



Developing an Organizational Context Favorable for Knowledge Transfer

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A primary aim of knowledge management is to enable and encourage knowledge transfer among and between individuals, communities and organizational units (Newell et al, 2002). Recent research has extended the importance of knowledge transfer and sharing to competitiveness, arguing that the creation and transfer of knowledge in organizations provide a basis for competitive advantage (Ingram, 2000). Organizations that achieve effective knowledge transfer are more productive (Hansen, 2002), enable intensive learning (Inkpen and Tsang, 2005), create new knowledge (Argote et al, 2003), and foster innovation (Tsai, 2001). From the innovation perspective, knowledge provides firms with the raw material for innovation, and knowledge transfer enables the of combining previously disparate ideas, insights and knowledge conducive to the creation of new products, services and processes (Cohen and Levinthal, 1990; Kogut and Zander, 1992). The rate of new product introduction can mirror a firm's capacity of managing, sharing, creating and combining new and existing knowledge (Smith et al, 2005).

Despite the interest that knowledge management has gained in both practice and academia, little is known about the nature and interaction of different *knowledge transfer mechanism*. Indeed, most studies so far analyze accomplishment of knowledge transfer per se, overlooking the effects of knowledge transfer on knowledge itself and on organizational outcomes. Here the notion of *perceived usefulness of knowledge* is a central factor mediating between knowledge sharing context and knowledge sharing outcomes.

Building on previous research findings related to organizational determinants for effective knowledge transfer, our work addresses two important questions:

1. How do factors of organizational context impact an organization's level of perceived usefulness of knowledge,
2. How does the organization's level of perceived usefulness of knowledge relate to innovation?

The research was conducted in marketing divisions of medium and large-sized companies operating in Greece in the ICT, Pharmaceutical and Food industries. All 194 companies employing more than 100 employees and registered in the official Greek ICAP database were contacted. Out of those, 112 accepted to participate in the research. In this article we present initial and partial results from 65 of these companies.

Usefulness of the Knowledge Being Transferred

Knowledge transfer actually occurs when received knowledge is *used* by recipients and this use results in *changing their behavior*; in other words when experience of one individual or organizational unit influences another individual or unit through changes in behavior (Nelson and Winter, 1982; Argote and Ingram, 2000). The notion of knowledge usefulness is not new in knowledge theory, but its relevance for effective knowledge management has only recently been fully recognized. Levin and Cross (2004) develop the construct *receipt of useful knowledge* as an outcome variable to denote the impact of knowledge transfer on project and business unit performance indicators (e.g., quality, cost and time measures). In the same vein, Reagans and McEvily (2003) apply the term *ease of knowledge transfer* -measured as perceived easiness of explaining a key idea, concept or theory between organizational members- to explain what makes knowledge transfer successful, Szulanski et al (2004) measure the effectiveness of transfer as the *degree of knowledge accuracy*, and Schultz (2001) describes how *knowledge relevance* has important impact on knowledge flows. To sum up, perceived usefulness of knowledge is dependent on the extent to which the concerned actors perceive knowledge as:

1. *Meaningful* - Knowledge should make sense to the users,
2. *Accurate* - Knowledge should be related to the tasks and problems facing the users and to the processes and routines through which work gets done,
3. *Valid* - Knowledge should be action-oriented and proven applicable,
4. *Conductive to innovation* - The use of knowledge should lead to something new (i.e., ideas, deeper knowledge, product/service concepts, etc).

Based on the above, we suggest that *perceived usefulness of knowledge* is an adequate proxy for operationalizing knowledge transfer effectiveness. Following our synthesis, we define and measure an organizational unit's perceived usefulness of knowledge as the extent to which the knowledge shared within the unit is perceived as meaningful, accurate, valid and conducive to innovation.

The Context of Knowledge Transfer

Knowledge and *context* are inextricably linked in organizations. Evolutionary economics (Nelson and Winter, 1982) and the knowledge-based view of the firm (Kogut and Zander, 1992) stipulate that a number of attributes of the context where knowledge transfer occurs are the primary antecedents of its effectiveness. Building on these theoretical foundations, Davenport and Prusak (1998) argue that when knowledge transfer is the objective, the method must always suit the organizational culture, and De Long and Fahey (2000) advance that different contextual dimensions shape both the individuals' behavior and their relationships. Hence, context determines the way that knowledge is created, legitimated and diffused throughout the organization.

We position our research recognizing that the notions of organizational context, culture and climate represent overlapping explanations of the same phenomenon (Ashkanasy et al., 2000; Smith et al, 2005) where the core refers to the following contextual factors:

- o Social Interaction reflecting closeness of working relationships and communication frequency in the marketing divisions,
- o Trust reflecting the perceived trustworthiness among individuals and groups within the division,
- o Motivation measuring intrinsic and explicit motivation to transfer knowledge within the division,
- o Learning Orientation reflecting commitment to learning, open-mindedness, and shared vision, and
- o Management Support measuring the extent to which leadership facilitates knowledge transfer within their division.

