar jobs" label, jobs in the information and communications technology (ICT) industry have significant backward and forward linkages with other industries, and can allow increased environmental sustainability in these industries through the use of teleconferencing, telework, and many forms of electronic transactions. Some authors[1] believe that "greening using ICTs" can reduce global greenhouse gas emissions by up to 17% by 2020. This does not, however, overshadow the real environmental justice issues at play. From becoming a larger CO_2 emitter than the aviation industry in the UK by 2012,[2] to triggering a doubling of the consumption of world office paper between 1980 and 1997,[3] fostering the exploitation of coltan in the war-torn Democratic Republic of Congo,[4] and causing a massive increase of electronic waste (e-waste),[5] the widespread deployment of ICTs externalises its share of environmental costs.

This report looks at the trends in North America in policy and legislation on ICTs and environmental sustainability, as well as the e-waste and climate change questions as they relate to corporate social responsibility (CSR). Emphasis will be placed on the need for mandatory regulations for the ICT industry in North America, as what they do will have a significant impact on other regions of the world, given the globalised nature of the industry.

Regional trends in policy and legislation

Regulation of the ICT industry is at its beginnings in North America. Forge describes four such initiatives in the US: the State of California Electronic Waste Recycling Act and Universal Waste Rules, the Federal Electronics Challenge, and the Electronic Product Environmental Assessment Tool.[6] An Electronics Industry Code of Conduct was also agreed on by 45 companies in 2004, but it has been sharply critiqued by Schipper and de Haan for its lack of clarity and lack of internationally accepted standards.[7]

Voluntary programmes are more prominent in North America than formal regulations. One example is the Climate Savers Computing Initiative, which led the industry to commit to a 50% reduction in power consumption in computers by 2010.[8] Groups such as the Mobile Phone Partnership Initiative[9] internationally and the GreenStar Network in Canada[10] are also important players in the organisational landscape.

One notable observation on the regulatory system is that North America is lagging far behind Europe. The European Telecommunications Network Operators' Association Sustainability Charter, the Restriction of Hazardous Substances (RoHS) Directive on toxic chemicals, the Waste Electrical and Electronic Equipment (WEEE) Directive, the Energy-using Products (EuP) Directive, and the Registration, Evaluation and Authorisation of Chemicals (REACH) legislation[11] are only some examples of the type of initiatives North America should consider. These regulations have a ripple effect on CSR innovations within the industry; in fact, a study on best practices in ICTs and sustainability by Two Tomorrows rates only two Asian companies and one US company in their Top 10.[12]

The need for corporate social responsibility

CSR and regulations are complementary; both are necessary to reconcile the sustainability budget of the ICT industry, which will contribute 2.8% of the global carbon footprint by 2020.[13] For example, while many of the most important

1 E.g. Casal, R.C., Van Wunnik, C., Delgado Sancho, L., Burgelman, J.C. and Desruelle, P. (2005) How will ICTs affect our environment in 2020?, *Foresight*, 7 (1), p. 77-87.

2 Global Action Plan (2007) *An Inefficient Truth: Executive Summary*. www.globalactionplan.org.uk/sites/gap/files/An%20Inefficient%20Truth%20-%20Executive%20Summary.pdf; UNESCAP (2010) *Creating Business and Social Value: The Asian Way to Integrate CSR into Business Strategies*. www.unescap.org/tid/publication/indpub2565.pdf

3 Global Action Plan (2007) op. cit.

4 Schipper, I. and de Haan, E. (2005) *CSR Issues in the ICT Hardware Manufacturing Sector: SOMO ICT Sector Report*. www.genderchangers.org/docs/ICT_Sector_Report.pdf

5 Forge, S. (2007) Powering down: Remedies for unsustainable ICT, *Foresight*, 9 (4), p. 3-21; Widmer, R., Oswald-Krapf, H., Sinha-Khetriwal, D., Schnellmann, M. and Böni, H. (2005). Global perspectives on e-waste, *Environmental Impact Assessment Review*, 25, p. 436-458; Herat, S. (2007) Sustainable Management of Electronic Waste, *CLEAN – Soil, Air, Water,* 35 (4), p. 305-310.

