Chapter XVI
A Complex Adaptive Systems–Based Enterprise Knowledge Sharing Model

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ABSTRACT

This chapter describes a complex adaptive systems (CAS)-based enterprise knowledge-sharing (KnS) model. The CAS-based enterprise KnS model consists of a CAS-based KnS framework and a multi-agent simulation model. Enterprise knowledge sharing is modeled as the emergent behavior of knowledge workers interacting with the KnS environment and other knowledge workers. The CAS-based enterprise KnS model is developed to aid Knowledge Management (KM) leadership and other KnS researchers in gaining an enhanced understanding of KnS behavior and its influences. A premise of this research is that a better understanding of KnS influences can result in enhanced decision-making of KnS interventions that can result in improvements in KnS behavior.

CAS-BASED MODELING OF ENTERPRISE KNOWLEDGE SHARING

The enterprise KnS model developed here models enterprise knowledge sharing from a complex adaptive systems perspective. Hypothetical con-

cepts that are fundamental to the development of this CAS-based model and to this research include:

1. Knowledge sharing is a human behavior performed by knowledge workers;

2. Knowledge workers are diverse and hetero-geneous;
3. Knowledge workers may choose to share knowledge; and
4. The KnS decision is influenced by other knowledge workers and the KnS environ-ment.

Enterprise knowledge sharing is the result of the decisions made by knowledge workers, individually and as members of teams, regard-ing knowledge sharing. As depicted in *Figure 1*, there are two major decisions (rectangles) that a knowledge worker makes: "Share Knowledge?" and "Type of Knowledge to Share?" This research models the KnS decisions as being influenced by the attributes of the individual knowledge worker, the KnS behavior of other knowledge workers, and the state of the KnS environment. Previous

KnS studies and research identify factors that influence KnS behavior. However, few address the heterogeneity of knowledge workers and how the attributes of the individual knowledge worker, and knowledge worker teams, impact KnS behavior. The emergent enterprise KnS behavior, noted by the diamond shape in *Figure 1*, is the result of the interactions of the knowledge worker with the KnS environment and other knowledge workers. Relevant aspects of enterprise KnS behavior and the associated KnS influences are discussed in the sections that follow.

Enterprise KnS behavior takes on many forms. It can be a conversation around a water fountain, e-mail sent to a co-worker or a group forum, a presentation to a small group, an enterprise "best-practice" forum, or documents published to a corporate repository. Murray (2003) categorizes KnS activities into technology-assisted commu-

Figure 1. Enterprise KnS influence diagram
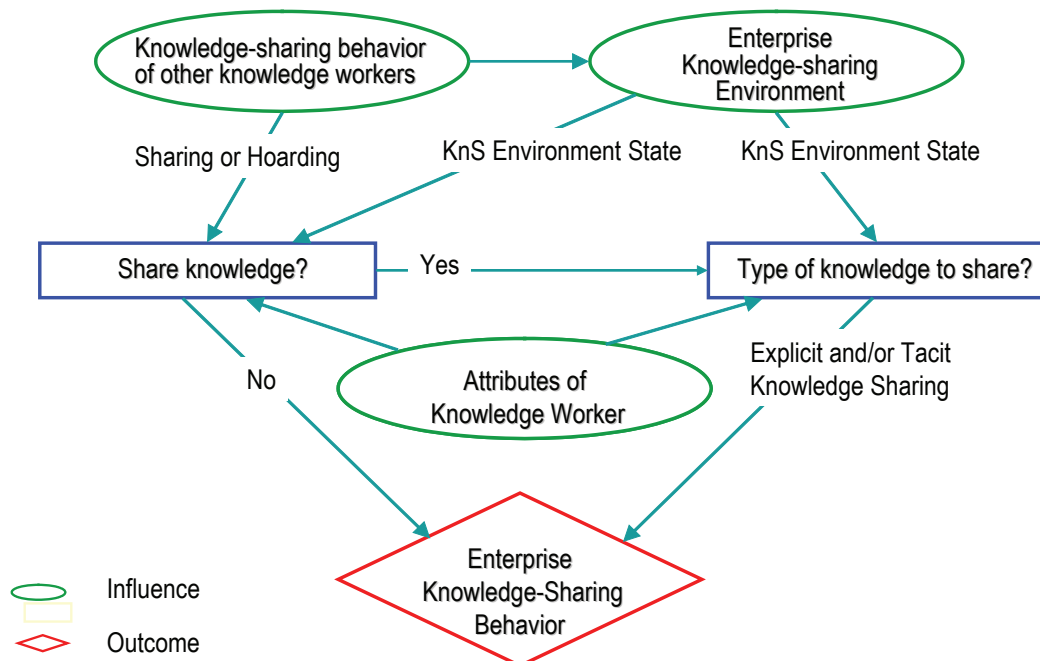
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