An in-depth literature review enabled us to analyze and conceptualize these factors and develop a set of hypotheses for testing through the sample of marketing divisions in Greek companies. Table 1 shows the hypotheses generated for each contextual factor, together with brief explanations of their major measures.

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| <p style="text-align: center;">Table 1. Hypotheses for the Contextual Factors and Knowledge Sharing Effectiveness</p> |
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Table 1. Hypotheses for the Contextual Factors and Knowledge Sharing Effectiveness

In order to measure the Perceived Usefulness of Knowledge we combined six items, from Levin and Cross (2001), Hansen, (1999) and Szulanski, (1996) to create a comprehensive and novel construct for this construct. The hypothesis tested was the following:

Hypothesis 6: The level of perceived knowledge usefulness of a business unit is associated with the number of new products and services it introduces.

Concerning the dependent variable New Products and Services, we measured the number of new products the marketing division had introduced in the very recent year (Smith et al, 2005). This measure was significantly correlated with the number of unit personnel, which was normalized to enable direct comparison. The hypothesis tested was the following:

Hypothesis 7: The level of perceived knowledge usefulness of a business unit mediates the relationship between the business unit's context and the number of new products and services it introduces.

About the Empirical Research

We collected 295 questionnaires and interviewed 72 marketing directors from 65 medium to large sized multinational enterprises located in Greece, using multiple regression analyses on the hypotheses generated. Hence, our research relies on multiple respondents in most organizations, improving the reliability of the results.

All factors were measured with multi-item scales and scores were means calculated across items. Respondents were asked to assess their agreement (1 = "strongly disagree to 7 = "strongly agree") to the extent to which the knowledge transfer within the business unit was useful for business unit's operation. We used survey items from previous published research in top academic journals, combining items from different sources. In some cases, we developed our own items to cater to some particularities in the Greek context. We validated these scales with an expert panel of academics and senior managers and proceeded to a pretest on a sample of 10 business units.

Results and Discussion

We tested our hypotheses concerning the influence of the contextual constructs on the mediating variable Usefulness of Knowledge and the dependent variable New Products and Services using ordinary least squares (OLS) regression. Four models were produced:

- o Model 1 showing the relationship between the dependent variable (New Products and Services) and the mediator (Perceived Usefulness of Knowledge),
- o Model 2 testing the effect of the independent variables (Social Interaction, Trust, Motivation, Learning Orientation, and Management Support) on the mediator (Perceived Usefulness of Knowledge),
- o Model 3 relating the independent variables (Social Interaction, Trust, Motivation, Learning Orientation, and Management Support) to the dependent variable (New Products and Services),
- o Model 4 testing the effect of the independent variables and the mediator on the dependent variable.

Regarding the impact of organizational context on perceived usefulness of knowledge, (Model 2; Hypotheses 1-5), social interaction was unrelated to perceived usefulness of knowledge, while trust has positive and significant influence to perceived usefulness of knowledge supporting hypothesis 2. Motivation was equally positively related to perceived usefulness of knowledge, supporting hypothesis 3 and learning orientation - namely shared vision, open-mindedness, commitment to learning - was marginally positively to perceived usefulness of knowledge supporting hypothesis 4. Management support has strong and significant relation with perceived usefulness of knowledge as well supporting hypothesis 5.

Supporting hypothesis 6, a firm's level of perceived usefulness of knowledge was associated to its number of new products and services. Unit size, competition intensity, and market share were directly related to innovation as expected, whereas market growth was unrelated.

We also expected that perceived usefulness of knowledge would mediate the relationships between the independent variables (Social Interaction, Trust, Motivation, Learning Orientation, and Management Support) and number of new products and services introduced. Following established methodology the analysis of this mediation includes three steps. The first step is to ensure and examine the existence of a relationship between independent variables (here trust, motivation, management support, social interaction and learning orientation) and the mediator (here perceived usefulness of knowledge). Except for social interaction, all of the variables were related with the mediator. The second step is to analyze if a significant relation between the independent variables and the dependent variable (here new products and services) exists. In Model 3, this is supported for the management support variable. Third and finally, Model 4 showed that previously significant relationship between dependent variable (here new products and services) and independent variables (here management support) were no longer significant when a firm's level perceived usefulness of knowledge was entered in the equation. This means that the mediator played a critical role and that usefulness of knowledge is determining for the link between knowledge transfer and innovation.

This study is a first attempt to show that the construct 'Perceived Usefulness of Knowledge' is a critical proxy of knowledge transfer effectiveness, as well as to find support for its positive relation to innovation. Our research attempted to answer two questions: (1) How do factors of organizational context impact an organization's level of perceived usefulness of knowledge, and (2) How does the organization's level of perceived usefulness of knowledge relate to innovation?

