A Framework of Personal Knowledge Management in the Context of Organisational Knowledge Management

Dace Apshvalka, Riga Technical University, Latvia, Dace.Apshvalka@gmail.com
Peter Wendorff, ASSET GmbH, Germany, P.Wendorff@t-online.de

Abstract
KM initiatives in organisations have often run into difficulties at the implementation level. Research into the causes of these problems has shifted attention to the human dimension of KM. Recently some researchers have focused on personal knowledge management skills and practices to emphasise this dimension. How are these three concepts 'personal', 'knowledge' and 'management' interrelated in a concept of PKM? What role does PKM play in the context of organizational KM?

1. Introduction

Knowledge management (KM) is widely acknowledged as a critical factor for organisational performance. However, KM initiatives in organisations have often run into difficulties at the implementation level. Research into the causes of these problems has shifted attention to the human dimension of KM. Recently some researchers have focused on personal knowledge management (PKM) skills and practices to emphasise this dimension. They claim that PKM is the most important success factor in organisational KM.

In this paper we discuss the role of individuals in organizations and clarify the basic concepts of PKM: personalisation, knowledge and management to get a clearer understanding of PKM and to assess whether it is a realistic option or just a utopian fad.

In section 2 we explain the individual's role in organizational performance. In section 3 we shortly describe some basic aspects of organizational KM (OKM). In section 4 we look at three interrelated concepts, "knowledge", "personal knowledge" and "management", to achieve a better understanding of PKM as a holistic concept.

2. Individual and Organisation

An organization is defined as a systematic arrangement of people brought together to accomplish some specific purpose (Robbins and Decenzo 2004).

Schein (1994) elaborates two perspectives on organisations: (1) the perspective of the individual, and (2) the perspective of the manager. He uses the term "perspective" to characterise a view of organisations as opportunities to fulfil needs. Using this idea the individual's perspective is focused on the fulfillment of individual needs, for example, economic livelihood, social contact, self-actualisation, etc. By the same token the manager's perspective is ideally focused on the achievement of organisational goals and objectives.

The notion of organisational goals and objectives has to be applied with care. Schein (1994: 4) rightly notes that while this "organizational perspective" is appealing, it "should not be construed to mean that the organization acts as an abstract entity; rather, it acts through the individual behaviour of certain key members in crucial managerial or leadership roles."

Koontz and Weihrich (1990) use the traditional functional approach to investigate management and claim that it still provides a useful perspective, defining the functions planning, organising, staffing, leading and controlling as core activities of managers. Following this concept we can characterise the manager's perspective in terms of these functions. He sees the organisation as a system where he is responsible for planning, organising, staffing, leading and controlling. In this way he coordinates activities of individuals or groups to ensure that they contribute to given goals and objectives in an effective and efficient way.

Individuals who join an organisation bring with them their personalities as important drivers of their behaviour. Organisations, on the other hand, develop cultures, that reflect their histories and are

manifested in the behaviours of their members (Brown 1998). Consequently the relationship between organisations and their members is one of mutual dependency and adjustment. Schein (1994: 22) calls this voluntary, largely implicit, mutual agreement a "psychological contract" between an organisation and its members. This psychological contract is dynamic, because human needs usually develop over time, based on personal factors (e.g., age, experience) or situational factors (e.g., family situation).

Handy (1999: 253), points to survival as a typical goal of organisations when he writes: "The law of the survival of the fittest is as inexorable for organisations as it is in nature". This remark draws attention to the need of organisations to adapt to their environments, for example, markets and cultures.

This adaptation requires the development of an appropriate organisational structure that is able to balance the often conflicting requirements of different stakeholders. Handy (1999) discusses these requirements under the headlines "uniformity" and "diversity" and concludes, "the designer of organizational structures needs to tread a tight-rope stretched between the pressures for uniformity on the one hand and diversity on the other" (Handy 1999: 255).

Uniformity in that sense refers to organisational elements, for example, hierarchies, roles and standards. These elements of organisational structure guide, limit and control their members, and thereby infringe on individual freedom. The intention behind these measures is to ensure coordination of different activities within an organisation to achieve overall effectiveness. Schein (1994: 21), notes that organisational structures, "that ensure organizational effectiveness may often leave individual needs unsatisfied", resulting in alienation, insecurity or bitterness. It is obvious that organisational measures can even run counter to individual needs, often to the detriment of individual performance.

