

9-2010

ONE CONFERENCE, MANY OPTIONS: THE WAYS TO SORT YOUR KNOWLEDGE IN A CONFERENCE

Iris Reyhav

Ariel University Center of Samaria, irisre@ariel.ac.il

Kishore Sengupta

INSEAD, France, kishore.sengupta@insead.edu

Dov Te`eni

, Tel-Aviv University, Israel, teeni@post.tau.ac.il

Follow this and additional works at: <http://aisel.aisnet.org/mcis2010>

Recommended Citation

Reyhav, Iris; Sengupta, Kishore; and Te`eni, Dov, "ONE CONFERENCE, MANY OPTIONS: THE WAYS TO SORT YOUR KNOWLEDGE IN A CONFERENCE" (2010). *MCIS 2010 Proceedings*. 72.

<http://aisel.aisnet.org/mcis2010/72>

This material is brought to you by the Mediterranean Conference on Information Systems (MCIS) at AIS Electronic Library (AISeL). It has been accepted for inclusion in MCIS 2010 Proceedings by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact elibrary@aisnet.org.

One Conference, Many Options: The Ways to Sort Your Knowledge in a Conference

*Iris Reychav, Ariel University Center, Israel, irisre@ariel.ac.il
Kishore Sengupta, INSEAD, France. kishore.sengupta@insead.edu
Dov Te`eni, Tel-Aviv University, Israel, teeni@post.tau.ac.il*

Abstract

Academic conferences, especially in the field of information systems, attract specialists the world over who attend, present, exchange knowledge, network, and build relationships in the academic world. One of the main benefits of a conference as regards attendees is the opportunity to meet other people with similar specializations. For knowledge sharing to take place in a conference, attendees need to identify ways of sorting and selecting the appropriate sources. This study looked into the use of technological channels utilized in the framework of a conference in an IS conference. It takes a novel approach to understanding how attendees search and locate content knowledge and knowledge on people. The results open a new perspective on how attendees source knowledge in an academic conference. Implications about the methods of sourcing knowledge in a conference are discussed.

Keywords: Academic Conferences, Content Knowledge, Knowledge on People

1.INTRODUCTION

Most if not all researchers attend conferences. In a conference, people may face high conference costs and have to travel great distances to attend. What motivates people and what benefits do they derive? One key benefit is the opportunity to meet and interact with other scholars. Knowledge sharing in an academic conference was examined by Reyshav & Te'eni (2009) who differentiated between formal settings such as lectures and workshops, and informal settings such as coffee breaks and social events. One of the main challenges to knowledge sharing as identified in this paper was the ability to interact selectively, which was related to potentials for future collaboration. However, their study was limited to knowledge sharing and did not deal with whether the attendees had appropriate knowledge of "who knows what." In order for knowledge sharing to take place in a conference, attendees need to identify potential ways of sourcing prior to the event.

A good strategy for sourcing knowledge is to ask someone who is likely to have the required knowledge. Since IT has clearly revolutionized matching between people during a conference, here we examined different sourcing methods that implement technological and personal channels.

The use of communication technologies in conferences is increasing rapidly, mainly due to the fact that participants tend to bring their own technologies such as laptops to the conference or take advantage of the technologies provided by the conference to keep updated online. However, little is known about the role of technology as used by attendees as compared to the role of traditional personal interaction for accessing knowledge. In addition, knowledge sourcing methods in a conference can assist organizing committees, who have a strong interest in making the best sourcing methods available.

This paper has two objectives. First, two crucial categorizations of knowledge - content knowledge and knowledge on people- are examined. Second, we explore the role of technology as compared to personal interactions in sourcing knowledge. The next section introduces the conference design that enables dialogue between the attendees. Then two of the main theories on the ways knowledge is captured, stored and shared are presented. A distinction is made between formal and informal knowledge shared in formal and informal settings. Third, we apply a theory of learning which considers sourcing knowledge as a vehicle to increase learning in organizations. Fourth, based on communication theory we present our model describing knowledge sourcing methods. This model is tested empirically through a survey and objective data collected during one of the largest conferences in the information systems field. Finally, we discuss how the empirical findings can enhance our understanding of the ways in which knowledge is sourced in academic conferences.

