Chapter X

The Information System Within the Organization: A Case Study

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ABSTRACT
There is considerable evidence that many information systems (IS) projects fail because of organizational, “softer” or “people-related” issues. Considerable effort has been expended in efforts to design improved development methodologies that incorporate these softer aspects. Less attention, however, has been directed towards approaches that increase our understanding of the interaction of the implemented IS with the wider organizational environment. Our thesis is that system dynamics (SD) has much to offer here and, in this chapter, we illustrate the utility of the SD approach in this context through presentation of a field study.

INTRODUCTION
The information system (IS) literature is littered with reports of poorly performing or canceled IS projects that have cost the sponsoring organizations considerable amounts of money. In an attempt to solve many of these problems,
different methodologies and techniques have been advocated. These include structured systems analysis and design (SSADM), an increased emphasis on requirements engineering, joint application development (JAD), computer aided software engineering (CASE), and method convergence.

These have not, however, had much impact on the situation. Other writers have attributed this to the reliance on the “hard” aspects of software development by these methods to the detriment of the softer, sociotechnical, aspects. In effect, we are ignoring the organization, or environment, into which a technical system will be placed. This environment is often messy, with many interrelated causal loops where cause and effect can be separated by either time and/or space. Understanding this type of situation is difficult and requires techniques not normally used within the IS discipline.

This chapter introduces a case study, where a particular technique was used to gain some understanding of a messy organizational situation that was, it was suspected, impacting the performance of the IS. The technique, using causal loop diagrams (CLDs), is described and then applied to the case study. Limitations of the technique are discussed, and directions for further research are suggested.

**BACKGROUND**

There is ample evidence in the literature that the effectiveness of IS development is little changed from the early years. In 1982, it was claimed that 15% of all software development projects failed completely and that overruns of 100–200% were common (DeMarco, 1982). In 1995, The Standish Group reported that 31% of software projects never deliver anything, only 16.2% are on time and within budget, overruns were up to 222%, and the total cost to U.S. organizations in 1995 for overruns and cancelled projects was estimated to be $132 billion ([Chaos](#), 1995). In 1996, the Organizational Aspects Special Interest Group (OASIG) of the U.K. reported the experiences of over 14,000 organizations. The report, supported by the Economic and Social Research Council and the U.K. Department of Trade and Industry, stated, in part, the following:

- 80–90% of IT investments do not meet their performance objectives; the reasons for this are rarely purely technical in origin.
- Most organizations are not good at evaluating the performance and impact of their investments in IT (OASIG, 1996).

In response to this situation, the IS industry has, over the years, introduced a number of methodologies and techniques. These include, but are not limited to the following:

- Structured systems analysis and design
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