Rollinson et al. (1999) suggest five dimensions to characterise organisations: configuration, centralisation, specialisation, formalisation and standardisation. An organisational designer has to make decisions regarding these dimensions. These decisions mean that some aspects of the organisation are explicitly defined in the organisation's official blueprint, while others are deliberately left open. The hope is, of course, that organisational members will fill in the gaps in the blueprint appropriately. Often, emergent self-organisation occurs in these situations, a phenomenon called "informal organisation". It can be substituted for formal organisation in an organisational design. Informal organisation can result in stable patterns of work that are voluntarily, intentionally, predictably, reliably and repeatedly followed within organisations, and that can lead to superior performance.

Handy (1999) and Rollinson et al. (1999) suggest that an appropriate division of labour between formal organisation and informal organisation is a key determinant of organisational performance. This view is shared by many commentators, for example, Robbins and Coulter (1999) and Schermerhorn (2001). This consensus can be stated in the following way: Formal and informal organisations are complementary approaches to organisational design, and an appropriate balance of these two forces is necessary for good organisational performance.

Naturally the question how formal organisation is related to organisational performance has been a key area of research in management since its inception, but there exist no simple, prescriptive, universal theories yet (Besanko, Dranove and Shanley 2000).

3. Organisational Knowledge Management

Schermerhorn (2001: 66) expresses the prevailing view of writers on management when he explains: "A new term is earning a significant place in management theory and practice. The concept of **knowledge management** is used to describe the processes through which organizations develop, organize, and share knowledge to achieve competitive advantage. The significance of knowledge management as a strategic and integrating force in organizations is represented by the emergence of a new executive job title - *Chief Knowledge Officer*, or CKO."

It is certainly no surprise that Schermerhorn (2001) and many other writers on management adopt a view on knowledge management that we characterised as managerial perspective in section 2. In that view an organisation is seen as a tool in the hands of skilful managers who plan, organise and control

KM. The managerial perspective on KM sees it as something that organisations do to satisfy their needs.

The organisational perspective on KM is very limited, however, because it tends to ignore three aspects of KM:

- A substantial part of the informal organisation created by organisational members addresses KM.
- Their motives in doing so are not necessarily close to those of the organisation.
- Appropriate informal KM enhances organisational performance.

Nonaka and Takeuchi (1995: 13, 72), writing about knowledge creating companies, point out that "although we use the term 'organizational' knowledge creation, the organization cannot create knowledge on its own without the initiative of the individual and the interaction that takes place within the group. […] Tacit knowledge of individuals is the basis of organizational knowledge creation."

Recently these concerns have been addressed by writers on KM under the label "Personal Knowledge Management" (PKM). Barth (2002a), for example, succinctly sums up his views on them in "The PKM Manifesto" in the following way: "I'm calling this work 'self-organization' because it lets me make three key points about personal knowledge management: that you don't have to be organized to be effective; that these days the 'self' is the basic organizational unit; and that self-organizing systems are the nature of professional teams and communities today—and therefore the foundation of knowledge work."

This is an enthusiastic statement by a popular proponent of PKM. It illustrates the potential conflict between the individual view of KM and the managerial view of KM in an organisational context. We look at Barth's three key points from a managerial perspective to show this.

"You don't have to be organized to be effective" (Barth2002a) is a true statement. Indeed sometimes effectiveness is the result of accident, luck or circumstance, and this applies to individuals and organisations alike. However, the beliefs motivating management are different, for example, Koontz and Weihrich (1990) make the point that (a) appropriate organisation generally contributes to sustained organisational success, and (b) individual effectiveness is only one of the many factors contributing to organisational effectiveness.

"These days the 'self' is the basic organizational unit" (Barth2002a) is an ambiguous statement that needs clarification. If Barth meant it in the sense that individuals are important elements of any organisation, he would be in agreement with the consensus in management. However, if he meant it in the sense that individuals are the most important organisational units, then this would be seen as a controversial statement in management, as teams are important organisational units, too (Robbins and Coulter 1999).

"Self-organizing systems are the nature of professional teams" (Barth2002a) is a questionable statement. Regarding humans, the consensus in management seems to be that the nature of humans is a very elusive notion (Schein 1994). Regarding teams, the consensus in management seems to be that many empirical phenomena relating to teams in organisations are not well understood at present (Rollinson et al. 1999), and this makes the notion "nature of professional teams" very obscure from the perspective of management science.