2. THEORETICAL BACKGROUND

2.1 CONFERENCE DESIGN

The main objective of a conference is generally to bring people together in a new setting that allows for interpersonal processes to unfold (Gustavsen and Engelstad, 1986). A primary objective of a conference design is to encourage the participants to acquire competence through democratic dialogue. A conference merges dialogue and work experience. An academic conference is a conference where researchers (not always academics) present and discuss their work. Academic conferences provide an important channel for exchange of information between researchers coming from all over the world. Mostly academic conferences are arranged around a specific theme to present research trends and new directions in a certain area. Among the various international conferences, popular ones attract hundreds of participants, such as one of the biggest IS conferences examined in this study. Academic conferences can help develop social relationships between people from different cultures through symbolic forms and techniques including formal settings as lectures and discussions, and informal settings such as social events.

2.2 KNOWLEDGE CATEGORIZATION WITHIN THE CONFERENCE

Two perspectives dominate thinking about how knowledge is captured, stored and shared. The first perspective, known as formalized knowledge sharing, defines knowledge as

collectable, storable and retrievable artifacts (Alavi et al., 2005, 2006). The second perspective highlights informal knowledge sharing and claims that knowledge is socially constructed and collectively held (Lave, 1993; Lave and Wenger, 1991; Nonaka and Konno, 1998). Rather than differentiating formal and informal settings, which both need to be adapted to maximize their gains from their knowledge management practices (Nidumolu et al., 2002; Orlikowski, 2002), this study considers formal and informal settings as complementary arenas where participants access content knowledge so as to be updated on the major discoveries in their field of interest, and knowledge on people, that can be implemented in job interviews, social relationships, potential collaborations, and to discuss goals, values and conference decisions.

2.3 KNOWLEDGE SOURCING AND LEARNING

Accessing and obtaining sourcing knowledge can increase learning in organizations (Gribbins et al., 2007). These learning behaviors fall into two categories: individuals can either learn from their own experiences or from the experiences of others (Levitt and March, 1988). Knowledge sourcing belongs in the latter category and is distinct from behaviors that involve learning directly from the work environment such as direct methods including observation, experimentation (Lapre and Van Wassenhove, 2001), systematic problem solving (Garvin, 1993), experiential learning (Kolb, 1984), and learning by doing (Arrow, 1962). Individuals must interpret the product of such direct learning activities; that is, knowledge must be inferred from the results of direct learning behavior. In contrast, knowledge sourcing is an indirect learning behavior whereby individuals gain access to others' understanding of the work environment, through interactions. In this context technology may have a considerable impact. Previous organizational research has focused on learning that take place either in a face-to-face environment, or online (Alavi et al., 2002; Carswell and Venkataesh, 2002). Online learning commonly includes use of the internet and the worldwide web (Kim and Bonk, 2006; Volery and Lord, 2000). The popularity of communication technology tools has surged over the last few years. According to internet world statistics there were 1, 463, 632, 361 internet users worldwide in 2008. There has been growing interest in online learning through communication technology (see seminal studies by Liu and Arnett, 2000; Molla and Licker, 2001; Torkzadeh and Dhillon, 2002). Understanding knowledge sourcing is critical for designing and developing the KM technologies which play a unique role in transferring knowledge in organizations.

2.3.1 Knowledge sourcing methods

The KM literature deals with different methods of sourcing knowledge, by which an individual accesses others' expertise, experience, insights, and opinions (Davenport and De Long, 1998; Earl, 2001). Organizations implement new knowledge sourcing methods to encourage individuals to draw on others' knowledge, hence reducing search and transfer cost. The KM literature has attempted to address the theoretical need to better articulate what kind of knowledge individuals source, how often different sourcing methods are implemented, and which technology tools are used.

Determining participants' preferred forms of knowledge sourcing is crucial for developing the KM infrastructure of a conference. Information seeking research (Johnson, 1996; Sussman and Siegal, 2003), does not distinguish between content knowledge and knowledge on people. By contrast to KM studies which have mostly focused on the representation of reality, we focus on the knowledge sourcing behavior of participants in a conference, which we define as the participants' actions to locate and access others' expertise, experiences, insights, and opinions. Organizations often support a wide variety of mechanisms for accessing others' knowledge, which range from ones recently proposed in the KM literature (e.g., knowledge repositories, virtual communities of practices such as meetings). Much of the research on knowledge transfer has investigated individuals' methods of transferring knowledge (social networks, knowledge repositories, e-mail, etc.). What has not yet been theorized or investigated are the various types of knowledge sourcing methods used for sourcing content knowledge and knowledge on people.

We grouped knowledge sourcing methods according to Harasim's (1989) typology of communication-based learning: one-to-many, one-to one, and many-to-many. These three

categories were also used by Culnan and Markus (1987) to group electronic media. Because knowledge sourcing is a communication behavior, we used these categories to identify three distinct forms of knowledge sourcing behaviors in a conference for content knowledge and knowledge on people.

