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in the workplace

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Discourse Communities and Communities of Practice
On the social context of text and knowledge production in the workplace

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This paper aims at giving a more detailed description and discussion of two concepts of *"community"* developed in the research areas of text production/ writing and social learning / information management / knowledge sharing and comparing them with each other. The purpose of this theoretical exercise is to determine the degree to which the concepts of discourse community and community of practice are suitable for investigating the social and organizational context of text and knowledge production. Finally, the paper examines the explanatory value of the two concepts for analyzing text and knowledge production at different Danish workplaces (a consulting engineering company, a university department and a bank) and discusses their significance in the context of co-located as well as geographically distributed communities.

1 Communities as contexts for text and knowledge production in the workplace?

Community has become a buzzword (and almost a magic spell) in literature on marketing and management. Numerous books and articles offer a wealth of advice on *virtual communities* to be assembled around a product or brand (cf. Andersen & Lindstrøm 1997:195-216), on commercial *online communities* to be developed (cf. Werry/ Mowbray 2001: 1-125) and on professional *communities of practice* to be nurtured as a basis for creation, sharing and mediation of knowledge in organizations (cf. Wenger/ McDermott/ Snyder 2002 and others).

By this, the term 'community', which has been familiar from academic literature with regard to text and knowledge production for quite a while now, has now also entered the discourse on business management. There might be a danger that the term 'community' with its positive connotations could tempt people to confuse these communities with a kind of "cozy communitarian closeness" (Kreissl 2004: 37) and thus lose sight of conflict, criticism and power as components of these communities (Harris 1989). However, when we allow the term to include diversity and conflict, it can make a significant contribution to the analysis of organizations and the way they communicate and they create knowledge. In the sense of Taylor et al. (2001), for example, for which organizations consist of a network of "working communities" as the context for solving practical problems at the workplace and talking (and writing) about them. With regard to the computerization of labor, this means for example:

"Some communities (management) [...] take other communities (workers) as their object and relate to them by assuming they are a resource to be mobilized and structured, using as a tool the products of a third community ([IT] system design). Some communities ([IT] system design) take the technologies of other communities (collaborative work) as their object and depend on the recruitment of a third community (management) to effect the implementation of their products into their work world" (Taylor et al. 2001: 22.).

Taylor et al.'s w*orking communities* can be characterized more precisely by two concepts taken from research into writing on the one hand and learning on the other, namely the concepts of discourse community and community of practice. In social-cognitive and social-interactive writing research, the concept of the *interpretation community*, which derives from literary criticism, was taken up and developed further into the concept of the *discourse community* which has become popular in the research field of academic as well as non-academic writing. Research in the field of situated learning and social aspects of learning has developed the concept of *communities of practice* and very quickly applied it to the 'learning organization'. Furthermore, for a while now cultural and communication studies have been attempting to comprehend the phenomenon of *virtual communities* in the field of internet-based communication. However, it seems that no one has yet tried to examine these concepts of community in order to find out what they together can contribute to explore the social contexts and the social dimensions of text **and** knowledge production in organizations and to investigate the relationship between text and knowledge production. This paper is an attempt to fill this gap.

Therefore in the remainder of this paper I will present the two central concepts of the discourse community (2.1) and the community of practice (2.2). Then I will determine the specific contribution of these concepts for studying the social dimensions of text and knowledge production in organizations on the level of departments or project teams (2.3).

By way of three case studies, I shall then examine the explanatory value of the two concepts, which take the constituting and the constituted role of conventions, expectations and interaction in the communities mentioned into account (3). These case studies refer to internal and external communication at various Danish workplaces: text production by consulting engineers in the preparation of an energy concept (project team) (3.1), semi-public email communication at a university department (department) (3.2) and the work of two project teams developing IT solutions for a bank (project team) (3.3). The use of Information and Communication Technologies (ICTs) plays an important role in the last two case studies, therefore the concepts of virtual teams and distributed communities will be taken into account too. The empirical data for this examination of the two concepts' explanatory potential were collected in connection with case studies of my own carried out earlier (Pogner 2003, Pogner/ Søderberg 2003) and with a master thesis (Business Administration) prepared under my guidance (Jensen 2002). The data consist of written documents (mainly in electronic form), qualitative interviews and ethnographic data such as semi-detached or participating observations. The case studies draw on different approaches to analyze qualitative data: text analyses and analyses of text revisions (Pogner 2003), discourse analyses (Pogner/ Søderberg 2003) or analyses of texts and interviews inspired by organization and learning theories (Jensen 2002).

