Knowledge management in the making: using the balanced scorecard and e-mail systems

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Abstract

Purpose – *Knowledge management deals with the production, application, and distribution of knowledge within and between organizations. Such intellectual resources do not appear* ex nihilo*, but are always constituted through practices and undertakings in an everyday work life setting. This paper seeks to examine how two managerial tools, the balanced scorecard and an e-mail system, are used to represent and classify various knowledge-based resources in two organizations.*

Design/methodology/approach – *The paper draws on Foucault's perhaps least recognized work,* The Birth of the Clinic *and shows how what Foucault calls sensible knowledge is useful for understanding BSC and the e-mail system. Sensible knowledge integrates a number of human faculties such as ocular, representational, and communicative skills in many cases taken for granted and poorly considered in organization theory. Two case studies serve as the primary empirical domain.*

Findings – *The paper concludes that knowledge can never be taken for granted, but must always be examined at the level of its constitution and reproduction, i.e. within the regimes of representation and classification in which practitioners operate. Such regimes of representation and classification are immanent in a variety of managerial tools and technological systems and must therefore be examined in greater details.*

Research limitations/implications – *The immediate implications from managerial tools and technological systems need to be studied in their context and understood as principal resources for managing knowledge in practice.*

Originality/value – *The paper bridges theoretical writings on representation classification, sensible knowledge and the more mundane everyday work life practices that constitute organizations.*

Keywords *Knowledge management, Classification, Balanced scorecard, Electronic mail*
Paper type *Case study*

Introduction

Knowledge management has emerged as a new perspective on organizations and their use of their various intellectual and knowledge-based resources (Spender and Grant, 1996). Being a theoretical perspective of the firm (Foss, 1996) that emphasizes the development, use, and dissemination of intangible resources, knowledge management bridges theoretical fields such as organizational learning, strategic management theory, and evolutionary theories of organizations. The field of knowledge management theory is diverse and growing, and essentially clusters around both the realist conceptualizations, conceiving of knowledge as what is directly accessible for managerial operations and manipulations, and the more constructivist and sociological perspectives, conceiving of knowledge as a social accomplishment during the course of action, and emerging from within certain practices and undertakings. In the former perspective, knowledge is portrayed as a stock from which know-how and experiences can be drawn and then applied to cases (e.g. Teece, 2000; Boisot, 1998; Stewart, 1997; Szulanski, 1996).

By identifying knowledge, it is supposed that knowledge can be generated and organized in an efficient way (Nelson and Winter, 1982, Nonaka, 1994, Nonaka and Takeuchi, 1995;

Hansen *et al.*, 1999). A common standpoint of such a perspective is differentiating between tacit and explicit knowledge. Explicit knowledge is frequently linked to things that can be formalized (such as statistics, for example), and tacit knowledge to knowledge that is hard to formalize in any way, shape, or form. But, like all taxonomies, it also has its weaknesses. The fact that tacit knowledge is hard to formalize does not necessarily mean that it fails to make a difference or has no meaning in organizing processes. Rather, the opposite is true. Polanyi (1967) goes far beyond such taxonomy, arguing that explicit knowledge is unthinkable because it is encompassed by tacit knowledge. Using such a starting point, we can say that tacit knowledge, by definition, becomes unformalized. However, in the latter perspective, researchers argue for an integrative view of knowledge wherein knowledge is depicted as a joint effort deriving from collaborations between individuals and humans and non-humans (Orlikowski, 2002; Tsoukas and Vladimirou, 2001; Lanzara and Patriotta, 2001). Knowledge is what is provisional, agreed upon, in a constant process of becoming, resisting any closure (Cook and Brown, 1999; Davenport and Prusak, 1998). This view is captured by Castoriadis (1997, p. 345):

> All knowledge is co-production; and, in nontrivial cases, we cannot truly separate out what ''comes from'' the subject and what ''comes from'' the object. This is what I would like to call the ''principle of undecidability of origin''.

In a similar manner, Gherardi and Nicolini (2001, p. 44) argue:

> Every attempt to label something as ''knowledge'' is made by a specific social community belonging to a network of power relations, and not by a world consisting purely of ideas. Hence, no knowledge is universal or supreme; instead, all knowledge is produced within social, historical, and linguistic relations grounded in specific forms of conflict and the division of labor.

While many writers point to the elusive and somewhat fluid qualities of the construct of knowledge, little empirical research supporting such theoretical development has been conducted. Following Hacking (1983), portraying scientific activities as a combination of representing (theory) and intervening (empirical research), there is, to date, only a modest body of empirical research (interventions) supporting the theoretical development of knowledge management theory (representation). In this paper, knowledge is, in accordance with Foucault (1983) and Deleuze (1988), regarded as what is distributed and what emerges from the joint combination of seeing and saying, in the intersection between visual inspection and linguistic systems of representation. Based upon this assumption, this paper reports on an empirical study of how individual human beings engage with managerial tools such as the balanced scorecard accounting model and e-mail systems. When operating such systems, aimed at structuring and bringing order to an inherently disorganized social reality, individuals are mobilizing what we call, in accordance with Foucault (1983), sensible knowledge, i.e. they mobilize both cognitive and embodied resources, such as vision and tactile capacities, but are also dependent upon shared language games and symbolic systems. Everyday managerial activities of the type manifested in the use of the balanced scorecard and e-mail systems thus draw on a number of integrated yet heterogeneous resources. Exploring how such resources are brought together is of great interest to knowledge management theory.

