University of West Hungary

Faculty of Economics

MANAGEMENT OF
KNOWLEDGE SHARING PATTERNS

Ph.D. Theses

Tamás Szirtes

Sopron

2011

Doctoral School: István Széchenyi Management

and Organisation Sciences

Director: Prof. Dr. Csaba Székely DSc

Program: Business Economics and

Management

Head of the Program: Prof. Dr. Csaba Székely DSc

Supervisor: Dr. István Szűts CSc

………………………………..…………
Approving Signature of the Supervisor

1. Goals and hypotheses of the research

In today's knowledge economy, knowledge plays a pivotal role in the success of business organizations. If members of an organization share their knowledge with each other, the organization is able to be more innovative and eventually more competitive in the market. Knowledge managers have always paid a lot of attention to knowledge sharing, but never enough to the motivational aspects of it including questions such as "Why do people share information with co-workers or why do they not?" or "What motivates a person to give up personal knowledge to someone else?". Until the motivation is clearly understood, knowledge management practices cannot be efficiently improved. There are many examples supporting this point: some organizations have invested significant amounts in KM solutions only to see their initiatives falter. If the motivation for knowledge sharing is not clear (and clearly managed), then employees do not simply start contributing.

Fiske's (1991, 1992) Relational Models Theory, which is the centerpiece of this dissertation, was not originally invented to describe knowledge sharing, but generally human relationships. Fiske (2004) states that the "Relational models theory is simple: People relate to each other in just four ways. Interaction can be structured with respect to (1) what people have in common, (2) ordered differences, (3) additive imbalances, or (4) ratios. When people focus on what they have in common, they are using a model we call Communal Sharing (CS). When people construct some aspect of an interaction in terms of

ordered differences, the model is Authority Ranking (AR). When people attend to additive imbalances, they are framing the interactions in terms of the Equality Matching (EM) model. When they coordinate their actions according to proportions or rates, the model is Market Pricing (MP)."

Even though this theory was invented to describe human relations in general, few researchers hypothesized that it could also be applied to knowledge sharing since knowledge sharing is a human relation after all. The latest research in this field has been conducted by Boer & Berends (2003) who examined an industrial research group. The last sentence of their article cites a very comparable research performed by Bij et al. (2003): "They may have gotten a different result when, for example, consultancy firms were studied." This sentence and Fiske's theory can be considered to be the foundation of this dissertation, but the goals (G) and related hypotheses (H) of this research project reach beyond what these findings implied and cover the following:

G1: Prove the validity of Fiske's theory for a consulting firm and an online community
H1: Fiske's relational theory describes the knowledge sharing mechanisms in a consulting firm (called Intenzz SAP Consulting Group).
H2: Fiske's relational theory describes the knowledge sharing mechanisms in an online community (called SAP Community Network).
G2: Investigate the knowledge sharing practices within Intenzz SAP Consulting Group

H3: Since Intenzz SAP Consulting Group is a knowledge-intensive consulting company, the Community Sharing model dominates its internal knowledge sharing practices. (More than 50% of the motivation in the internal processes apply the Communal Sharing model.)

G3: Create practical guidelines for managing the knowledge sharing patterns within Intenzz SAP Consulting Group

G1 does not try to generalize to the complete set of consulting firms and online communities, but it is limited to two elements. The value of reaching this goal is that it proves the applicability of Fiske's theory in two new domains, which have never been researched before. G2 and G3 are goals only for Intenzz, because the author was in a position to suggest improvements in the knowledge management practices of this organization. In case of an independent Community it is not the case; therefore there is no added value in focusing on G2 and G3 for the SAP Community Network. The results produced to reach G2 and G3 are not generalizable without further research, but demonstrate the practical value of Fiske's theory. Furthermore, the exploratory research conducted to realize G2 and G3 gives the insight, lays the foundations, formulates the right questions and develops the tentative propositions which can be tested in another subsequent explanatory research.

2. Content, methodology and justification of the research

The content of the research is the analysis of two organizations: Intenzz SAP Consulting Group and SAP Community Network. Both are knowledge-intensive organizations; therefore knowledge processes are of very high importance.