The paper will conclude by discussing the contribution of the two concepts to the investigation of knowledge and text production (and of their possible interplay) in organizations (4).

2 Communities in text and knowledge production

Analyses of social networks have led us to realize that communities nowadays are not limited to immediate geographical neighborhoods or localities, and, inversely, that computer networks do not necessarily have to bridge long distances. Social networks facilitated by computer-networks use different Information and Communication Technologies (ICTs: email, news-groups, home pages, Internet Relay Chat (IRC), Web Logs (Blogs), Bulletin Board Systems, Multi User Dungeons (MUDs and MOOs), video conferences, video streaming and other usu-ally web-based technologies). The networks offer, at least potentially, the possibility of "com-panionship, social support, information and a sense of belonging" (Wellman/Gulia 1999: 169) – qualities which are characteristic for communities. Such virtual communities, in this case: communities linked by ICTs, create a common social reality in their interactive negotiating of identities, relationships, bonds and standards for the members (Bayum 1995).

Communities - regardless of whether the members are co-located or are connected 'virtually' – are characterized by the development of certain behavioral rules and norms, but also by the feeling of belonging and engagement. That feeling is a result of shared ways of behaving and thinking – whether it is due to similar interests, tasks, professions or lots. These fundamental communal features and functions also characterize the concepts of discourse communities and communities of practice. In both cases knowledge is developed and shared. But the two con-cepts differ mainly in what forms the basis of the constitution of the community: the common discursive practice in solving knowledge problems or the everyday social practice via which mainly practical tasks are mastered. However, the one often includes the other – especially in work situations in which text production is an essential part of the tasks to be done (Jakobs in press, Pogner 1999 and Couture 1992).

2.1 Discourse communities and text production

At the beginning of the eighties, the literary critic Stanley Fish demonstrated via the concept of interpretation community that the reception of texts is an active creative process on the part of the reader and that this process depends not only on the personal experience of the recipient but also on the conventions of the interpretation community to which he or she belongs (Fish 1980 [2000], 170-173).

> "Interpretive communities are made up of those who share interpretive strategies not for reading (in the conventional sense) but for writing texts, for constituting their properties and assigning their intentions. In other words, these strategies exist prior to the act of reading and therefore determine the shape of what is read rather than, as is usually as-sumed, the other way round." (Fish 1980 [2000]: 171).

"Writing" is used in the metaphorical sense here to describe the creation of the text by the reader in the reception process.

The concept of the interpretation community has been developed further to the concept of the discourse community in the context of social-cognitive and social-interactive writing research. Discourse communities are characterized by the mutual dependence of language use and member-ship in the community:

> *Discourse* emphasizes that the group shares more than a particular native tongue or symbol manipulating skill. It connotes a complex set of conventions for assembling lengthy

stretches of written or oral text, conventions shaped by cultural traditions as well as current circumstances. *Community* emphasizes that the people feel connected by virtue of their shared discourses and the work the discourse enables them to do (Bizzell 1994: 395).

The different discourse communities (family/home, school, workplace etc.) are characterized by various specific patterns of language use. They can be defined as social groups with common rules for language and its use, but also for the way of approaching problems. Members of the discourse community use their texts in order to demonstrate their membership in the community to which they belong or wish to belong (Pogner 2003 and Winsor 1996).

Discourse communities affect the way in which their members define problems and formulate solutions, i.e. acquire, transform and produce not only language but also knowledge. The norms, conventions and expectations of a discourse community constrain the options of the members, but they also enable the communication of problem solutions and opinions. The influence goes in the other direction too: the members build up the community's framework of norms, conventions and expectations, reproduce and adjust it in their interaction or alter it if necessary. For this reason, besides the official and dominant forms of discourse there are also less official, alternative forms. Discourse communities are not necessarily harmonious, conflict-free groups at all times, and they are not always free of the unequal distribution of discursive, social or economic power either. Academic discourse communities in particular live from discussion, criticism and academic competition in the name of knowledge creation - without being totally free of power constellations.

