GLOBAL INFORMATION SOCIETY WATCH 2010

Focus on ICTs and environmental sustainability

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Introduction

The level of information and communications technology (ICT) penetration in Spanish society is very high, making up 4.61% of the country's gross domestic product (GDP). According to official statistics, 57% of households have a computer and 39% have internet access, while 94% of companies are connected to the internet.[1] There was 109.1% penetration of mobile telephony in the fourth quarter of 2009[2] – in other words, there are more mobile phone lines (51 million) than inhabitants (46 million). Spain has a good legislative framework, and a long but uneven practice of electronic waste (e-waste) management. The issue of ICTs and climate change, however, is still in its infancy.

Policy and legislative context

Royal Decree 208/2005, which adapts EU Directive 2002/96/CE on e-waste into national law, establishes the responsibility of manufacturers and importers of ICTs in this regard. The international agreements signed by Spain concerning the import and export of hazardous waste are the Basel Convention (1989) with the Ban Amendment (1995); the London Convention Protocol (1996); the Rotterdam Convention (1998); and the Stockholm Convention (2001). The Basel Action Network (BAN) qualifies Spain's commitment to enforcing these agreements as excellent.[3] There are very serious penalties for dumping hazardous waste, causing serious environmental damage, and hiding relevant data, with fines ranging from EUR 30,000 to EUR 1.2 million.

The Integrated National Waste Plan (PNIR) 2007-2015 states that "measures will be established to facilitate the re-use of elements and components of e-waste."[4] Although the Ministry of the Environment and Rural and Marine Affairs declared that it would develop and publish a Manual for the Reuse of e-Waste before 2009, to date it has not been published and the ministry has not made significant progress in the prioritisation of the issue.

E-waste policy and practice

A draft law on a sustainable economy, as approved by the government and submitted to debate in the Spanish parliament in the spring of 2010,[5] mentions (in Article 3.5) the importance of promoting waste treatment. According to the bill, the government should adopt policies to combine economic development with waste minimisation. In Article 33, "Sustainability in the management of public enterprises", it establishes criteria for awarding public sector contracts, which include adequate waste management practices and the use of recycled and reused materials. It devotes two articles to the management of waste in Title III "Environmental Sustainability". Article 93, "Increased deduction for environmental investment" refers to the amendment of the Corporate Tax Law for the deduction of investments involving the reduction, recovery or treatment of industrial waste in general. Article 108, "Common goals of public policy for a sustainable urban environment", stipulates that the government will formulate and develop policies in support of a sustainable urban environment and also promote more efficient services in waste management. It also includes a series of controversial legal amendments to allow the blocking of websites that facilitate unauthorised downloading of copyrighted content. This has raised criticism, given that legislation on a sustainable economy modifies intellectual property law, and does not address or help in the ongoing process of dematerialisation.[6]

E-waste is handled by the Integrated Management System (SIG). However, reuse is not addressed by the system, which only deals with recycling. For instance, the ECOTIC foundation, the Spanish leader in the management of e-waste, working with more than 400 companies, collected a total of 47,052 tonnes of e-waste from across Spain in 2008 – an increase of 51.5% compared to 2007 – including 4,520 tonnes of ICT waste. However, ECOTIC only does recycling, and in its 2008 annual report the word "reuse" does not appear.[7]

The absence of studies and standards on how to measure the gains of ICTs and environmental sustainability is an important limitation. Although Spanish law[8] defines priorities for the treatment of this waste (first reusing, then recycling, energetic valorisation, and finally disposal) we consider there is not enough transparency in the percentages

1   Spanish Central Bank (2010) *Summary of ICT indicators*. www.bde.es/webbde/es/estadis/infoest/si_1_5.pdf

2   Telecommunications Market Commission (2010) *Fourth Quarter 2009 Report*. www.cmt.es/cmt_ptl_ext/SelectOption.do?nav=publi_trimestrales

3   Basel Action Network (2010) *Country Status/International Toxics Progress Report Card*. www.ban.org/country_status/report_card.html

