Chapter 9

Virtual Community of Practice Ontocop: Towards a New Model of Information Science Ontology (ISO)

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ABSTRACT

Information Science (IS) is an ambiguous field as its boundaries overlap with other domains such as Archive Science, Library Science and Computing Science which requires defined clear definition. This study creates a systematic and comprehensive ontology targeted to explore IS boundaries and foundations. This paper uses Mereotopology theory to describe classes, instances and their relations. The classes are created based on taxonomy of IS to create an asserted model of Information Science Ontology (ISO) that can be as a skeletal foundation for knowledge base. The main classes are Actors, Method, Practice, Studies, Mediate, Kinds, Domains, Resources, Legislation, Philosophy & Theories, Societal, Time, and Space. The design is based on Methontology to create ISO from scratch. Its framework facilitates the construction of ontology at the knowledge levels. It is found that identifying the IS boundaries through implementation ontology workflow is encoded using Protégé and Web Ontology Language (OWL) for formalizing and representation of the ISO. ISO is an effective way to represent knowledge and overcome semantic heterogeneity, ISO is a fundamental integration between semantic that realizes the interoperability information of the domain.

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1. INTRODUCTION

Ontology is an important emerging discipline that has vast potential in the development of information organization, management and understanding. It has been vital in many different fields, particularly in the knowledge management area. Ontology describes concepts, terms and relations in a specific domain to create communication richness and provide a clear description of these concepts which are related to the domain knowledge. Ontology can be used from people and software agents as a knowledge base (Gómez-Pérez et al., 2004; Gruber, 1993). However, the main motivation for building and developing ontology is to create potential for sharing knowledge and re-using it in many applications within a specific domain, it allows used this coding in efficient way.

Since community of practice (Cop) has been recognised as a knowledge management tool, many organisations have changed their direction to Cop as a solution for creating and sharing knowledge (Wenger, 2002; Schlemiel, 2008; Saint-Ongo, 2003).

Communities of Practice are an attempt by individuals, groups and organisations to share what they know and exchange ideas, concepts, perspectives, and expertise from various cultures (Gasevic et al., 2006).

The central focus of Cop is to improve the knowledge domain (Erat et al., 2006). Just as knowledge management has been widely discussed, so the issue of the Communities of Practice as part of an overall knowledge management strategy has been commonly discussed on in literature and by practitioners who implement them (Wenger, 1998).

The contribution of an Ontocop community can be developed in terms of asking the following questions:

- How members of IS domains share information?
- How they interact and learn from new experience?
- How they gain competence to enter into the community?

To answer the above questions, the overall objective of this research is proposed, i.e., to visualize the IS domain. In regard to knowledge acquisition; how Ontocop helps to create potential members who join together to develop the ontology process. This paper focuses on: 1). How virtual Communities of Practices are organised, evolved and managed; 2). How community members will share a common interest in the subject area, ongoing interaction among them to develop the ontology; 3). how Communities of practice (Cops) work, to find sources of knowledge; 4). How Cops use resources for improvement of innovation and productivity.

2. BACKGROUND

2.1. Virtual Communities of Practice (VCops)

2.1.1. Community of Practice (Cops)

Community of Practice is introduced by Lave and Wenger (1998) as a learning process within the Legitimate Peripheral Participation (LPP). LPP in his perspective is an important aspect of effective social learning. LPP is based on the idea that members of the community with less experience will learn from social interaction with experts in a specific domain. This initial definition relates the theory of situativity, situated learning within ethnographic study.

Community of Practice has developed when redefined by Wenger (1998) from use within a business environment, to be used in knowledge management as a location for successful knowledge sharing. The concept has received much