Virtual Community Knowledge Evolution

Abstract

This paper puts forth a vision and a possible architecture for a community knowledge evolution system. We propose augmenting a multimedia document repository (digital library) with innovative knowledge evolution support, including computer-mediated communications, community process support, decision support, advanced hypermedia features, and conceptual knowledge structures. These tools and the techniques developed around them would enable members of a virtual community to learn from, contribute to, and collectively build upon the community's knowledge and improve many member tasks. The resulting Collaborative Knowledge Evolution Support System (CKESS) would provide an enhanced digital library infrastructure serving as an ever-evolving repository of the community's knowledge, which members would actively use in everyday tasks and regularly update.

Keywords


I. Introduction

Digital libraries commonly provide access to both text and multimedia reference materials as a collection of published documents and digital representations of other artifacts (art, music, etc.). This paper sets forth a vision of a digital repository enhanced with innovative knowledge evolution support, including computer-mediated communications, community workflow and process support, decision support, hypermedia features, and conceptual knowledge structures. These tools and the techniques we propose around them would enable members of a virtual community to learn from, contribute to, and collectively build upon the community's knowledge and improve many member tasks. Community knowledge includes its documents, discussions, decisions, conceptual models, workflows and processes. Community members should be able to contribute to, discuss and learn from the community’s knowledge, and from each other (Ram et al., 1999). Our proposed Collaborative Knowledge Evolution Support System (CKESS) would result in an enhanced digital library infrastructure serving as an ever-evolving repository of the community's knowledge, which members would actively use in everyday tasks and regularly update.

We broadly define a virtual community to include anyone actively interested in, or associated with, a group formed around a particular domain of interest. Dispersed or local, the community would require electronic support to implement a continuous metaimprovement strategy in its services. Thus we parallel Mowshowitz’ view of virtual organizations—flexible organizations which actively seek flexible approaches to their own improvement (Mowshowitz, 1995).

In this paper we consider two types of virtual communities: professional societies and virtual educational communities. A professional society can be