Based on our discussion in section 2 and the statements by Schermerhorn (2001) and Barth (2002a) on KM in the context of organisations we can conclude the following: The KM activities in an organisation naturally entail OKM and PKM as complementary activities that inevitably result from the presence of formal organisation and informal organisation.

Jashapara (2004) develops an integrated approach to KM that, in our opinion, is clearly informed by an organisational perspective. Nevertheless he acknowledges the existence of PKM as a subject of scientific research in KM, and defines it as "ways of developing and managing an individual's personal capital" (Jashapara 2004: 310).

He points out that PKM has attracted surprisingly little attention from the scientific community so far, when he remarks: "If knowledge is likely to be the core commodity of future 'knowledge' markets,

there is relatively little literature on its implications for the individual. Each individual's worth on the market could be described as their personal capital. [...] In a knowledge era, it is argued that each of us needs to take our personal capital seriously and take ownership for the development and maintenance of our knowledge. Like many commodities, it may soon become outdated and valueless" (Jashapara 2004: 300).

We generally agree with Jashapara (2004) regarding PKM, but we think that two issues should be given more attention in order to get a clearer picture of the relationship between PKM and OKM:

- PKM is certainly concerned with "ways of developing and managing an individual's personal capital" (Jashapara 2004: 310). As organisations may well be interested in enhancing the personal intellectual capital of members, their OKM may include measures to improve PKM, in the same way as specific forms of formal organisation can be used to encourage specific forms of informal organisation (cf. section 2).
- PKM has certainly to do with "each individual's worth on the market" (Jashapara 2004: 300). But even in an organisational context there is no reason to believe that PKM efforts by members are mainly motivated by market considerations. For example, our discussion in section 2 suggests that PKM activities can also be motivated by self-actualisation needs, etc.

4. Personal, Knowledge, and Management

The concept 'Personal Knowledge Management' has three interrelated components: 'personal', 'knowledge' and 'management. Each of these three components is complex and a subject of deep research itself. In this section we look at each of these components to understand the whole concept of PKM better.

4.1 Knowledge

Knowledge is a diverse concept consisting of many interrelated concepts. Scientists and philosophers have tried for centuries to define what knowledge actually is. Because of its complexity and comprehensiveness, it seems to be impossible to give one clear, overall and universal definition of knowledge.

We are integrating three different definitions of knowledge to achieve a broad understanding of this complex concept.

The first definition is given by Davenport and Prusak (1998: 5) who defines knowledge as "a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluation and incorporating new experiences and information. It originates and is applied in the minds of knowers. In organizations, it often becomes embedded not only in documents or repositories but also in organizational routines, processes, practices, and norms."

The second definition is offered by Iske and Boekhoff (2002) who define knowledge as a "combination of facts, experiences and perceptions that are being used to make a decision or to select an action by which a situation is changed into a more valuable situation."

The third definition is provided by Wilson (2002) saying that "knowledge involves the mental processes of comprehension, understanding and learning that go on in the mind and only in the mind, however much involve interaction with the world outside the mind, and interaction with others."

From these three definitions we infer that knowledge is not a material and not a process. It is both process and material, combined together in special dynamic structures and able to persist and function in a special environment.

The three definitions above suggest the following ontological view of knowledge:

Knowledge is an interrelated structure of such 'materials' as: experiences, values, contextual information, insights, facts, and perceptions. Informally they might be called 'knowledge materials'.

Knowledge involves a knowledge material handling process that includes the following subprocesses: evaluation, incorporating, decision making, action selection, comprehension, understanding, and learning.

Knowledge material handling processes can only occur in a specific environment, called 'mind', as Wilson (2002) stresses: "in the mind and only in the mind". Similarly Ortner (2002) writes that "knowledge does not exist per se. It is supposed to reside in our minds when we select pieces of our experience and form patterns that we assume to fit to a given situation."

Ortner (2002) writes that information acts like a command or trigger that prompts the selection of a specific pattern in the mind. These impulses from outside are essential for 'actuating' knowledge or for arranging specific combinations of knowledge material into a specific structure and starting specific knowledge processes. It means that knowledge is context and outside impulse dependent. These impulses from outside are received as a form of information. Knowledge creation in the mind or learning occurs when perceived information is understood. Understanding means that an interconnection is found between received new information and existing knowledge.

From this perspective knowledge and information are strongly related and maybe, therefore, often confused. Ortner (2002) writes that "there is no knowledge on a hard disk or anywhere else in IT. So what is there then? Commands, instructions and recommendations on how to select something in our minds. It is up to us to follow these commands and believe in them and turn them into meaningful, senseful knowledge or not".