Academic research communities can be modeled as "specific interest groups" whose main purpose is to create or produce knowledge in a specific topic or subject area. They possess certain mechanisms and media which allow information to be exchanged and shared by their members, own a specific terminology and specific genres, which both include official texts (e.g. articles, conference papers, working papers) and unofficial, occluded texts (e.g. submission letters) (Swales 1990, 1996, 1998). In the official discourse the focus is often on argumentative texts which have to be based on well-documented proof. However, the positioning of one's own contribution within the discourse community is just as important as this rhetorical foundation.

The social-constructivist or socio-interactive perspective and with it the potential field of application for the concept of discourse community is not limited to academic writing (cf. Bazermann 1988, Berkenkotter / Huckin/ Ackerman 1991, Herrington 1985, Lehnen 2000). On the contrary, it has been expanded to include non-academic text production (cf. Killingsworth / Gilbertsen 1992). In particular in the field of technical writing and especially research in professional communities such as engineering (cf. Pogner 1999 and 2003, Winsor 1990 and 1996, Zappen 1989) it has been used to explain individual and collaborative text production.

For writing in academic discourse communities, it is the case that text production not only accompanies social practices of problem-solving but itself often is an integral part of it (cf. the concepts of heuristic writing (Hermanns 1988) and of *knowledge transforming* (Bereiter / Scardamalia 1987)). Besides the shared language and discourse, academic discourse communities therefore also share practices of thinking, research and learning, which are expressed in the processes of changing, producing, disseminating and sharing knowledge in departments, institutes, universities, research associations, scientific disciplines and on conferences etc. Not all "social practices" (Fairclough 1992: 86-96) of research, information management, knowledge sharing, and learning are discursive in nature – but these "discursive practices" (Fairclough

1992: 73-86) are the starting point for the concept of the discourse community. Nowadays many of these discursive practices take place in electronic newspapers, on electronic conferences, in electronic discussion lists, web logs etc. using ICTs.

Summing up, the characteristics of the discourse community can be described as follows:

	Aim	Participants/Members	Basis of cohesion	Duration
Discourse community	Producing and disseminating knowledge in texts and discourses	No formal membership. Persons working on similar problems and with shared interests	Common (professional) interest. Participation in the joint discourse for problem-solving and for knowledge production.	As long as there is interest in the problem. Even if members often change, the DC continues to exist.

Table 1 Characteristics of discourse communities

2.2 Knowledge production and communities of practice

Social-psychological or social-cognitive researchers in organizational learning and the production, sharing and dissemination of knowledge are particularly interested in which social and organizational circumstances are beneficial for knowledge production. For researchers such as John Brown and Paul Duguid (1991) as well as Jean Lave and Etienne Wenger (1991), knowledge and learning are social phenomena and not rational, explicit 'things' which can be produced in a formalized hierarchical work organization with comprehensive division of labor.

> "*Knowing* is inherent in the growth and transformation of identities and is located in relations among practitioners, their practice, the artefacts of that practice, and the social organization and political economy of communities of practice" (Lave & Wenger 1991: 122).

Organizations consist of complex relationships between different networks and groups which do not necessarily turn up in the organizations' charts but make sure that 'the job is getting done'.

> "[…] A new organizational form is emerging that promises to complement existing structures and radically galvanize knowledge sharing, learning, and change. It's called the community of practice." (Wenger/ Snyder 2000: 139).

Communities of practice are groups of people who share an interest, a problem area or enthusiasm for a certain subject, look for problem solutions together and intensify their knowledge and expertise in this field via continuous interaction (Wenger/ McDermott/ Snyder 2002: 4).

> "What are communities of practice? In brief, they're groups of people informally bound together by shared expertise and passion for a joint enterprise – engineers engaged in deep-water drilling, for example, consultants who specialize in strategic marketing, or frontline managers in charge of check processing at a large commercial bank. Some communities of practice meet regularly […]. Others are connected primarily by email networks. […] Inevitable, however, people in communities of practice share their experi-

ences and knowledge in free-flowing, creative ways that foster new approaches to problems." (Wenger/ Snyder 2000: 139/140).

Knowledge creation and learning in these communities are characterized by sharing stories (the members of the community use these to diagnose problems and store the existing knowledge), cooperation (the members take part in a common practice) and a form of social construction of the community of practice (the members develop a common understanding of their practice and a general consensus as to how problems are to be solved) (cf. Brown & Duguid 1991).

