

Chapter 12

An Investigation into the Factors which Influence the Adoption of Green IT: A Case Study of an Irish Public Sector Organisation

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ABSTRACT

This chapter reports on a case study which investigated the adoption and implementation of Green IT within an Irish public sector organisation, namely Ollscoil na hÉireann Gaillimh (OÉG). The Unified Theory of Acceptance and Use of Technology (UTAUT) model was employed as a theoretical lens for gathering and analysing data (Venkatesh et al, 2003), looking at how such factors as facilitating conditions, performance expectancy, effort expectancy, social influence, and other moderating variables affect the intention to use Green IT, which for the purposes of this study is defined as “the environmentally responsible use of computers and related resources” (Harris, 2008). The study found that the most significant facilitating condition as regards employees’ willingness to adopt Green IT within OÉG was awareness of the expected benefits. Social influence was also found to be a major factor, and in this regard, the chapter concludes with a number of recommendations.

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INTRODUCTION

Green IT, also referred to as Sustainable IT or Green Computing, is a relatively new concept which can be defined as “the environmentally responsible use of computers and related resources” (Harris, 2008). More particularly, Green IT can be thought of as a collection of strategic initiatives which either directly reduce the “carbon footprint” of an organization’s computing operations (i.e. “greening of IT”); use information technology to help reduce the organization’s overall carbon footprint (i.e. “greening by IT”); incentivize and support greener behavior by the organization’s employees, customers and suppliers; or/and ensure sustainability of the resources used by IT (Hird, 2008).

The primary drivers of implementing a green IT strategy are to protect the environment, to reduce costs, save money, comply with government regulations, improve efficiency and advance the reputation of the organization in question (Molla et al., 2009). In Ireland, the public sector has been challenged to take the lead in demonstrating energy efficiency savings: the national vision for 2020 is a 20% reduction in energy use, but for the public sector the target is 33%. This paper relates the experiences of an as yet early stage project to roll out Green IT initiatives across a public sector organization in Ireland.

As our conceptual framework, we chose the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003). This is a comprehensive but conceptually intuitive model, based on a synthesis of the principal elements in a number of other models of technology adoption and usage, namely the Theory of Reasoned Action, Technology Acceptance Model, Motivational Model, Theory of Planned Behaviour, Model of PC Utilisation, Innovation Diffusion Theory, and Social Cognitive Theory. The UTAUT framework is one of the most highly cited within the information systems literature, but our extensive review of the literature revealed that it has not yet been

used to analyze the factors impacting the adoption of Green IT. The four core determinants within the UTAUT model are:

- Performance Expectancy – the degree to which an individual believes that using a particular technology will yield gains in terms of the performance of some task.
- Effort Expectancy – the degree of ease associated with the use of the technology.
- Social Influence – the degree to which an individual perceives that important others believe he or she should use the new technology or practice.
- Facilitating Conditions – the degree to which appropriate supporting mechanisms are in place to facilitate the use of the technology.

The objective of our research was therefore to seek answers to the following research questions:

- What are the current facilitating conditions of Green IT within the organization?
- What are the performance expectancy, effort expectancy and social influence factors associated with implementing Green IT within the organization?
- What benefits does the organization expect to achieve by implementing Green IT?

LITERATURE REVIEW

Driving Forces behind Implementation of Green IT Initiatives

There are a number of principal factors driving the move towards greater adoption of Green IT within organizations. Firstly, there is the imperative to protect the safety and integrity of our natural environment. Green IT encompasses a wide range of environmental challenges, such as

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