In encapsulating these ideas, the paper will start with one less-frequently discussed practice in this context, i.e. how people in industrial societies categorize and classify on an everyday basis in order to achieve knowledge and become organized (e.g. Bowker and Star, 1999, p. 59). Categorizing is a generic social practice (Douglas, 1966), especially within knowledge management theory. In most cases, notwithstanding the constructivist credo, knowledge is, in Tsoukas and Mylonopoloulos's (2004) formulation, very much treated as ''given''. We start our analysis of knowledge management practices at companies by introducing the concept of representation, linking such a discussion to Michel Foucault's (1973) perhaps least-recognized work, *The Birth of the Clinic*, and his concept of sensible knowledge. The perspective is illustrated by two cases. Both cases demonstrate how practical work conducted in what have been called knowledge-intensive organizations is

essentially a matter of categorization, classifying and storing for later use, where knowledge emerges in-between saying and seeing. In the first case, the use of the balanced scorecard model of management control in an organization is examined as a means of organizing, categorizing, and structuring heterogeneous and complex materials and processes. In the second case, a study of the use of an e-mail system in an organization is employed. The study suggests that knowledge management researchers need to conduct detailed empirical studies of how individual co-workers in organizations constitute and exploit their know-how through engaging with a series of interrelated activities and resources such as e-mail systems, categorization schemes, concepts and vocabularies, and visual inspection. Failing to address the generic practices of everyday working life will entail that knowledge largely remains a black-box and will be taken as what is ''given''. The paper will also conclude with the implications of our analytical interpretive framework for our understanding of the study of categorizing and knowledge processes and will exemplify how such a perspective can help us in examining (critically) their consequences and effects regarding everyday life organizing.

Knowledge management and the practice of classification and categorizing

Classification

In terms of knowledge management, classification is one of the generic processes used in the production of what we call knowledge, know-how, or intellectual capital. The notion of knowledge is one of the most complex theoretical constructs in organization theory. It embodies a variety of philosophical, linguistic, sociological, and psychological debates and draws on a multiplicity of discussions in various disciplines. Several of Plato's dialogues address the notion of knowledge and what makes something become known. These concerns have remained a perennial subject of discussion in the western canon. One of the abiding concerns relating to the construct of knowledge is that it is closely associated with the notion of representation, i.e. various means of signifying, denoting, and illustrating underlying realities in written texts, formulae, symbols, and so forth. Since the signifying system is, as suggested by a variety of philosophers such as Wittgenstein, Austin and Quine, in an Anglo-American analytical tradition of thinking, and by a number of continental thinkers such as Saussure and Derrida, language is in essence based on the use of arbitrary signs and symbols which can never fully mirror an underlying nature. In consequence, humans can never attain a position within language from which they are able to observe and evaluate what we call knowledge; knowledge is thus inextricably entangled with the use of language, which in turn is never an enclosed or fully determinate system of symbols and signs (Mouritsen, 2000; Tsoukas and Vladimirou, 2001; Yakhlef and Salzer-Mörling, 2000). In consequence, the construct of knowledge can never be simply located within language, always being an assemblage consisting of different human faculties such as perception, cognition, and tactile engagement with material resources and their potential for making judgments, distinctions, and classifications (Vygotsky, 1978).

Bowker and Star (1999, p. 10) define classification thus:

> A classification is a spatial, temporal, or spatio-temporal segmentation of the world. A ''classification system'' is a set of boxes (metaphorical or real) into which things can be put to then do some kind of work – bureaucratic or knowledge production.

What is of great importance, in terms of such practices of classification, is that infrastructure tools (i.e. tools that are not really visible, yet impose numerous silent means of direction and coordination) are always, to some extent, ambiguous and provisional. They can never ''impose total precision'' (Bowker and Star, 1999, pp. 157-158). However, systems of classification are never determined once and for all, rather they are malleable and changing en route. This is a paradoxical quality of classification systems: they are both part of the infrastructure and therefore, to some extent, immutable; yet they are continuously undergoing minor changes and modifications. In this view, classification systems are similar to languages that are largely stable systems (which de Saussure calls *la langue*) as well as what is creatively practiced and used in everyday life by individuals (*la parole* in de Saussure's vocabulary). For Bowker and Star (1999), classification systems are of great

interest because they enable a structuring and organization of the world that can be shared across communities of practice and create an order of things that serve as boundary objects bringing together heterogeneous interests.

The construction of taxonomies and classification systems is a central managerial activity. It is noteworthy that when the notion of categorization is employed in this paper, it is in a more affirmative manner than, for instance, Chia's (1998) critical assessment of the epistemological tradition deriving from Aristotle's insistence on taxonomies as the generic categories of knowledge. Categorization and classification are instead regarded to be a primordial human activity that can be observed in all sorts of human social organizations, from tribal societies (Durkheim, 1995; Lévi-Strauss, 1966) to research communities in various domains of technoscience, e.g. biologists (Lynch, 1985) or physicists (Traweek, 1988). In what follows, we draw on Bowker and Star's (1999) sociological analysis of the use of categories and classifications in the organization of society. For Bowker and Star (1999), contemporary society is dependent on the use of practices of classification:

> Our lives are henged around with systems of classification, limned by standard formats, prescriptions, and objects (Bowker and Star, 1999, p. 1).

They continue:

> These standards and classifications, however imbricated in our lives, are ordinarily invisible. The formal, bureaucratic ones trail behind them the entourage of permits, forms, numerals, and the sometimes-visible work of people who adjust them to make organizations run smoothly . . . Remarkably for such a central part of our lives, we stand for the most part in formal ignorance of the social and moral order created by these invisible, potent entities (Bowker and Star, 1999, p. 2).

The everyday life of contemporary society is thus immersed in a variety of standards, classifications, and categories that we normally take for granted, that have become naturalized.
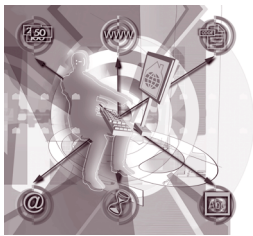
Representation

Classifications can also be seen as rudiments of the more extensive concept of representation. In accordance with Heidegger (1977), representation could be linked to modernity and the emergence of the industrial world. Heidegger argues that it differs from other and prior modes of knowing in that it is not simply concerned with the duplication of the symbolic coding of the world in its diversity, but rather with the selective objectification of things, states, and processes (see also Kallinikos, 1995, p. 118). We can say that in the context of classification and categorizing; representation produces a particular brand of reality and works as a kind of ''world-making'' (see, for instance, Goodman, 1978). This world is continually working to structure our thoughts, thinking, and acting processes for us, or in Bowker and Star's (1999) words: to become naturalized.

