Enhancing On-Line Conferencing Ba with Human-Machine Interaction CorMap Analysis

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ABSTRACT

Recently, information is being used to enhance supporting technologies in conference management systems, which greatly improves the efficiency of conference organizing affairs and promotes extensive communication and cooperation between researchers. The on-line conferencing ba (OLCB) serves as a conference management system and provides an environment for knowledge creation. CorMap analysis is a technique for qualitative meta-synthesis, which can carry out series mining from qualitative data. The early OLCB system pushes the visualized results of CorMap analysis to users by images. In this paper, the authors introduce an interactive CorMap analysis to enhance the OLCB system, which enables users to conduct the conference mining process directly and acquire more clear and structured information. The working process of interactive CorMap analysis is shown with the application of the 7th International Workshop on Meta-synthesis and Complex Systems (MCS’2007).

Keywords: Conference Mining, CorMap Analysis, Creativity Support, Human-Machine Interaction, On-Line Conference Ba (OLCB)

1. INTRODUCTION

According to the statistics of organized meeting in 2008 by the International Congress & Convention Association (ICCA), there were 7,300 events organized by international associations (Sirk, 2009). These events took place on a regular basis and rotated between a minimum of three countries in the year 2008, a rise of approximately 800 over 2007. With the fast-growth in both scale and frequency of conferences and advances in communication and information technologies, digital revolutions are happening to conference management. As more ubiquitous computing technologies are applied, conference management systems are no longer limited to basic functions such as paper submission and information presentation, but extend well to in-depth analysis of conference data, which may help the conference

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organizers make appropriate programs and the participants find interesting topics and draw a rough scenario about the latest developments of the concerned topics (Pesenhofer, Mayer, & Rauber, 2006; Tang, Zhang, & Wang, 2007). Conference mining, which generates in-depth exploratory analysis results that are pushed to users for stimulating their further thinking and friends making, before, during and after formal conference activities, is now becoming the most valuable auxiliary feature of the conference management system (Matsuo, Tomobe, Hasida, et al., 2006; Tang, Zhang, & Wang, 2007).

The concept of on-line conferencing ba (OLCB) was firstly coined in 2006 during the interdisciplinary research of meta-synthesis system approach to complex problem solving and knowledge science, and then exhibited in organizing international conference with a demo system using some relevant technologies (Tang, 2006). OLCB system not only has the basic functions of information release, paper submission, paper review assignment and paper review, but also is expected to be considered as a creative support system by integrating a series of statistical methods to conduct the mining of the fundamental conference data such as submissions and registered authors, and post those visualized mining results to stimulate on-line discussions among participants and other target groups.

At the early OLCB system, users can drop their comments for discussion at the BBS area with the static pictures about the mining visualization which may stimulate imaginations and but also is incapable to meet the users’ desire for further exploration themselves. In this paper, we report our endeavors of this improvement to enable interested people to manipulate the CorMap analysis directly by Web application. With recent studies on conference mining (Tang & Zhang, 2007; Tang, Liu, & Zhang, 2008), human-machine interaction of the CorMap analysis in OLCB system is greatly improved to exhibit human-machine interaction process of approaching the meta-synthesis from qualitative hypothesis to quantitative validation. Then the OLCB system may enhance the facilitation of knowledge sharing and creation, stimulation of participants’ imagination and creativity to a greater extent, in short, provide better service for the conference participants.

2. ON-LINE CONFERENCING BA (OLCB)

Japanese Professor Nonaka has once adopted a Japanese word ba, to refer to a shared space which is of physical, virtual or even mental context, to achieve the spiral SECI process of knowledge conversion. An academic conference is a platform for information and knowledge exchange, through which the organizer actually provides a physical ba for dynamic knowledge sharing and new idea emergence. In adoption of the idea of ba, the on-line conferencing ba (OLCB) is designed for conferencing affairs as a supplementary virtual platform which is unhindered by time and space. OCLB engages in idea exchange, knowledge sharing and inspiration emergence by integrating the qualitative meta-synthesis technologies, CorMap and iView to conduct the conference mining for hidden patterns and setting up a forum for users discussion. CorMap and iView analysis are proposed by meta-synthesis and knowledge science research group in Academy of Mathematics and Systems Science, Chinese Academy of Sciences, have been applied to textual data analysis for diverse problems, such as group discussion process analysis, conference mining, experts’ knowledge essence elicitation and social psychological analysis, etc. (Tang, 2007, 2008, 2009; Tang & Zhang, 2007; Tang, Zhang, & Wang, 2008). After carrying out both CorMap and iView analysis toward the fundamental conference data, OLCB pushes the visualized mining results in pictures to users.

Figure 1 shows the framework of OLCB. The system was firstly applied to the 7th International Symposium on Knowledge and Systems Sciences (KSS’2006). The visualized analysis results were posted at the virtual
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