The one-to-many sourcing method covers dissemination of knowledge from a single knowledge providing device that may be accessed by many knowledge seekers such as a website, electronic email list, SMS or bulletin boards. It is a superior mechanism for transferring best practice (Hansen et al., 1999). Websites showing conference content and email lists of participants serve the recipients' needs to re-use this existing knowledge because it save time and effort. Web repositories of knowledge are indexed, searchable, and therefore are easier to locate (Davenport and Klahr, 1998). Web repository forms of organizational memory enhance the re-use of knowledge within organizations (Haseman et al., 2005) in that written knowledge is a recipe for action that can be followed to produce a desired result. In an academic conference, the website presents information about program scheduling which can be followed up by the participants. Email lists can be easily accessed and used by participants either by with their own computer resources such as laptops or the internet café provided by the conference committee.

H1: One-to- many knowledge sourcing methods will be used by participants in an academic conference to the same extent for sourcing content knowledge and knowledge on people.

The one-to-one knowledge sourcing method is based on person-to- person communication where a single knowledge provider communicates directly with a single knowledge seeker through different technological tools and personal channels. "Personalization" is the term that describes the evolution in Internet marketing that mimics a local grocery store where the owner benefits from knowing all the customers personally. Technologies that support one- to one- sourcing knowledge methods in a conference include emails between conference participants, communication tools (e.g. Skype), dyadic SMS, and personal collocated one-on-one meetings. One-to-one knowledge sourcing mechanisms expressly support the kind of rich dialogue between source and recipients required to compare contexts.

Hansen et al. (1999) described dyadic knowledge sourcing behaviors as part of a KM strategy to promote person to person contacts. Examples include one-to-one conversations via telephone, email, or in person.

H 2: One- to-one knowledge sourcing methods will be used by participants in an academic conference to an equal extent for sourcing content knowledge and knowledge on people.

The many- to-many knowledge sourcing method covers those situations where knowledge is exchanged among multiple seekers and multiple sources through technologies and personal encounters. Technologies supporting this category include electronic discussions, multi-person calls using communication tools such as Skype, and telephone conference calls. Personal encounters cover planned meetings where individuals make efforts to locate and access others' expertise, experience, insights, and opinions by engaging in face to face public conversations. The distribution of knowledge among communities of individuals is well-known in many types of work (Brown and Duguid, 1991). Examples include question-and- answer systems (Goodman, 1998), work teams (Edmonson, 1999), and communities, both co-located and distributed (Rheingold, 1993). When a recipient and a source can engage in a dialogue, the recipient is able to pose questions, probe, and clarify the relevance of certain knowledge to his or her situation. March and Olsen (1987) argued that with better understanding of each others' respective context through discussions, it is more likely that the relevance or the irrelevance of a given piece of knowledge will become apparent. Dialogue also improves the likelihood that recipients will understand the

implications of a particular piece of knowledge. Hinds and Kiesler (1995) argued that a high level of interactivity “*may be especially important in exchanging and discussing complex information*” and that it “*permits... ongoing feedback so that people can adjust what they say to one another, correct misunderstanding and fill in details*” (p. 375). Knowledge sourcing through the many-to-many method taps a wide range of perspectives. Participants can target a group whose collective identity is a shared issue, problem, or interest and thus “*meet other like-minded people whom they might not otherwise have come to know because of differences in geographical location or position*” (p. 375). Knowledge sourcing in a group setting is more akin to weak ties in social network theory (Burt, 1992) in that it provides superior access to broader contact networks than do strong ties, which provide more redundant information. Hagel and Armstrong (1997) argued that the value of group discussions is exposure to the “*comparative experiences and perspectives of many individuals*” (p. 17).

H3: Many-to-many knowledge sourcing methods will be used by participants in an academic conference to an equal extent for sourcing content knowledge and knowledge on people. The hypotheses are summarized in Figure 1.