The basic function of representation can be seen as making one thing present in terms of another (Castoriadis, 1987). It is something that can stand in for an absence and thus make it present (Latour, 1987). But, how does this ''stand in for'' work? The conventional notions of representation are that the object is being represented as external and antecedent to the social practices and instruments of its representation (Bloomfield and Vurdubakis, 1997, p. 643). But one aspect of this phenomenon, that has not been discussed so well in a corporate context, is how representation, while simultaneously striving to make an objective world, also works from another angle; as a manifold which disturbs the flat plane of explanation, and how this process could be illustrated in a wider social context. We can understand this phenomenon from two angles. Firstly, as noted above; technologies of representation function to objectify the ''world'' (cf. Cooper, 1993). But, following Heidegger's analysis of the modern world as a vast representation, the logic of human representation could also be seen as topological or spatial rather than just designative.

This phenomenon is further explained by Bateson (1973, p. 457) when he stresses that:

> What gets from territory to map is transforms of difference and that these differences (somehow selected) are elementary ideas.

> **"The fact that tacit knowledge is hard to formalize does not necessarily mean that it fails to make a difference or has no meaning in organizing processes."**

The mapmaker puts the differences that are important to him on the map. The information on the map is composed of these differences, and the differences themselves cannot be localized or located anywhere. In other words, representation works as a manifold which has the potential to double back on itself, not just a naming mechanism. This is also what we can find implicit in Heidegger's (1977, p. 121) argumentation when he says that explanation is always twofold:

> It accounts for an unknown by means of a known, and at the same time it verifies that known by means of that unknown.

So, the spatial logic of representation at work could now be said to be a flat plane of explanation (making still), but which also encompasses another kind of space where this flat plane is disturbed. It could be said to be a space of intersections or interactions that works in term of folds or doubles (Cooper, 1993, p. 270). Representation can thus be seen as divisions or frames functioning according to a logic where something has to be ignored or suppressed in order to be illuminated or highlighted – a set of oppositions. If we go back to the example of the map, we could say that the mountains are represented by the valleys and vice-versa, i.e. inclusion/exclusion, big/small, familiar/foreign etc., following the folds in the space of representation and thus capable of being described as a mutually defining process.

The result of a mutually-defining process like this could also become a lost vision. This is what Foucault convincingly elucidates in his book *This is not a Pipe* (Foucault, 1983) by discussing the concept of dividing. He shows, using several interpretations of works of the surrealist painter René Magritte, that we need division because by dividing things we can maintain a vision. Stability and order are maintained by representation. But at the same time, the structure around the folds of inclusion and exclusion (here related to vision) may interpenetrate. This is what happens when division fails, because so does vision, too. Foucault shows how representation or resemblance can easily be disturbed, giving rise to the question: what ''represents'' what? He elucidates how the resemblance is easily threatened by a different and unstable space. Foucault (1983, p. 44) dissociates the term similitude from resemblance, and brings the former into play against the latter. He writes:

> Resemblance presupposes a primary reference that prescribes and classes. The similar develops in series that have neither beginning nor end, that can be followed in one direction as easily as in another . . .

We are back to the notion above that language, in essence, is based on the use of arbitrary signs and symbols.

What Foucault does is to show that we need division, because by dividing things we can maintain a vision, take control, ascribe significance to certain aspects of the world, i.e. attain knowledge. We can say that division serves the discourse and the learning – the knowledge process – by making comparison possible and by singling out aspects that are of current interest from others that are currently deemed irrelevant. But, he also stresses that every attempt to represent the world in a kind of scientific discourse will simultaneously be swallowed up by the world expanding to contain it. Divisions will create new divisions in a never-ending process. But how could such a process become linked to knowledge as a non-given entity? However, following Deleuze (1988) in praise of Foucault's contribution to epistemology, knowledge is what emerges in-between seeing and saying, in the active engagement with the material, thus producing what Foucault calls sensible knowledge.

Sensible knowledge

In exploring the relationship between seeing and saying, Foucault (1973) examines how the shift to the clinic (hospital), as the new domain for treating patients, had led to a mutation in medical knowledge. According to Foucault, the old codes of knowledge determined what would be seen by the eighteenth-century physicians. These codes defined and organized diseases in a hierarchical fashion, categorized in many families, genera, and species. The existence of disease was more defined in relation to one another than to the body (Sheridan, 1992, p. 39). However, with the advent of the hospital, the essential locus of the new medicine was no longer based on theoretical studies or lecture halls as a means of knowledge transfer, at several removes in time and space from the actual body; now the hospital is the bosom of medical experience, where the disease gradually declares its truth, a truth that it offers to the eye and ear in a kind of a indubitable totality. Medical knowledge is now based on a simultaneous combination of seeing (gaze), experimenting (doing), and saying (discourse). What made such a change possible was a complex of events that included new organizational settings in the hospitals, a new definition of the status of the patient, and a new relationship between public assistance and medical experience: in essence, between health and knowledge (Sheridan, 1992, p. 40). Medical knowledge had arrived at the level of the immediate use of the senses; this sensory knowledge implies the conjunction of a hospital domain with a pedagogic domain. As Foucault (1973, p. 120) argues:

> For what are observation and experience based on if not the relation of our senses.

