ASSESSING THE ROLE OF CULTURE IN KNOWLEDGE SHARING

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Abstract

It is generally acknowledged that the organization culture affects how knowledge processes, such as knowledge sharing, evolve. Despite the growing attention for aspects of culture, the knowledge management debate has not paid systematic attention to the diagnosis of a knowledge culture. The central question of the article is how such a diagnosis can be conceived. An answer to this question is presented, mainly based on a literature review, consisting of four elements: an identification of cultural elements ordered in knowledge sharing terms, a specification of facets of knowledge sharing as cultural behavior, the specification of different types of relationships between culture and knowledge sharing and a sequence of diagnosis steps connecting the first three elements. The article presents the case study of a Dutch government institution to illustrate the diagnostic framework and procedure.

Keywords: knowledge culture, knowledge sharing, diagnostic framework.

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It is generally acknowledged that the organization culture affects how knowledge processes, such as knowledge sharing, evolve. Despite the growing attention for aspects of culture, the knowledge management debate has not paid systematic attention to the diagnosis of a knowledge culture. The central question of the article is how such a diagnosis can be conceived. An answer to this question is presented, mainly based on a literature review, consisting of four elements: an identification of cultural elements ordered in knowledge sharing terms, a specification of facets of knowledge sharing as cultural behavior, the specification of different types of relationships between culture and knowledge sharing and a sequence of diagnosis steps connecting the first three elements. The article presents the case study of a Dutch government institution to illustrate the diagnostic framework and procedure.

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Suggested track: B knowledge sharing

1 Introduction

The importance of culture in the knowledge management domain is widely recognized (e.g. De Long, 1997; Gold, Malhotra, & Segars, 2001; Kayworth & Leidner, 2003). In discussions of knowledge management, knowledge economy, and the knowledge-based view of the firm (Grant, 1996) culture is prominently present. Culture is particularly seen as a potential source of barriers for processes such as knowledge sharing and development (e.g., see De Long & Fahey, 2000; McDermott & O'Dell, 2001). Many authors argue that a culture can be more or less ideal for valuing knowledge and managing it, as shows in such terms as the knowledge culture (Banks, 1999; Bonaventura, 1997; Smith, 2003), the ‘sharing culture’ (Comeau-Kirchner, 2000; Damodaran & Olphert, 2000; Davenport, De Long, & Beers, 1998; Neef, 1999), the

knowledge-centered culture' (Janz & Prasarnphanich, 2003) or the knowledge-friendly culture (Davenport *et al.*, 1998). Such concepts refer to a culture of openness and trust, a culture in which learning is appreciated and in which experience, expertise and knowledge are considered more important than hierarchy.

In spite of the increased attention for the relationship between culture and knowledge sharing no discussion is available of a general framework for diagnosing the knowledge culture, nor an overview of alternative procedures, methods and techniques.Several useful elements are present in the literature for devising such a diagnosis, particularly in the form of evidences and suggestions as to how the organization culture can obstruct knowledge sharing, and in the form of characterizations of a knowledge sharing culture. The central question of the research presented in this paper is: How can elements of culture and knowledge sharing be identified and linked in a framework that is suitable for diagnosing the role of organization culture in knowledge sharing? Identifying and linking such elements can take place in two ways. In the first place a deductive method can be followed building a model that – based on definitions of culture and knowledge sharing – identifies the relevant elements and their connections. In the second place an inductive method is possible that develops a framework by integrating elements and relationships identified in the literature. Both methods have advantages and disadvantages. An advantage of the first method, which starts from an explicit theoretical position, is that the logic of its argument may be the best guarantee of a complete framework. An advantage of the second method is that it postpones the choice of a theoretical perspective and that it may therefore hope to combine more diverse insights. In the research this second manner has been chosen. The main consideration leading to this choice was that the literature has developed various ideas around the concept of a knowledge culture. However, an integration of these ideas is lacking. The choice of an inductive method then appears as the best possibility to build on the collected insights of connecting culture and knowledge sharing. Development of the central question then leads to the following four research questions:

1. Which elements of culture are relevant for defining a knowledge sharing culture, and how can those elements be used in a diagnosis of that culture?
2. Which elements characterize knowledge sharing, and how can those elements be used a diagnosis of a knowledge sharing culture?
3. Which relationships exist between culture and knowledge sharing, and how can these relationships be used in a diagnosis of a knowledge sharing culture?

4. How can the answers on questions 1, 2 and 3 be combined to guide an organization when assessing its knowledge sharing culture? This fourth question leads to the following subquestions:
    a. How translates answering questions 1 through 3 into a step-by-step plan for diagnosing the knowledge sharing culture?
    b. How can an individual organization derive concrete questions and directives from the step-by-step plan when diagnosing knowledge sharing its culture?

The research presented in the paper focuses on questions 1 through 4a. Although the specification of the method (cf. research question 4b) is not the core focus we present briefly what results may be expected from applying the framework in practice. To that purpose the paper presents the application of the framework in a Dutch government institution. The institution in question is in the early stages of designing and implementing a knowledge management program aimed at turning the organization into a regional knowledge centre on its competency domain. It has pinpointed knowledge sharing as its pivotal process for achieving this objective, and the organizational culture as the key determinant both of the knowledge sharing process and the possibilities of managing knowledge sharing. The case study is presented to illustrate how the framework may guide a diagnosis of the current organizational culture as the backdrop against which knowledge processes actually run or may be expected to run. The presentation serves as an illustration of the argument and as input for further discussion.