Knowledge transmitted outside of the mind becomes information for an outside observer. Wilson (2002) writes "whenever we wish to express what we know, we can only do so by uttering messages of one kind or another – oral, written, graphic, gestural or even through 'body language'". Polanyi (1964: 252) indicates that "only a speaker or listener can mean something by word, and a word in itself can mean nothing. […] The words I have spoken and am yet to speak mean nothing: it is only I who mean something by them".

However aspects described above don't make such processes as knowledge sharing, capturing and the like impossible or utopian fad. If we receive or transfer knowledge from one source to another (during communication processes) in the form of information, it certainly is not the same complete knowledge as it was in its source. As Wilson (2002) rightly points writing that "knowledge built from messages can never be exactly the same as the knowledge base from which the messages were uttered". But anyway this uttered knowledge still contains potential for triggering selection of certain patterns in the receiver's mind.

Special tools and techniques may and should be used and skills have to be developed to be able to utter and transmit knowledge as well as to capture received knowledge (although in the form of message or information) as much as possible close to its original meaning.

Existence of hidden/tacit/unconscious knowledge makes this original and uttered knowledge approximation process more complicated because very often even the owner of original knowledge doesn't know its real and/or complete meaning. Polanyi (1964: 252) writes: "I can say nothing precisely. […] I do not focally know what I mean, and though I could explore my meaning up to a point, I believe that my words (descriptive words) must mean more than I shall ever know, if they are to mean anything at all".

Summing up this short knowledge survey, we conclude that knowledge is a delicate network of dynamically linked information chunks (knowledge material) embedded in a special environment or mental space (mind) and performing information handling processes. Knowledge is closely related to information so that outside its environment it takes the form of information.

4.2 Personal Knowledge

From our knowledge survey in the previous section (4.1), we see that knowledge is something very personal and belonging and strongly embedded in its owner's mind.

Davenport and Prusak (1998: 5) write that “knowledge exists within people, part and parcel of human complexity and unpredictability”.

Because of these human aspects, knowledge is embedded in an individual’s personal, subjective mental space and is strongly related to an individual’s psychological features, volition, motivation and emotional intelligence, where emotional intelligence is sometimes even more important than traditional intelligence.

Meredith and his colleagues represent human knowledge as residing in a three dimensional space. These dimensions are (Meredith et al. 2000): cognition – conscious play of words and images through our mind; affect – feelings and mood; conation – connects cognition and affect to behavior.

As they say, these dimensions come from the traditional model of human mental processes espoused by philosophers and psychologists.

The three processes or dimensions are closely interwoven. Each process pervades the other to a great extent. The same external stimulus results in responses from all three processes. None of the three exists in a vacuum without the other two. Since knowledge is at least cognitively based, it is impossible to know something without having an affect and conative reaction to it, these reactions adding to and becoming a part of knowledge (Meredith et al. 2000).

Much about the personal element in knowledge can be found in Michael Polanyi’s writings. For example, his book ‘Personal Knowledge’ is especially devoted to this subject.

However, Polanyi was not the first to recognize this personal element in knowledge. In the ‘Transcendental Analytic’, Kant argues that into all acts of judgement there must enter a personal decision that cannot be accounted for by rules (Karori 1998).

Another important aspect is, as Polanyi (1964) indicates, that ‘personal’ does not definitely mean ‘subjective’. There is a connection between the individual’s world and reality. Polanyi (1964) calls it ‘universal intent’ which is an effort to uncover a hidden reality.

Polanyi (1964) says that when we claim to know anything, we are in fact tacking a risk. Any act of factual knowing “presupposes somebody who believes he knows what is being believed to know. This person is taking a risk in asserting something, at least tacitly, about something believed to be real outside himself” (Polanyi 1964: 313). According to Karori (1998) this statement by Polanyi means “that we don’t have strict criteria of telling when we have made contact with the hidden reality. So, although our claims are made with ‘universal intent’, this does not guarantee their truth”.

4.3 Management

According to the Merriam-Webster Online Dictionary, management is the “judicious use of means to accomplish an end”.

Basic management processes or processes for ‘judicious use of means’, as it was indicated in section 2, are planning, organising, staffing, leading and controlling.

In the context of this paper the essential question is: Can we manage and how can we manage knowledge?

