

# Chapter 68

## The Contribution of Teleworking towards a Green Computing Environment

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### ABSTRACT

*The aims of the chapter are to consider the strategic green issues of teleworking in terms of the environment, transport, location, office space, and resource use for modern organisations and business sectors and to formulate a conceptual model of the processes involved. In fact, teleworking technologies are variously implemented for green computing initiatives, and the many advantages include lower greenhouse gas emissions related to travel, greater worker satisfaction, and as a result of lower overhead office costs, increased profit margins. The chapter initially investigates the appropriateness of a working definition of teleworking with regard to green computing, and following this, explores the benefits and barriers of teleworking in a green computing environment. The theoretical frameworks and models of teleworking are then considered, and a conceptual model of the contribution of teleworking to green computing is formulated. It is the intention of the chapter to identify and articulate those teleworking concepts that will be useful to academicians, scientists, business entrepreneurs, practitioners, managers, and policy makers, and to indicate future research directions for research scholars and students with similar interests.*

### INTRODUCTION

In relation to the aims of the chapter, which are to consider the strategic green issues of teleworking in terms of the environment, transport, location, office space and resource use (Goodman et al, 2004) for modern organisations and business sectors, the research has attempted to understand the factors and

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processes through which organisations have adopted teleworking in relation to green computing. The study has surveyed and built upon the body of knowledge concerning teleworking and green computing including applications and practice in the business research literature. In these terms the key benefits and barriers of what is known as “green teleworking” in contemporary organisations have been considered and the various definitions and models of teleworking and green computing have been analysed. A review of the processes and dynamics of green teleworking as an innovative practice in modern organisations has been undertaken. Preliminary research questions for this study which arise out of the literature include:

- ‘How do organisations overcome the barriers to adopting green teleworking?’
- ‘To what extent does teleworking, and specifically green telework, contribute towards a green computing environment?’

Following the identification of the contemporary benefits and barriers of the adoption of green teleworking, a model that highlights the importance of the factors for organisations has been developed to highlight the processes involved. In fact, teleworking technologies are variously implemented for green computing initiatives and the many advantages include lower greenhouse gas emissions related to travel, greater worker satisfaction and, as a result of lower overhead office costs, increased profit margins. The chapter initially investigates the appropriateness of a working definition of teleworking with regard to green computing and following this explores the benefits, and barriers, of teleworking in relation to a green computing environment. The theoretical frameworks and models of teleworking are then considered and a conceptual model of the contribution of teleworking to green computing is formulated. It is the intention of the chapter to identify, and articulate, those teleworking concepts that will be useful to academicians, scientists, business entrepreneurs, practitioners, managers and policy makers, and to indicate future research directions for research scholars and students with similar interests.

The research methodology has involved an extensive literature review into the fields of Teleworking and Green Telework. The literature review has identified journals, articles and documents that define, describe, test and analyse the concepts of Teleworking and Green Telework. Various definitions of Teleworking have been analysed from research papers and articles in contemporary journals and a definition of Green Telework has been given. The review has illustrated various trends and research gaps and has assisted in the formulation of a conceptual model of the contribution of Teleworking towards Green Computing. The research design has involved a logical sequence from the thematic literature review to the study’s research questions, theoretical frameworks and models of Teleworking. This has been followed by formulation of the conceptual model, discussion of the usefulness of the model and future research directions, and the conclusions (Yin, 2004).

## **BACKGROUND**

### **Teleworking Definitions**

The definition of telework proposed by the European Commission reads as follows:

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