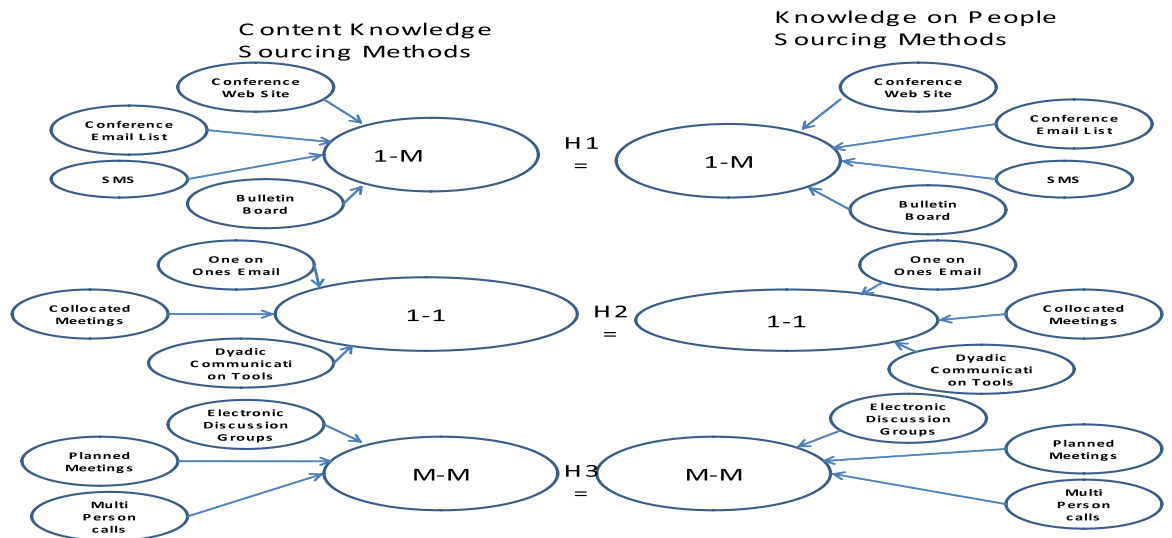


Figure 1: Theoretical Model of Sourcing Method for Content Knowledge and Knowledge on People in a Conference

3. RESEARCH METHOD

This study examined participants in a popular IS conference, the ICIS, held in Paris in December 2008. Participants were asked randomly to participate in the study while they were attending different events at the conference. We collected data on the second and the third day of the conference, since we wanted to be sure that people were familiar with the conference environment.

3.1 INSTRUMENT DEVELOPMENT

We defined and examined two types of knowledge: content knowledge and knowledge on people. Content knowledge refers to knowledge about research in the conference, e.g. lectures. We assessed participants' use of a variety of technological tools and

human interaction processes in sourcing each type of knowledge with a five point Likert scale anchored at "not at all" and "a lot".

Knowledge sourcing methods were grouped according to Harasim's (1989) typology of communication including the one-to-one; one-to-many and many-to-many methods. The technologies and processes in each category were reviewed by IS professors from several countries.

Reliability and confirmatory factor analysis is not a meaningful concept when applied to actual behavior constructs (Bollen and Lennox 1991; Chin, 1998). Each sourcing method category in this study covered a distinct technological tool or process for sourcing knowledge. Therefore it was impossible to assess the reliability of each of these dimensions. For this reason each item was analyzed separately for sourcing content knowledge and sourcing knowledge on people. Although the items were evaluated on a Likert scale, the results were split into two dichotomous variables, where a score of 1-2 was considered as not using the technology or process in the specific sourcing method and 3, 4, or 5 was considered as usage. McNemar's non-parametric method test for nominal data was applied on the matched pairs of content knowledge and knowledge on people. Further, in order to aggregate the results for each sourcing method we applied a Cochran test which is also a non-parametric test to determine whether the different sourcing methods had a similar effect on sourcing content knowledge and knowledge on people. Use of a sourcing method was defined as at least one mention of a technology or personal process.

The control variables included age, country of work, and profession (academic, non-academic). We also asked the participants to indicate whether they had a personal laptop with them at the conference.

3.3 DATA COLLECTION

We carried out the survey in four sessions, for a total of 400 questionnaires. In each session we distributed 100 questionnaires which participants were given during the lectures, workshops, panels, etc. In the morning session on the second day we obtained a 16% response rate (10% of the total sample); in the afternoon session of the second day the response rate was 41% (27% of the total sample). In the morning session of the third day the response rate was 22% (14% of the total sample) and in the afternoon session of the third day the rate was 72% (47% of the total sample). A total of 180 responses were obtained for a response rate 45%. Twenty nine participants who did not answer many of the questions were eliminated. Respondents ranged in age from 21 to 70 with a mean age of 38.74 (sd= 10.26). Participants came from the following geographical areas: 33.8% from the USA; 45% from Europe; 13.2 % from Asia, and 4.1% from Australia. The four respondents from Australia were pooled with the European group on the basis of similarity of responses. Among the participants, 83.8% were academics. Seventy-seven percent brought their own technologies such as laptops to the conference and only 15.9% did not have their own computer at the conference and needed to use the conference internet café.

