Chapter 11
Soft Systems Model (SSM)

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ABSTRACT

Soft Systems Model (SSM) is an action-oriented approach developed by Checkland (1981) to tackle complex and ill-defined social phenomena. It facilitates development of a model of inquiry for use in carrying out an investigation to understand, learn, and achieve changes in a social situation. These features provided justification for using SSM to tackle the problematical situation in library and information sciences. It has the capacity to deal with inter-organizational social phenomena and different worldviews. This chapter aims to understand the existing library and information science (LIS) literature that has been used in SSM applications. It focuses on the purposes and validity of using SSM. This chapter then discusses the using of two streams of SSM in LIS: the stream of logic-based enquiry and the stream of cultural enquiry. Moreover, the chapter reports the changes and action resulted by using SSM in the field of library and information management.

INTRODUCTION

Libraries are described in literature as complex social organizations which, on the one hand, embrace users, staff, collections, information services, and various other activities that take place within a library; and which on the other hand, are influenced by socio-political and technical changes (Chowdhury et al., 2008). Therefore, selecting a soft systems approach to investigate issues related to library is a reasonable and justifiable way to deal with complex, ill-defined problems, and also to accommodate various people's perspectives. A number of studies have utilised SSM techniques to address the situations of libraries and information services by involving the problem's owners and stakeholders in analyzing and discussing the problem's situation in order to find solution that make visible and desirable change. This review aims to understand the existing LIS literature that has been used in SSM applications. The intention is to examine the techniques used to achieve the objectives, and to recognise the validity and reliability of using SSM in exploring the problems and making improvements to aspects of LIS activity. LIS studies reviewed in this section include: Brember's (1985) "Linking a medical user survey to management for library effectiveness", Kurbanoglu's (1991) "Planning an information network for Turkey", Knowles' (1993) "A CD-

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ROM network for a multi-site polytechnic", Al-Hassan and Meadows' (1994) "Improving library personnel management", Underwood's (1994) "The management of libraries information services and resource centres", Brown-Syed's (1996) "an automatic library consortium", Delbridge's (2003) "Library management system design", and Delbridge's (2008) "An illustrative application of SSM in a library and information services context: process and outcome ".

Little effort has been devoted so far to reviewing previous SSM studies related to library and information management. Delbridge (2003), in her doctoral dissertation, reviewed a number of studies, including articles published between 1985 and 2000, classified by topics: ILSD, medical libraries, strategic planning for library services, and personnel management in Kuwaiti libraries. Four years later, Delbridge and Fisher (2007) published an article that aimed to provide an overview of the application of SSM to LIS activities. Other recently published studies include an article by Somerville et al. (2005).

The content of this review framed according to the stages of SSM, involving all SSM activities within two streams: logical-based inquiry and cultural-based inquiry. This way of reviewing the literature identifies the purposes of using SSM in library and information management, different ways to use SSM, and an understanding of the outcomes and changes that occur within libraries that use SSM.

SSM is a learning process methodology that emerged from the systems thinking approach as a means of addressing the complexity of real world systems (Wilson, 1990; Checkland and Holwell, 1998; Checkland, 1999b). SSM, moreover, is by its nature, closely related to the action approach, which applies intervention with key actors to improve the problematical situation. This chapter focuses on the development and philosophical position of SSM. It also gives information on system thinking and criticisms that lead to the emergence of SSM. The philosophy of SSM and comparison between 'hard' and 'soft' systems approaches are discussed in section 2.1. In section 4 previous applications of SSM to studies in library and information management are reviewed to demonstrate the validity and reliability of using SSM in the situation of library and information management context.

THE PHILOSOPHY OF SSM

This section focuses on the central idea relating to the development of SSM. The shift from 'hard' thinking to 'soft' thinking and unsuitability of using a hard systems approach in situations that include hard and soft elements is discussed in section 2.1. The section also describes the power of '*Weltanschauung'* (W) and '*human activity systems*' (HAS) within SSM's cycle of learning for action. In section 2.2, the philosophical context of SSM is discussed.

'Hard' and 'Soft' Systems Thinking

In the 1960s a group of researchers from the Department of Systems Engineering at Lancaster University applied a hard systems approach in their action research programme. The system engineering was used as an intellectual framework by which the researcher could become involved in the situation. Therefore, three cyclical processes were used to address the problem: create methodology, use methodology, and learn from use, as illustrated in Figure 1.

This approach tackles the real world situation by applying a mechanistic view whereby the objective of the system is clear and the problem is well-defined. However, much criticism was aroused over the application of such an approach in the field of management and social sciences: where systems are shaped by the complexity of humans and a wide range of human and technical components interact in the functioning of the system. According to Checkland and Poulter (2006),