We can thus say that Foucault puts an aesthetic dimension to knowledge processes, but still within a logical-analytical approach (Strati and Guillet de Montoux, 2002; Gagliardi, 1996). The emerging form of knowledge is based on the alternation of the perceptible and the expressible (relating to the relationship between experience and language) through the development of a language that is geared towards representing, in as accurate a manner as possible, what is visible. Detailed descriptions seek to transcribe symptoms into signs, to capture the passage from patient to disease, and from the individual patient to the conceptual, adding or revising what is already known about the disease. Foucault (1973, p. 114) goes on to suggest that:

> It is there that is forged, by the spontaneous virtues of descriptions, the link between the random field of pathological events and pedagogical domain in which they formulate the order to their truth. To describe is to follow the ordering of the manifestations, but it is also to follow the intelligible sequence of their genesis; it is to see and to know at the same time, because by saying what one sees, one integrates it spontaneously into knowledge; it is also to learn to see, because it means giving the key of a language that masters the visible.

Foucault then argues that if the clinical domain is open only to the task of language (saying) or to the demands of the gaze (seeing), then it will have no limits and, therefore, no organization. There is boundary, form, and meaning only if interrogation and examination are connected with each other, defining the level of fundamental structures, the meeting place of doctor and patients. Foucault says that the clinic seeks to determine this locus using three different means: the alternation of spoken and perceived stages during an observation; the effort to define a statutory form of correlation between what is said and seen; and the ideal of an exhaustive description.

To sum up, as a consequence of what could be called the distributed conceptualization of knowledge, consisting of seeing, saying, and tactile and embodied engagements, one of the key parameters of knowledge is the ability to categorize, classify, and structure what is seen, said, and examined. For instance, Heidegger (1987, p. 77) says:

> Knowing means imposing regulating forms on chaos.

To classify and categorize is to make divisions, in an effort to see more clearly. But, we are not talking about representation as a signifying process, rather the opposite, in terms of world making. Representation can thus be seen as divisions or frames which function according to a logic where something has to be ignored or suppressed in order to be elucidated or

highlighted, i.e. as a set oppositions. At stake are two kinds of spaces: one, at the service of discourse (what is said), and another that is seen, a space escaping discursive explanation (Cooper, 1993, p. 290). Using this background, we say that knowledge can be regarded as what is emerging in-between seeing and saying, in the active engagement with the material. It is in such a context that Foucault helps us to see and exemplify how knowledge is generated, by bringing us to a clinic. Knowledge is what is generated thanks to our senses, by seeing and being seen, by asking questions in a special manner, by striving to redistribute what is seen in a special order and by struggling to capture ''everything'' in an exhaustive description. Put briefly, knowledge is generated when interrogation (saying) and examination (seeing) are connected with each other. But how do an accounting model and an e-mail system, two managerial tools serving as the infrastructure of everyday working life, relate to this? The answer is that they are both largely built on representations, stemming from different classification and categorizing practices, where knowledge can be regarded as having arrived at the level of the immediate use of the senses.

Case illustration

The empirical material is based on taped and transcribed interviews about how people used the balanced scorecard and e-mail. Our ambition was to grasp a broad picture. In doing so, we interviewed different people on different levels using the balanced scorecard and e-mail at two different organizations. General questions were asked about the following areas:

- how they used it;
- why they used it; and
- their experiences in using it.

We have based our argumentation on what people have said to us, i.e. their statements. Our interpretive framework is linked to concepts like sensible and sensitive knowledge. Indeed, concepts like sensible and sensitive are not easy to grasp because such ''aesthetic experiences'' – as they could be called – are inherently subjective. In our empirical work, we have to rely on what people say. So our approach is closely linked to the conventional method used in this kind of research field (Taylor, 2002; Guillen, 1997). But, by letting the users of the balanced scorecard and e-mail express their experiences when using them, we have also come closer to organizational members in order to take an ''aesthetic perspective'' on their own experience. The first illustration is about how a balanced scorecard is used at an organization with the focus on the scorecard's different perspectives. The illustration is based on 11 interviews conducted at the end of the 1990s with people working for a major general clothing agent in Sweden.

The methodological choice of the study calls for two major limitations that need to be addressed: for the first, the case study is based on two single cases and therefore one must keep in mind that there may be significant differences between industries, companies, departments and individual regarding how management tools and technological systems are used in practice. Therefore, the case studies reported primarily serve as illustrations to the theoretical reasoning rather than being final and conclusive evidence of some underlying hypothesis. For the second, there may be cultural differences between countries that must be acknowledged. Sweden is often portrayed as country favoring informal relationships across organization tiers, democratic decision-making and avoidance of conflicts. It may be that the same management tools and technological systems are implemented and received differently in other countries and cultures. At the time of the study, the BSC had been fully implemented within the organization and had taken a prominent place in both speech and action during the control process (see also Edenius and Hasselbladh, 2002). The other case study focuses on how e-mail is used with a particular emphasis on a classifying system in order to get rid of too much e-mail. The illustration at hand is based on ten interviews with people working at an insurance company. They were conducted during 2001. The interviews were conducted in a more ambitious way than just meeting people for the first time to discuss how they use a tool. The interviewees were given a form for one week and asked to record how much e-mail they had sent and received, and to make their own comments. After

one week, the personal interviews were conducted. The purpose of the case studies was not to give a ''thick'' description (Ryle, 1971; Geertz, 1973), but to illustrate how knowledge is generated as a result of the practice of categorizing and classifying the use of the balanced scorecard.