4   Ministry of the Environment and Rural and Marine Affairs (2008) *Plan Nacional Integrado de Residuos (PNIR) (2007-2015)*. www.mma.es/secciones/calidad_contaminacion/pdf/PNIR_22_12_2008_%28con_tablas_y_planes%29.pdf

5   Gobierno de España (2010) *Propuesta de Ley de Economía Sostenible*. www.economiasostenible.gob.es/wp-content/uploads/2010/03/01_proyecto_ley_economia_sostenible.pdf

6   Red Sostenible (2010) *Oscurece tu Web*. red-sostenible.net/index.php/Oscurece-tu-web

7   Fundación ECOTIC (2009) *Memoria 2008*. www.ecotic.es/files/MEMORIA%202008%20ECOTIC.pdf

8   Gobierno de España (2005) *Royal Decree 208/2005 on Electric and electronic equipment and management of waste*. www.electrorecycling.net/docs/directivas/RD%20208-2005%20sobre%20RAEEs.pdf

achieved by each treatment method and not enough incentives for the SIGs towards reuse. For example, incinerating PC motherboards is considered the same as recycling components manually, despite the release of toxic chemicals into the atmosphere.

A widespread practice in public and private organisations is the replacement of ICT equipment within a short time span, usually limited to the period under extended guarantee (typically three years). For instance, in the public research environment, the common practice is to establish a depreciation plan for a period of three years. This minimises the maintenance and upgrading costs of previously acquired equipment, and treats ICT equipment as consumable goods, which leads to a lot of e-waste and little or no reuse. In addition, the upgrading cycles of proprietary software with extra features sometimes deliberately force older hardware or software to become obsolete as a sales strategy to create pressure on the customer to purchase new hardware or software again. The marketing campaigns from most mobile operators continue promoting the frequent (e.g. yearly) substitution of mobile devices even if the old one is completely functional. In contrast, tenders for the acquisition of ICT equipment for public administrations and large companies are more frequently including requirements involving energy efficiency, e-waste management and CO_2 emissions.

One of the most active NGOs in Spain around the issue of ICT e-waste is Greenpeace, which publishes the Green Electronics Rankings.[9] At the same time, grassroots movements and associations work at the local community level to change views and practices. For instance, the association *Tecnologia per Tothom* or "Technology for Everybody" (TxT)[10] works on engaging students to take civic responsibility and offers training through a Reuse Workshop, among other activities, with support from the Centre of Cooperation for Development at the Technical University of Catalonia (UPC).[11] The workshop is a hands-on session where participants learn how to repair a computer. It was started in 2003, and is held twice a year. By July 2009 more than 800 computers were repaired, installed and handed over to 102 solidarity projects. It expanded from six projects involving twenty computers in 2003, to 25 projects involving 87 computers in 2009.

ICTs and climate change

The ongoing efforts towards e-business, e-government and, in general, the role of ICTs in the dematerialisation of processes and services, results in clear improvements in efficiency, the reduction of travel needs, the reduction in resources required for manufacturing and the removal of packaging and distribution, the transfer of and access to information without using paper (newspapers, books, etc.),

and new business models for the distribution of software, music, art, movies and games.[12] ICT systems have also brought more efficiency in processes such as traffic control in large cities, the smart power grid with its capability of integrating renewable electricity, and the monitoring and regulation of the environmental impact of diverse human activities.

The Organisation for Economic Co-operation and Development (OECD) report *Towards Green ICT Strategies: Assessing Policies and Programmes on ICT and the Environment*,[13] released in 2010, is a survey of 92 programmes and initiatives (50 from governments and 42 from industry associations) across 22 OECD countries, plus the European Union. It looks at the direct effects of ICTs (initiatives focusing on environmental impacts produced by ICTs themselves) and at the enabling effects of ICTs (initiatives focusing on reducing environmental impacts by using ICT applications). According to Annex 1 of the report, Spain is still not addressing any of these aspects, being among the worst rated in the OECD, together with the Czech Republic, Greece, Luxembourg, Mexico, Poland and Turkey.