2 Culture in organizations

The first research question concerns recognizing elements of organization culture and arranging these in the light of an intuitive perception of knowledge sharing. Countless conceptions and definitions of culture and organization culture have been given. When combining the views of different authors, only some seem to be of one mind, more authors appear as competing, and others seem to talk at cross-purposes. Perhaps the only thing the literature agrees on is that there is no univocal definition of culture. Sackmann (1991) indicates that at least part of the lack of congruence originates from the fact that organization culture has the traits of an umbrella term and that several authors emphasize different aspects. The defining and descriptive elements of that umbrella term can be summarized in seven aspects:

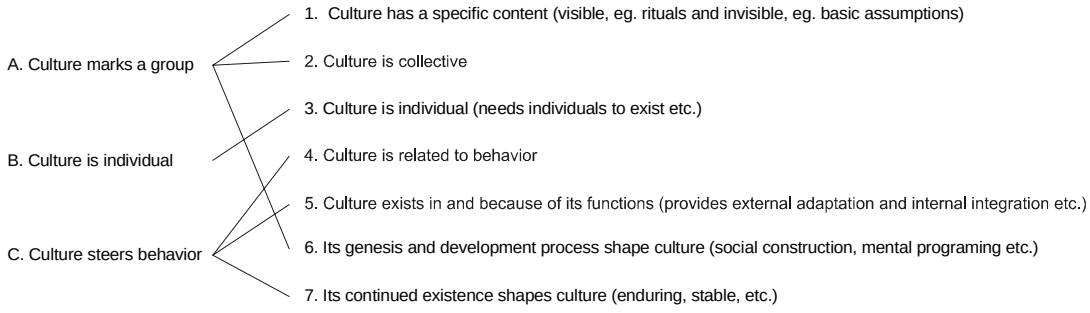

Figure 1 Grouped aspects of culture

1. Organization culture is characterized by a certain content: basis assumptions, values and standards, rules, etc. (e.g. Deal & Kennedy, 1982; Hofstede, 1991; Kotter & Heskett, 1992; Morgan, 1986; Schein, 1985; Trice & Beyer, 1993);
2. Organization culture is always something collective, something common, shared by a group, etc. (e.g. Sackmann, 1991; Schein, 1985);
3. Organization culture relates to individuals, organization culture is carried by people, individuals must put effort into appropriating culture, organization culture can be seen as a psychological contract between individuals and the organization (e.g. Meek, 1988; Rousseau, 1995; Sackmann, 1991);
4. Organization culture is related to behavior: organization culture provides a system of behavioral patterns, it involves ways of cooperation, organization culture gives direction and meaning to action, it is the basis of acquired behavior, etc. (e.g. Schein, 1985);
5. Organization culture has an impact and serves several functions, it offers organizational stability, individual security, it provides an instrument of control, gives identity to individual organization members and groups within the organization as well as to the whole organization, it leads to the reduction of uncertainty and fear, it ensures external adaptation and internal integration (e.g. Meek, 1988; Schein, 1985; Schneider, Gunnarson, & Nilesjolly, 1994);
6. The process of its production forms organization culture, organization culture is a social construction, the product of mental programming, has been learned, historically determined (e.g. Hofstede, 1991; Schein, 1985);
7. Its existence shapes organization culture: organization culture has a durable, stable character; consequently, it changes only with difficulty (e.g. Hope & Hendry, 1995; Kilmann, 1985; Schein, 1985).

To be able to link to knowledge sharing we have to reorder these seven aspects in the light of aspects of knowledge sharing. Using terms that appear in the culture discussions, knowledge sharing involves behavior that individuals show as members of a group of two or more people. Based on this provisional characterization of knowledge sharing the seven aspects of culture can be assigned to three groups (see Figure 1): the historically determined group character of culture (aspects 1, 2 and 6), the fact that culture only exists if individuals recognize and adapt culture and keep it viable (aspect 3) and the relationship between culture and behavior (aspects 4, 5 and 7).

3 Knowledge and knowledge sharing

The second research question concerns identifying elements of knowledge sharing and arranging these in the light of culture. Knowledge sharing is an important mechanism that will turn individual knowledge into group organizational knowledge. Three aspects of knowledge sharing can be distinguished. Firstly, knowledge sharing is a process, and therefore involves a sequence of events, actions and activities, that evolve in time. Secondly, knowledge sharing asks for at least two parties or roles, played by individuals or groups: the role of bringing (offering, showing, teaching etc.) and the role of getting (acquiring, learning, etc.) knowledge. Thirdly, knowledge sharing is typified by the characteristics of knowledge that is shared.

A closer interpretation of the third aspect of knowledge sharing, the fact that it concerns sharing *knowledge*, calls for an exploration of the terms knowledge and organizational knowledge. These terms are, as are culture and organization culture, container terms rather than sharply outlined concepts. As Alvesson and Kärreman (2001: 997-1000) complain, the term ‘knowledge’ is used in an inconsistent, vague, broad, two-faced and unreliable sense in the knowledge management and broader organization literature. A useful and much-quoted portrait of organizational knowledge shows in the five ‘images of knowledge’ Blackler (1995) found in his survey of the organization literature. Blackler warns us that these images in themselves do not clarify what the concept of knowledge is that hides behind the images. Blackler recognizes the images of ‘embrained knowledge’ (knowledge in models and theories), ‘embodied knowledge’ (knowledge as inextricably linked to physical skills), ‘encultured knowledge’ (knowledge as shared sense-making), ‘encoded knowledge’ (knowledge stored in documents and such) and ‘embedded knowledge’ (integrated knowledge in procedures connecting people, machines, problem solving methods etc.). The third image of ‘encultured knowledge’ that Blackler lends from Collins (1993), deserves extra attention here, because of its