6 Forge (2007) op. cit.

7 Schipper and de Haan (2005) op. cit.

8 American Council for an Energy-Efficient Economy (2008) *Information and Communication Technologies: The Power of Productivity*. aceee.org/pubs/e081.htm

9 The Mobile Phone Partnership Initiative was launched during the sixth meeting of the Conference of the Parties to the Basel Convention to promote the environmentally sound management of end-of-life mobile phones. For more information: www.basel.int/industry/mppi.html

10 The GreenStar Network Project is initiating a Canadian consortium of industry, universities and government agencies with the common goal of reducing greenhouse gas (GHG) emissions arising from ICT services. For more information: www.greenstarnetwork.com

11 Schipper and de Haan (2005) op. cit.

12 Two Tomorrows (2010a) Tomorrow's Value Rating: Information and Communications Technology (ICT) www.tomorrowsvaluerating.com/Page/InformationandcommunicationstechnologyICT

13 Global e-Sustainability Initiative (2010) Climate Change Initiative. www.gesi.org/Initiatives/ClimateChange/tabid/71/Default.aspx

issues relating to greening ICTs identified by Forge[14] can be tackled domestically, the pressing problem of e-waste and other socioeconomic conditions such as labour rights, unionisation and occupational health in hardware factories[15] cannot be easily taken up by the ICT industry because they are deeply embedded in growth in production and consumption of electronic products in the global market. One ought to be reminded that CSR, which remains a voluntary form of self-regulation, while holding tremendous potential for innovation, is susceptible to the vagaries of the market.[16] On the upside, consumers can exert their purchasing power in the marketplace to entice companies to provide more socially and environmentally responsible goods.[17]

E-waste, however, cannot remain subject to supply and demand forces. ICT waste is a tremendous threat to environmental sustainability. It largely consists of incineration residues or discarded fraction placed in landfill sites, which result in exposure, for millions of recyclers, primarily located in China and India and other developing countries, to unhealthy solids and gases such as brominated flame retardants, phthalates, organotonins, ammonia, mercury, lead, cadmium and antimony.[18] There have been international efforts to tackle this problem, namely through the four following conventions: the Basel Convention (1989, with amendments in 1995) on transboundary movements of hazardous waste, the London Convention Protocol (1996) on ocean dumping, the Rotterdam Convention (1998) on exporting dangerous chemicals, and the Stockholm Convention (2001) on persistent organic pollutants.[19]

These conventions have done little to improve the management of e-waste in North America, as Canada did not ratify the Basel Convention and the US did not ratify any of the four conventions. In fact, it is estimated that 50% to 80% of the e-waste collected for recycling is being exported illegally by the US.[20] With over two billion mobile phones now in use worldwide, some 130 million PCs being produced annually, and over 150 million currently in landfills,[21] there is no sign of this situation changing, despite the best efforts of citizen lobby groups such as the Basel Action Network, the Silicon Valley Toxics Coalition, the Greenpeace Toxic Campaign and Toxic Links India.

E-waste goes hand in hand with planned obsolescence. One striking example of this is that the "average lifespan of a new model computer has decreased from 4.5 years in 1992 to an estimated 2 years in 2005."[22] This destructive cycle needs to be tackled for ICTs to become more sustainable.[23] The concept of extended producer responsibility for end-of-life management of electronic and electric equipment has been explored by Sinha-Khetriwal, Kraeuchi and Widmer[24] as one branch of CSR that can make a difference in reducing the e-waste stream, alongside design for environmentally cleaner production, standards and labelling, recycling and remanufacturing.[25]

One area in which CSR has been relatively effective in terms of greening ICTs is around climate change. Hewlett-Packard (HP) is the company that stands out in this area. HP has been awarded the best carbon disclosure award for its 2008 Global Citizenship Report,[26] and ranks No. 1 in Two Tomorrows' study of sustainability in the Silicon Valley[27] and third worldwide.[28] HP's Power to Change campaign encourages PC users to make behavioural changes to save energy by downloading a new desktop widget that tracks the cumulative energy savings associated with participants turning off idle PCs when not in use. Through its Social and Environmental Responsibility Supplier Code of Conduct, HP is also recognised as a leader in full supply chain analysis, which measures emissions produced at each stage of the product's life, and holds its suppliers accountable for meeting the same stringent environmental standards as itself.[29] The company also uses a carbon footprint calculator to assess printer energy and paper use and accepts all computers for