Communities of practice come into being everywhere, and that includes different workplaces and companies but especially those organizations that want to / have to act in the context of the knowledge economy:

> "We all belong to communities of practice. At home, at work, at school, in our hobbies – we belong to several communities of practice. And the communities of practice to which we belong change over the course of our lives. In fact, communities of practice are everywhere. […] Workers organize their lives with their immediate colleagues and customers to get their job done. In doing so, they develop or preserve a sense of themselves they can live with, have some fun, and fulfil the requirements of their employers and clients. No matter what their official job description may be, they create a practice to do what needs to be done. Although workers may be contractually employed by a large institution, in day-to-day practice they work with – and, in a sense, for – a much smaller set of people and communities." (Wenger 1998: 6)

Communities of practice combine learning in the sense of an activity (practice) with learning in the sense of belonging (community):

> "[…] Practice: a way of **talking** about the shared historical and social resources, frameworks, and perspectives that can sustain mutual engagement in practice. […] Community: a way of **talking** about the social configurations in which our enterprises are defined as worth pursuing and our participation is recognizable as competence." (Wenger 1998: 5; the bold type is the author's.)

Common practice is the source of cohesion and membership and is characterized by the joint participation of the members in this practice. The practice is localized in the community of people and in their relations with each other which allow them to do what they do. However: what characterizes the community of practice on the inside is not only homogeneity (harmony, cooperation), but also variety (conflict, competition) – i.e. similar tensions as that are typical for discourse communities.

> "[…] a community of practice can become a very tight node of interpersonal relationships. […] These interrelations arise out of engagement in practice and not out of an idealized view of what a community should be like. In particular, connotations of peaceful coexistence, mutual support, or interpersonal allegiance are not assumed, though of course they may exist in specific cases. Peace, happiness, and harmony are therefore not necessary properties of a community of practice. Certainly there are plenty of disagreements, tensions, and conflicts […]. (Wenger 1998: 76 f.)

Communities of practice are held together by negotiating the common goal or task (defines the domain of knowledge or practice), the mutual commitment (expresses how the community functions and what binds it together) and the common repertoire of the community (routines and skills, stories, styles, vocabulary, events and discourses (sic!)). Participation in communities of practice consists of common activity, interpersonal relationships, shared knowledge and negotiation of the shared interest (Wenger 2000: 230).

The properties of communities of practice can be summed up as follows:

	Aim	Participants/ Members	Basis of cohesion	Duration
Community of practice	Extension of the capabilities of the members Exchange of knowledge	Members select themselves	Passion, commitment to and identification with the expertise of the group	As long as there is an interest in the continued existence of the group

Table 2: Characteristics of practice communities (cf. Wenger / Snyder 2000: 142)

2.3 Text and knowledge production in discourse communities and communities of practice

In order to define the terms used here more precisely, we shall now compare the concepts of the discourse community and the community of practice with traditional organizational units (for distinguishing between the community of practice and traditional units, cf. Wenger, McDermott, Snyder 2002: 43).

In contrast to *departments* (business units, functional or administrative units etc.), discourse communities and communities of practice are characterized by loose connections between the members and by a higher degree of informal self-management. Good relations among colleagues and participation are more important than official hierarchies. The main focus is on knowledge and learning, but there are still differences of power: old-timers have more power than novices; this power is based on their ability to contribute to the discourse and knowledge of the community. Discourse communities and communities of practice are able to transcend the boundaries of the organizations involved (cf. Brown and Duguid's notion of "networks of practice" (2000: 141f.).

Characteristic for *project teams* is that they lead to the achievement of a common goal dictated from outside the team by carrying out interdependent tasks in division of labor. A project manager usually coordinates the individual efforts according to the goals of the team's task. In contrast, a coordinator of a community of practice is not really the manager of the community but the one who brings the members/participants together and allows them to find their own way. In discourse communities, there is usually no official manager or coordinator. The members of discourse communities or communities of practice are not interconnected via interdependent subtasks (like in a project team) but by interdependent knowledge and a common domain in which processes of knowledge sharing and learning take place. "[The community] is defined by its fundamental commitment to exploring its domain and to developing and sharing the relevant knowledge" (Wenger/ McDermott/ Snyder 2002: 43).