First question: what is the balanced scorecard? As a response to the shortcomings of traditional accounting (Kaplan and Johnson, 1987), Kaplan and Norton presented a new model in the middle of the 1990s that they called the balanced scorecard (Kaplan and Norton, 1992, 1993, 1996a, b). They claimed to take the major fallacy of management accounting head on its inability to uncover what really takes place in firms. In the spirit of classical rationalism, they started by presenting a model that could cover a broader spectrum of activities in the firm and map casual relations across different activities. Kaplan and Norton argue that they have found four robust perspectives that are common, so they implemented them in a model/chart they called the balanced scorecard. Kaplan and Norton argue that a highly important financial perspective should be complemented by three others equally important performance drivers/processes: learning, future and development, market/customer, and internal business processes. Within each perspective, two critical success factors are to be measured and evaluated in line with the corporate and business strategies. By using the scorecard (or rather score-chart) in that spirit, Kaplan and Norton say it will promote double-loop learning and scientific knowledge by capturing the relevant performance drivers (Kaplan and Norton, 1996b) of the organization. In addition, by establishing goals for the drives in the scorecard that go with the overall strategies, and by monitoring them, the BSC could even be used to implement strategies successfully.

Linked to what has been said above, what Kaplan and Norton are actually dealing with is a technology of representation that has an extraordinary capacity to frame something while other things are simultaneously being put aside. Let us first illustrate this by showing how the BSC represents the natural world and fixes objects and events in space and time. As one person formulated it:

> The BSC method forced us to be clear about what to do and what not to do, and what we should do with greater confidence. It is, as I usually say, an inside mission. You can't change track every week; you must be consistent and clear when you choose your strategy and you must hold your course (senior corporate manager).

The users say that, by representing the world in numbers and figures, they feel that they have received clarity and stability. The BSC gave the users a feeling of stability in order to become consistent and hold a course. The way technologies of representation work is by separating the one (original) and the two (copy) and by giving them order and direction. This became even clearer when the users discussed how the four perspectives were related to each other. As one project manager formulated it:

> I see the scheme as satisfied customers giving us a good turnover (financial perspective), which in turn brings the company good profits. So, customers must be put in one perspective; and there are two more that are about internal efficiency, and a fourth one about innovation and learning. I think we all need these four perspectives, i.e. internal efficiency, customers, learning, and growth, in order to have good turnover.

The interviewee sees a complete picture of the way different things are connected, what to focus on and measure, together with direction and clarity. The technology of representation in use seems to have the capacity to make things appear to be connected, making a kind of wholeness or optimum solution. It seems to generate a perceived relevance to the users,

" **In terms of knowledge management, classification is one of the generic processes used in the production of what we call knowledge, know-how, or intellectual capital.** "

shaping collective and individual cognition in a particular way. The objectifying and meaning-ascribing effects could be said to arise from a process of pendulum movement between selectivity and artificial holism. The opposition at work here could be said to be inclusion by exclusion and wholeness by selectivity. Something has to be ignored or suppressed in order to be elucidated or highlighted, and the orders by the questions are asked seems already guarantees the place of language within the practice of the BSC.

This is what Foucault (1973, p. 111) demonstrated by putting the clinic in focus. A speaking eye would scan the entire hospital field with all the patients in their beds (spatial classification); the ideal investigation was based on stages of an observation, the succession of the symptoms, the appearance of their present characteristics, etc. (temporality). In a kind of regular alternation of speech and gaze, moving from patient to patient, the disease would gradually declare its truth (spatial-temporal). It is a question of an effort to define a statutory form of correlation between the gaze and the language. Each visible segment assumes significant values in terms of key figures. But the analytical structure, the statutory example of the BSC, seems neither to be produced nor revealed by the picture itself. The picture's role seems to be more about dividing up the visible within an already given conceptual configuration. This reminds us of a passage in Foucault's (1973, p. 114) text when he writes regarding statutory examples:

> . . . endeavor[s] on the part of clinical thought to define its methods and scientific norms hovers the great myth of a pure gaze that would be pure language: a speaking eye. It would scan the entire hospital field, taking in and gathering together each of the singular events that occurred within it; and as it saw, as it saw ever more and more clearly.

At the company, there was also a discussion about whether to have five perspectives instead of the four main ones recommended by Kaplan and Norton (1996b):

> We wondered about having a human perspective as well, but we decided not to let the human perspective become a hostage, a place for taking care of personnel issues. Our opinion is that responsibility for the staff is catered for by the fact that we have a staff function, we've moved that a long way and we shouldn't build a staff unit into the card as some sort of alibi, along the lines of ''here we take care of issues like this''. That is why management is implemented in the internal process perspective, and it is a high-priority factor. I don't think it's important what we call the different perspectives, it's more important to capture all the critical success factors. Covering these in the card is more important than what you call them. Issues concerning human factors are obvious and clear in our scorecard (project manager).

This person tells us that those personnel issues should be regarded in a wider context, and should thus be implemented within the BSC scheme:

> In the beginning, we thought a lot about whether we should start with Kaplan and Norton's predefined perspectives; we were keen not to follow them, because they are just a model. But after a while, we accepted Kaplan and Norton's four perspectives. What we discussed was whether we should include a personnel perspective or not. The conclusive argument was that we did not like to see our staff as something separate from our ordinary business. We chose to regard them as implicit in the internal efficiency perspective, or as part of the customer perspective . . . Yes, we took another decision after a while, but the thing was that there is no right or wrong way in this; but we wanted to highlight the staff perspective, and that was not the case when it belonged to everything else (planner).

> We have now increased our perspectives from four to five, and it is due to this that I think that ''daring'' is important [referring to a key figure in the internal process perspective] and that we must have the capacity to distinguish between staff and innovations, to put this perspective into focus. Because in this case, we didn't have to mix personnel issues with innovation issues (market manager).

The project manager (in the first of these three interview excerpts) regards personnel issues as important enough to warrant inclusion in the (original) BSC. In the second case (the last two interviews above), the logic seems to go in another direction: we have an extraordinary technology, let us use the model and add another perspective. What happened in the second case was that, in order to know (i.e. to divide), personnel issues were separated from the other perspectives, thus introducing a definition of a new ''object'' and the measurement

practices related to it. By dividing information into personnel and non-personnel, they established a vision of a problem and something that was ready to be measured.

