

## Chapter 67

# The Influence of Culture on the Adoption of Green IT

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### ABSTRACT

*This chapter addresses the impact of organizational culture on the adoption of Green IT initiatives. We begin by exploring organizational culture and consider the nature of culture within the IT sector. An analysis of the effect of culture on sustainable use of IT is presented using Cameron and Quinn's Competing Values Framework as a tool to explore organizational culture. A major theme of this Chapter is the use of choice architectures to 'nudge' individuals in particular directions with a focus on adopting green IT policies. Other themes explored are the roles social media play in promoting green IT and the impact of culture on the use of tools which deliver green IT including cloud computing and context-aware systems. We consider the impact of globalization. Key recommendations for working with culture to support the adoption of green IT are provided.*

### INTRODUCTION

There has been increasing awareness in recent years that the sustainable use of resources (the so-called 'green' agenda) is one of the key issues facing the human race in the early 21st Century. It is widely accepted that the emission of Greenhouse gases resulting from industrialization has already had a significant effect on the climate and that, without a concerted international effort to use resources in a sustainable way, further climate changes may have serious consequences. It is also recognized that, since the onset of industrialization in the late 18th century, finite natural resources have been used at an unsustainable rate and the disposal of waste has often been undertaken, without regard to the effect on human health.

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Information Technology makes a significant contribution to Greenhouse gas emissions, accounting for around 2% of global carbon dioxide emissions, on a par with the aviation industry (O'Neill, 2010). However, IT can also contribute to reducing pollution through technologies such as 'intelligent buildings' and teleconferencing.

There have been a number of laws and concordats addressing sustainability at both international and national level. At international level, an important early treaty was the Kyoto Protocol (United Nations, 2014); this protocol required signatories to commit to reducing Greenhouse gases. The UN 2003 World Summit on Sustainable Development (UN, 2014) established a range of environmental objectives, including increased access to energy services, energy efficiency, the use of renewable energy, and the promotion of sustainable patterns of production and consumption. At the UN 2014 Climate Change Summit, leaders committed to limiting global temperature rise to less than 2 degrees Celsius from pre-industrial levels (United Nations, 2014).

Individual companies have come under growing pressure to address environmental concerns (O'Neill, 2010). This pressure has come from the need to comply with environmental legislation, but also from environmentally engaged consumers and the need to promote a positive corporate reputation. An increasing number of companies recognize that they should be judged not only on economic success and have adopted a 'Triple Bottom Line' of environment, society and economic performance (Elkington, 1994; Elkington, 2004).

Organizational Culture has long been recognized as an issue of great importance within the business literature and, in recent years, substantial attention has been devoted to its impact on the adoption of green initiatives. It has been argued that for companies systematically to incorporate environmental concerns into their activities requires a major change of corporate culture (Stead & Stead, 1992; Post & Altman, 1994). However, there has been limited consideration of the impact of organizational culture on the adoption of green IT.

The central theme of this Chapter is to explore the role of culture within IT, and the extent to which particular types of culture facilitate green initiatives. Cameron and Quinn's Competing Values Framework is used as a tool to explore organizational culture. A number of approaches to transforming organizational culture are considered: the use of social media, both internal to the company and external; the use of 'nudging technology' and 'choice architectures'; and the use of 'context awareness'. A major theme is Cloud Computing, which is a key enabling technology for much of the work discussed in this paper.

The remainder of the Chapter is structured as follows. The green agenda, sustainability and green issues, along with green IT are addressed in Section 2, with organizational culture, the impact of organizational culture and IT culture itself being discussed in Section 3. The impact of organizational culture on the adoption of green measures is discussed in Section 4, along with the impact of organizational culture on the adoption of green IT. This is followed by discussion in Section 5 of the impact of social media in transforming cultural attitudes in general and in the promotion of green IT. We provide an introduction to enabling technologies such Cloud-Based Systems in the section on Enabling Technologies, along with a discussion of the need for people involved with these technologies to work along with culture. This is followed by consideration of '*nudging*' theory and choice architectures in Section 7. Section 8 provides key recommendations and the Chapter concludes with a discussion addressing the topics discussed in the Chapter, closing observations, and open research questions.

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