If we add the concept of discourse community to Wenger, McDermott and Snyder's (2002: 43) synopsis on community of practice, project team and department, the different structures can be summed up as follows:

	Aim	Participants/ Members	Basis of cohesion	Duration
Discourse community	Producing and disseminating knowledge in discourses and texts	No formal membership. Persons working on similar problems and with shared interests Fuzzy boundaries	Common (professional) interest. Participation in the joint discourse for problem-solving and knowledge production	As long as there is an interest in the problem. Even if members often change, the DC continues to exist.
Community of practice	Production, extension and exchange of knowledge, enlargement of the capabilities of the members	Members select themselves on the basis of expertise and interest in the subject Fuzzy boundaries	Passion, commitment and obligation; identification with the group and its expertise	As long as there is an interest in the continued existence of the group, in the subject and in learning
Project team	Execution of a specified task/subtask	All who play a direct role accomplishing the task, assigned by management Clear boundaries	Milestones, overall goals and partial goals of the project	Until completion of the project
Department (functional or business unit)	Delivery of a product or duty	Everyone who reports (directly or indirectly) to the department's manager Clear boundaries	Job profile and requirements, common goals of department and organization	As long as the organizational structure in question continues to exist

Table 3: Comparison between different groups and communities in organizations

So what do communities of practice and discourse communities have in common and what distinguishes them from each other? They have in common the relatively voluntary nature of membership and the significance of the membership for the identity of the members. They also have in common the two constitutive elements 'domain of knowledge', i.e. a set of topics and problems which the community is devoted to, and 'community', i.e. the group of those interested in this domain (Wenger/ McDermott/ Snyder 2002: 27-40). But they differ in one other constitutive element ('practice' and/or 'discourse'). If the focus is on the aspect of a common discourse developed in order to be effective in the domain in question, the community can primarily be analyzed as a discourse community. If the focus is on the aspect of common practice developed in order to be effective in the domain, the community can primarily be examined as a community of practice. In some cases (for example in academic discourse communities), the community's practice consists mainly of official and unofficial discursive practices, i.e. discourse and communities of practice coincide here. In other cases, either practice is predominant (but this always includes language and discourse) or discourse (which is, however, always part of social practice).

If, for sake of argument, we replace "practice" by "discourse" in the following sentence, we get a good description of discourse communities:

> „Whereas the domain denotes the topic the communication focuses on, the practice [or the discourse, khp.] is the specific knowledge the community develops, shares, and maintains. When a community has been established for some time, members expect each other to have mastered the basic knowledge of the community […]. This body of shared knowledge and resources enables the community to proceed efficiently with the domain." (Wenger/ McDermott/ Snyder 2002: 29)

This substitution test demonstrates the close relationship between the two concepts. Both in discourse communities and in communities of practice domain-specific texts, discourses and a domain-specific language play an important role. However, with communities in which the discursive element is predominant, written texts occur more often than they do in communities in which the practical element and the spoken language are predominant. One of the instances in which the close relationship between the two concepts becomes visible, is the role which, according to Lave and Wenger (1991), language and discourse play in the socialization of newcomers to communities of practice:

> "Indeed […] learning to become a legitimate participant in a community involves learning how to talk (and be silent) in the manner of full participants. Talking within [a practice] itself includes both talking within [a practice] (e.g., exchanging information necessary to the progress of ongoing activities) and talking about [a practice] (e.g., stories, community lore). Inside the shared practice, both forms of talk fulfil specific functions: engaging, focusing, and shifting attention, bringing about coordination, etc., on the one hand; and supporting communal forms of memory and reflection, as well as signalling membership, on the other. […] For newcomers then the purpose is not to learn *from* talk as a substitute for legitimate peripheral participation; it is to learn *to* talk as a key to legitimate peripheral participation. (Lave/ Wenger 1991: 105 and 109)

The same applies – to a probably even greater extent – for newcomers to discourse communities.

Discourse communities and communities of practice are thus not mutually exclusive concepts; they both describe the social aspects of knowledge creation (and learning) – with slightly differing priorities between discursive and non-discursive practices. The crucial question is: Does production of discourse, i.e. of coherent units of oral and written texts, serve as a means of knowledge production (as in a community of practice) or is text production also an important aim of knowledge production (as in a discourse community)? In the following case studies, it is the respective task of the producers of texts and knowledge, which is the main factor deciding which of the concepts mainly can be used to examine the social context of text and knowledge production. In the first case, the task is primarily the text production of a project team of engineering consultants, in the second it is the daily communication and working practice of a university department, and the third example deals with the development of IT systems in two project teams.

