IDEA GROUP PUBLISHING
701 E. Chocolate Avenue, Hershey PA 17033-1240, USA
Tel: 717/533-8845; Fax 717/533-8661; URL-http://www.idea-group.com
ITB9029

Chapter XI

Relating Cognitive Problem-Solving Style to User Resistance

Michael Mullany
Northland Polytechnic, New Zealand

Peter Lay
Northland Polytechnic, New Zealand

ABSTRACT

This study investigated the relationships between user resistance to new information systems and the differences in cognitive problem-solving styles between systems developers (analysts) and users. In addition, associations were tested between user resistance and the following: system accuracy, system reliability, the analyst's attitude, the analyst-user relationship, analyst-user dissonance, the user's age and the user's length of service with his current employer.

A significant positive association between user resistance and analyst-user cognitive style difference was found. A model was then developed which enables the estimation of user resistance prior to system development with the aid of the Kirton Adaptive/Innovative Inventory (an instrument which measures cognitive style). Significant negative associations were found to exist between user resistance and system accuracy, and user resistance and system reliability. No relationships between user resistance and either user age or user length of service were found.

INTRODUCTION

There are conflicting views regarding the influence of cognitive style on user resistance. Hirschheim and Newman (1988)[1], for example, note that a user may resist a system because the mode of presentation of that system does not match the user's cognitive style. In other words, the system does not follow a problem-solving sequence that is totally acceptable to the user. Huber (1983), however, deduced from his own literary survey that cognitive style theory had not, and probably would never, provide guidelines for system design. Nonetheless, a careful analysis of Huber's study reveals that it merely rejects attempts to match a system to a given user's cognitive style. It does not reject attempts to match the systems developer cognitively with a given user. On the contrary, Huber's study encourages the use of cognitive style theory for personnel selection and placement purposes. Since little direct evidence was found in the IS literature of previous attempts to match systems developers and users cognitively, it was decided to investigate user resistance along this more novel line.

The purpose of this study, then, was to test relationships between user resistance to computer-based systems, including those commonly associated with e-Commerce and cognitive style. This term, or the alternative, cognitive problem-solving style is used to denote an individual's approach to problem solving. The Kirton Adaption-innovation Inventory (KAI) was selected as an instrument to measure cognitive styles. The KAI, based on Adaption-innovation (A-I) theory, measures an individual's preference for either an "adaptive" or "innovative" approach to problem solving. Adaptive problem-solvers tend to follow prescribed and traditional methods, whilst innovators seek new and often unexpected solutions. These concepts will be expanded on later.

SUMMARY OF PRIOR RESEARCH

The study covered four areas of prior research. These are: IS user resistance to new systems; resistance to change in other areas not necessarily related to IS (e.g., e-commerce); the influence of cognitive problem-solving styles on resistance to change; and measures of system success and their application. Since e-commerce success is largely a matter of user opinion, the aspect of user satisfaction and its measurement is covered under the discussion of the last area. A link is claimed between user satisfaction (or dissatisfaction) and user resistance, thus the possibility of using user satisfaction as a converse substitute measure of user resistance is considered.