

# Index evaluations and business strategies on communities of practice

Mei-Tai Chu \*, Rajiv Khosla

*Business Systems and Knowledge Modeling Laboratory, School of Business La Trobe University, Melbourne, Victoria – 3086, Australia*

## Abstract

Business strategies and index evaluations on communities of practice (CoPs) could be the prevailing way for group learning and innovation building within firms. As firms grow in size, scope, and complexity, CoPs members who regularly engage in sharing and learning based on common interests, could improve organizational performance. Due to multi-criteria consideration and uncertain information handling, the purpose of this research is to use the fuzzy multi-criteria decision making (MCDM) method to analyze various index priorities and strategy preferences of CoPs, by undertaking empirical studies of Industrial Technology Research Institute (ITRI) in Taiwan. Fourteen units in survey case were given fifty-seven questionnaires about their priorities towards sixteen different pairs of criteria. Additionally, they were also asked to estimate their four highest achievable business strategies. These evaluation criteria include satisfying multi-dimensions to capable operators. Under each of the four first-tier dimensions, four second-tier criteria are used to assess and echo their first-tier dimensions. The findings of this paper can promote performance value of implementing knowledge management systems and modelling of competitive strategies for CoPs.

© 2007 Elsevier Ltd. All rights reserved.

**Keywords:** Communities of practice (CoPs); Business Strategies; Fuzzy multi-criteria decision making (MCDM); Industrial Technology Research Institute (ITRI)

## 1. Introduction

CoPs simultaneously emphasizes storage and distribution of explicit and tacit knowledge, enhances member interaction and knowledge sharing, enables organization learning, and induces innovation to maximize the value of Knowledge Management (KM). Global enterprises, such as IBM, 3M, Xerox, Cisco, and Dell, meet transformation needs by operating CoPs in emerging economies, have taken CoPs as a new central role in the value chain (Chu, Shyu, Tzeng, & Khosla, 2007a, 2007b). As knowledge complexity increases, and cross-field cooperation grows, the knowledge lifecycle shortens. Therefore, CoPs tends to focus on important issues which face dynamic and evolving nature of organizations.

ITRI is a non-profit organization dedicated to the research and development of industrial technologies, in

order to promote Taiwan's high-tech industry. ITRI's vision for 2008 is to maintain the same scale but triple the revenue growth of 2002. They face an enormous challenge reaching such a high target, especially if they rely on traditional work methods and cultural legacy (Buckley, 1985). ITRI with many knowledge workers wants to provide industrial total solution and continue to innovate. CoPs could be the best practice to break the organizational fence and establish a sharing culture. From 2000, ITRI began implementing KM. In 2003, they focused on customer driven values and gradually generated KM benefits. Each ITRI unit's resources are limited, and preferences and problems toward CoPs are different. Every unit will have varying index priorities and goals. Therefore, the maximum benefit and impact of CoPs can be achieved with careful planning (ITRI, 2003, 2007).

The purpose of this research is to use fuzzy MCDM method to identify the index priority and to measure the four-business strategies of CoPs. This evaluation features two distinct stages. First, we brainstorm with KM

\* Corresponding author. Tel.: +61 3 94793064; fax: +61 3 94795971.  
E-mail address: [debbiechu0421@hotmail.com](mailto:debbiechu0421@hotmail.com) (M.-T. Chu).

consultants in ITRI to identify dimensions and criteria for the questionnaire. This research proposed four-dimension architecture with objective and trade-off criteria as follows, with four criteria designed for each dimension, respectively.

- Locus of Leadership: related to enforcement or volunteer, whole or partial adoption.
- Incentive Mechanism: related to award or punishment.
- Member Interaction: related to sharing or security.
- Complementary Asset: related to infrastructure and resource.

Secondly, the questionnaire was distributed to a broad sampling of CoPs experts, to seek their views and calculate their index values. The aim is to provide a valuable reference when choosing suitable CoPs business strategies. Although many scholars assert that CoPs create organization value, there has been relatively little systematic and quantitative study on the linkage between community outcomes and the underlying functional structure, the majority of papers focus on individual and subjective viewpoints, this research attempts to determine these insufficiencies, and aims at objective and trade-off driven criteria for future analysis.