14 Forge (2007) op. cit.

15 Schipper and de Haan (2005) op. cit.

16 Doane, D. (2005) Beyond corporate social responsibility: Minnows, mammoths and markets, *Futures*, 47, p. 215-229.

17 Calveras, A., Ganuza, J.-J. and Llobet, G. (2007) Regulation, Corporate Social Responsibility and Activism, *Journal of Economics & Management Strategy*, 16 (3), p. 719-740.

18 Forge (2007) op. cit.; Herat (2007) op. cit.

19 Schipper and de Haan (2005) op. cit.

20 Forge (2007) op. cit.

21 Greenpeace International (2009) Where does e-waste end up? www.greenpeace.org/international/en/campaigns/toxics/electronics/the-e-waste-problem/where-does-e-waste-end-up/

22 Herat (2007) op. cit., p. 305.

23 Calder, J. (2010) Electronic Waste: How Waste Leads to Design Challenges, *In Compliance Magazine*, April. www.incompliancemag.com/index.php?option=com_content&view=article&id=274:electronic-waste-how-waste-leads-to-design-challenges&catid=24:current-issue&Itemid=126

24 Sinha-Khetriwal, D., Kraeuchi, P. and Widmer, R. (2009) Producer responsibility for e-waste management: Key issues for consideration – Learning from the Swiss experience, *Journal of Environmental Management*, 90 (1), p. 153-165.

25 Herat (2007) op. cit.

26 Corporate Register (2010) CR Reporting Awards '10: Global Winners & Reporting Trends. www.corporateregister.com/pdf/CRRA10.pdf

27 Two Tomorrows (2010b) Corporate responsibility rating: Silicon Valley. www.tomorrowsvaluerating.com/Page/SiliconValley

28 Two Tomorrows (2010a) op. cit.

29 Network for Business Sustainability (2010) *The New Normal: Sustainable Practices Your Future Employees Will Demand*. www.impactyouthsustainability.ca/en/wp-content/uploads/ImpactReport_Feb_10_ENG.pdf

recycling, while offering consumers cash for reusable technology equipment through its Expanded Trade Program. In addition, HP leads the way in terms of sustainability targets: the company set a goal to reduce water use to 5% below 2007 levels by 2010 and reduced its own carbon emissions by 4% in 2008 through teleconferencing, reduced travel, increased use of technology, reduced office space and sustainable building design.[30]

Telus is North America's Vodafone in the mobile phone industry. Telus has been tracking their environmental performance and setting targets since 2006, and showing improvement in most areas. It has new offices with LEED certification[31] and a goal of complying with the International Organization for Standardization (ISO) 14001:2005 Environmental Management Systems Guidelines by 2013.[32] As part of the Caring Company Program, which recognises companies that donate more than 1% of their tax profits to charitable organisations every year, encouraging employee volunteerism and implementing matching programmes to encourage employees to donate, Telus also contributes to the social and economic pillars of sustainability.

Electrical power to run servers is another area in which CSR leadership has been demonstrated. Google, which rates No. 6 in Two Tomorrows' study of sustainability among Silicon Valley companies,[33] has been paying extra for DC power supply, which has 90% efficiency as opposed to the typical 70%, a scheme which pays back in energy costs in only a few years.[34] Google has also been a pioneer in using renewable energy to power its data centres by setting up zero-carbon data centres powered by windmills, hydroelectric or geothermal sources.[35] In addition, Google has partnered with General Electric to develop a "smart grid" for network servers that reduces energy consumption through the more intelligent use of electricity.[36]

Despite these success stories, much remains to be done in terms of the impact of ICTs on the environment. It is the prerogative of the government to promote CSR, and this is an area in which North America lags behind its European counterparts. Canada is showing initiative by investing in the Green IT Program,[37] and the US houses some innovative ICT sustainability legislation. However, it remains that both Canada and the US have missed out on the opportunities to provide leadership in using ICTs as a tool for climate change adaptation at the COP 15 Summit in Copenhagen.

Conclusion

This article briefly highlighted e-waste policy and CSR as a solution to the greening using ICTs and greening ICTs puzzle, while maintaining the importance of increased regulations to tackle issues of planned obsolescence and climate change as they relate to design components such as energy efficiency. There need to be enforceable legislation, tax incentives and other reward systems to support more sustainable ICT practices in North America. With the atmosphere as a public good, the mantra "increased profit from more energy efficiency" just does not cut it. Standardisations, symbols and ratings such as those put forward by the Global Reporting Initiative, the Global Compact Index, the Dow Jones Sustainability Index and Energy Star can contribute to industry behavioural change and should be encouraged.

In addition to third-party analysis to maintain accountability and transparency, ICT companies and companies using ICTs ought to consider promoting staff to the role of sustainability coordinator to save costs and incentivise departments to take action around the life cycle of their products and utility bills. This should happen together with a decentralised, self-regulated approach in which individuals are provided with the necessary information to make responsible choices, for example by using their iPhone barcode app to gain information on retail products.

This article also pointed to happenings in the CSR realm, using HP, Google and Telus as examples. It is worth noting, however, that those innovations remain essentially piecemeal and that there is a high risk of "greenwashing" coming from an overall unsustainable industry that really needs to focus on cleaning up its act as opposed to flaunting its achievements through a marketing machine.

There are plenty of opportunities for ICTs and sustainability, but a new design paradigm of cradle-to-grave care and extended producer responsibility is imperative. ■

30 Ibid.

31 LEED certification stands for Leadership in Energy and Environmental Design. It is an internationally recognised green-building certification system, providing third-party verification that a building or community was designed and built using strategies intended to improve performance in metrics such as energy savings, water efficiency, CO_2 emissions reduction, improved indoor environmental quality, and stewardship of resources and sensitivity to their impacts.

32 The ISO 14001:2005 Environmental Management Systems Guidelines specify requirements for an environmental management system to enable an organisation to develop and implement a policy and objectives which take into account legal and other requirements and environmental aspects to which the organisation subscribes.

33 Two Tomorrows (2010b) op. cit.

34 Forge (2007) op. cit.

35 Williamson, A. (2008) Zero-carbon data centers for green computing, *International Science Grid This Week*, 19 November. www.isgtw.org/?pid=1001498

36 googleblog.blogspot.com/2008/09/partnering-with-ge-on-clean-energy.html

37 www.canarie.ca/en/green-program/pilot/about

GLOBAL INFORMATION SOCIETY WATCH 2010

GLOBAL INFORMATION SOCIETY WATCH 2010 investigates the impact that information and communications technologies (ICTs) have on the environment – both good and bad.

Written from a civil society perspective, **GISWatch 2010** covers some 50 countries and six regions, with the key issues of ICTs and environmental sustainability, including climate change response and electronic waste (e-waste), explored in seven expert thematic reports. It also contains an institutional overview and a consideration of green indicators, as well as a mapping section offering a comparative analysis of "green" media spheres on the web.

While supporting the positive role that technology can play in sustaining the environment, many of these reports challenge the perception that ICTs will automatically be a panacea for critical issues such as climate change – and argue that for technology to really benefit everyone, consumption and production patterns have to change. In order to build a sustainable future, it cannot be "business as usual".

GISWatch 2010 is a rallying cry to electronics producers and consumers, policy makers and development organisations to pay urgent attention to the sustainability of the environment. It spells out the impact that the production, consumption and disposal of computers, mobile phones and other technology are having on the earth's natural resources, on political conflict and social rights, and the massive global carbon footprint produced.

GISWatch 2010 is the fourth in a series of yearly reports critically covering the state of the information society from the perspectives of civil society organisations across the world.

GISWatch is a joint initiative of the Association for Progressive Communications (APC) and the Humanist Institute for Cooperation with Developing Countries (Hivos).

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