We found strong support for paying attention to contextual factors when firms want to transfer knowledge within business units. Trust, motivation to transfer knowledge, management support and learning orientation are important characteristics of a context that fosters knowledge transfer and innovation. This contribution is important since the need for developing an organizational context where knowledge transfer and innovation flourish is obvious; effective knowledge transfer cannot be achieved for free. The fact that social interaction had no effect on usefulness of knowledge confirms previous speculations about the ambiguous role that communication plays for knowledge transfer. Actually,

communicating more will not help if the communication is not properly understood between senders and recipients, for reasons of, e.g., hierarchical distance or different professional priorities and perspectives.

Since perceived usefulness of knowledge views knowledge as meaningful, valid and innovative, one can expect that it may lead to innovation processes. Indeed, our analysis reveals that perceived usefulness of knowledge leads to innovation expressed by new product and service introduction. In turn, we showed that perceived usefulness of knowledge fully mediates the relationship between management support and the number of new products and services, which is a contribution to innovation theory and its relation to knowledge.

Future research needs to concentrate more on the contextual factors that facilitate both knowledge transfer and innovation. Even if the debate among organization context, climate and culture is on-going, the need to standardize core factors that influence knowledge and innovation is obvious.

Our study has limitations that should be acknowledged. For instance, we assume that knowledge transfer has occurred within business units if business unit outcomes are reported to have improved as a result of perceived usefulness of knowledge. This means that we assumed beforehand that some process of knowledge transfer occurs within the organizational unit. This is logical to be assumed, since we look at the effect of knowledge transfer (perceived usefulness of knowledge). Moreover, our intention is to use more advanced statistical techniques on the data set in order to provide a more detailed picture of the relationships between the different variables involved in the knowledge transfer puzzle.

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REFERENCES

- Argote L, Ingram P., (2000), "Knowledge Transfer: a basis for competitive advantage in firms" *Organizational Behavior and Human Decision Processes*, Vol 82, No1, pp. 150-169
- Argote L., McEvily B., Reagans R., (2003), "Managing Knowledge in Organizations: An Integrative Framework and Review of Emerging Themes", *Management Science* Vol. 49, No.4, pp. 571-582
- Ashkanasy N.M., Wilderom C.P.M., and Peterson, M.F., (2000), "Introduction", in shkanasy N.M., Wilderom C.P.M., and Peterson, M.F., (eds), "Handbook of organizational culture and climate", pp 1-18, Thousand Oaks, CA: Sage
- Cohen W. M. & Levinthal D. A. (1990), "Absorptive capacity: A new perspective on learning and innovation", *Administrative Science Quarterly*, 35, pp 128-152
- Davenport, T. H. & Prusak, L. (1998) "Working knowledge", Boston, MA: Harvard Business School Press
- De Long D.W. & Fahey L., (2000), "Diagnosing cultural barriers to knowledge management", *Academy of Management Executive*, Vol. 14, No.4, pp 113-127
- Hansen M.T., (1999), "The Search-Transfer Problem: The Role of Weak ties in Sharing Knowledge across Organization Subunits", *Administrative Science Quarterly*, Vol 44, p. 82-111
- Hansen M.T., (2002), "Knowledge networks: Explaining effective knowledge sharing in multiunit companies", *Organization Science*, Vol. 13, No.3, pp. 232-248
- Ingram & Roberts, (2000), "Friendships among Competitors in the Sydney Hotel Industry", *American Journal of Sociology*, Vol 106, No 2, pp 387-423
- Inkpen A.C., and Tsang E.W.K., (2005), "Social Capital, Networks, and Knowledge Transfer", *Academy of Management Review*, Vol 30, no. 1, pp146-165
- Kogut B. & Zander U., (1992), "Knowledge of the firm, combinative capabilities, and the replication of technology", *Organization Science*, Vol 3, pp.383-397
- Levin D.Z. and Cross R., (2004), "The Strength of Weak Ties you can trust: the mediating role of trust in effective knowledge transfer", *Management Science*, Vol 50, No 11 pp. 1477-1490
- Nelson and Winter (1982), "An Evolutionary theory of economic change", The Belknap press of Harvard university press, Cambridge, MA
- Newell S., Robertshon M., Scarborough H. & Swan J., (2002), "Managing Knowledge Work", Palgrave, New York
- Reagans R. and McEvily B., (2003), "Network Structure and Knowledge Transfer: The effects of cohesion and range" *Administrative Science Quarterly*, Vol 48, pp. 240-267
- Schultz M., (2001), "The uncertain relevance of newness: organization learning and knowledge flows", *Academy of Management Journal*, Vol 44, No 4, pp 661-681
- Szulanski G., Cappetta R., Jensen R., (2004), "When and how trustworthiness matters: knowledge transfer and the moderating effect of causal ambiguity", *Organization Science*, Vol 15, No 5 pp 600-613
- Szulanski, G., (1996), "Exploring internal stickiness: Impediments to the transfer of best practice within the firm" *Strategic Management Journal*, Vol 17, 27-43
- Tsai W., (2001), "Knowledge Transfer in intra-organizational networks: Effects of network position and absorptive capacity on business unit innovation and performance", *Academy of Management Journal*, Vol 44, No. 5, 996-1004