Corporate social responsibility initiatives are resulting in some progress in the use of ICTs in combating climate change. Private companies, through the Global Reporting Initiative, are reporting successes as part of their corporate social responsibility portfolios. A 2009 report by Vodafone and Accenture[14] studies the potential reductions in CO_2 emissions made possible by mobile technology in the following industries: ICTs (by developing technology and providing the necessary connectivity); logistics and transport (through intelligent logistics); basic services (through smart grids); production systems and service maintenance management (through intelligent manufacturing); and services for business activities (through dematerialisation).

New trends

Research, development and innovation in the above areas are promising signs. However, there is an important absence of government push on the following issues: funds for new initiatives, amortisation of technologies, and standardisation. For example, the National Plan on Research, Development and Innovation 2008-2009 does not prioritise funding for projects focused on ICTs and climate change. There is also no mention of funding mechanisms for ICTs in the climate change monitoring agreement between Spain and the United Nations.[15]

9   Greenpeace (2009) *Ranking Verde de Electrónicos*, 15th edition. greenpeace. org/espana

10 txt.upc.edu

11 www.upc.edu/ccd

12 de Pablo, F. (2008) Sostenibilidad en las TIC, *BoleTIC*, 46, p. 22-26. www.astic. es/la-asociacion/boletic/boletic-n%C2%BA-46-junio-2008

13 www.oecd.org/dataoecd/3/7/44001912.pdf

14 Vodafone and Accenture (2009) *Las telecomunicaciones y el CO2: Cuantificación del papel de la tecnología móvil frente al cambio climático.* www.vodafone.es/conocenos/responsabilidad-corporativa/descargas/att00015968/carbon_connections.pdf

15 Ministry of the Environment and Rural and Marine Affairs (2009) *Fifth National Communication to the United Nations Framework Convention on Climate Change.* www.mma.es/secciones/cambio_climatico/documentacion_cc/divulgacion/pdf/5cn.pdf

The Secretary of State for Telecommunications and Information Society of the Ministry of Industry, Tourism and Trade, Francisco Ros, said in 2010 that the period 2006-2009 has seen more than 50 research and technological development projects in the field of ICTs and sustainability, involving an investment of EUR 110 million, in areas such as green ICTs, energy saving in households, ICT networks, energy efficiency and renewable energy. However, the balance – and perhaps imbalance – among these focus areas is not known.

Action steps

There is consensus in Spain on the importance of the management of e-waste and the potential of ICTs in the mitigation of climate change. However, while the first topic is becoming mainstream, despite its shortcomings, the second lurks behind arguments concerning using ICTs for productivity, modernisation and reducing costs. The role of ICTs in mitigating climate change may not be the driving force for the introduction of ICTs, but the potential for the reduction in costs and time due to an increase in productivity, accessibility and comfort is. For instance, the draft legislation on a sustainable economy, discussed in parliament in spring 2010, simply refers to a reduction of emission of GHGs, promotion of corporate environmental responsibility, and the creation of a common system for the purchase of CO_2 credits. Similarly, the Granada Ministerial Declaration on the European Digital Agenda proposes to "[e]xplore ways to seize the opportunities of cloud computing for productivity and efficiency gains, as well as environmental gains especially for European public bodies, small businesses and communities."[16] Environmental issues appear, but in a diluted way, and as the last item.

We believe it is necessary to promote awareness on re-use instead of disposal on the issue of recycling e-waste, and to value organisations and companies doing good work in these areas. The promotion of reuse instead of the more cost-effective disposal requires the introduction of new incentives and regulations by the national and European government. Corporate social responsibility goes beyond compliance with the law, and companies that promote it should be recognised.

There is a need for a systemic approach, where multiple organisations work together to tackle the complete life cycle of a product. Even the numerous initiatives in e-waste management are quite isolated. The integration of good e-waste practices into the everyday purchase and use of ICTs is needed to ensure that proper e-waste management becomes the norm.

The required push is coming from NGOs, particularly environmental protection organisations in collaboration with NGOs focused on ICT technologies, from the academic sector, and from several international companies that have already adopted specific measures to optimise environmental sustainability. The government, currently focused on alleviating and managing the economic crisis, will follow in the coming years as a result of this push. ■

16 www.eu2010.es/export/sites/presidencia/comun/descargas/Ministerios/
en_declaracion_granada.pdf

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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2010 Report
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