4. DATA ANALYSIS

Hypotheses H1, H2, H3, regarding the differences in use of the technologies and processes in each one of the three sourcing methods were partially supported, as shown in Table 1.

4.1 One-to-many sourcing method category:

There was significantly more sourcing of content knowledge (KMC) compared to sourcing knowledge on people (KMP) for the conference web site (66% vs. 50%) and for the conference email list (25.8% vs. 17.3%). A high percentage of participants used the conference website for sourcing content knowledge and for sourcing knowledge on people (71.7%, $p \leq .01$). This was also true for the conference email list (51.3%, $p \leq .01$). However, there was no significant difference for the bulletin board between sourcing content knowledge and knowledge on people. Thus hypothesis 1 was partially confirmed only as regards sourcing knowledge. All the other technologies included in this category were used more for sourcing content knowledge.

Knowledge Sourcing Method	Technology/ Process	KMC%	KMP%	(KMP/ KMC)%	Sig.	Hypothesis Accepted
One to Many	Conference Web Site	66%	50%	71.7%	.00	H1-
	Conference Email List	25.8%	17.3%	51.3%	.01	H1-
	Bulletin Board	14.1%	11.9%	47.6%	.64	H1+
One to One	One on One Email	47.7%	33.11%	63.4%	.00	H2-
	SMS	12.3%	10.59%	61.1%	.77	H2+
	Collocated One on One Meetings	53.7%	35.09%	58.2%	.00	H2-
	Communication Tools used One on One (e.g., Skype)	19.5%	10.59%	48.3%	.00	H2-
Many to Many	Electronic Discussion Groups	10.1%	7.94%	53.3%	.54	H3+
	Planned Meetings	40.1%	25.16%	57.6%	.00	H3-
	Multi –Person Calls using Communication Tools (e.g., Skype)	11.3%	7.94%	58.8%	.18	H3+

Table 1: Technology Use Comparison for Sourcing Content Knowledge versus Sourcing Knowledge on People (McNemar Test)

4.2 One-to-one sourcing method category:

There was significantly more sourcing of content knowledge (KMC) compared to knowledge on people (KMP) using one-on-one email (47.7% vs. 33.6%), collocated one-on-one meetings (53.7% vs. 36.1%), and communication tools used one-on-one (19.5% vs. 10.7%). A high percentage of participants who used one-on-one email for sourcing content knowledge also use emails for sourcing knowledge on people (63.4%, $p \leq .01$); a high percentage of participants using collocated one-on-one meetings for sourcing content knowledge also used this for sourcing knowledge on people (58.2%, $p \leq .01$); a high percentage of participants using communication tools one-on-one for sourcing content knowledge used it for sourcing knowledge on people (48.3%, $p \leq .01$). Thus Hypothesis 2 was partially supported. For SMS technology there was no significant difference between sourcing content knowledge and knowledge on people. In all the other technologies, email content knowledge was accessed more than knowledge on people.

4.3 Many-to-many sourcing method category:

There was significantly more sourcing of content knowledge compared to knowledge on people for planned meetings (40.1% vs. 25.9%). Among those participants who used planned meetings for sourcing content knowledge, 57.6% ($p \leq .01$) also sourced knowledge on people in these planned meetings. Thus Hypothesis 3 was partially supported in that there was no significant difference between sourcing content knowledge and knowledge on people results except for electronic discussion groups, and multi-person calls using communication tools. However, the dominant use of planned meetings in this category tended to be used for content knowledge more than for knowledge on people.

The control variables in this study were not found to be significantly correlated with the research variables, although the findings indicate a higher percentage of academic respondents and a higher rate of respondents who brought their own laptop with them to the

conference. No difference as regards sourcing methods was found between participants from different continents.

In conclusion, our hypotheses were partially supported. In order to generalize our results we compared the use of each sourcing method for content knowledge and knowledge on people using a Cochran non parametric test (see Table 2).

Knowledge Type	1-M	1-1	M-M	Cochran's Q	Sig.
Content Knowledge	71.5%	68.2%	54.5%	12.14	.002
Knowledge on People	52.3%	47.7%	35.1%	12.62	.002

Table 2: Sourcing Methods Chosen for Content Knowledge and Knowledge on People

The results presented in Table 2 illustrate the significant difference between sourcing methods for content knowledge (Q=12.14, p=.002) and knowledge on people (Q=12.62, p=.002). However, the results fail to support the ranking of sourcing methods in terms of preference; therefore we examined pairs of sourcing methods for each type of knowledge (see Table 3).

