Chapter 6.4
Corporate Environmental Management Information Systems Influence of Green IT on IT Management and IT Controlling

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ABSTRACT

Green IT (Green IS, Green ICT) is a concept of saving energy consumption to reduce IT costs. A current survey shows that only few companies in German speaking countries consider this aspect in their daily business. This is important facing the current situation of attempts of cost saving during the current economic crisis worldwide. This chapter introduces into Green IT and presents an IT management and controlling concept. Then the main results of a currently presented survey are used to modify the concept. Finally an agenda for future research is given.

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INTRODUCTION

It has been discussed that ecological thinking has positive effects on the economic performance (Telle, 2006). Sustainable risen energy prices have indicated thinking and rethinking in companies. Like the "bio wave" in the food market some years ago now we are faced by a "Green IT wave" among IT suppliers and their customers. The public opinion has been focused to the enormous amount of used energy for running IT servers of public known companies. Google for example runs 450.000 servers which needs more than 800 million kWh per year (Chou, 2008). This simple example underlines the importance of a need for action.

We can understand Green IT as the idea of saving energy when using IT resources. That includes investments in hardware, services and changing the business and IT strategy. However different industry studies show that there is no common understanding of green IT although it is an emerging trend (Chou, 2008). In a lot of cases the IT management does not know the energy cost of running their central IT systems (server in data centre and more) and decentralised workplace systems (desktop systems, laptops and other). A current survey among German speaking countries shows that one third of the companies don't know their energy costs of running their IT (Gadatsch & Juszczak, 2009). Furthermore the energy cost does not have a high impact on decisions about IT investments. At the same time analysts like the Gartner Group predict a strong increasing market for IT services around the buzz word "green IT" (Eriksdotter, 2009). In the past the efforts to save energy costs of central data centres were in the foreground. Now the efforts are expanding to the decentralized IT resources like workplace systems (desktop, laptops and more). The investigations of the Experton Group show that more than 60% of the IT driven energy costs were reasoned out of the central data centres in offices and other parts of the companies (n. a., 2008). This paper tries to figure out the impact of green IT on IT controlling in the future.

The IT controlling department is focused on effectiveness and efficiency in using ICT. The motivation of this paper is to address Green IT as a future challenge for IT controller. They should take a more active part in managing "Green IT" to save energy for environment and costs for companies.

GREEN IT

Technologies and Concepts

Green IT is not a new concept. Since the beginning of the nineties the "energy star" certification is known (EPA, 2009). It attests that IT hardware is compliant to energy saving criteria. Risen energy costs lead to a rethinking in using energy for IT. Like the "biologic wave" in the food industry years ago we currently feel a "green wave" in the IT industry. Enterprises which control innovative technologies and concepts for restructuring their business processes can improve their competitiveness by reducing their energy costs (Ryan, 2008).

Green IT definitions cover different point of views. The discussion is going on. Murugesan (2009) defines Green IT as "the study and practice of designing, manufacturing, using, and disposing of computers, servers, and associated subsystems … efficiently and effectively with minimal or no impact on the environment". A short definition is that Green IT is using IT resources in an efficient way (Curley & Donnellan, 2008). Green IT can be defined as the usage of energy saving technologies (hardware, software, cooling), organisational concepts (job instructions) and technical rules (construction of buildings).

A common view is the changing focus of Green IT. The meaning is shifting from a pure technical view in information systems (Green in IT) to a business oriented view (Green with IT). In the future more strategic views are estimated (Green IT Strategy) by the consulting company Ernst & Young (cf. Figure 1).

Two technological sectors are relevant: energy saving hardware and software as well as technologies for cooling and buildings. Normally a companywide change of hardware is necessary to get enough effects. This is joined with new concepts of data centre organisation like server virtualisation. New concepts to create buildings and reuse of heating energy need changes in buildings or new buildings for data centres. In the hardware area often the concept of server virtualisation is used. That means several logical servers are served by one physical machine. At the end user side thin clients (desktop simulation on server) reduces the energy consumption. The potential of energy saving is enormous. A typical