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Lost in knowledge sharing: possible lessons and implications for middle managers and their organisations[12]

Knowledge sharing plays an essential role in the success of organisations. The success, or failure, of knowledge sharing activity depends on how the individuals and / or groups involved feel about the knowledge sharing process itself and about one another (Smith 2005). This article defines knowledge sharing as a two-way process—imparting and receiving of knowledge—between two or more parties. The information thus shared can be knowledge personal to the parties involved in the process—knowledge found in people's own minds, in other words—or indirect knowledge—knowledge of and contained in relevant sources of information (such as paper documents and electronic documents and databases, for example). Knowledge sharing can be simultaneous, when the parties involved in the process are all present, or consecutive, when the parties make their knowledge explicit. The knowledge sharing process is of mutual benefit to the parties involved. In addition, this article defines middle managers as being those employees who work below the top management of the organisation—the chief executive officer (CEO)

and / or top managers—and who are responsible for and work with employees hierarchically lower than themselves. Characteristic mainly of medium- and large-size enterprises, middle managers play a significant role in vertical organisational communication and influence horizontal knowledge sharing within the organisation. This article presents part of the results of a study conducted among middle managers in Hungary, highlighting how the individual characteristics of middle managers can influence the maturity of their knowledge sharing. 'Maturity of knowledge sharing' is defined by two dimensions—'availability' and 'usefulness of knowledge'—and two directions—middle manager–middle manager and middle manager–subordinate. 'Availability' is the extent to which the middle managers studied here, their subordinates, as well as other middle managers are willing to spend time helping one another and sharing their knowledge when necessary. 'Usefulness of knowledge' refers to whether the middle managers studied here, their subordinates, as well as other middle managers possess the necessary knowledge—and to its usefulness for others. This article investigates why and in what areas maturity of knowledge sharing differs, covering differences in age, length of service, and field of activity. In addition, this article suggests ways of enhancing middle managers' maturity of knowledge sharing—ways of bringing all middle managers' maturity of knowledge sharing to at least the level of the most mature, thus allowing for the wider creation and improvement of the overall organisational knowledge.

Research background

In 2007, the Strategic Management Research Group (SMRG) at the Department of Management, Faculty of Business and Economics, University of Pannonia in Hungary decided to study knowledge sharing among middle managers and the middle managers' vertical / downward and horizontal / lateral relationships (see, for example, Csepregi 2011; Gaál et al. 2012). Studies of middle managers date back to at least the 1970s, when, according to Chandler (1977), middle managers were concerned exclusively with the supervision of lower hierarchical levels. Nowadays, however, a large body of literature discusses their role in other areas.

There has not been a universally accepted definition of middle managers, in the recent literature. Bower (1986: 297–8), for example, stated that middle managers 'are in a position to judge whether issues are being considered in the proper context'. Uyterhoeven (1989: 136) argued that middle managers are 'responsible for a particular business unit at the intermediate level of the corporate hierarchy'. Ireland (1992: 18) described middle managers as employees who work between an organisation's top-level and first-level managers, integrating 'the intentions of top-level managers with the day-to-day operational realities experienced by first-level

managers'. Regarding their position in the organisation, Staehle and Schirmer (1992: 70) emphasised that middle managers are 'employees who have at least two hierarchical levels under them and all staff employees with responsibility for managing personnel'. This article defines middle managers as being those employees who work below the top management of the organisation—the CEO and / or top managers—and who are responsible for and work with employees hierarchically lower than themselves. This definition entails that research on middle managers should focus on medium- and large-size enterprises.