Wilson (2002) writes that “knowledge can never be managed, except by the individual knower and, even then, only imperfectly. […] We often do no know what we know: that we know something may only emerge when we need to employ the knowledge to accomplish something. Much of what we have learnt is apparently forgotten, but can emerge unexpectedly when needed, or even when not needed. […] We seem to have very little control over ‘what we know’.”

We argue that ‘little’ doesn’t mean ‘not at all’. Individuals can enhance their ability to control what they know. And they can manage what they know, even if imperfectly.

According to the above definition, management contains three basic components: goals, means and mean handling processes.

We can't manage anything if we have no goal we want to achieve by managing certain assets (knowledge in this case). If we have no goal, we don't know where we are going, what we need to do and what we need to know. Without a goal our life is like catching a wind and our resources are wasted (Apshvalka 2004).

If we have a goal, we can make a plan how to achieve it. We are using our previous knowledge, experience and skills and trying to get new knowledge, new skills and experiences to achieve the goal faster and more effectively. Consequently, we need to know our past problems, past decisions and past solutions, as well as get some new knowledge from our internal and external sources to find out how to solve future problems and what decisions to take. To avoid waste of knowledge resources, it is necessary clear understanding what we need to know and why we need to know and then it is necessary to manage these resources to achieve our objectives and goals. (Apshvalka 2004)

For example, if we want to manage our personal knowledge and are trying to achieve any goal in our lives (either short term, like preparing food, or long term, like becoming a professor, or beyond, like 'getting in heaven') we have to manage our knowledge. This management process starts from getting the right means. Therefore we have to plan and decide what books to read, what TV broadcasts to watch, what websites to browse, with whom to communicate and the like. And we have to plan and decide strategies how to trigger selection of right patterns in our mind when it is necessary (cf. section 4.1). This refers to decisions and actions of storing our knowledge also somewhere out of our mind, trying to approximate as much as possible this uttered knowledge to our inside knowledge that is embedded in our deeply personal and tacit environment. So, we can decide to write a book, or to make a video, or to make a multimedia presentation and so on. These are only some possible activities regarding management of personal knowledge, that show that it is necessary to manage our personal knowledge for personal effectiveness.

Managers in organizations have to take into account essential aspects which were discussed in previous sections. As we indicated in section 2, an organization acts through the individual behaviour of certain key members (Schein 1994), and individuals who join an organisation bring with them their personalities as important drivers of their behaviour (Brown 1998).

Only the individual himself/herself can manage what is in his/her mind (i.e., knowledge). But a manager coordinates activities of individuals or groups to ensure that they contribute to given goals and objectives in an effective and efficient way.

In the context of OKM, managers have to take care that knowledge workers have appropriate and positive emotional environment and that they are well motivated to achieve organizational goals. If they suffer a lack of motivation and positive emotions, their knowledge management capabilities will be very limited (cf. section 4.2). Many aspects have to be addressed regarding how to turn employees' personal knowledge management systems to work for organizational goals.

5. Conclusion

An organization is an arrangement of people brought together to accomplish organizational goals. People are organizations' main resources and therefore have to be managed very carefully. The problem is that humans are quite closed, self-managed systems and therefore difficult to manage from outside. But this 'problem' can be turned into an advantage if addressed well. As people are 'self-managed' systems, organizations don't need to plan, organize or control their employees' personal knowledge. It is everybody's personal decision, will and responsibility to manage his/her knowledge. Organizations can offer tools, techniques, processes and procedures, but managing knowledge still will remain a deeply personal affair. But managers have to care that knowledge workers have an appropriate and positive emotional environment and that they are well motivated to achieve organizational goals. If workers lack motivation and positive emotions, their knowledge managing capabilities will be very limited.

Thanks to modern technologies we can do more than mere information management. Nowadays we can not only read and write, but we can also see and create audios, videos, pictures, animated

pictures, and diagrams. There are even some incipient possibilities of smell transmitting over the networks of the future. So, the possibilities to receive and transmit knowledge material that is closer to the original source knowledge, is more real than it was some time (years, months and even days) ago.

Our opinion is that knowledge management is definitely no utopian fad. We agree and also stress that the most important 'elements' in managing knowledge are independent individuals and that the most important knowledge assets reside in their minds. Therefore, every individual's personal knowledge management is essential for organizational knowledge management success.