When evaluating business strategies of CoPs, many different aspects could be taken into consideration. There are numerous evaluation indexes. Moreover, their structures are hierarchical (Kerzner, 1989). Many scholars and experts have adopted the analytic hierarchy process (AHP) (Saaty, 1977, 1980) method to evaluate the problems of relative level factors of hierarchy and to provide a more complete depiction of the structural and functional aspects of whole system. For instance, Hwang and Yoon (1981) discussed multi-attribute decision methods and application, In addition, Cheng and Mon (1994) evaluated weapon system by AHP, Tsaur, Tzeng, and Wang (1997) analyzed tourist risk using fuzzy perspectives, and Tang and Tzeng (1999) researched e-business promotion strategy for information service industry. Other examples of AHP and fuzzy MCDM usage include: Yu and Lee (2002) evaluated the policy issuing for national 3G telecommunications license using the fuzzy multi-evaluation strategic method, Shyu (2003) used fuzzy MCDM to identify foundry factors and preferred location of IC design.

In the questionnaire, dimensions were measured by pairwise comparison, participants found it easier to decide dimension A is more important than B dimension instead of dimension A versus B is 5 to 1. Recently some scholars used fuzzy AHP (Buckley, 1985) to handle linguistic scale problems, which is more convenient to help participants to express opinion and concept precisely, just as Cheng and Mon (1994) applied to the choosing of weapon systems.

This research uses the fuzzy AHP method proposed by Buckley (1985). The questionnaires and consultant inter-

views were designed to reveal the perspectives of ITRI CoPs experts, in fourteen units. The questionnaires and interviews were also designed to weight their comparative importance of business strategies and indexes. Sixty-two surveys were returned out of the seventy-five distributed. For the purpose of the research, only five are deemed invalid. AHP, EXCEL, and SPSS were used to analyze the questionnaires, which were collected at different stages of the hierarchy and for different types of work.

For CoPs dimension priority, the results show that participants chose *Member Interaction*, *Incentive Mechanism*, *Complementary Asset*, and *Locus of Leadership* in that order. For criteria importance, *Emphasize Cross-Field Sharing* scored highest, next *Achievements Appraisal Basis*, then *Bottom-Up Teaming*, and *Independent IT Platform* ranked lowest. For business strategies, *Increasing Core Competency* scored highest, next *Enhancing Working Efficiency*, *Inducing Innovation Learning*, and finally *Promoting Responsiveness* scored the lowest.

Section 2 briefly introduces the literature review and comparison analysis used: the implications, benchmarks, and values as well as a description of expected benefits. The benefit assessment follows the firm's missions and objectives, making a holistic understanding of managerial structure, a critical success index to evaluate benefits. Section 3 illustrates the characteristics of fuzzy MCDM with models. Section 4 designs a research model to meet analytical needs. Section 5 conducts a questionnaire using above model to perform and verify the results from this study. Finally, Section 6 provides the conclusions and suggestions of this research.

## 2. Literature review and comparison analysis

Most KM projects stress explicit knowledge. However, very little tacit knowledge of the individual or community is inquired upon. In the last two years KM projects emphasize people interface, especially cross organization boundaries. As the tacit knowledge is transmitted in cross-regions, CoPs has become the critical concept in design and operation of KM systems.

### 2.1. CoPs implications

There is different positioning and goals in various CoPs. Although the names differ, the different terms describe similar content and concept. In 2000, Verna thought knowledge should include and utilize KC to create organizational knowledge. In 1998, Wenger first proposed CoPs in the Harvard Business Review. He believes CoPs is an informal group sharing knowledge, points out CoPs is composed by three critical elements shown in Table 1.

### 2.2. CoPs benchmarking

There is other team formation in an organization besides CoPs, including formal divisions, project teams,

متن کامل مقاله

دریافت فوری ←

**ISI**Articles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات