MODELING THE DYNAMICS OF ORGANIZATIONAL KNOWLEDGE

ABSTRACT

Organizational knowledge is a key competitive asset in the Information Age. The recognition of its importance has spawned great interest in Knowledge Management: the processes, systems and social structures designed to develop, exploit, maintain, and preserve organizational knowledge over time.

This work contributes to the knowledge management literature by identifying and simulating the interaction between the knowledge-generating processes of the firm and its own dynamics. This simulation may be used to understand how knowledge management programs are embedded in the larger environment of the firm, and how that environment is in turn affected by the ability to manage knowledge successfully.

This dissertation develops a framework for understanding the dynamics of organizational knowledge and knowledge management. This framework is formalized through the use of a system dynamics simulation model that depicts changes in the organizational knowledge environment and staff knowledge over time. The model produces behaviors characteristic of successful knowledge management programs. Alternative scenarios, with different model parameters, illustrate unsustainable behavior.

The research employed both qualitative and quantitative techniques. Case studies of two information systems consulting firms are developed through intensive interviews and document review. A dynamic causal structure is derived from the cases and the literature, and is captured in a formal simulation model. Simulation scenarios that produce sustained knowledge management benefit, or decay and marginalization of the knowledge management program are created. Validation of these behaviors is achieved

through structured interviews with knowledge management experts at one of the case study firms.

The results of the interviews demonstrate that the model depicted plausible behavior for both the sustainable and unsustainable scenarios. The reviewers note several suggested modifications to the behaviors and the structures of the model. Other possible extensions of the research are also identified.