Chapter 20

Sustainability and Social Responsibility in Raising Awareness of Green Issues through Developing Tertiary Academic Provision: A Case Study

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ABSTRACT

While it is important to promote sustainability throughout ICT-related education, there is a need for individuals who can deliver in the short term. One way to achieve this is the taught Master of Science course, such as Leeds Metropolitan University’s Green Computing MSc, believed to be the first to commence in the UK. Glyndŵr and Southampton Solent Universities have developed awareness of sustainability across the broader curriculum, primarily using professionalism and social responsibility. This paper describes the experiences and thinking behind these developments and offers some suggestions for further development to secure sustainability within the IT education sphere.

INTRODUCTION

Recent reports, including the Digital Britain report and consequent legislation (Department for Business Innovation and Skills, 2010) and the previous UK government’s “jobs of the future” report (Departments for Business Innovation and Skills and Work and Pensions, 2010) place the information and communications technology (ICT) sector of industry at the centre of the 21st century economy. The use of ICT-based facilities to enable economic growth means that we should
expect ICT provision to develop, and therefore that the overall energy “take” of the totality of ICT devices will also increase, unless steps are taken to improve their efficiency. In consequence, this will lead to an increased awareness of the need for those devices to be energy efficient. As a result, we have seen the emergence of a field of study which is generally referred to as “green IT” (Jenkin et al., 2011, Meyer, 2009), and which assesses the twin issues of making ICT itself “greener” by improving its energy-related performance, and of using ICT to “green” other aspects of an organisation’s activity. Typical examples of the former include server virtualisation and desktop power management; the latter manifests itself in activities such as virtual conferencing and smart buildings.

In addition to the financial imperatives to improved ICT efficiency, other pressures are also being felt: UK and EU government legislation (Department of Energy and Climate Change, 2009; The European Parliament and the Council of the European Union, 2003) is creating legal requirements on organisations to reduce their energy use: this carbon reduction commitment, requiring large organisations to participate in a carbon reporting and trading scheme is backed by significant cost penalties for non-adherence.

It can be expected that requirements such as this will “trickle down” to smaller organisations: directly via an increase in the coverage of the carbon commitment; or indirectly as sub contractors inherit carbon commitments as they enter into agreements with larger organisations. It is generally expected that energy costs will rise, partly due to the reduced availability of fossil fuel and the greater cost of alternatives. It is also widely predicted that government legislation (so called “carbon taxes”) will contribute to the increased costs of energy. Both of these factors will create possibly the most significant driver to reducing energy consumption: that of cost savings.

Other drivers for adoption of energy aware behaviour are the development of corporate (social) responsibility initiatives, by which organisations present themselves as socially responsible, and therefore improve their standing in the eyes of consumers. Similar consumer pressures give rise to the plethora of “green” advertising, where a variety of businesses vie to advertise the energy efficiency of their product, whether that is oil production, car manufacture or food distribution.

All of these pressures (cost, legal, public pressure and responsibility) are creating a demand for individuals who are able to develop and lead on sustainability issues within business and other organisations of all sizes and in all sectors of the economy. ICT, because of its size and increasing significance in the “digital future” calls for particular specialisms, taking matters of efficiency beyond the realm of building and equipment provision, embracing changes in working practices and the promotion of different uses for existing and new technologies.

Whatever one’s view of the cause, it is clear that humankind must take steps to reducing the volume of greenhouse gases, primarily Carbon Dioxide (CO₂). As one of the major sources of CO₂ is energy production, close scrutiny of the users of energy in industry and domestically is inevitable. When such scrutiny is applied to electrical energy, the significance contribution of Information and Communications Technology (ICT) becomes apparent. While estimates and definitions vary widely, an often-quoted report from the charity Global Action Plan (2007) suggests that ICT use generates 2% of the total CO₂ produced each year; and that around 10% of UK electricity is consumed by “ICT devices”. Other data supports that (Aebischer, 2009).

One result of such scrutiny is that, as its cost increases, energy use plays an increasing role in the overall cost of ICT provision, giving rise to an interest in driving that use - and hence its cost – down.

In the long term, it is likely that such sustainability issues may become the norm, because of the way in which products operate and the driv-