We agree with Ortner (2002) who writes that "the need for a better theory of information and knowledge creation is best illustrated by the fact that whilst the most sophisticated computers can be used for both criminal, inhuman purposes and for creating a more peaceful world, advanced IT cannot deal with the human emotions, beliefs and social cultural behavior that determine or at least influence economic, political, technical and practical decision-making. Such a theory should give insight into how emotions, knowledge, belief systems and reified knowledge (artifacts, symbol systems, etc.) are interlinked and work together. What contribution can we expect here from IT and IT-related research?" (Ortner 2002)

The time has come when we need to address subject of PKM because modern age offers us a lot of possibilities, alternatives, opinions, and so on. If we don't manage our knowledge, we are just 'wind catchers', unable to make rational decisions, set goals and achieve them.

Our intention was not to make an explicit list of activities and strategies for PKM in this paper, but to indicate that PKM is an essential subject to be addressed by further research.

6. References

Apshvalka, D. (2004) *Personal Knowledge Management*. In Remenyi, D. (ed.): Proceedings of the 11th European Conference on Information Technology Evaluation (ECITE), Amsterdam, Netherlands, November 11-12, 2004, pp.17-22.

Barth, S. (2000) "The Power of One", *Knowledge Management Magazine*, December, http://www.destinationkm.com/articles/default.asp?ArticleID=615 (last visited on 15/05/2005)

Barth, S. (2002a) The PKM Manifesto, http://www.global-insight.com/pkm/ (last visited on 23/05/2005)

Barth, S. (2002b) "Personal Knowledge Management", *InfoToday*, New York, May, http://www.global-insight.com/pkm/PKM%20NY%205-02-B.pdf (last visited on 15/05/2005)

Bernstein, D.A., Clarke-Stewart, A., Roy, E.J. and Wickens, C.D. (1997) *Psychology*, Houghton Mifflin.

Besanko, D., Dranove, D. and Shanley, M. (2000) *Economics of Strategy*, John Wiley & Sons.

Brown, A.D. (1998) *Organisational Culture*, Financial Times Pitman Publishing.

Davenport, T.H. and Prusak L. (1998) *Working Knowledge*.

Frand, J. and Hixon, C. (1999) *Personal Knowledge Management : Who, What, Why, When, Where, How?*, http://www.anderson.ucla.edu/faculty/jason.frand/researcher/speeches/PKM.htm (last visited on 15/05/2005)

Grey D., (2003) *PKM*, Denham Grey's Blogs: Knowledge-at-work. Personal thoughts about learning, community and social affordances for knowledge creation, December 28, 2003, http://denham.typepad.com/km/2003/12/pkm.html

Handy, C. (1999) *Understanding Organizations*, Penguin Books.

Iske, P. and Boekhoff, T. (2002) *A Framework for Valuing the Potential of Knowledge,* In Karagiannis and U. Reimer (Eds.): Practical Aspects of Knowledge Management, 4th International Conference, Vienna, Austria, December 2002, Proceedings, pp. 632 – 638.

Jashapara, A. (2004) *Knowledge Management*, FT Prentice Hall.

Karori, M. (1998) *Micael Polanyi and the personal element in science*. South African Journal of Philoophy. May 98, Vol. 17, Issue 2.

Koontz, H. and Weihrich, H. (1990) *Essentials of Management*, McGraw-Hill.

Meredith, R., May, D. and Piorun, J. (2000) *Looking at Knowledge in Three Dimensions. A Holistic*
Merriam-Webster Online Dictionary, http://www.m-w.com/

Nonaka, I. and Takeuchi, H. (1995) *The Knowledge-Creating Company*, New York, Oxford University Press.

Ortner, J. (2002) *Knowledge in an Electronic World? ,* In Karagiannis and U. Reimer (Eds.): Practical Aspects of Knowledge Management, 4th International Conference, Vienna, Austria, December 2002, Proceedings, pp. 281 – 300.

Polanyi, M. (1964) *Personal knowledge: Towards a post-critical philosophy.* New York: Evanston: Harper & Row.

Robbins, S.P. and Coulter, M. (1999) *Management*, Prentice-Hall.

Robbins, S.P. and Decenzo D.A. (2004) *Fundamentals of Management: essential concepts and applications,* 4th ed. Pearson Prentice Hall.

Schein, E.H. (1994) *Organizational Psychology*, Prentice-Hall.

Schermerhorn, J.R. (2001) *Management*, John Wiley & Sons.

Wilson, T.D. (2002) *The nonsense of 'knowledge management*. Information Research, 8(1), paper no. 144, http://InformationR.net/ir/8-1/paper144.html