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Chapter 2

A Case Study Evaluation of the Use of the Viable System Model in Information Systems Development

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This chapter considers the usefulness of the Viable System Model (VSM) in information systems (IS) projects. The VSM is a rigorous organizational model which was developed from the study of cybernetics and has been given considerable attention by management science research. The chapter presents a case study that focuses upon the sales team of a manufacturing company. This sales team were seeking to develop database support for group working. The VSM was useful in highlighting the organizational limitations upon the IS project and challenged some assumptions about the nature of work in the company. It is proposed that the VSM provides a valuable diagnostic capability that shall assist the company in future IS developments.

Concepts and models of systemic behaviour are now much in evidence as many different scientific disciplines grapple with their own issues of

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organization and adaptation (see Capra 1996 for a useful synthesis). Information systems (IS) research has been particularly receptive to such "systems thinking" (e.g. Checkland 1981; Checkland and Holwell 1997), possibly as a result of its need to address people and technologies as an organized complexity. It has been widely appreciated that many different kinds of sophisticated model are useful in IS projects. Organizational and enterprise models have been promoted as a response to the observation that many IS projects fail, not because of technical difficulties, but because of a misconception of the potential contribution of the IS to the greater organization.

The focus of this chapter is upon a particular branch of systems thinking, namely cybernetics. Cybernetics has been highly influential in the development of systems concepts across many different disciplines (Checkland, 1981) and continues to attract attention today (see again Capra, 1996). Its focus is upon patterns of control and communication in systems of all kinds and is thus described as the science of organization (Beer 1979, 1985). We are motivated by a general interest in developing cybernetic approaches to IS projects. We propose that cybernetic models and theory may assist the study of patterns of communication in organization and make it possible to appraise the linkage between these communication patterns and the structure of the organization itself. Our particular focus in this paper is to consider the value of the Viable System Model (VSM). The VSM has been developed from cybernetic theory by Beer (1972, 1979, 1985) for application to human organizations. It has been given considerable attention by management scientists (e.g. Espejo and Harnden 1989).

This paper is organized into five further sections. The next section ('The Viable System Model') gives an outline description of the VSM. Following this, the case study of the development of a database system for a sales team is introduced ('The Case of Heather Manufacturing Systems'). The VSM created for the case study follows in 'The Viable System Model of HMS'. This leads to the Discussion which considers the usefulness of the VSM in the case study and a projection of its utility in other IS projects. Finally, some short conclusions are presented.

THE VIABLE SYSTEM MODEL

The VSM is an organizational model. This paper can give only a very brief introduction to its features, the basis and features of which are set out at length by Beer in a trilogy of books (see Beer 1972, 1979, 1985). The reader may also pursue a fuller understanding of VSM and cybernetics by reference to related academic studies (e.g. Espejo and Harnden, 1989; Kawalek and Wastell, 1996).