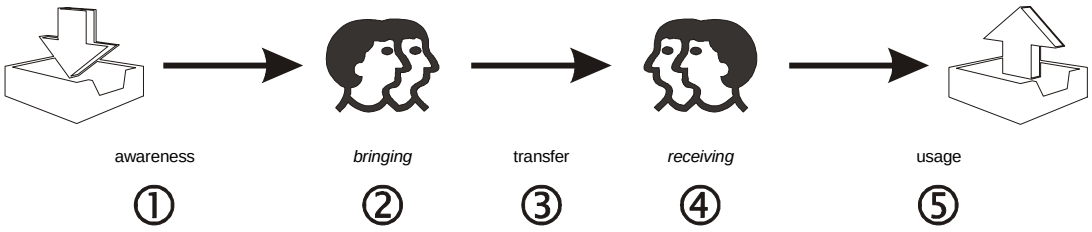

Figure 2 Facets of knowledge sharing

reference to culture. This image conveys that knowledge exists as the ascription of meaning and that it calls for recognition of the social context in which that ascription takes place (e.g. Jankowicz, 1994). Knowledge as 'encultured', or as an outcome of shared sensemaking, refers to the conception that knowledge is a social construction that cannot be fully understood separate from the situation in which it comes about (e.g. Weisinger & Salipante, 2000). Given this image knowledge sharing is not seen as pushing packages of existing knowledge back and forth, but as a process that requires not only knowledge of the bringing party but also of the obtaining party: "The ability to evaluate and utilize outside knowledge are largely a function or the level or prior related knowledge" (Levinthal & Cohen, 1990: 128). Knowledge and knowledge sharing are strongly interwoven. On the one hand knowledge sharing is only possible based on existing knowledge. On the other hand knowledge sharing is needed for the common ascription of meaning, and therefore for knowledge to become a 'collective resource'.

Next to the contents of the knowledge sharing process also its form and the parties involved have to be considered. Identifying the possible influence of culture on these aspects requires a specification of the knowledge sharing process. The model in Figure 2 presents such a specification. This model, which combines the models of Hendriks (1999) with those of Levinthal and Cohen (1990) and Gupta and Govindarajan (2000), distinguishes five facets of knowledge sharing. The model is based on the intuitive premise that knowledge sharing presumes two roles: that of one who has knowledge (facet 2) and that of one who gets knowledge (facet 4). Knowledge sharing is different from transfer in the sense that in knowledge sharing situations individuals and groups are bound to change roles frequently. Connecting knowledge owners (bringers) and getters presumes a choice of canal (facet 3). Knowledge sharing will only come about when involved parties recognize its importance or possible value (facet 1). The effectiveness of knowledge sharing will become apparent if on the basis of shared knowledge other products are made or processes run differently (facet 5).

Combining the model in Figure 2 with the knowledge types distinguished above answers the second research question. The five facets of knowledge sharing offer

starting points to specify the influence of culture, which calls for a specification per facet of the contents of the process (cf. the characteristics of the shared knowledge).

4 Relationships between culture and knowledge sharing

This brings us to the third research question, which concerns the relationship between culture and knowledge sharing. An analysis of the literature that addresses this relationship leads to the identification of a large number of different relationships. These can be divided into conceptual (or internal) and influencing (external or causal) relationships (see Figure 3 for an overview). In the conceptual area the relationship is characterized by reciprocity: knowledge defines culture and culture defines knowledge. Many authors consider knowledge as an indispensable element when defining of culture (relationship A1 in Figure 3) and, the other way around, many authors indicate that without a reference to culture a definition of knowledge would be incomplete (relationship A2 in Figure 3). As an example of the A1-group consider Goodenough (1957) who states that "A culture consists of whatever it is one has to know or believe in order to operate in a manner acceptable to its members." Also, for instance, Cleland (1990) identifies knowledge as one of the components of culture: "An organizational culture is the environment of beliefs, customs, knowledge, practices, and conventionalized behavior of a particular social group." The definition of 'encultured knowledge' by Blackler (1995) that was given above, gives an example of A2-group. Also Schein's conception that knowledge refers to solutions for problems that a group accepts as valid fits within this group (e.g., see also Chia, 2003). In other words: culture is knowledge and knowledge is culture, but knowledge and culture are not identical.

The second class of relationships between knowledge sharing and culture, labeled as causal relationships, can be detailed into six types. Firstly, the degree and form in which an organization values knowledge is culture-related. This also applies to the appreciation of individual aspects and forms of knowledge (Chia, 2003; De Long & Fahey, 2000). For example, McDermott and O'Dell (2001) show that software development firms appreciate the creative aspects of knowledge, which surfaces in a larger appreciation for not-yet-perfect prototypes than one finds at software firms that sell off the shelf products. This type of relationship does not only concern the question as to whether or not an organization appreciates knowledge, but particularly the question as to how it appreciates knowledge. This appreciation will, for example, be different in the four cultures that McGill and Slocum distinguish (1994): the knowing culture (the emphasis is put on what the organization is already familiar with), the