In the BSC scheme, it was possible to either include or exclude personnel issues. In both cases, new knowledge was generated regarding the staff and their activities. But to separate, and thereby make up, different perspectives seems both stabilizing and, at the same time, disturbing. The division is far from being a stable situation. It seems to be connected to serious problems of dividing things yet far away from just putting information in four boxes in a chart. The empirical material also illustrates how that which is excluded and included interpenetrates, with a loss of vision as a result. This was the case when the users really tried to capture some perspectives. The creation of perspectives and objects for measurement provides the basis for defining an area of intervention and control (which makes accounting, comparison, inspection, etc., possible). Language thus provides a mechanism for constituting reality as something that is amenable to certain kinds of action. The respondents create objects, i.e. perspectives and key figures, thereby paving the way for a successive creation of identities and differences. The respondents define the conditions under which it is possible to ''know things'' and to identify what is connected to what, to decide, for instance, if the captured object is about human capital or some other key figure. As soon as the new ''mathesis'' is created, a new stability and certainty will be created.

The perspectives already defined, which are said by Kaplan and Norton to be robust across a number of industries, are not guaranteed to invoke a sense of wholeness and objectivity. The perceived robustness seems rather to appear when the BSC is practiced as a framing technology, i.e. how the organizing representation works to make order and direction. The framing technology gives an impression of wholeness, clarity, and direction. The perceived stability – or to use the same word that Kaplan and Norton use, picturing their four perspectives – ''the robustness'', emerges when different modes of representing and intervening are combined into an orchestrated effort, by saying and seeing, to construct and connect new objects for measurement. If one perspective fails as a taxonomy, a new perspective could be imported in order to provide a new possibility of measuring and comparing. When quantities of the same perspective are compared, it becomes possible to use numerical terms unambiguously. Failing this, when the division fails, as in the example above, a new dimension has to be added. In the same way we can add apples and oranges and call them fruit, we can divide fruit into apples and oranges, and in Foucault's words:

> The similar . . . can be followed in one direction as easily as in another (e.g. Townley, 1995).

The conclusion is that the success of the BSC is not primarily linked to some perspective with an extraordinary potential to view the reality of an organization, rather the robustness seems to be built into the concept of classification, representation and by our senses.

The use of e-mail

Another illustration of the function of classifying processes focuses on how e-mail is used. The argumentation in this section will focus on how we use charts in our desire to try to get rid of one of the main problems of using e-mail, i.e. overload. But before doing this, a short overview will be presented of how the organizing of representation could be linked to e-mail systems and their use. To be active in an e-mail network is to work with different representations on different levels. However, what seems to be important here is that without information continuing to exist in the network, the possibility of the users becoming efficient in their communication seems weak. Being active in the network is a question of the possibility of exhausting one's time. People can make a lot of contacts with others in a short time, compared to other technologies or speech. The actors can do more things, synchronize these things, and carry them out in a productive sequence. This is, however, not a coincidence. Based on the theory of representation, we can argue that the representations of e-mail addresses maintain what can be called an analytical space. Without the possibility that users have of seeing and saying and thus knowing (the right e-mail address, that the users will use their e-mail, to locate people who are not active and remind them, etc.), the system would probably break down or at least take on another meaning (like chatting on the

net, without an instrumental reason) (Edenius, 2002). Therefore, the success of e-mail has its roots, one might argue, in categorizing and classifying, where seeing ''all'' – like a doctor in a clinic – is an important characteristic of being a perfect user.

Still, this analytical space is not innocent. In practice, e-mails seem effortlessly to be too numerous and to come too frequently. Overload occurs. Overload is, perhaps, the most used concept linked to the negative consequences of e-mail, both for individuals and the efficiency of the organization, and the problem is increasing. Overload means that people are unable to handle the information provided. In the light of how representation functions – in line with the discussion regarding the BSC – we can say that thanks to how information is organized in e-mails, people have become aware of while at the same time being gifted with (cognitive) limitations. In other words, e-mail can strengthen the mind and body to be able to handle a lot of information, but the opposition is overload and frustration. There are mainly two different strategies for trying to solve the overload problem. The first solution is partly to use different kinds of intelligent agents (Motiwalla, 1995), as they are known, to increase the possibility of ordering incoming and outgoing e-mail (see, for instance, Bälter, 1998; Hall, 1998). Unfortunately, these prioritizing systems have serious attendant problems (Motiwalla, 1995, p. 23). This was also found in the empirical material. At the insurance company, everyone works in a milieu where the opportunity exists to install and use a prioritizing system but chose not to, in fact. As one user claimed:

> It is too complicated and doesn't work in practice.

Another strategy that appeared more common is developing the seeming advances of the analytical space by storing e-mail in a more rational way. First, storing e-mail makes it possible to gain control. It becomes easy to pick up relevant addresses and find out to whom in the network it is worth spending time on responding. We can see here how representation as categorizing is closely linked to abbreviation, which makes more economic use of space and time in two ways: by close packing and by reduction of size and space (Cooper, 1992). We can obtain ''knowledge at a glance'' and make things happen. The logic seems clear and is fundamental to e-mail systems, and like a speaking eye in a hospital, the investigation is based on stages in investigation and appearance of their characteristics. As one administrator formulated it:

> By putting incoming e-mail in different boxes, I can take control of my communication. One box contains incoming e-mail from my friends, another from one of the projects I am working on. By dividing up my e-mail like this, it becomes easy to handle a quite lot of e-mail . . . it's like throwing a lot of letters all over the floor and then trying to sort to them in an efficient way. It would be difficult . . . But occasionally, I put my e-mail in the wrong boxes, which gets me into trouble, because it takes quite some time to find a lost e-mail.

