

## Chapter 8

# A New Recommendation for Green IT Strategies: A Resource-Based Perspective

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### **ABSTRACT**

*Incorporating the natural environment as a strategic focus has recently been recognized as a possible source of competitive advantage. In this regard, green IT provides an opportunity for companies to tackle the environmental issue, and simultaneously serves as a source of competitive advantage. However, the field of green IT strategy, from the perspective of environmental management, remains limited by its distinct lack of a theoretical framework and straightforward definitions. In this conceptual study, we proposed “green IT strategies” based on a resource-based perspective by incorporating modern institutional theory into a strategic formulation. This chapter conceptualizes three different strategies: tactical green IT strategy, strategic proactive green IT strategy, and sustained green IT strategy, along with theory-based propositions for each of the strategies. The chapter also demonstrates that the Green IT strategy is path-dependent; that is to say, a firm’s prior experience and history helps determine its current strategies. This study also involves a discussion of the development of the theory, the proposed model, and some possible future research directions.*

### **INTRODUCTION**

Information Technology (IT) has enabled significant improvements in the standard of living.

However, the production, purchase, use, and disposal of electronic products can also exert significantly negative environmental impacts (EPEAT, 2008). This indicates that changes in the natural environment may be viewed as inevitable

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consequences of economic activity, which require firms to evolve (Faber, 1998). According to the current research conducted by Gartner, ICT is responsible for approximately 2% of global CO<sub>2</sub> emissions, and can also contribute significantly to the control and reduction (up to 98%) of CO<sub>2</sub> emissions associated with other activities and industries (Mingay, 2007). The trend of “greening” IT products, applications, services, and practices will probably pose a continuous concern, as the Green IT strategy provides opportunities to tackle environmental issues (Vykoukal *et al.*, 2009). In response to this issue, many businesses are altering their practices in order to become more environmentally responsible (Hendry and Vesilind, 2005).

Considering renewable energy technologies and efficient energy utilization as the most effective potential solutions to current environmental issues (e.g. Hollander and Schneider, 1996; Lee *et al.*, 1992), firms are finding it increasingly necessary to select the appropriate strategies to address this issue. Because little research has been conducted thus far on Green IT from a strategic management perspective, in this study we have conceptually described and recommended a novel set of Green IT strategies driven from the resource-based view perspective, by incorporating modern institutional theory into the strategic formulations.

*“Environmental management is necessary, urgent, and can often be profitable” (Aragon-Correa and Rubio-Lopez, 2007, p.359).*

## **BACKGROUND**

Over the past 20 years, the literature regarding strategy has developed into two main guru theories: the resource-based view theorists focus on the valuable resources required for the sustenance of competitive advantage, and the Porterians emphasize the discovery and exploitation of market opportunities (Miller, 2003). However, one major limitation of both of these prior theories is that they

do not consider natural environmental aspects in their strategic formulations (Hart, 1995). On the other hand, previous research has demonstrated that competition via innovation and firm performance is compatible with and can be enhanced by proper environmental management (Crowe and Brennan, 2007). Thus, managers who wish to secure the continuity and profitability of their business must deal proficiently with forthcoming environmental developments that have yet to achieve the status of a decision event (Dutton and Duncan, 1987).

Incorporating the natural environment as a strategic focus is considered by some to be a source of, rather than a threat to, competitive advantage (Hart 1995; Porter and van der Linde 1995). The implementation of environmental practices has been extensively evaluated and such factors of environmental legislation, the rising cost of waste disposal, corporate images, and public perception collectively constitute a further impetus for green initiatives (Shrivastava, 1995); however, thus far, only limited efforts have been made to systematically clarify these practices and to gain insight into the manner in which they can contribute to a favorable competitive position (Lucas, 2009). Researchers concerned with environmental responsiveness have attempted to determine the rationales underlying the responses of firms to environmental issues (e.g. Bansal and Roth, 2000; Hoffman, 2001; Hunt and Auster, 1990; Sharma *et al.*, 1999; Paulraj, 2008). However, the field of strategic IT from the perspective of environmental management continues to suffer from a distinct lack of a theoretical framework and straightforward definitions (Lucas, 2009).

In this regard, we have conceptually divorced the technological issue (to which we refer herein as “Green IT”) from the environmental issue. Whereas the environmental issue emphasizes the totality of the organization’s actions toward the environment (Sharma *et al.*, 1999), Green IT tends to focus principally on environmentally technological practices (Mingay, 2007). Consistent with the

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