Knowledge Type	Sourcing Method Comparison	Cochran's Q	Sig.
Content Knowledge	1-M; 1-1	.43	.50
	1-M; M-M	9.94	.002
	1-1; M-M	7.0	.008
Knowledge on People	1-M; 1-1	.75	.38
	1-M; M-M	11.65	.001
	1-1; M-M	7.36	.007

Table 3: Sourcing Methods Ranks for Content Knowledge and Knowledge on People

Table 3 depicts the differences in sourcing methods and indicates that for content knowledge, the one- to- many sourcing method was preferred over the many- to- many method (Q=7, p=.008), and one-to-one sourcing was preferred over the many- to- many method (Q=9.94, p=.002) for knowledge on people. However, no significant difference was found between one-to- many sourcing and one-to-one sourcing for content knowledge.

Similar patterns were found for sourcing knowledge on people. One-to-many ranked higher than many-to-many (Q=11.65, p=.001). One- to- one ranked higher than many- to- many (Q=7.36, p=.007). No significant difference was found for sourcing knowledge on people between one- to- many and one- to- one.

5. DISCUSSION LIMITATION, PRACTICAL AND RESEARCH IMPLICATIONS

This research addressed the question of how participants at an academic conference access others' knowledge about content in the conference and knowledge about people through three different sourcing methods: one-to-many, one-to-one, and many-to-many.

According to March (1991), individuals benefit from better access to others' knowledge in two ways: enhanced efficiency through the re-use of knowledge or replication, and improved innovation through the creation of entirely new knowledge. In addition, according to Porra (1999) adaptively also evolves through feedback with the environment, and the ability to change entails knowledge adaptation.

This study is one of the first to have collected self-report data on participants' actual behavior in sourcing knowledge. The empirical findings demonstrate that sourcing content

knowledge takes precedence over sourcing knowledge on people in all of the sourcing methods.

First, in one- to-many sourcing, the most popular tools used in the ICIS 2008 conference were websites and the conference email list.

Knowledge about the content of the conference presented on the website was considered to be clearer and more objective than the information conveyed through conversation which is often intermixed with irrelevant information. Further, conference websites are prepared by specialists who control the content for clarity, objectivity and accuracy. However, participants' comments indicated that it took time to find relevant information on the website. Participants who sourced knowledge via the website needed to define their search and hence, this sourcing method was unlikely to expose them to divergent viewpoints.

Similarly, in one- to- one sourcing, content knowledge dominated. However, this time personal interactions in one-to-one meetings ranked first for both sourcing content knowledge and knowledge on people. Among the technological tools in this category the one-on-one email was ranked first. Participants described the importance of two- way communication through interactions to enhance networking, which increased the potential for collaboration in future research.

Third, in the many-to- many sourcing method, personal interactions were ranked first. Similar to the previous two sourcing methods, content knowledge ranked higher than knowledge on people. Group knowledge sourcing was not supported by technologies in the conference. However, group knowledge sourcing has great potential for social impact (Parameswaran and Whinston, 2007). Currently, much of the business interest in social online networks is in the field of content distribution and advertising; however, there are many possible applications to conferences. Enhancing the opportunities for group sourcing may empower individuals to use electronic group discussions to get to know new people, and access knowledge on people. In summary, our research provides evidence on types of sourcing methods enabled by technologies in an academic conference. A senior manager from a major IT company attending the conference felt the questionnaire tapped an under-researched area of communication: not what people access, but how people use different technological tools to source specific types of information. In summary, IT is about to change the form of knowledge sharing at conference in both the formal and the informal settings (see for example Te'eni, 2008).

Although the sample size was small it could not be extended, since the conference organizers were hesitant to disturb the participants. Future research consisting of a follow-up with the respondents and a longitudinal study on changes in behavior could help clarify how sourcing knowledge enables scientific exchange.

This study has several practical implications, especially as regards managing technological and personal KM methods within organizations. IT managers often invest significant amounts in technologies which support knowledge management with the goal of creating an organizational knowledge database that can provide the organization with a market advantage. However, simply having technology does not directly imply knowledge sharing. Therefore, such investments will be wasted if managers do not first determine which sourcing methods are best served by different tools and which personal methods are most suitable for sourcing content knowledge and knowledge on people. Understanding cultural differences in sourcing knowledge is also important in the global age. Further, managers can increase the efficiency of knowledge dissemination in organizations through customization of technology tools for sourcing different types of knowledge.