3 Case studies and examples

3.1 Text and knowledge production by a group of consulting engineers

The study of the genesis of an energy concept which Danish engineers prepared and composed for an East German town in the context of their consulting activities shows that the production

of the various text versions, which build on one another, is embedded in chains of different interactions – some of them with German experts and clients on location (Pogner 1999 and 2003). These chains of interactions, including text production, commentary and revision; but also visits, meetings, phone calls etc., allow the engineers to acquire local knowledge on the energy supply in the town in question and to use this knowledge as a starting point for finding technical, economical and environmentally sound solutions and for recommending and legitimating them in the energy-concept text.

On the one hand, the processes of text production and revision carried out by the Danish project team and the comments of the German clients and experts show that text production not only accompanies (non-linguistic) activity and problem-solving but itself is a form of interacting - and of solving problems. However, they also show that the text being produced and revised works as a catalyst for cooperation within the Danish project team and also with the German experts and clients. Furthermore the text (as an artifact) helps to focus meetings and discussions, contributes to organizing, planning and coordinating the task at hand, and it functions as a communication tool. These functions of texts and other artifacts are described by Kimble / Hildreth / Wright (2001: 231) as being typical for knowledge sharing in a community of practice, when the members are not in the same place (co-located) but for example work in different countries (distributed). This indicates that communities of practice play an important role in the engineers' project.

The Danish engineers lack local information on the energy supply of German towns in general, the state of the power plants and supply networks in the town in question, and the potential cooperation partners available for the municipal services and their intentions and competencies. For this reason, they try to acquire the missing information by cooperating with local German experts – information which they could then transform into knowledge of their own via contextualization and evaluation (Diemers 2000: 371 f.). On the one hand, they try to acquire "hard knowledge" (Hildreth / Kimble 2002) from other texts (maps, plans, drawings and diagrams, other expert reports, reports from visits, minutes from meetings etc.), and on the other they try to acquire "soft knowledge" (Hildreth / Kimble 2002) through their active cooperation with German experts and clients. The hard, declarative knowledge than can be articulated and codified, is learned via the procession, evaluation and revision of various documents. However, soft, non-codifiable, procedural knowledge, which is not so easy or impossible to quantify, grasp and store, can only be acquired in processes of participation (membership, activity, interaction etc.) and reification (shared documents, texts, instruments and other artifacts.), i.e. in two processes which are characteristic for communities of practice (Hildreth / Kimble 2002). At the end of the project, the Danish engineers concede self-critically that there was much too little concrete cooperation with the German experts and clients, i.e. that a community of practice with them was not established. The Danish engineers would like to have cooperated more closely with the experts and the clients. However, the way in which they carried out their task and organized the work on the energy concept ("via remote control from Denmark", as one of the engineers put it), made it impossible for a community of practice to evolve.

The challenges which the engineers face in interaction with the German experts and clients via different media, genres, and forms of communication (face-to-face, telephone, fax, email, discussion protocols, text drafts and versions, drawings, viewings, inquiries etc.) cannot only be explained by using the concept of the community of practice; some aspects can be dealt (better)

with by resorting to the concept of discourse community. The job of the Danish project team is not just to design the energy supply of the German town with the help of the laws of thermo-dynamics and economic parameters while taking legal regulations and environmental considerations into account; it is also important for the consulting engineers to indicate how competent they are as experts through using the 'right' language and discourse. This is done by presenting oneself in texts and interactions as a member of the discourse community of engineers by displaying expert knowledge, using expert language and align with the "a-rhetorical" ideology of the production of technical texts (Winsor 1996) – even though one is aware that an energy concept does not only follow a technical and economic logic but political and strategic considerations too.

