Chapter XI

Using Causal Mapping to Support Information Systems Development: Some Considerations

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Abstract

Identifying what different stakeholders in a business need from Information Systems development has always been seen as problematic. There are numerous cases of failure as projects run over time, over budget, and, most significantly, do not meet the needs of the user population. Whilst having a structured design process can go some way towards reducing the potential of failure, these methodologies do not attend sufficiently to clarifying and agreeing objectives or to considering the social and cultural elements inherent in the ownership and adoption of any new system. Instigating an effective, and structured, dialogue between users, developers and, when appropriate, sponsors, is therefore a critical consideration. Linking user needs, as they see them, to the language of IS developers and vice versa is crucial. Both parties need ownership. This chapter focuses upon the use of causal mapping, supported where appropriate by special software, that facilitates the development of a shared understanding (of both business needs and IT opportunities) and through this common platform enables a negotiated and agreed outcome. The nature of the outcome invites translation to structured design processes.

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Introduction

Although Information Systems (IS) are able to provide considerable benefits to organizations, there have been an extensive number of failures. For example, in 1999 the Financial Times noted that 50% of systems projects fail to meet their expected rate of return. A later, more spectacular, example is the system developed by ICL for UK Post Office counters—a system which went massively over budget and was never completed in line with the original specification (Financial Times, 22 July 1999). Explanations for these problems abound and range from poor communication with users and customers, not learning from past experiences, over-ambitious rates on returns, unexpected demand levels, amongst others (Boddy, Boonstra & Kennedy, 2002).

The use of structured approaches such as Structured Systems Analysis and Design Method (SSADM) (Downs, Clare & Coe, 1988), Information Engineering (Martin, 1986) and other such methodologies were touted as aiding the development of the systems through providing careful, logical procedures to follow. However, experience showed that they still fell short in terms of supporting the process of IS development, as they lacked understanding of the boundaries and properties of the systems starting well down the development process. More recent approaches such as prototyping, and Rapid Application Development (Martin, 1991), which were developed to answer some of the difficulties, are still unable to provide what is required. For example, no aid is provided by these techniques for managing differing, and possibly conflicting, objectives of users, or addressing the organization’s social and cultural norms of behaviour. Defining requirements is often regarded as a simple process, or one that can be determined by the Information Systems (IS) staff. As argued by Jayaratna (1994) and Stowell (1995), what is needed is a deeper understanding of the nature of organizations and how the system interacts with the organization.

Orlikowski, Walsham, Jones and DeGross (1995) found that even when systems are developed with consideration of the organization’s working practices there are problems as appropriation of systems can often be diverted from original intention as user needs change and are refined over time and use. However, they suggest that this is likely to be particularly the case if and when business practices and their socially construed norms are not well understood. Acknowledging the need to attend to the social and ethical considerations, however, is not new, as noted in Enid Mumford’s work (1983) and, as Zuboff comments, IS “ultimately reconfigures the nature of work and the social relationships that organize productive activity,” (1988) further reinforcing the need.

Therefore, methods and techniques for facilitating dialogue between users, developers and, when appropriate, sponsors is important. Soft Systems Methodology (SSM)—a problem structuring methodology has seen some success in this area (Checkland & Scholes, 1990). As its name suggests, SSM pays particular attention to the “soft” or social issues. The approach recognises that in most situations there is a lack of clarity regarding the objectives of the system in question and that these issues often comprise many aspects and subtleties which make working with the apparently messy IS design situation problematic. Providing some means of surfacing and structuring existing concerns is achieved through the formalism of what is called a “rich picture”—a cartoon-like picture that depicts the aspirations and situations of stakeholders of the system.
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