The way the user was sorting incoming e-mail was to get the feeling of being in control of the e-mail and, perhaps, also the ability to handle a lot of e-mail at the same time. However, this interviewee also communicated problems finding the right classification, i.e. to put the right e-mail in the right box in the chart. The interviewee is really an example of how the folds of inclusion and exclusion may interpenetrate (like the previous example of finding the most relevant perspective to put in the BSC).

But there is much more going on in the light of how representation works and sensible knowledge. Mackay (1988) helps us to understand the situation further. He tells us about an ordinary e-mail user who had 600 messages in his inbox and 40 folders. The stored messages were a mix of correspondence and personal friends, information ''that may be

useful some day'', messages that required some kind of action to be taken. He expressed his unwillingness to delete messages by asking:

What percentage of the ocean don't you like?

We can ask why it is so important to store old memos. Here we can find another dimension of the relationship between inclusion/exclusion. In remote control, representation displaces the outside of the remote and ''beyond'' into the inside of the near and familiar. In abbreviation, it displaces the outside of the dispersed and macroscopic into the inside of the compact and manageable. The user in Mackay's (1988) example does not ask ''what percentage of the bulk of your colleagues' messages don't you like (and which seem easier to delete)?''. Not so. He instead inverses the familiar to the outside, the dispersed and macroscopic. He does not see a picture of a lot of e-mail, a lot of information, from the outside. The big and the small become interchangeable; the representational coding has been broken with proportionality and has taken precedence over the event it represents. The representation paints a selective and discriminatory picture of the world. But note that the way information is structured in an in-box is already to be found in the software. Users have to start with a limited number of perspectives to fill with information. The incoming information, the abbreviated information, is an illustration of how representation displaces the outside into the inside of the near, which can be seen, almost touched, familiar and manageable; a kind of sensible knowledge.

Even if some staff at the company were using this technology, it was far from being used by all. Research shows – as do our interviewees – that most e-mail users do not organize/divide their e-mail in such a way: e-mail users prefer to keep most of their e-mail in the in-box or, perhaps, in the trash bin (Whittaker and Sidner, 1996; Mackay, 1988). We can, of course, interpret this in terms of the technology still not being too easy to deal with, demanding advanced knowledge on the part of the user. But the function of representation and sensible knowledge raises a more significant note and complementary theory about why this does not seem to be the case. All e-mails can be stored on the computer. Techniques can differ. In the ''macroscopic'', this stored e-mail is nothing, but seems to become important during the representation process of displacement. The e-mail received has become near and familiar. But it belongs to the network world. Users will not harm themselves one bit by deleting their old e-mails. ''The stored e-mail can be useful, sometimes'' is a frequent answer in the empirical material, too. Instead, they have an aversion to organizing their e-mail in this folder-direction. This aversion is not primarily linked to technical problems, but to the way they have to handle their e-mail. Put simply, the users point to the difficulties of reaching a proper and effective taxonomy. As three administrators put it when asked questions focusing on this phenomenon:

I find it good to have all my e-mail in the in-box. When I scroll through the in-box, all the e-mails work as a reminder to me. If I'd put some of the e-mails in another folder, I wouldn't have had this opportunity. As long as my e-mails are in the in-box, I read them and I will be reminded the whole time.

I do not use different folders very frequently. When e-mails no longer seem relevant, I delete them; all the others I keep in my in-box, which I try to keep as empty as possible. I'll see directly what's important or what isn't, the e-mail in the inbox keeps alive this way.

My inbox is a kind of my to-do list. All e-mails in my inbox are something I have to deal with. And they'll always remind me about this . . . I don't have to work in such a structured order as I would have to, if I had saved all my e-mails in different boxes.

Here we can see a more intricate blend of how representation is organized, as well as its results. The displacement of information is a much more complex phenomenon than just packing information in a convenient way. The practice of administrating one inbox where almost all e-mail is stored (until deleted) gives a feeling of immediate actuality. Dividing e-mail between different folders is, for many interviewees, ''killing'' it, i.e. to some degree rendering it marginal. Representing information in more boxes seems to be connected with another displacement whereby the familiar once again becomes the macroscopic, un-familiar, the ''not-easy-to-manage'', in other words what is excluded. The users stress how difficult it is to remember where they have put particular e-mails to maintain a state of balance between the different folders. Some folders become too big and some too small.

However, in parallel with a discourse that organizes the analytical room, there is a discourse that does not seem to prioritize an analytical space with a corresponding gaze, which lives in symbiosis with dividing (seeing) practices. It is, rather, a space where glance, spontaneity, experimenting-by-doing, capturing wholeness; a process of the senses rendering the visible expressible in immediate terms which are to hand, a kind of sensory knowledge of the simultaneous combination of seeing, experimenting-by-doing, conceiving, and saying, as a form of discipline beside the analytical one. Based on the theory of representation, we can say that the division here seems to collapse. Thus, how the users act has instead arrived at the level of the immediate use of senses. We are back to a situation where folds interpenetrate, where a vision is lost in the sense of escaping overload. But this does not mean that the users do not act. In between seeing and saying, and its correlated knowledge, they just act on the basis of other circumstances.

Discussion and conclusions

In accordance with Tsoukas and Mylonopoloulos's (2004) claim that much knowledge management writing takes knowledge as something that is given, always in place already and ready to apply to cases in organization, this paper has discussed the day-to-day practices of organizations where knowledge is constituted, circulated, and structured. In theoretical terms, the paper brings Bowker and Star's (1999) insistence that human activities are essentially directed towards categorization and classification together with Heidegger's analysis of the function of representation and Foucault's text which examines the emergence of medical practice in the clinic. Here, knowledge is what emerges within an analytical framework wherein seeing, saying, and doing are jointly related and mutually reinforce one another, thereby constituting this multiplicity of practices as a form of legitimate knowledge. This tripartite constitution of knowledge also draws on forms of representations and classificatory schemes which, in themselves, are never uncontested initially, but become stabilized through agreements, adjustment, and collective decision-making in specific communities of practice. Here, one can speak of ethnomethodological studies of knowledge management practices (see Garfinkel, 1967). The empirical illustrations, relating to use of the balanced scorecard accounting model and e-mail systems, draw on certain classificatory schemes that are constituted in their very application. In addition, such managerial models and techniques are mundane practices, practices that have become naturalized and are thus at times barely noticeable as sources of knowledge and, due to their consequences, competitive advantage for the firm in focus. In consequence, the empirical illustrations presented in the paper indicate the fruitful aspects of defamiliarizing certain taken-for-granted and socially-unmarked practices and activities in organizations, as well as critically examining their consequences and effects regarding the organizing of everyday life.