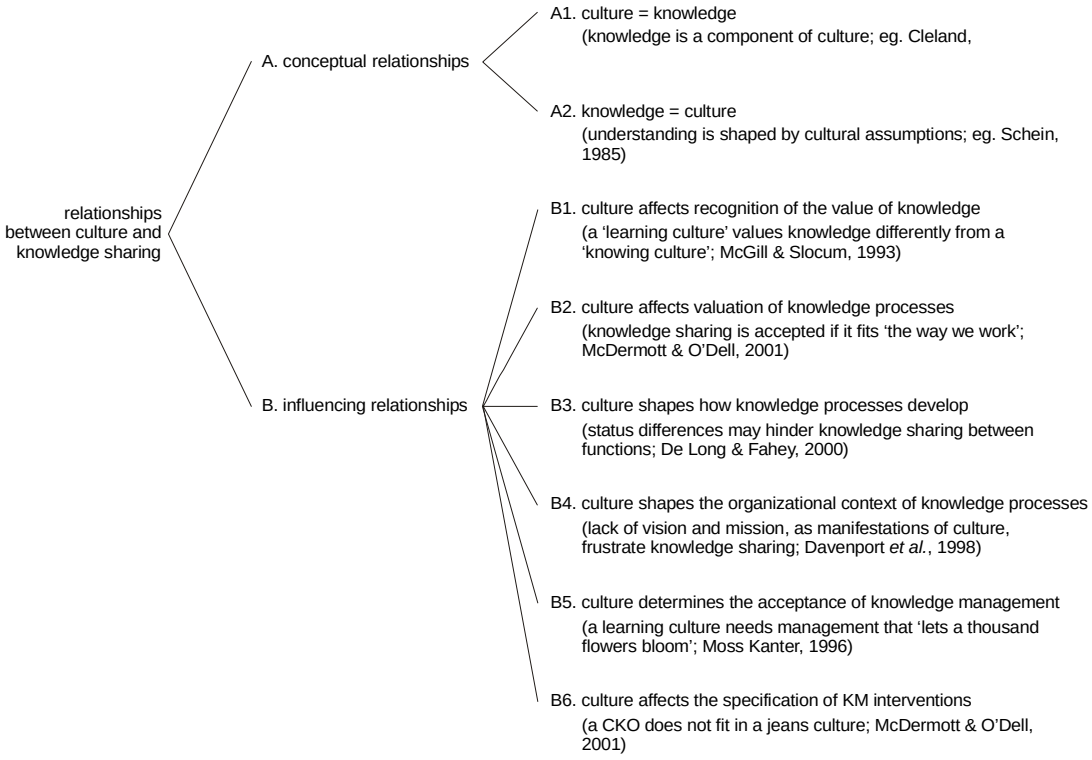

Figure 3 Classes of relationships between culture and knowledge sharing

understanding culture (that appreciates especially the processes of becoming knowledgeable), the thinking culture (which values highly the creative process of problem solving in new situations) and the learning culture (which appreciates exploration of new problems and solutions, experiments, and the conscious deviation from the beaten track).

Secondly, culture influences the appreciation of processes such as knowledge sharing, development or retention. This type of relationship between culture and knowledge gets most attention in the knowledge management literature. Particularly, authors stress the influence of culture on knowledge development (e.g. Davenport *et al.*, 1998; De Long & Fahey, 2000; Leonard & Sensiper, 1998; Nonaka & Takeuchi, 1995), on knowledge sharing (e.g. Damodaran & Olphert, 2000; Davenport *et al.*, 1998; D. Ford & Chan, 2002; Hendriks, 1999; McDermott & O'Dell, 2001) and on the link between knowledge sharing and knowledge development (e.g. Glisby & Holden, 2003). For instance, authors point out that culture must create the right conditions for knowledge development: essential are a commitment to learn, nourishing openness and faith, making mistakes that is inextricably linked to learning should not lead to punishment of any kind, etc. (e.g. Friedman, Lipshitz, & Overmeer, 2001). Culture can raise barriers for learning (such as highly appreciating old successful solutions, which will reduce the willingness to engage in experiments, e.g. see Antal, Lenhardt, & Rosenbrock, 2001).

For our present discussion of the relationship between culture and knowledge sharing such insights are particularly relevant because they show how culture can influence knowledge sharing as involved in learning with others. Mutual trust, motivation, and the willingness to see and solve problems are culturally determined conditions that affect whether knowledge sharing will come about (e.g. Goh, 2002; Neef, 1999; Ruppel & Harrington, 2001; Santoro & Gopalakrishnan, 2000). As to the connection between sharing and developing knowledge Glisby (2003) stresses that culture guides the appreciation of the four learning processes in Nonaka's SECI model (socialization, externalization, combination and internalization), based on the culturally laden acceptance of certain forms of knowledge sharing (via social contact or by via externalization of knowledge).

Thirdly, culture influences the way knowledge processes develop in the organization. This third relationship is different from the second in that it concerns which forms how knowledge processes take, and not whether or not they come about. Culture guides the interaction between people (De Long & Fahey, 2000; Sturdy, 2000). Culture influences vertical knowledge sharing, that is knowledge sharing in the hierarchy (Bhagat, Kedia, Harveston, & Triandis, 2002; De Long & Fahey, 2000; D. P. Ford & Chan, 2003). The degree of knowledge sharing depends on culture (in masculine, individualistic cultures the importance of knowledge sharing is less automatically recognized, see D. P. Ford & Chan, 2003). Culture influences the contents of the knowledge sharing process (in an informal network organization knowledge sharing develops substantively different than in an organization with a formal, closed culture, see Kayworth & Leidner, 2003; McDermott & O'Dell, 2001). Knowledge sharing can be more difficult between groups in an organization with clearly distinguished cultures then in organizations that have a strong, uniform culture (Bhagat *et al.*, 2002; Huang, Newell, Galliers, & Pan, 2003).

In the fourth place culture is an element of the organizational context in which knowledge sharing takes place (Snyder & Wilson, 2002). This context stipulates how and when knowledge is shared. This fourth relationship concerns an indirect relation between culture and the knowledge sharing process. Culture, for example, plays a role in defining the acceptability of a specific organization structure, which in turn influences knowledge sharing (e.g., see Almeida, Song, & Grant, 2002).

In the fifth place culture plays an important role in the management model an organization embraces. In other words, culture affects the acceptance of actively managing knowledge processes by other stakeholders than the knowledge workers themselves. This concerns the question what the possible and desirable sphere of

influence of management will be with respect to knowledge: for example, the facilitation of behavior or direct control based on norms and standards (Alvesson & Karreman, 2001; Malhotra, 2002). As, for instance, Moss Kanter (1996) emphasizes, a directive management style is not appropriate in a culture where learning is appreciated: “Let a thousand flowers bloom!”

In the sixth place culture guides the way an organization implements its management given an existing management model. In other words, culture stipulates the focus and style of management (e.g. Lam, 1996) as well as actual selection and interpretation of interventions aimed at influencing how individuals and groups deal with issues of knowledge. It also stipulates the chances of success of actually specifying and taking management measures (e.g., culture contributes to defining which interpretation of an intranet will effectively promote knowledge sharing, see Hall, 2001; Harvey, Palmer, & Speier, 1998; Ruppel & Harrington, 2001). In network organizations in which standards and values especially emphasize the importance of personal contact and community formation, ICT plays another, probably less prominent role than in companies where standards and values ask for as much externalization, explication and formalization of knowledge as possible and where they favor reuse of lessons-learned (De Long & Fahey, 2000). Also culture plays for example an important role in what is seen as a reward or as an expression of appreciation (Comeau-Kirchner, 2000; Greengard, 1998). Moreover, culture co-decides how much faith and trust those people will meet who plan to introduce knowledge management interventions (Lam, 1996).

5 Assessing the role of culture in knowledge sharing

The question then is how the elements of organization culture and knowledge sharing (research questions 1 and 2) and the relationships among them (research question 3) can be used as building blocks of a diagnostic framework (the fourth research question). Here we focus on the influencing relationships between culture and knowledge sharing (B1-B6 in Figure 3). The conceptual relationships become manifest these influencing relationships. An explicit exploration of the conceptual relationships (A1 and A2 in Figure 3) falls outside scope of this paper. As indicated above the fourth research question entails two questions: positioning diagnostic elements in a sequence of diagnosis steps (i.e. combining the first three answers) and specifying that sequence into a concrete diagnosis instrument. We only address the first question here. The answers on the first three research questions can be combined in two ways: either by identifying relevant aspects of knowledge sharing in a diagnosis of culture, or

designating cultural influences in a diagnosis of knowledge sharing. Both approaches involve the risk that they may involve focusing on elements that may appear irrelevant in due course because the relevance of diagnosing one concept only becomes visible as soon as the other is introduced. As knowledge sharing is the intuitively more simple term, the risk appears smaller in the first approach, which makes that approach preferable. As we will develop below, it involves building a perception of culture in which step by step aspects of knowledge sharing are introduced.

The answer to the first research question (culture as belonging to a *group* that incites in *individuals* as group members certain *behavior*) puts the diagnosis steps in sequence. The answer to the second question (recognition of knowledge sharing facets) specifies the third cultural aspect: knowledge sharing involves a form of behavior. These facets can therefore be used as a checklist to pinpoint the influence of culture on knowledge sharing behavior. The answer to the third question (distinguished types of relationship between culture and knowledge sharing) directs the assessment of how culture can play a role in each of the knowledge sharing facets. In other words: the first alternative connects the answers to the first three research questions to the next sequence in the diagnosis of culture:

1. Diagnosing the characteristics of organization culture at group level as the backdrop of knowledge sharing behavior;
2. Interpreting the way in which individuals negotiate group culture or cultures in the light of their knowledge sharing behavior;
3. Examining the way in which culture gives positive or negative impetus to the different facets of knowledge sharing behavior.

In the following sections each of these three steps is more closely examined.

6 Group culture

The first diagnosis step concerns characterizing the group aspects of organization culture in the light of their possible impact on knowledge sharing. Outcome of this diagnosis step must be the identification of groups in the organization with a different culture, the characterization of the cultures of those groups as a group phenomenon and the characterization of the concerning group characteristics of culture as relevant for knowledge sharing. This step requires a model for characterizing the culture of groups. The choice of a suitable model depends on a number of criteria that are partly

Frame 1 Group culture in the case study

In the government institution examined in the case study we found a combination of the characteristics of the bureaucratic, entrepreneurial and clan cultures. Bureaucracy particularly associates with the large number of rules within the institution. These produce extensive information flows. The inclination exists to split up work processes into small task entities divided over individuals, which involves the need for separate coordination of the tasks. The impression is, however, that rules are dealt with in a flexible way and that control is lacking. This leads to employees experiencing a large degree of freedom in that by and large they can specify their activities as they see fit. Strong social links dominate the institution. People prefer getting knowledge from colleagues to outsiders. This does not seem to imply an alienation from customers and market. The institution wants learn about its customers. The institution has the wish and the strength to learn provided no dangers are involved. Independence is highly valued, which leads to many work-related initiatives and the drive to experimentation.
Within the dominating culture the conclusion then is that the institution is on a good position to promote knowledge sharing. The combination of cultural characteristics offer opportunities for recognizing the possibilities involved. The biggest potential barriers originate from the hierarchical traits in the culture, whereas the combination of an entrepreneurial and group culture offers the most useful starting points for envisioning knowledge management programs. The aim of these programs should be to weaken the hierarchical elements, and to reinforce the already present group and entrepreneurial elements. The institution should aim to reduce the information flows that result from the hierarchical culture in size and to decrease its focus on functions. There is a lack of awareness that the institution owns much knowledge that is not exploited and that is obtained from outside. This obstructs the motivation of people to learn.

specific to the situation of the organization to be diagnosed: e.g. assessments of culture made in the past, the expected acceptance of used characterizations of culture, theoretical robustness of the model, the possibility of characterizing the culture types in terms of knowledge sharing and the availability of measurement instruments developed based on the model. To illustrate the argument we will discuss using the competitive value model of Quinn and Rohrbaugh (1988; 1983) as the basis for taking the first diagnosis step (characterization of group culture in the case study took place on the basis of this model: see Frame 1). With several adaptations this model has served as the basis for many measurement instruments (eg. Cameron & Quinn, 1999; Hellriegel, Jackson, & Slocum, 1999; Zammuto & Krakower, 1991). This framework refers to whether an organization has a predominant internal or external focus and whether it strives for flexibility and individuality or stability and control. The framework is based on six organizational culture dimensions and four dominant culture types: clan (flexible – internal), entrepreneurial (flexible – external), market (stable - external), and bureaucracy (stable - internal).

Bureaucratic culture is characterized by rules and fixed working methods. Work contacts in non-standard situations are usually established via higher hierarchical layers. Horizontal knowledge sharing at the level of operation is mostly problematic, particularly between functions and departments (De Long & Fahey, 2000). The closed

nature of culture and the emphasis on tasks rather than persons is bound to reinforce this.

Aspects that characterize *clan culture* are tradition, allegiance, socialization, teamwork, solidarity and social control. Overtime is not considered problematic, as long as it serves the aim of the organization. The long-term relationships people enter into show their allegiance. Employees value mutual social relationships at the workplace and give priority to cooperation in relevant areas. For knowledge sharing such a parochial culture that focuses on people instead of tasks offers opportunities. People are motivated to share their knowledge, if they see the relevance. However, this culture also involves the danger of an inward orientation: just as the hierarchical culture this culture is a closed culture. Employees prefer face-to-face meetings and are less likely to use an impersonal medium as Internet or knowledge-based systems for knowledge sharing. Barriers exist for getting knowledge from outside the group.

In *entrepreneurial cultures* innovation, individual initiative and independence constitute the norms. Professionals in these organizations are focused on their individual career ladders. The entrepreneurial culture is characterized by possibly thwarting characteristics as concerns knowledge sharing. On the one hand it is an open culture, which may induce a greater inclination towards knowledge sharing than in a closed culture. On the other hand independence is highly valued. The entrepreneurial culture can generate barriers for the willingness to share knowledge as it is task-oriented rather than people-oriented.

In a *market culture* people particularly focus on obtaining specific goals (financial, market goals). The relationship between organization and professional is purely contractual. The professional conducts tasks for which the organization pays him. These tasks will be carried out with large commitment because the reward will be higher if more or better final results are gained. Knowledge sharing will take place if it results in rewards that are stated in a contract. The closed nature, task-orientation and results-orientation of a market culture do not generate specific barriers to knowledge sharing but generate a strict framework that privileges only explicitly stipulated forms of knowledge sharing.

7 Cultural patterns of individuals

To come about, exist and persist, culture as a group phenomenon depends on individuals. Insight in the role of the individual is in at least three ways useful to nuance and verify the image that shows when considering culture as a group phenomenon.

Frame 2 Cultural patterns in the case study

In the case study the pattern of internalization appeared as the dominant pattern. Conforming behavior did not show and only some indicators of an innovating pattern emerged. The culture of the region and the sector showed to have a major impact on the organization culture. As a government organization the institution attracts individuals who appreciate a trustworthy employer, with adequate wages, good fringe benefits and a lower pressure of work than in business. The sector is predominantly conservative. New products and processes must be proven before they are accepted. The conscience of having to use community money in a justifiable way is strong. Most of the employees are proud of the work they do. The drive to do things well with the lowest social costs is strongly present. This combination of elements in a pattern of internalization: people distinguish little between work and private life. They are willing to discuss the quality of their own products and services. Loyalty and allegiance dominate the institutional atmosphere. The organization is expected to ensure the well-being of the employees. The collective character offers security and generates allegiance but also causes rigidity and an inward orientation. Some signs of an innovation pattern surfaced during the interviews, but in a less clearly recognizable form. The appreciation of initiatives and creativity exists although it is not defined as the present company culture, but as the aspired culture. Most respondents recognized the drive to work together and an orientation toward the future, but the opinions diverged as to how strong this drive and orientation actually were. The conclusion to draw is that the image the first step conveys stands firm, but that the bureaucratic and group elements of culture appear stronger than the entrepreneurial elements. Knowledge sharing is not at angles with the organization culture. Yet an open and transparent culture does not really exist. This indicates that prevailing group culture and the culture patterns call for an explicit attention for the more concrete barriers to knowledge sharing.

Firstly, a diagnosis of the role of individuals is important as it may show how strong group culture is and to what extent group culture influences knowledge sharing. Secondly, every individual is a member of more than one cultural group, partly within and partly outside the organization, and his or her culture materializes at the crossroads of those cultures. Insight into the role of individuals is therefore important to be able to assess the presence and strength of subcultures and assess their influence on organization culture. In the third place the role of the individual is vital in maintaining and developing culture and assessing the role of individuals therefore provides the backdrop against which interventions aimed at adaptation to culture or adaptation of culture become meaningful. Assessing the role of the individual in organization culture involves assessing the cultural involvement of that individual. A useful theory to this purpose is presented by Neuijen (1992) who distinguishes between three patterns in individual involvement in organization culture (the case study has used Neuijen's theory to assess how individuals negotiate group cultures; see frame 2).

The first pattern distinguished by Neuijen is the pattern of *internalization* which involves employees seeking a steady, perhaps even lifelong workplace and distinguishing little between work and private. They are convinced of making a useful contribution to society without questioning the quality of their own products and services. Employees

expect their loyalty and allegiance to be met by the organization taking care of their well-being. Management takes the form of social control among employees and the organization appealing to the conscience of the employees. Internalization forms a pattern in which harmonious relationships are valued. The collective character offers security and generates allegiance but it can also cause rigidity and an inward orientation. Managers frequently come from inside the organization and are considered to be the spokespersons of the collective. Its focus on social control and the acceptability of the organization appealing to the conscience of employees make this pattern suitable for knowledge sharing. However, the danger of rigidity and the inward orientation may generate knowledge sharing barriers.

The second culture pattern is that of *conformation*. Employees obey the rules without questioning the underlying standards and values. Employees and the organization engage in a calculating relationship. The organization does not consider itself responsible for the well-being of employees, whereas employees are aware that they must stand up for their own interests. Employees change jobs easily. A management attitude that requires a large degree of involvement and responsibility of employees is likely to fail in a pure pattern of conformation. Knowledge sharing can be problematic because mutual relationships are not based primarily on deep-rooted solidarity and consensus, but on conventions, social control, calculated tactics or public opinion.

The third cultural pattern is that of innovation. Key topic in this pattern is `freedom within bounds'. Employees share future ambitions of the organization that form the most important source of organizational identity. The employees have to make these ambitions work out, act loyally and ensure the organization's viability. But if it is in the interest of their own career they will leave the organization. Not tradition (as in the pattern of internalization) or the instrumental value of relationships (as in the pattern of conformation), but jointly building the organization, and an orientation towards the future characterizes the pattern of innovation. Management needs powers of persuasion as its most important management tool in this atmosphere of initiatives and creativity, in which employees do not appreciate being sent into a direction they did not choose for themselves. Knowledge sharing fits well within this cultural pattern given its focus on collective efforts and its orientation toward the future. The most important risk this pattern involves as to knowledge sharing is similar to that of the entrepreneurial organization culture: weighing personal and group ambitions may tip the scale toward the personal end.

8 The knowledge sharing culture

Understanding knowledge sharing as culturally determined behavior of individuals in groups leads to considering knowledge sharing as defined within two dimensions: firstly, the presence of group cultures as culture types; secondly, the behavior of individuals as their way to react to existing culture aspects and their behavioral patterns to maintain or reform those cultures. The first two diagnosis steps described above will outline these dimensions, sketch how an organization scores on these dimensions and thereby provide a steppingstone for the third diagnosis step. Although these steps produce useful information for assessing the role of organization culture in knowledge sharing, inevitably they outline an overall picture. To be able to pinpoint in more detail how the organization culture may be expected to affect knowledge sharing, a specification is needed of the space defined by the two dimensions. Describing that space involves answering the question as to how the different types of relationships between culture and knowledge sharing, as identified in Figure 3, play a role in the facets of knowledge sharing (see Figure 2). Culture may involve both a positive and negative impact on each facet of knowledge sharing. Steps 1 and 2 give an insight into possible or even probable impacts, but allow no definite conclusions as to the prevailing culture actually implying these impacts. For instance, the risk that associating knowledge with power will lead to undesirable barriers to knowledge sharing will be probably largest in a hierarchical culture, but may also occur in other cultures. How big the risk is within each culture type will depend on the dominant cultural patterns. Therefore the specification of the cultural influence on various facets of knowledge sharing can be no automatic translation of the outcome of steps 1 and 2, but involves a separate diagnosis step that should use the outcomes of the first two steps as guidance. The cultural impacts on knowledge sharing should be selected as appropriate within the picture painted in the first two steps. The objective cannot be to draft a complete list of possible positive or negative cultural impacts. The objective should be to select impacts based on three criteria: firstly, each facet of knowledge sharing should be addressed; secondly, all relevant types of relationships between culture and knowledge sharing should be included (see Figure 3); thirdly, the outcome of the first two diagnosis steps should ‘come alive’ in the third diagnosis step.

	barriers	facets of knowledge sharing				
		A. recognition value	B. bringing knowledge	C. choice of channel	D. getting knowledge	E. using knowledge
B1	culture hinders recognizing the importance of knowledge	✈				
B1	learning is not appreciated	✈	**(✈)**		✈	
B1	received insights are preferred over new knowledge	✈			✈	✈
B2	knowledge sharing does not fit `the way we work´	✈				
B2	prevailing value is that of the `self made man´, sense of collectivism is lacking	✈	✈		✈	
B2	culture does not emphasize that contacting others is something good	✈	**(✈)**	**(✈)**	**(✈)**	
B2	culture emphasizes present and future, evaluations are not highly appreciated	✈	**(✈)**			✈
B3	knowledge = power		✈		**(✈)**	
B3	the 'not-invented-here' syndrome: knowledge from outside the organization is appreciated less				✈	
B3	actively offer knowledge to others is not appreciated and stimulated		✈			
B3	recognition, trust and openness are lacking		✈		✈	
B3	´one good turn deserves another´ is no received value; culture therefore obstructs reciprocity		✈		**(✈)**	
B3	reputation building by way of expertise is no element of culture		✈		✈	
B3	role models not recognized		✈			
B3	knowledge seen as individual and intangible; building and maintaining a knowledge infrastructure not highly valued		**(✈)**	✈	**(✈)**	
B3	status and rewards only go to knowledge owners				✈	
B3	errors are not tolerated		✈		**(✈)**	
B3	need for help is seen as weakness				✈	
B3	there fear exists that knowledge that is passed on will not be used correctly		✈			
B3	making compliments openly is not considered appropriate in the culture		✈		**(✈)**	
B4	the mission gives little hold for assessing the value of knowledge	✈				**(✈)**
B4	the mission gives little hold for assessing the value of knowledge sharing	✈				
B4	organization structure raises barriers between knowledge sharing parties	✈	✈		✈	

Table 1 Cultural barriers to knowledge sharing
✈ = barrier has a probable effect on the facet
(✈) = barrier has a prossible effect on the facet
See figure 3 for the meaning of B1-B4 (first column); no examples are included of the relationships B5 en B6 as these appeared less relevant in the case study

Table 1 gives an example of this specification as it was made in the case study. The table shows a selection of cultural impacts on knowledge sharing that were collected in the literature (incl Banks, 1999; Damodaran & Olphert, 2000; Davenport *et al.*, 1998; Davenport & Prusak, 1998; De Long & Fahey, 2000; Disterer, 2002; D. Ford & Chan, 2002; Kayworth & Leidner, 2003; Leidner, 1999; McDermott & O'Dell, 2001; Probst, Raub, & Romhardt, 2000; Snyder & Wilson, 2002; Wensley, 2001). The table shows which connections between the impacts and the facets of knowledge sharing deserve

Frame 3 The impact of culture on knowledge sharing in the case study

As to the first facet of knowledge sharing the interviews at the government institution showed that culture raises no direct obstructions to knowledge sharing: the role of the culture in recognizing the importance of knowledge and knowledge sharing does not appear obstructive. The most clearly visible barriers appeared in the organizational context for knowledge sharing, as influenced by culture, (a mission that offers no concrete starting points for assessing where and when knowledge sharing is appropriate, an organization structure that raises barriers instead of facilitating contacts). As to the second facet of knowledge sharing the prevailing culture seems to involve little obstruction to offer knowledge to others (no knowledge = power culture, a strong group feeling is present, etc.). Here too the role of the organization structure is seen as a negative influence, as well as the lack of recognition by the organization of situations in which knowledge sharing has come about successfully. As to choice of channel, the third facet, face-to-face contact appears the most important form of transfer. The most important barrier here derives from the lack of time and occasion to meet others. With respect to the fourth facet, actively hunting for knowledge, the interviews show that people develop their networks within the bounds of their own department. A clear lacking awareness of outside knowledge shows in the data. The image the conversations convey is that employees develop little activity themselves. Management is urged to draw the knowledge map. As to the absorption and usage of knowledge, the fifth facet, it appears that learning by evaluating is no accepted value.

most attention. For instance, the association of knowledge with power may prevent people from offering their knowledge to others (facet 2: bringing knowledge) as that may undermine their power basis. It may also be a barrier to actively looking for useful knowledge elsewhere within or outside the organization (facet 2: bringing knowledge), as that could be interpreted as a sign of weakness and lack of power. The table can be used on a row-by-row basis, assessing the presence of cultural barriers, and a column-by-column basis, assessing the state of affairs as to all facets of knowledge sharing. Combining both approaches appears as a suitable way to draw a balanced picture of both cultural impacts and a sufficiently rich conception of knowledge sharing.

9 Conclusion

The possibilities of exposing the relationships between organizational culture and knowledge sharing are limited, for a researcher as well as for the organization itself. A knowledge culture cannot really be measured, an outsider can only hope to offer a mirror to members of a culture but can hardly be expected to penetrate the depths of culture. An organization cannot step outside its culture to assess its status. That does not imply that assessing the knowledge culture of an organization is a hopeless task or a mission impossible. An important condition for successfully carrying out such an assessment is to recognize that the relationship between culture and knowledge sharing is fundamental: culture is interweaved in organizational knowledge itself, in

knowledge processes and in interventions of organizations aimed at influencing the knowledge processes. Studying the relationships between culture and knowledge sharing first and foremost involves exploring and reconstructing the close connections between the two concepts. For an organization this means that awareness and recognition of the intricacies involved in the relationship are necessary preambles to step to knowledge management in the sense of designing and introducing interventions in the management arena. The principles and procedures for connecting culture and knowledge sharing as described in this paper offer a contribution to the discussion as to how organizations can produce this awareness and recognition by way of critical self-reflection.

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