Summing up, the challenges, difficulties and the partial failure of the Danish engineers can be explained with reference to the concepts of discourse community and community of practice. Only gradually did the engineers realize that the text to be produced was not only a text which had to indicate expertise by demonstrating membership in the discourse community of engineers but also a text which should have been directed to audiences characterized by other discourse communities (of economists, business people, investors, politicians, administrators and lawyers). To have to take all of this into account in a text written in a foreign language did not make the task any easier. Also, they did not succeed in building up a community of practice with those who not only speak the foreign language but also have the necessary local knowledge. The result was that only codifiable, explicit, hard local knowledge could be learned and used whereas it was not possible to acquire necessary, situated, procedural, soft local knowledge, meaning that only a limited amount of local knowledge was available for carrying out the planning and counseling task.

3.2 Computer-mediated communication at a University department

A second case study (Pogner / Søderberg 2003) focused on examining communicative practices at a Danish university department in the context of so-called "email-to-all"-communication and on the contribution of this form of computer-mediated communication to forming a community of the researchers / teachers and the administrative staff of the department. "Email-to-all"-communication allows every member of the department to send an e-mail to all members of the department at once, thus allowing experience and information to be exchanged and shared and requests for assistance to be sent. In spite of this social potential, the "email-to-all" is not used to establish or support a community of practice. Either a community of practice of this type does not exist at all at the department, or it uses other media and channels. However, as a large portion of the researchers – in contrast to the administrative staff – do not so much consider the department as being a community tied to a certain physical location but rather as a kind of 'virtual community', whose member communicate often via telephone or email, the question arises as to why 'email-to-all' is not used as a way of building up or supporting a community of this kind.

The senders in the email-to-all discourse are mainly managers and decision-makers; the topics deal with teaching, examinations, academic seminars and the organization of day-to-day work. The 'email-to-all' is used as a handy, quick 'mass medium' ensuring the practical broadcasting of information and decisions necessary to 'get the job done'. The discourse reflects the role distribution of the department: participation / membership is defined by being allocated to this department, the decisions are made and announced by the senders / management, and the re-

cipients / employees are to carry them out in order that the department's products and services, i.e. research and, first and foremost, teaching, can be supplied.

One shows one's membership by paying attention to the conventions about what 'normally' is communicated (business matters), how this is communicated (factually, technically) and which genres and text types are used (announcements, messages, enquiries). A large part of the emails follows these discursive conventions; they can be interpreted as indicators for the existence of some sort of community. But no further signs of a sense of belonging to, identifying with, participating in the department as a community become visible in these 'typical' emails. If at all, a feeling of belonging becomes visible only indirectly in complains about the lack of community in those few mails, which are untypical for the email-to-all discourse of the department. The members of the department expressing themselves in these atypical mails are not managers or decision-makers. Other topics are dealt with via other genres and text types (narratives, stories, satire) in a different style (exaggeration, irony, parody): stories of "worst practices" in which everything goes wrong are told. Those stories are in sharp contrast to the "war stories" which Orr (1990 and 1996) and Brown/Duguid (1991 and 2000) see as an important medium of the expression of professional communities, in which pride, experience and expert knowledge and skills of a community are expressed. In the e-mail-to-all stories, the department is constructed as the community of the employees, who are all in same boat, which is characterized by stress, overtime and lack of support from managers and colleagues. Perhaps, this could be the starting point for a discussion on how this "in-the-same-boat" community could improve its practices in the direction of better practices so that less frustration occurs. However, a discussion of this kind does not take place in the email-to-all communication. We shall disregard at this point whether this discussion might be conducted in face-to-face communication between those who mainly see the department as being a unity fixed to a certain common location, i.e. a co-located community of practice. The observations mentioned confirm that "virtual teams" (Kimble/Alexis/Li 2000), "international communities of practice" (Hildreth/Kimble/Wright 1998 and Kimble/Hildreth/Wright 2001) or "electronic networks of practice" (Teigland / Wasko 2004) might neither be able to replace the entire face-to-face communication with computer-mediated communication nor can they disregard close interrelations between the physical world and the electronic world.

The department, which on the one hand shapes the email-to-all discourse and on the other hand is shaped or socially constructed, i.e. in this case: reproduced by it, is not enacted as an expert discourse community of researchers. This is not very surprising in view of the variety and at times fragmentation, which characterize this interdisciplinary department as a research unit. Neither does the department become visible as a community of practice, which could use the email-to-all as a forum for those who want to share knowledge and experience with regard to teaching and organizing teaching. The department is rather constituted as an administrative unit of the university which needs top-down communication in order to supply certain products and services: contributions to study programs in the form of teaching and examinations.