The methodology of the Intenzz case study included a mix of qualitative and quantitative methods and a combination of exploratory and explanatory approaches: first, an online survey was conducted among the employees of Intenzz. This helped to identify the most common knowledge sharing scenarios inside Intenzz and gather qualitative data about the usage of the four relational models. Second, management was interviewed to review the list of business processes in the online survey. This resulted in a longer list of processes. Third, based on the output of the online survey and interviews with management, business process models and knowledge process models, based on the former, were created using the growing BPMN standard. These knowledge process models show what knowledge processes are present and what kind of knowledge sharing takes place within Intenzz. Fourths, interviews with the employees were conducted to analyze all the scenarios that were not covered in the online survey. Finally, recommendations and guidelines were created based on the findings and they were validated against another research project conducted at Intenzz. The second case study, about SAP Community Network, used a combination of qualitative (participant observation, text

analysis and narratives) and quantitative (survey) research methods and concluded the same: the four models are applicable and can fully describe the knowledge sharing inside the Network.

The author strongly believes that knowledge sharing on all levels, from small organizations to global networks, has an immense potential to improve human conditions. The author is inspired about the idea of applying Fiske's very powerful theory to knowledge sharing and thus enabling further developments in this field. It adopted an interdisciplinary approach and introduced so-called knowledge sharing patterns as extensions of the original Relational Models Theory. Beyond reaching theoretical conclusions, this research has created recommendations and guidelines for knowledge management practitioners.

3. Results of the research

In the Intenzz case study, from a knowledge sharing point of view, the 12 most important business processes have been identified in the online survey and the interviews. The 79 scenarios of the online survey showed that the most common knowledge sharing processes within Intenzz are working in internal teams, having email discussions with the colleagues and consulting the customer. For each of the 12 processes the patterns of the four models have been analyzed. Some examples of the results of this analysis are listed below.

CS: 52% of the internal processes are CS-based, 20% AR, 23% EM, and 5% MP. This demonstrates very

clearly that knowledge sharing within Intenzz occurs predominantly based on the CS model. For example, uploading content to the Intenzz Portal is based on CS. On the other hand, when sharing knowledge internally in teams, not all Intenzz employees consider their colleagues a community. A mix of CS and EM was found and it can be explained by the fact that some Intenzz consultants were hired 2 years ago (when the company was founded), and some joined just recently. For the new ones EM is expected and CS is more spread among the "old" colleagues. Some participants share knowledge based on AR in a team only to gain reputation or because they think they are expected to do so by their bosses. Similarly, when looking at the processes which received the highest percentage for any of the four models, the process of teaching a colleague excels with 63% CS. This reflects the fact that teaching a colleague does not get rewarded financially (MP).

AR: Consulting is the very typical MP scenario in the sense that the consultant shares her/his knowledge until she/he is paid. Interestingly, AR got the biggest number of votes for this process. The reason can be that reputation can be a reward for knowledge sharing whether the sharing is internal (with colleagues) or external (with customer). AR is significantly stronger in case of external sharing with other consultants because the judgment of the peer group is very important for any experienced consultant. Similarly, when Intenzz consultants give trainings, AR is the strongest since Intenzz employees give trainings to improve their reputation in the market. Money (MP) is also important, but most important is building the network and

improving one's image. One of the reasons why MP plays a smaller role could be that payment is not even certain; it is dependent on the evaluation ratings of the students. The same can be found about why consultants attend the VNSG Congress, the largest SAP fair in the Netherlands: on one side, they are paid to attend (MP), and on the other, they are present because everybody important is there, so building professional network and reputation (AR) is just as important as the paid hours. Interestingly the strongest AR process is the one which is also the strongest CS process: teaching a colleague. It can occur because teaching requires wide and very deep knowledge and in a teaching situation it is always very transparent who has this knowledge (the teacher).

EM: All Intenzz consultants follow trainings; therefore if one consultant shares the lessons learned from a training, she or he can expect to hear similar lessons from others. This is a perfect setup for EM and indeed, from all the processes this received the highest percentage of EM motivation.

MP: Consulting is expected to be the very typical MP scenario, but, interestingly, AR got the biggest number of votes for this process – as discussed above. This shows that really good consultants don't work for their customers only based on the MP model.