To the best of our knowledge, this is the first study to empirically test how knowledge is disseminated in an academic conference thorough technology tools and personal interactions. Our research examined the actual behavior of academic researchers and may help extend and encourage greater use of group technologies, in particular in settings where people come with their own IT tools. Moreover, KM implementation in a conference requires careful attention to support content knowledge and knowledge on people. Future research

should study the influence of knowledge sourcing on knowledge sharing and its impact on learning and scientific exchange.

References

- Alavi, M., Kayworth, T. R. and Leinder, D. E. (2005/2006). An empirical examination of the influence of organizational culture on knowledge management practices. *Journal Management Information Systems*, 22 (3), 191-224.
- Alavi, M., Marakas, G. M. and Yoo, Y. (2002). A comparative study of distributed learning environments on learning outcomes. *Information Systems Research* 13 (4), 404-415.
- Arrow, K. (1962). The implications of learning by doing. *Review Economic Studies* 29, 166-170.
- Bollen, K. A. and Lennox, R. (1991). Conventional wisdom on measurement: A structural equation perspective. *Psychological Bulletin* 110 (2), 305-314.
- Brown, J. S. and Duguid, P. (1991). Organizational learning and communities-of-practice: Toward a unified view of working, learning, and innovation. *Organization Science* 2 (1), 40-57.
- Burt, R. S. (1992). *Structural Holes: The Social Structure of Competition*. Harvard University Press, Cambridge, MA.
- Carswell, A. D. and Venkatesh, V. (2002). Learner outcomes in an asynchronous distance education environment. *International Journal of Human Computer Studies* 56 (5), 475-494.
- Chin, W. W. (1998). The partial least squares approach for structural equation modeling, in: Marcoulides, G. A., (Ed.), *Modern Methods for Business Research*, Lawrence Erlbaum, Mahwah, NJ, pp. 295-336.
- Culnan, M. J. and Markus, M.L. (1987). Information technologies, in: Jablin, F M., Putnam, L. L., Roberts, K. H. and Porter, L. W. (Eds.), *Handbook of Organizational Communication: An Interdisciplinary Perspective*, Sage, Newbury, Park, pp. 420-443.
- Daft, R. L. and Weick, K. E. (1984). Toward a model of organizations as interpretation systems. *Academy Management Review* 9 (2), 284-295.
- Davenport, T. H., De Long, D. W. and Beers, M. (1998). Successful knowledge management projects. *Sloan Management Review* 39 (2), 43-57.
- Davenport, T. H. and Klahr, P. (1998). Managing customer support knowledge, *California Management Review* 40 (3), 195-208.
- Earl, M. J. (2001). Knowledge management strategies: Towards a taxonomy. *Journal of Management Information Systems* 18 (1), 215-233.
- Edmonson, A. (1999). Psychological safety and learning behavior in work teams. *Administrative Science Quarterly* 44 (2), 350-383.
- Ford, D. P., Connelly, C. E. and Meister, D. B. (2003). Information systems research and Hofstede's culture consequence: An uneasy and incomplete partnership. *IEEE Transactions on Engineering Management* 50 (1), 8-25.
- Garvin, D. A. (1993). Building a learning organization *Harvard Business Review* 71 (4), 78-91.
- Goodman, P. S. and Darr, E. D. (1998). Computer aided systems and communities: Mechanisms for organizational learning in distributed environment. *MIS Quarterly* 22 (4), 417-440.
- Gribbins, M. L., Urbaczewski, A., Hadidi, R. and Vician, C. (2007). Technology-enhanced in blended learning environments: A report on standard practices. *The Communication of the Association for Information Systems* 20, 741-759.
- Gustavsen, B. and Engelstad, P. H. (1986). The design of conferences and the evolving role of democratic dialogue in changing working life. *Human Relations* 39 (2), 101-116.

- Hagel, J. and Armstrong, A. (1997). *Net Gain*. Harvard Business School Press, Boston.
- Hansen, M. T., Nohria, N. and Tierney, T. (1999). What's your strategy for managing knowledge. *Harvard Business Review* 77 (2), 106-116.
- Harasim, L. (1989). On line education: A new domain in: Mason, R. and Kaye, A., (Eds.), *Mindweave: Communication, Computers, and Distance Education*, Pergamon Press, Oxford, pp. 50-62.
- Haseman, W. D., Nazareth, D. L. and Souren, P. (2005). Implementation of a group decision support system utilizing collective memory. *Information & Management* 42 (4), 591-605.
- Hinds, P. and Kiesler, S. (1995). Communication across boundaries: work structure and use of communication technologies in a large organization. *Organization Science* 6 (4), 373-393.
- Hofstede, G. (1980). *Culture's Consequences: International Differences in Work Related Values*, Beverly Hills, CA: Sage Publications.
- Johnson, J. D. (1996). *Information Seeking: An Organizational Dilemma*, Quorum Books, Westport, CT.
- Laprè, M. A. and Van Wasenhove, L. N. (2001). Creating and transferring knowledge for productivity improvement in factories. *Management Science* 47 (10), 1311-1325.
- Lave, J. (1993). Situating learning in communities of practice, in: Resnick, L. B., Levine, J. M and Teasley, S. D., (Eds.), *Perspectives on Socially Shared Cognition*, Washington (DC): American Psychological Association, pp. 17-36.
- Lave, J. and Wenger, E. (1991). *Situated learning: legitimate peripheral participation*. New York (NY): Cambridge University Press.
- Levitt, B. J., March, G. (1988). Organizational learning, *Annual Review Sociology* 14, 319-338.
- Liu, C. and Arnett, K. P. (2000). Exploring the factors associated with web site success in the context of electronic commerce. *Information & Management* 38 (1), 23-33.
- Kim, K. J. and Bonk, C. J. (2006). The future of online teaching and learning in higher education: The survey Says. *EDUCAUSE Quarterly* 29 (4).
- Kolb, D. A. (1984). *Experiential Learning: Experience as the Source of Learning and Development*, Prentice-Hall, Englewood Cliffs, NJ.
- March, J. G. (1991). Exploration and exploitation in organizational learning, *Organization Science* 2 (1), 71-87.
- March, J. G. and Olsen, J. P. (1987). The uncertainty of the past: Organizational learning, in: March, J. G., (Ed.), *Decisions and Organizations*, Basil Blackwell, Oxford, pp. 335-358.
- Martinsons, M. G. and Westwood, R. I. (1997). Management information systems in Chinese business culture: An explanatory theory. *Information & Management* 32 (5), 215-228.
- Molla, A. and Licker, P. S. (2001). E-commerce systems success: an attempt to extend and respecify the DeLone and McLean model of IS success. *Journal of Electronic Commerce Success* 2 (4), 1-11.
- Nidumolu, S. R., Subramani, M. and Aldrich, A. (2001). A situated learning and the situated knowledge base. *Journal Management Information Systems* 18 (1), 115-50.
- Nonaka, I. and Konno, N. (1998). The concept of 'Ba': Building a foundation for knowledge creation. *California Management Review* 40 (3), 40-54.
- Orlikowski, W. U, M. (2002). Knowing in practice: Enhancing a collective capability in distributed organizing. *Organization Science* 13 (3), 249-73.
- Parameswaran, M. and Whinston, A. B. (2007). Social computing: An overview. *The Communication of the Association for Information Systems* 19, 762-780.
- Porra, J. (1999). Colonial systems, *Information Systems Research* 10 (1), 38-69.
- Reychav, I. and Te'eni, D. (2009). Knowledge exchange in the shrines of knowledge: The "how's" and "where's" of knowledge sharing processes. *Computers & Education* 53, 1266-1277.

- Rheingold, H. (1993). *The Virtual Community*, Addison-Wesley, New York.
- Soh, C., Kien, S. S. and Yap, J. T. (2000). Culture Fits and Misfits: Is ERP a Universal solution? *Communication of the ACM* 43 (4), 47-51.
- Stasser, G., Taylor, L. A. and Hannah, C. (1989). Information sampling in structured and unstructured discussions of three and six person groups. *Journal of Personality and Social Psychology* 57 (3), 67-78.
- Sussman, S. and Siegal, W. (2003). Informational influence in organizations: An integrated approach to knowledge adoption, *Information Systems Research* 14 (1), 47-65.
- Te'eni, D. (2008). Let's Congress, www.letscongress.com.
- Torkzadeh, G., Dhillon, G., 2002. Measuring factors that influence the success of Internet commerce *Information Systems Research* 13 (2), 187-204.
- Volery, T. and Lord, D. (2000). Critical success factors in online education. *International Journal of Education Management* 14 (5), 216-223.
- Walsham, G. (2002). Cross-cultural software production and use: A structural analysis. *MIS Quarterly* 26 (4), 359-380.