Case study[†]

Factors influencing GIS project implementation failure in the UK retailing industry

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Abstract

This paper presents a parsimonious framework to evaluate factors of GIS project implementation. The High Performance Equation proposed by Schermerhorn (Management for Productivity, Wiley, New York, 1984) is used to encapsulate the nature of 'ability', 'effort' and 'support' in successful implementation. This model is explained and its components elaborated. The model is then illustrated through a case study of the UK retailer NOWAY. This company was evaluated using a case research design with pilot studies conducted in local authorities that at the time had more sophisticated GIS. NOWAY failed to effectively implement their GIS and the High Performance Equation helps to explain and illustrate why this occurred. Whilst not offering a total causal analysis of the failure of GIS implementation at NOWAY, this paper outlines the core factors that affected their GIS implementation process.
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1. Introduction

Over the past 20 years, UK retailers have made increasing use of Geographical Information Systems (GIS). These systems were initially used to help with site selection decisions but

have developed as Decision Support Systems (DSS) to help in many areas of marketing decisions. Tonks (1990) argued that GIS relative advantages lies in its ability to locate customers through its discriminatory power, and this has allowed user's to make full use of their existing databases.

GIS are well established as giving competitive advantage and enhancing organisational decision-making in a wide array of functions. The speed of diffusion for GIS technology has been rapid due to many user-friendly features, particularly in the graphical display of statistical analyses. However, despite the increasing use of GIS particularly in the retail sector, it appears that the primary focus has been on its applications and benefits, with limited emphasis upon the issues around implementation of the project (England, 1996; Grimshaw, 1997). Retailers who wish to realise the benefits of a GIS have to consider what is involved in implementing the system in their organisation. A GIS entails careful project implementation based on a full understanding of what must be done to avoid failure, as many GIS have never accomplished the claimed benefits made when the system was acquired. This begs the question of what happened in the period from conception to full employment of the system. Despite the popular and increasing significance of GIS technology in retail organisations, little research has focused on the reasons for GIS project implementation failure. Most efforts are not found in retailing but in other more developed GIS areas, e.g., local governments.

This paper reviews previous research and uses case research to examine the way project implementation is occurring in the acceptance of GIS in the UK retailing through the High Performance Equation (Schermerhorn, 1984). The equation was employed to reduce the large amount of factors suggested by the IS project implementation failure literature. This paper also utilises many lessons that have emerged from studies of IS project implementation in other disciplines.

2. Factors influencing GIS project implementation failure

Traditionally, GIS project implementation has been viewed as beginning after the design effort and ending as soon as the system becomes operational and the outputs are formed. Previous studies in GIS project implementation suggest that implementation is an evolutionary process that is continuous and iterative (Onsrud & Pinto, 1991). The suggestion is that the implementation is staged and able to be broken down into separate levels of action.

There are many GIS implementation factors presented in the literature (Grimshaw, 1997, 2000, 2001; Madon & Sahay, 1997). These factors are subject to where and how the system has been implemented, and vary according to what organisation or sector it fits into. One of the key issues that will be addressed in this paper is, could the plethora of implementation success factors be systematically reduced to a practical compelling amount? As success or failure is determined by the activity performance of individuals involved in implementing GIS, this study thus proposes a new direction in understanding GIS implementation factors through the High Performance Equation (Schermerhorn, 1984).