The key findings in the SAP Community Network case study have shown that some participants worked along CS and EM, some followed AR, and some were motivated by market pricing.

CS: SAP Community Network is called community, so CS is implied. The SAP Community Network uses online and offline operational methods. The main online methods, apart from the forums, are wikis, chat sessions, blogs, and the mentor program. The number one offline community feature is the Community Day, which is a one-day pre-conference event of the largest SAP conference.

EM: In reality, most SAP consultants participate actively assuming EM, i.e. mutual benefits from sharing their knowledge. SAP tries to position this community based on EM as the main source of information for SAP consultants. The forums and the Lounge are the main realizations of EM, even though the forums have CS, AR, and MP aspects as well.

AR: AR comes in two forms: based on power or based on reputation. Power-based AR is present in the Community due to the involvement of SAP employees. Reputation, on the other hand, is also a major factor.

MP: Key to the success and growth of the Community has been a novel awards program. Authors, and even audience can collect points for their involvement and the points can be used to purchase SAP merchandize. This is a clear form of the MP model.

This research has shown that the four models can be mixed and even in one interaction multiple models can be present. This is what the author calls patterns and this can be considered as an extension of Fiske's theory. Understanding the patterns is a prerequisite for managing

them and minimizing the mismatches (disagreement about the implementation method, use of different models, and infrastructure is designed for another model). Based on the analysis of the above mentioned models and considering the added value created in the various patterns, an ordered list of patterns was compiled: Internal knowledge sharing is recommended based on pure CS, CS+AR, and CS+EM. Internal knowledge sharing based on pure AR, AR+EM, AR+MP, pure EM, and EM+MP needs improvement. Internal knowledge sharing based on pure MP and CS+MP is to be avoided.

For Intenzz this new knowledge allowed them to create new guidelines for their internal knowledge sharing:
- More formal and informal meetings should be held to minimize null relations (lack of relations).
- Intenzz should create conditions for as much CS as possible. This facilitates moving from EM to CS.
- Intenzz should help consultants get AR benefits alongside MP to further strengthen the motivation for consulting.
- Communities of Practice are the way to go to build SAP expertise inside Intenzz.
- Knowledge sessions are useful to build knowledge internally and improve Intenzz' vision externally.
- The use of LinkedIn and such networks should be encouraged in order to locate experts and share knowledge across the boundaries of organizations.
- The Intenzz Portal should be redesigned to enable it to better support the communities.
- Further tooling, e.g. wiki, should be assessed to enable knowledge sharing.

New scientific results

The new scientific results of this research can be summarized in the following points.

Research method:
- This research introduced the so-called knowledge sharing patterns as extensions of the original Relational Models Theory.
- Not enough attention has been paid to the motivational aspects of knowledge sharing, and even the various researches in this area lead to vary different and confusing results. Proving that Fiske's theory is applicable to describe all knowledge sharing in Intenzz and the SAP Community will hopefully draw more attention to this approach and further studies will follow.
- This exploratory research laid the foundations and developed the tentative propositions which can be tested in another subsequent explanatory research.
- This dissertation "walks the talk", because it not only discusses knowledge sharing, but supports it as well. It is written in English which is the basis nowadays for an international knowledge sharing.

Research results:
- The research demonstrated that all the knowledge sharing within a consulting form (Intenzz SAP Consulting Group) and in an online community (SAP Community Network) can be described by the four models or the patterns of the four models.

- The results showed which models and patterns were more or less relevant in the various knowledge sharing processes at Intenzz.
- Knowledge processes were derived from business processes in order to support the design of knowledge infrastructure.

Practical results:
- An ordered list of patterns was created to formulate recommendations to improve knowledge sharing.
- The understanding of the patterns allowed the author to define practical guidelines to encourage knowledge sharing within Intenzz.

4. Conclusions and recommendations

The first goal (G1) of this project was to prove the validity of Fiske's theory for a consulting firm and an online community. In the first case study about Intenzz SAP Consulting Group both the online survey and the interviews delivered results that supported the hypothesis (H1) that the four models of Fiske's theory (1991, 1992), Communal Sharing, Authority Ranking, Equality Matching and Market Pricing can describe all knowledge sharing inside an organization.