Previous studies focused exclusively either on middle manager–subordinate relationships (Crouch and Yetton 1988; Xin and Pelled 2003; Glasø and Einarsen 2006) or on middle manager–top manager relationships (Schilit 1987; Nonaka 1988; Dutton et al. 1997; Pappas, Flaherty, and Wooldridge 2003). However, Kaplan (1984: 38) pointed out that such vertical relationships also extend to the superior's superior and the subordinates' subordinates. Moreover, he argued, middle managers are engaged in horizontal / lateral relationships—with peers, other middle managers' superiors and subordinates, as well as professionals in other organisations, not only in vertical relationships. Such multidirectional relationships were also identified by Uyterhoeven (1989: 137)—'the middle manager wears three hats in fulfilling the general management role', as a subordinate, as a superior, and as an equal, having to manage relationships upwards when they take orders, downwards when they give orders, and laterally when they relate to peers.
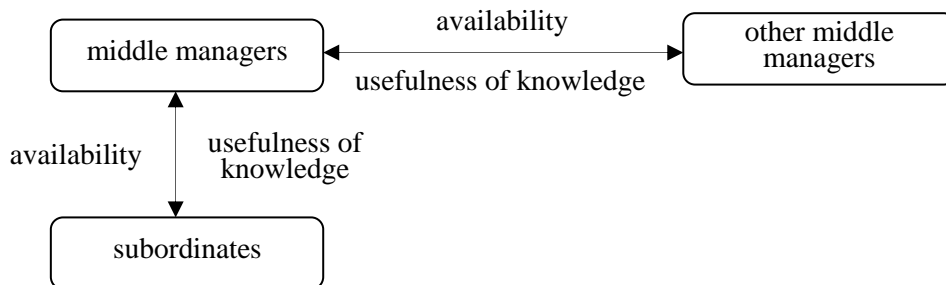
Figure 1:   Maturity of knowledge sharing: dimensions and directions

Recognising this multidirectionality, the SMRG study into middle manager knowledge sharing investigated both vertical and horizontal relationships, within as well as between different organisational units. The study did not investigate the leadership function, where only the middle manager–subordinate relationships would have been examined. Instead, it concentrated on the knowledge sharing function, especially on its maturity. As illustrated in Figure 1, 'maturity of knowledge sharing' refers to the level of knowledge sharing development and is

defined by two dimensions—'availability' and 'usefulness of knowledge'—and two directions—middle manager–middle manager and middle manager–subordinate. 'Availability' is the extent to which the middle managers studied here, their subordinates, as well as other middle managers are willing to spend time helping one another and sharing their knowledge when necessary. 'Usefulness of knowledge' refers to whether the middle managers studied here, their subordinates, as well as other middle managers possess the necessary knowledge—and to its usefulness for others.

Maturity of knowledge sharing	Components			
	1	2	3	4
usefulness of other middle managers' knowledge to focal middle managers	**.899**	.101	.168	.105
usefulness of focal middle managers' knowledge to other middle managers	**.823**	.018	.156	.274
availability of subordinates to focal middle managers	.092	**.858**	.222	.127
availability of focal middle managers to subordinates	.033	**.854**	.175	.213
availability of other middle managers to focal middle managers	.238	.181	**.858**	.047
availability of focal middle managers to other middle managers	.104	.240	**.833**	.222
usefulness of focal middle managers' knowledge to subordinates	.094	.209	.124	**.874**
usefulness of subordinates' knowledge to focal middle managers	.340	.146	.132	**.756**

Extraction method: principal component analysis.
Rotation method: Varimax with Kaiser normalisation.
Rotation converged in six iterations.

Table 1:   The rotated component matrix for middle managers' maturity of knowledge sharing

Investigation of maturity of knowledge sharing in middle manager–middle manager and middle manager–subordinate relationships used principal component analysis and revealed the following dimensions (see Table 1):
1. For middle manager–middle manager availability, focal middle managers' availability for other middle managers and other middle managers' availability for focal middle managers.

2. For middle manager–subordinate availability, focal middle managers' availability for their subordinates and their subordinates' availability for focal middle managers.

3. For middle manager–middle manager usefulness of knowledge, focal middle managers' usefulness of knowledge to other middle managers and other middle managers' usefulness of knowledge to focal middle managers.

4. For middle manager–subordinate usefulness of knowledge, focal middle managers' usefulness of knowledge to their subordinates and their subordinates' usefulness of knowledge to focal middle managers.

The higher the values of these dimensions, the higher the maturity of knowledge sharing. However, the SMRG study aimed neither to create a dimension index nor to differentiate among levels of maturity of knowledge sharing. Instead, it aimed to reveal those individual characteristics that result in differences within dimensions, creating (at least) two dimension groups, one characterised by 'the most favourable results' (higher maturity of knowledge sharing) and the other by 'the least favourable results' (lower maturity of knowledge sharing).

Research methodology

The average number of registered middle- and large-size enterprises in Hungary was 5,780, between 2007 and 2010 (KSH 2010). Four thousand such enterprises covering a wide range of economic sectors were selected randomly, for the SMRG study, and were sent cover letters and questionnaires (see Csepregi 2011: 209–16 (Appendix 2)), by post or electronically, with the request to be filled in by at least one middle manager. In addition, an electronic version of the questionnaire was created on LimeSurvey, an Online Survey Tool, and a website was established, to allow participants in the study to access further information about the research. The website address was highlighted on the questionnaire.

Between 2007 and 2010, 400 completed questionnaires were returned from middle managers in manufacturing / production, maintenance, logistics, finance / accountancy / controlling, quality management, human resources (HR), project management, commerce / purchase / sale / marketing, and research and development (R&D) (see Table 2, p. 72). The organisations they represented were in commerce, building trade, processing, logistics / warehousing, mining, telecommunications, agriculture, tourism / catering, education, government, healthcare / social support, estate agency, financial intercession, information technology (IT), electricity / gas / fume / water supply, and other economic sectors (see Table 3, p. 72)—and were involved either only in production activity, or mainly in production activity, or mainly in service activity, or only in service activity (see Table 4, p. 73).

Fields of activity	Middle managers	
	Numbers	Percentages
manufacturing / production	48	12
maintenance	52	13
logistics	32	8
finance / accountancy / controlling	40	10
quality management	16	4
human resources (HR)	56	14
project management	32	8
commerce / purchase / sale / marketing	68	17
research and development (R&D)	56	14
Total	**400**	**100**

Table 2: Middle managers' fields of activity

Economic sectors	Middle managers' organisations	
	Numbers	Percentages
commerce	44	11
building trade	28	7
processing	72	18
logistics / warehousing	32	8
mining	16	4
telecommunications	17	4
agriculture	15	4
tourism / catering	12	3
education	15	4
government	17	4
healthcare / social support	15	4
estate agency	16	4
financial intercession	12	3
information technology (IT)	17	4
electricity / gas / fume / water supply	20	5
other	52	13
Total	**400**	**100**

Table 3: The economic sectors of middle managers' organisations

In terms of type of enterprise ownership, the organisations the middle managers represented were fully national and privately owned, fully national and state

owned, with a national majority and privately owned, with a national majority and state owned, fully foreign, and with a foreign majority (see Table 5).

Types of activity	Middle managers' organisations	
	Numbers	Percentages
only in production	112	28
mainly in production	132	33
mainly in service	72	18
only in service	84	21
Total	**400**	**100**

Table 4:   The types of activity of middle managers' organisations

Types of enterprise ownership	Middle managers' organisations	
	Numbers	Percentages
fully national and privately owned	144	36
fully national and state owned	56	14
with a national majority and privately owned	36	9
with a national majority and state owned	32	8
fully foreign	104	26
with a foreign majority	28	7
Total	**400**	**100**

Table 5:   The types of enterprise ownership of middle managers' organisations

Research findings

The SMRG study focused on two directions of investigation—middle manager–subordinate and middle manager–middle manager—vis-à-vis maturity of knowledge sharing defined through availability and usefulness of knowledge. The focal middle managers' individual characteristics investigated in this study included their functional area, their length of service in their respective organisations, and their age. To ease raw data handling and the interpretation of findings, the middle managers' functional areas were divided with the use of decision tree analysis into 'soft' (HR, project management, commerce / purchase / sale / marketing, and R&D) and 'hard' (manufacturing / production, maintenance, logistics, quality management, and finance / accountancy / controlling) (see Csepregi 2011: 111–12 (Table 42), 208 (Appendix 1)). With regards to the length

of service in their respective organisations, two main groups of middle managers were identified, with less than three years and with more than three years of service. With respect to their age, two other groups of middle managers were identified, younger than 35 years old and older than 35 years old.

Middle manager–subordinate availability

Decision tree analysis was used to reveal the classes of middle manager–subordinate availability (see Figure 2, p. 75), analysis of variance was applied to differentiate the classes with most and least favourable results (see Table 6, p. 75), and post hoc test (with LSD test) was conducted to reveal the significant differences between the most-most and the least-least favourable results (see Table 7, p. 76). The SMRG study revealed that only two of the three individual characteristics investigated influence middle manager–subordinate availability. The level of relevance of these two characteristics is also important. The study showed that middle managers who had worked in their organisations for more than three years, and in 'soft' functional areas, were the most available for their subordinates. The same finding was also found valid for their subordinates (see Csepregi 2011: 93–6 (3.5.3 Results)). The explanation was twofold. First, length of service in their respective organisations resulted in reciprocal middle manager–subordinate trust based on familiarity with each other. Second, length of service in their respective organisations and functional areas resulted in enhanced experience and knowledge.

In contrast, the SMRG study showed that middle managers who had worked in their organisations for less than three years, and in 'hard' functional areas, were the least available for their subordinates. The same finding was also found valid for their subordinates. The explanation was threefold. First, trust based on familiarity with one another had not had time to develop between middle managers and their subordinates   Second, middle managers had not had time to familiarise themselves with their respective organisations and functional areas. Consequently, they were less available for their subordinates than they would have been otherwise. Third, quantitative targets and their realisation dominated 'hard'—more than they did 'soft'—functional areas. They were considered generally accepted and known by subordinates, which was not always the case. As a result, middle managers were failing to perceive the need to be available for their subordinates and they were less available for them than they would have been otherwise. By default, subordinates were less available for their middle managers than they would have been if the middle managers had been available for them—not least because they had to find solutions to problems without their middle managers' collaboration.
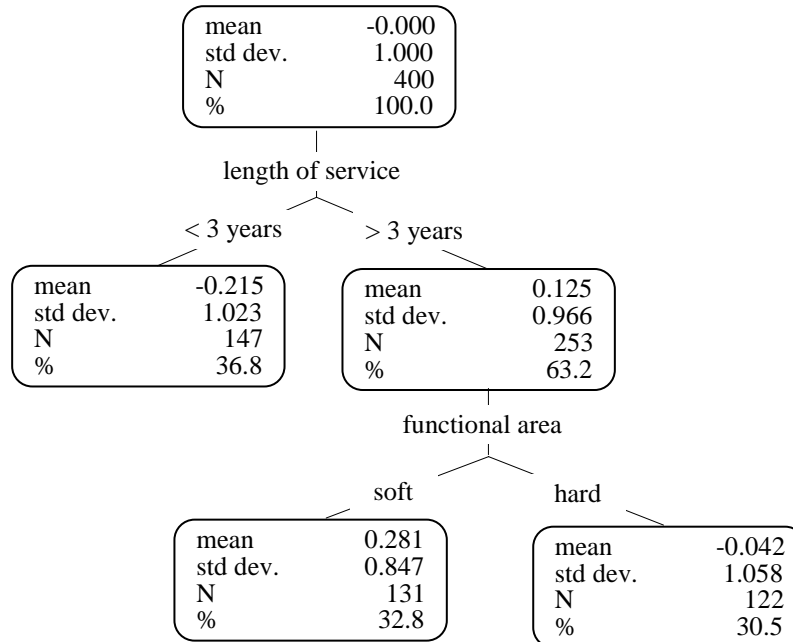
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                    ┌─────────────────────────┐
                    │ mean           -0.000   │
                    │ std dev.        1.000   │
                    │ N                 400   │
                    │ %               100.0   │
                    └────────────┬────────────┘
                                 │
                         length of service
                           ╱           ╲
                    < 3 years         > 3 years
          ┌─────────────────────┐  ┌─────────────────────┐
          │ mean        -0.215  │  │ mean         0.125  │
          │ std dev.     1.023  │  │ std dev.     0.966  │
          │ N              147  │  │ N              253  │
          │ %             36.8  │  │ %             63.2  │
          └─────────────────────┘  └──────────┬──────────┘
                                              │
                                        functional area
                                        ╱            ╲
                                     soft            hard
                           ┌─────────────────────┐  ┌─────────────────────┐
                           │ mean         0.281  │  │ mean        -0.042  │
                           │ std dev.     0.847  │  │ std dev.     1.058  │
                           │ N              131  │  │ N              122  │
                           │ %             32.8  │  │ %             30.5  │
                           └─────────────────────┘  └─────────────────────┘
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Figure 2:   Classes of middle manager–subordinate availability based on individual characteristics

Middle managers' individual characteristics		Effects on middle manager–subordinate availability
functional area	'hard'	least favourable
	'soft'	most favourable
length of service (in years)	under 3	least favourable
	over 3	most favourable
age (in years)	under 35	n/a
	over 35	

Table 6:   The effects of middle managers' individual characteristics on middle manager–subordinate availability

Middle manager–subordinate usefulness of knowledge

The SMRG study revealed that only two of the three individual characteristics investigated influence middle manager–subordinate usefulness of knowledge. The level of relevance of these two characteristics is also important. The study showed

that the knowledge of middle managers who had worked in their respective organisations for more than three years, and who were more than 35 years old, was the most useful for their subordinates. The same finding was also found valid for their subordinates. The explanation was twofold. First, length of service in their respective organisations resulted in enhanced experience and knowledge of the organisation and their particular functional area—and enhanced acceptance / respect from subordinates. Second, age, especially if combined with length of service, also led to enhanced acceptance / respect from subordinates. Prior to this study, other Hungarian researchers had reached similar conclusions. For example, Bakacsi et al. (2002) studied the Hungarian propensity for high power distance and paternalistic leadership style (see Hofstede 2001). Therefore, higher regard for older rather than younger middle managers is not surprising—most of these middle managers were born in a paternalistic regime (Pintér 2007).

Multiple comparisons						
Dependent variable: middle manager–subordinate availability (functional area and length of service in the middle manager's organisation)						
I	J	I-J	Std. error	Sig.	Confidence interval: 95%	
					Lower bound	Upper bound
least-least 'hard' < 3 years	most-most 'soft' > 3 years	-.60637711[*]	.14086537	**.000**	-.8833146	-.3294397

* The mean difference is significant at the 0.05 level.

Table 7:　　　The LSD test of the least-least and most-most favourable results

In contrast, the SMRG study showed that the knowledge of middle managers who had worked in their respective organisations for less than three years, and who were less than 35 years old, was the least useful for their subordinates. The same finding was also found valid for their subordinates. The explanation was threefold. First, middle managers who had worked for less than three years in their respective organisations had insufficient experience of coordinating and communicating with their subordinates. Second, middle managers who had worked for less than three years in their respective organisations had insufficient experience of their functional areas. In addition, third, the first two explanations were even more relevant for middle managers less than 35 years old—in Hungary, older middle managers are more accepted / respected than younger middle managers (Pintér 2007). The author's interviews of middle managers revealed that knowledge shared by young middle managers is usually problem-specific and of short-term relevance. Young middle managers (especially young middle managers who had worked for less than three years in their respective organisations) may force their

expertise (knowledge acquired through education and experience gained earlier in their careers) onto their subordinates and meet with resistance, particularly if there is a clash of organisational cultures. No matter how useful in itself, knowledge sharing only becomes useful with time—the time it takes middle managers to develop adequate relationships with their subordinates.

Middle manager–middle manager availability and usefulness of knowledge

The SMRG study revealed that only two of the three individual characteristics investigated influence middle manager–middle manager availability. The level of relevance of these two characteristics is also important. The study showed that middle managers who had worked primarily in 'soft' functional areas, and for more than three years, were most available for other middle managers. The same finding was also found valid for other middle managers. The explanation was twofold. The first explanation lay with the highly interactive nature of 'soft' functional areas, as well as with the other middle managers' need to keep up-to-date with what goes on in their organisations. Teamwork—and the ability to work as part of a team—played an important role, relationship orientation was dominant, and good relationships with other middle managers were significant. The second explanation stemmed from middle managers acquiring knowledge and understanding of one another, and of their organisations, with time.

In contrast, the SMRG study showed that middle managers who had worked primarily in 'hard' functional areas, and for less than three years, were least available for other middle managers. The same finding was also found valid for other middle managers. The explanation was twofold. First, middle managers in 'hard' functional areas are characterised by low levels of interaction—they rely on rules and regulations and are task oriented, and individual work and responsibility dominate. Consequently, middle managers in 'hard' functional areas may seem less open, less friendly, and less available than middle managers in 'soft' functional areas. Second, middle managers who had worked for less than three years for their respective organisations may be viewed by other middle managers as unaware of the goals of the organisation and as lacking in adequate experience—an understandable, but misleading, attitude, since middle managers new to the organisation may bring rich, relevant expertise from elsewhere.

The SMRG study revealed no significant differences between the middle managers' usefulness of knowledge in 'soft' and 'hard' functional areas. However, the study also showed that the knowledge of middle managers who had worked for more—rather than less—than three years in their respective organisations was considered more useful by other middle managers. The same finding was also found valid for other middle managers. Length of service in the organisation

(knowledge and understanding of the organisation, in other words) mattered, not age—alongside, of course, earning the trust of other middle managers.

Possible lessons

Middle managers who had been working for less than three years in a 'hard' functional area, and who are less than 35 years old, are characterised by low levels of maturity of knowledge sharing. Although other middle managers, subordinates, as well as superiors contribute to its improvement, the onus for maturity of knowledge sharing enhancement through patience and openness lies with the middle managers themselves. Patience is required because the study showed that length of service is decisive both in availability and in usefulness of knowledge, vis-à-vis both subordinates and other middle managers. Openness is required to counteract the rigidities intrinsic to 'hard' functional areas—the remaining of this article suggests ways in which this can be achieved through trust development, learning, teamwork and self-improvement, training, and competence development.

Trust development

Being open and allowing time for interaction with others may lead to the development of trust. Frequent interactions, personal contact, and socialising among individuals are just a few advices that could be followed to encourage trust building (Arino, De la Torre, and Ring 2001; Child 2001). To promote intensive conversation, cooperation, and knowledge sharing, opportunities have to be created to develop trust levels sufficient for enabling cooperation and knowledge sharing, and resulting in higher productivity (Chami and Fullenkamp 2002; Kaser and Miles 2002). Besides increasing productivity, trust in a workplace had been shown to have a strong effect on job satisfaction, stress, and organisational commitment (Kramer 1999; Levin and Cross 2004).

However, trust and the willingness to share knowledge may differ, depending upon the nature of the personal interactions among individuals (Feldman and Lynch 1988). As an example, the relationship between trust and the willingness to share knowledge can be different for those with whom someone has agreeable personal interactions than for those with whom these personal interactions are rather difficult (Holste and Fields 2010). Knowing this, other solutions should be found for building trust with those with whom interactions may be a bit challenging.

Knowledge of the parties involved in numerous interactions with others leads to a certain level of trustworthiness, which, as a specific form of trust, is called 'knowledge-based trust' (Jones and George 1998). Before entering any

relationship, these parties weigh the opportunities that they can gain from trusting each other against the potential risks that may occur. The parties might stop believing in the benefits of the relationship, if it does not yield the expected results, which may reduce the willingness of building a higher trust level or may lead to a breakdown in trust (Jones and George 1998). Middle managers cannot fully follow this behaviour. This does not mean that middle managers should trust everybody, but always weighing the opportunities is not a solution either.

McAllister (1995) identified two types of trust, 'cognition-based trust' and 'affect-based trust'. Trust is cognition-based when 'we cognitively choose whom we will trust in which respects and under which circumstances, and we base the choice on what we take to be "good reasons", constituting evidence of trustworthiness' (Lewis and Weigert 1985: 970). Affect-based trust relies on the emotional ties that link individuals and that include feelings of friendship, love, or care (Lewis and Weigert 1985; McAllister 1995). Without affect-based trust, the sharing of tacit knowledge is low (Holste and Fields 2010). Nonetheless, although the importance of affect-based trust is undeniable, cognition-based trust dominates for middle managers in medium- and large-size enterprises.

Learning

Being open and allowing time for interaction with others may also lead to learning. Middle managers may learn from other middle managers, subordinates, as well as superiors. Moreover, the learning process is not necessarily one-sided. Despite the relative youth of those under discussion (less than 35 years old), middle managers may contribute to learning with their own expertise (knowledge acquired through education and experience gained earlier in their careers, which, in cases, may have been quite intense).

Teamwork and self-improvement

Being open and allowing time for interaction with others facilitates teamwork, and may ultimately lead to self-improvements in middle managers. Launching an organisational development, an organisational shaping, or a knowledge management programme, for example, would require selecting middle managers and apportioning middle manager roles. Middle managers' wide variety of backgrounds should be regarded as a network of knowledge, and as an asset leading to self-improvements in less experienced middle managers. The network knowledge contains several generations of middle managers (ranging from slightly experienced, through reasonably well experienced, to highly experienced), but centres on the older (more than 35 years old), highly experienced middle managers, characterised by high levels of maturity of knowledge sharing.

Training

In-house training by middle managers in 'soft' functional areas may be highly beneficial for middle managers in 'hard' functional areas. Sharing best 'soft' functional area practices, as well as sharing day-to-day experiences, may induce middle managers in 'hard' functional areas into being open and allowing time for interaction with others. In-house training by reasonably well experienced and highly experienced middle managers may also be highly beneficial for middle managers in 'hard' functional areas, through sharing of expertise and of knowledge of the organisation itself. Subordinates of middle managers in 'hard' functional areas may benefit too from such training, directly or indirectly.

Competence development

Maturity of knowledge sharing entails certain competences which, in turn, entail matching middle managers with their middle managerial positions. Assessment centres may contribute to securing this match, and project management may also benefit from such an approach.

The SMRG study used principal component analysis to reveal these competences (see Tables 8a, p. 81, and 8b, p. 82). For all of these competences to be highly developed would be extremely unusual. However, middle managers whose competences do not meet requirements—but whose technical expertise, for example, does—can always receive relevant training. Knowing that the organisation thus invests in their long-term future, being open, and allowing time for interaction with others can only facilitate the acquisition of competences leading to high levels of maturity of knowledge sharing.

In order, for example, to develop their ability to combine technical expertise with creativity, middle managers' methodological competences need to be investigated and, where necessary, enhanced. There are two types of methodological competences: competences important in thought processes (logical thinking, systematising ability, analytical ability, and system analysis ability) and competences important in work processes (awareness of organisational goals, result orientation, and practical comprehension of tasks). Systematising ability and system analysis ability allows middle managers to contribute knowledge to the systems of their organisations. Middle managers have to integrate information / knowledge into their functional areas, departments, or groups and to apply it into practice. Analytical ability makes processing and using such information / knowledge possible. Through logical thinking, middle managers can take necessary knowledge out of the wider knowledge set and process and share this knowledge relevantly, in order to fulfil effectively the organisational goals

assigned to them. Practical comprehension of tasks and awareness of and identification with organisational goals allow middle managers to interpret and transpose knowledge into practice.

Competence	Component						
	1	2	3	4	5	6	7
ability to initiate a relationship	**.736**	.000	.070	.102	.020	.158	.183
ability to maintain a relationship	**.729**	-.032	.040	.139	.018	.223	.134
empathy	**.682**	.119	.115	.220	.201	-.081	-.033
ability to provide feedback	**.588**	.048	.187	.297	.010	.044	.230
objectivity	**.489**	.084	.157	.031	.234	.148	.100
international work experience	.078	**.934**	.120	.062	.000	.003	.018
international education	.070	**.892**	.133	.050	.051	.056	.040
work experience in international surroundings	.006	**.843**	.219	.143	.042	.012	-.029
work experience in other types of organisations	.038	.181	**.818**	.094	-.000	.018	.129
work experience in other specialised fields	.182	.111	**.706**	.103	.249	.001	.036
experience gained by individual interest	.265	.058	**.692**	.079	.094	-.007	-.040
work experience in similar organisations	-.003	.169	**.676**	.024	.011	.119	.261

Extraction method: principal component analysis.
Rotation method: Varimax with Kaiser normalisation.
Rotation converged in seven iterations.

Table 8a: The rotated component matrix for middle managers' competences

Knowledge sharing facilitates such processes, both in effort and financially, though social competences for communication and social competences for co-operation. Social competences for communication (ability to understand, ability to summarise, and ability to explain) and for co-operation (ability to initiate a relationship, ability to maintain a relationship, objectivity, ability to provide feedback, and empathy) secure efficient as well as effective knowledge sharing processes. The ability to summarise, for example, allows middle managers to share

only the most relevant knowledge with others—the result of prior selection of knowledge facilitated by their ability to understand. The ability to explain, to take another example, allows middle managers to share knowledge in a manner that is understandable and perceivable by the targeted audience.

Competence	Component						
	1	2	3	4	5	6	7
systematising ability	.060	.088	.047	**.733**	.116	.000	.175
analytical ability	.190	.088	.149	**.731**	.035	.184	.027
logical thinking	.262	.027	-.013	**.667**	.226	.115	.052
system analysis ability	.156	.086	.116	**.608**	.006	.214	.221
ability to undertake tasks	.080	.016	.012	.216	**.806**	.199	.090
ability to manage stress	.076	.044	.192	.076	**.792**	.024	.042
stamina	.198	.021	.076	.047	**.707**	.217	.235
result-orientation	.053	.014	.072	.101	.202	**.826**	.027
organisational goal awareness	.218	.131	-.085	.075	.094	**.704**	.126
practical comprehension of tasks	.133	-.079	.125	.286	.093	**.607**	-.007
ability to understand	.178	-.038	.086	.075	.036	.087	**.814**
ability to explain	.106	.013	.159	.123	.109	.130	**.653**
ability to summarise	.141	.046	.046	.189	.167	-.084	**.641**

Extraction method: principal component analysis.
Rotation method: Varimax with Kaiser normalisation.
Rotation converged in seven iterations.

Table 8b: The rotated component matrix for middle managers' competences (continued)

There are three other types of competences that facilitate knowledge sharing: personal, professional, and international. Personal competences refer to stamina, ability to manage stress, and ability to undertake tasks. Professional competences

refer to experiences gained by individual interest, including in other specialised fields, at similar or other types of organisations. By gaining such experiences, middle managers may acquire a wide range of information and knowledge in various fields. Professional competences help and shorten middle managers' integration into their organisation, as well as the probation time and the time taken by acquiring the communication jargon specific to that organisation. International competences refer to expertise gained from working and / or studying overseas and / or in international surroundings. International competences facilitate the transfer of current best practices from overseas organisations to nationally owned enterprises, for example, where they are either unknown of or simply not used. International competences are indispensable in organisations with either direct international links, through overseas operations, or with indirect international links, through international partnerships.

As this section shows, there are many types of competences, and the list of competences is very long. Matching middle managers with their managerial positions entails figuring out what specific competences actually need to be nurtured and how.

Implications

Maturity of knowledge sharing varies with middle managers' individual characteristics discussed in this article, while organisations facilitate its enhancement, in order to develop organisational knowledge. Nonaka and Takeuchi (1995: 13) pointed out that 'the organization cannot create knowledge on its own without the initiative of the individual and the interaction that takes place within the group'. They also stressed that organisational knowledge creation has its roots in individuals' tacit knowledge and that it 'should be understood as a process that organizationally amplifies the knowledge created by individuals and crystallizes it as a part of the knowledge network of the organization' (Nonaka and Takeuchi 1995: 59). The creation of organisational knowledge was explained as follows: 'for tacit knowledge to be communicated and shared within the organization, it has to be converted into words or numbers that anyone can understand. It is precisely during this time this conversion takes place–from tacit to explicit, and, as we shall see, back again into tacit–that organizational knowledge is created' (Nonaka and Takeuchi 1995: 9).

Since the creation of organisational knowledge is constituted by interactions, one of the most important management tasks is to encourage these interactions (the sharing of knowledge) occurring among employees. Sharing individual knowledge plays a major part in organisational activity—this, is considered, helps both individuals and organisation to grow (Spender 1996; Teece 1998; Kearns and

Lederer 2003). The reason why knowledge sharing within an organisation is so important is reinforced by Dunford (2000: 296) too: 'much of the key knowledge is held by individuals unless there is some structure to retain it within the organizational memory'. However, if individual knowledge is not shared or cannot be shared in an effective way within the organisation, then, the knowledge may vanish or may have limited effect on the organisational effectiveness and the organisational knowledge base (Bhatt 2002; Chou et al. 2007).

Conclusions

The SMRG study conducted between 2007 and 2010 showed why there are differences among middle managers' maturity of knowledge sharing, and where these differences appear (for full details of the study, see Csepregi 2011). The study focused on adult middle managers (over 18 years old) who worked for more than a day in either 'soft' or 'hard' functional areas in medium- or large-size enterprises operating in Hungary. Four hundred middle managers participated in the study, and the enterprises they represented covered both production and services. Regarding type of ownership, these enterprises were fully national and privately or state owned, with a national majority and privately or state owned, or fully foreign or with a foreign majority.

The SMRG study revealed that there are significant differences in the middle managers' maturity of knowledge sharing, defined through availability and usefulness of knowledge, both with regard to subordinates and to other middle managers. Similar findings were also found valid for subordinates' and other middle managers' maturity of knowledge sharing. The relevance of age, length of service, and functional area was investigated vis-à-vis availability and usefulness of knowledge—all these individual characteristics were found relevant, albeit not together, not at the same time.

Middle managers who had been working for less than three years in a 'hard' functional area, and who were less than 35 years old, were characterised by low levels of maturity of knowledge sharing, both with regard to subordinates and to other middle managers. This article advised middle managers patience (to reach the length of service necessary to allow availability and usefulness of knowledge) and openness (to counteract the rigidities intrinsic to 'hard' functional areas). This article suggested possible lessons for these middle managers, and possible remedial actions involving not only the middle managers themselves but also subordinates, other middle managers, and the wider organisation: trust development, learning, teamwork and self-improvement, training, and competence development. Both middle managers and their organisations stand to gain from learning these lessons and from applying these actions, through enhanced middle manager maturity of

knowledge sharing and enhanced overall organisational knowledge. Knowledge sharing is a win-win deal for everybody.

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