Mundane technologies (to use Michaels's (2000) formulation) and tools, such as the balanced scorecard model and e-mail systems, operate by spatializing what is fluid and fluxing from the outset, for instance the entire range of performance measures to choose from prior to implementing the BSC, or the totality of information and messages captured by an e-mail inbox. The notion of representation offers such a spatialized structure within a certain domain. Next, what Foucault calls sensible knowledge, is what serves to classify, organize, and categorize the totality of performance measures and information (in our two cases) that is available and continuously becomes available in the course of action. Just as the medical doctor practicing in the clinic becomes more and more capable of inspecting, investigating, and diagnosing patients through the engagement of visual, tactile, and cognitive capabilities and skills, the user of the BSC, or e-mail system, engages in classifying and categorizing managerial material (or at least material that may have managerial implications, either immediately or sooner or later) in different domains and classes. Thus, organization co-workers operate within the same kind of epistemological grids as does the practicing doctor when diagnosing his or her patient. One may argue that the doctor's work, to a greater extent than does the office worker's, makes use of embodied and tactile competencies in terms of touching the patient; the BCS and e-mail systems are not primarily embodied but in most cases they appear in a computer-mediated form, in a

management control system, or in an off-the-shelf e-mail program. Such a remark is legitimate and highly relevant, but too easily turns the visual and the embodied into an opposition; rather than thinking of the visual structuring of (for instance) e-mails as being detached from the body, one may argue that it is a form of embodied engagement in order to structure what is not immediately embodied but still has implications for the body (cf. Scarry, 1985). E-mail and other computer programs are heavily dependent on an iconography and semiotics deriving from the body and spatiality. Menus are ''pulled down'', files are stored in mailboxes, the program answers, deleted documents are thrown into the trash bin, and so forth.

The computer reproduces an entire image of the physical environment on the screen. Such a virtual environment is not, of course, experienced and embodied in the same manner as the lived, physical space, but in terms of the tripartite of seeing, saying, and doing which constitutes the faculty of sensible knowledge, the ''doing'' is not that much different. To offer another intersection between the virtuality of office work and the medical work of the clinic, recent technological developments in advanced surgery have enabled certain operations to be conducted through the application of robot-technologies and computers. Here, surgeons operate and observe their patients directly on a computer screen. However, notwithstanding the use of advanced technology, the sensible knowledge of the surgeon is indispensable as regards the medical treatment of the patient. Therefore, Foucault's notion of sensible knowledge is a valuable construct when examining how knowledge is constituted and created in organizations. In practical terms, the two studies indicate the functioning of the two managerial tools. In positive terms, both the BSC and the e-mail systems enable the constitution of surfaces and spaces where knowledge is created, constituted, rearranged, divided, and so forth; in brief, knowledge is being modified and turned into action.

On the other hand, both the BSC and the e-mail systems serve to exclude and marginalize certain perspectives, ideas, and concerns. Classificatory schemes are, in that respect, double-edged in terms of imposing a line of demarcation between what is right and wrong, doable and impossible, legitimate and illegitimate. In consequence, practicing managers need to continuously return to and reflect on the short and long-term consequences of (for instance) the key performance indicators favored by the present balanced scorecard in use. Classificatory schemes *per se* do not offer any explanations as to their exclusion and functioning, but serve precisely due to their ability to shield off such self-reflexive concerns. In brief, they operate through their simplicity. Since classificatory schemes cannot justify the trade-offs they impose on social reality, it is important that practitioners and academic researchers highlight the implications of certain classifications and categorizations and point out the unrecognized or overlooked effects. The totality of representational, classificatory, and sensible engagement with empirical realities constitutes an infrastructure of everyday life that is not immediately accessible to common-sense thinking. Studies of the day-to-day effects of various managerial techniques and tools thus contribute not only to our understanding of how knowledge is constituted and applied, but also to more efficient practices. Considering that the present paper is an initial attempt to show how practical knowledge is generated, one weakness in our approach is that we have had to rely on what people say. Further research could benefit from asking organizational members to take an aesthetic-knowledge-in-making perspective on their own experience and broaden the concept of sensible knowledge to cover not only sight, but also the other senses linked to other technologies.

The main contribution of this paper is that it brings the three notions of classification, representation, and sensible knowledge into the knowledge management discourse. These three constructs are, in themselves, highly complex and in many ways contested, but making them part of an analytical framework that explores everyday working life practices may permit non-exhaustive treatment of the concepts. Bridging theoretical perspectives in the analysis of everyday working life practices remains a fruitful way of avoiding what one might call, in accordance with Bourdieu (2000), a ''scholastic fallacy'', i.e. an inability to relate to and a disregard for practical issues and concerns. To avoid the scholastic fallacy, one needs to continuously integrate theoretical discussions and practices and then

imbricate the two in order to make them correspond with one another. Thus, one needs to simultaneously become more abstract and concrete when analyzing knowledge management practice. Within the field of knowledge management, there is tendency to operate on what one might call the ''meso-level of analysis'', i.e. neither adhering to abstracts and theoretical discussions nor addressing practical concerns. Hopefully, this paper has managed to move outside the confines of meso-level analysis.

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