In the second case study about SAP Community Network the qualitative methods showed that the four models are again capable of describing knowledge sharing in this online community (H2). Based on these results, hypothesis H1 and H2 are accepted.

The second goal (G2) of this research was to investigate the knowledge sharing practices within Intenzz SAP Consulting Group in an exploratory approach. This was achieved by the online survey, the interviews with employees and managers, by business process modeling and modeling of the related knowledge processes. These methodologies improved understanding of the knowledge sharing patterns for each of the 12 business processes analyzed inside Intenzz. All these findings were the foundation to reach the third goal (G3).

The third hypothesis (H3) states that since Intenzz SAP Consulting Group is a knowledge-intensive consulting company, the Community Sharing model dominates its internal knowledge sharing practices. More precisely formulated, more than 50% of the motivation in the internal processes follows the Communal Sharing model. The average percentage for CS was found to be 52%; therefore H3 is accepted.

The third goal (G3) was to create guidelines for managing the knowledge sharing patterns within Intenzz SAP Consulting Group. The findings reached as part of G2 helped to create an ordered list of knowledge sharing patterns and identify areas for improvement in the knowledge management practices of Intenzz. Consequently, G3 has been reached.

To sum up, all four and no more than four models could be found in both case studies. This is the most important research observation. Once this was settled, there were great possibilities to analyze the patterns of these four models and improve them.

This research shows that Fiske's theory can be applied to a consulting firm and an online community. It would be recommended for a follow-up research to take it further, investigate a representative sample of consulting firms and online communities to prove the validity of Fiske's theory to all consulting firms and online communities. Moreover, it is recommended for future researches, to continue with this approach and develop further guidelines to exploit the theory's full potential.

Another area for future research where knowledge sharing may be different from other areas is the open source movement. Explaining the incentives of individuals who take part in the open source movement based on Fiske's theory is an interesting challenge for knowledge management researchers. So far, the motivational aspects of the open source movement have not been analyzed. This is a huge opportunity to show the applicability of the theory on one side, and to better understand this movement on the other side.

Last, but not least, let this chapter conclude with another type of recommendation. Since this PhD project was partially coached by the University of West Hungary and the Eindhoven University of Technology in the Netherlands, the author hopes that this work will encourage cross-fertilization between these two universities for the benefit of both and could bring beneficial consequences beyond the scope of this project in the future.

5. Publications related to the dissertation

Publications:

1. Tamás Szirtes: Managing knowledge sharing – case study of a consulting firm. English language article. The article has been accepted with modifications by both reviewers of the Society and Economy. ISSN 1588-9726.
2. Tamás Szirtes: Knowledge Management via the Portal. English language public publication. Written upon request from Intenzz NetWeaver Services B.V. Zeist (Holland), December 3, 2007.
3. Tamás Szirtes: Tudásmenedzsment a holland agráriumban. Hungarian language article. Published in the 16th special edition of Gazdálkodás. Publisher and distributor: Károly Róbert Oktató-Kutató Kht. Gyöngyös. ISSN 0046-5518, INDEX 25341. 2006. 50th year, pages 109-114.
4. Tamás Szirtes: Growing a knowledge management culture in virtual organizations. English language article. Published in the Knowledge Management category of the reviewed database „Leading Edge Forum Papers Program" of the Computer Sciences Corporation. http://lef.csc.com/
   Washington (USA). May 11, 2006.
5. Tamás Szirtes: Managing Knowledge Sharing Patterns. English language article. Published in the reviewed database of szakdolgozat.hu. The owner of the database: Twentyx Bt. (Supervisor: Weggeman, prof. dr. ir. M.C.D.P)
   Vác, January 19, 2005.

Presentations:

1. Knowledge Management in the Enterprise 2.0. English language presentation in the conference „Innovation, Competitiveness, Convergence - The Science for the Earth which can be lived" organized by the Faculty of Economics of the University of West Hungary.
Proceedings:
http://www.nyme.hu/fileadmin/dokumentumok/ktk/Konferencia/2008_konf_Absztraktok.pdf
Sopron, November 4, 2008.

2. Presenting Enterprise Service-Oriented Architecture to IT Management. English language presentation in the „18th Enterprise Architecture Practitioners Conference" of OPENGROUP.
Proceedings:
http://www.opengroup.org/public/member/proceedings/q208/
http://www.opengroup.org/public/member/proceedings/q208/21PL.htm#Tuesday (Username: confq208 , Password: squinty)
Presentation:
http://www.opengroup.org/public/member/proceedings/q208/Presentations/a3_szirtes.pdf (Username: confq208 , Password: squinty)
Glasgow (UK), April 22, 2008.

3. Presenting Enterprise Service-Oriented Architecture to IT Management. English language presentation in the „SAP eSOA and NetWeaver" workshop of VNSG.

Proceedings:
http://werkgroepen.vnsg.nl/content.asp?kid=7651403
5 (Username: leden, Password: ba2233)
Zeist (Holland), February 27, 2008.

4. Knowledge Management via SAP NetWeaver: An
   Overview. English language presentation in the
   „Portal Workshop" event of Wolters Kluwer.
   Alphen aan den Rijn (Holland) September 25, 2007.

5. A tudás gazdasági természete. Hungarian language
   presentation at the PhD Conference organized as part
   of the 28th Economic OTDK at the University of
   Miskolc.
   Conference program:
   http://212.40.96.82/memark/otdk/szekcio.pdf
   Proceedings:
   http://193.6.3.238/gtk/ge/phd/informaciok/absztrakto
   k.pdf Editors: Aladár Nagy, György Kocziszky,
   Adrienn Erıs, Attila Havriló, Péter Galbács.
   Publisher: University of Miskolc, Faculty of
   Economics. ISBN: 978-963-661-768-4
   Miskolc, April 26, 2007.

6. Categorizing Motivation Behind Knowledge Sharing.
   English language presentation at the 5th National
   „Tudásmenedzsment és a hálózatok regionalitása"
   Conference of Young Regionalists organized by the
   Regional Research Center West-Hungary Scientific
   Institute of the Hungarian Academy of Science and
   the Multidisciplinary Doctoral School of Human
   Sciences of the Széchenyi István University.
   Conference program:
   http://www.sze.hu/etk/konferencia2006/elozetes_kon
   ferencia_program.doc
   Győr, November 10, 2006.

7. The Economic Nature of Knowledge. Hungarian language presentation in the comprehensive exam in the Doctoral School Theory and Practice of Economic Processes. University of West Hungary. Sopron, January 12, 2006.

8. Tudásmenedzsment a holland agráriumban. Hungarian language presentation at the „A gazdálkodásban publikált phd hallgatók tudományos konferenciája" Conference organized by the Faculty of Agricultural and Food Sciences of the University of West Hungary.
Mosonmagyaróvár, October 14, 2005.

9. Knowledge Management in the Corporate Portal. English language presentation in the „Information Management Workshop" event of BHP Billiton. Singapore, September 14-16, 2005.

10. Knowledge Management in the Enterprise Portal – the way I see it. English language presentation in the „Knowledge Management Day 2005" event of itelligence Netherlands B.V.
Eindhoven (Holland), August 26, 2005.

11. Virtuális közösségek a hazai K+F számára. Hungarian language presentation at the „Mi, fiatalok a magyar kutatás-fejlesztés jövőjéért - Mit akarunk, és hogyan váltsuk valóra?" Conference of the University of Veszprém.
Summary: http://www.nkth.gov.hu/aktualis-hirek-esemenyek/2005/osszefoglalo-mi-fiatalok
Proceedings: http://4t.gov.hu/main.php?folderID=1230

Presentation:
http://4t.gov.hu/download.php?ctag=download&docID=1778
Veszprém, July 8-9, 2005.

12. Managing Knowledge Sharing Patterns Based on the Four Elementary Forms of Sociality. English language presentation in the „Verseny élesben" International EU-Day Conference at the Faculty of Agricultural and Food Sciences of the University of West Hungary.
CD publication: Editors: Károly Kacz, Gábor Lukács, Zsuzsanna Radnics. Publisher: Faculty of Agricultural and Food Sciences of the University of West Hungary. ISBN 963 9364 39 8 (CD ISBN 963 9364 40 1)
Mosonmagyaróvár, May 5, 2005.