3.3 Knowledge production of project teams in a bank for the development of IT solutions
The last example deals with consequences of organizational changes caused by the merger of two Danish, a Swedish and a Norwegian bank, causing local communities of practice to be

broken up (Jensen 2002) without being replaced for the purpose of the maintenance and improvement of (in particular soft) knowledge.

The restructuring of the organization means that the development of new IT products is reorganized. Development tasks used to be carried out by two cooperating project teams. One project team from the 'Business' sector which comprised the individual banks, had the role of an internal client which commissioned the other project team from the IT department to develop and implement a certain IT product. After the restructuring of the company, one single project team from the newly established 'Development and Organization' department carries out the IT development tasks (for example an IT system for the bank's pay desks or for credit cards). Besides IT employees, the new 'Development and Organization' department includes employees from the old 'Business' sector who used to be in charge of the individual banks and branches in Denmark, Sweden and Norway.

In consequence, information and knowledge sharing has not only to happen within the project team and between the 'IT' and 'Business' people represented in it. In order to prevent information and knowledge from being stored in 'information pockets' within a project team to which no-one outside of the project team has access, it is also necessary to ensure that information (as the input for knowledge creation and learning on the part of the 'learning organization') is made accessible to other project teams and the rest of the organization too. In everyday work, a large part of the sharing and disseminating of knowledge does not only take place in particular project teams but also in and between communities of practice in which knowledge is maintained and developed in collective activities. In contrast to project teams, they operate without formal management, deadlines or specific output (certain products or services).

The employees of the two project teams in the 'Development and Organization' department notice that restructuring has made it harder to stay up-to-date with regard to knowledge of business processes. The members of the project team, who come from the old 'Business' sector, miss the opportunity of direct sparring with the branches of the bank which allowed them to maintain their soft knowledge about business processes and to update it constantly. Furthermore, another organizational unit, 'Credit Cards and Finances' used to be the context for a community of practice and thus for the maintenance of soft knowledge about business processes. Even after the merger, individual banks ask the former members of this unit for help. These continue to try to help the banks although they are officially no longer in charge and because the unit which is now responsible ('Bank Activities in Denmark') does not possess the necessary knowledge, because the employees who have built up this knowledge together were moved from the 'Credit Cards and Finances' to the 'Development and Organization' department or to the marketing department.

> "The way it used to be, with all those people in the "Credit Cards" sector, we had everything within the card sector. [..] We used to have a box called "Cards and Finances" inside the company. But this was broken up and the people all ended up at different places [...]. We were all completely atomized. [..] This is a problem now, because we all used to be together, connected by the subject "card". Now that we have dispersed in all directions, we're fighting to preserve the card knowledge we had accumulated together. [...] I am no longer able to maintain and expand my knowledge. It is beginning to disappear

because I don't have my fingers immediately in the matter any more" (an employee of the project team quoted according to Jensen 2002: 60f. original in Danish)

As a result, former employees of the old 'Credit Cards and Finances' unit try to arrange informal meetings and stay in contact with each other in order to at least partially maintain the day-to-day sparring with others of like mind in the field – something which before the restructuring used to be quite normal. The management of the bank has taken no steps to encourage and support this initiative to maintain this community of practice. It has apparently not even noticed that there is a need for it after the restructuring. There is thus evidently a community of practice here which is lacking support - perhaps also electronic support.

With the exception of email, computer-mediated communication only makes a small contribution to information and knowledge sharing in the 'Development and Finances' department. For the sharing of information and knowledge in communities of practice of the department, in particular socialization via 'apprenticeship', backup groups and a 'common language' as well as the abovementioned informal maintenance of knowledge in informal circles are seen as especially valuable and important. The contribution which computer-mediated communication makes to the work of the project teams and the maintenance of communities of practice is mainly to be found in the support of other means of internal and external knowledge sharing, means which are considered as more valuable. The concrete work of the project team produces common knowledge and also gradually functions as a "common interpretation space" (Diemers 2000: 369) which plays an important role in the contextualization, and thus the sharing of information and knowledge inside the team. Communities of practice can play an important role in making the soft, non-codifiable, procedural knowledge of the project teams accessible to other parts of the company. In the case study presented here, these communities emerge when old opportunities for exchanging experiences in co-located, official units disappear, for example as a result of restructuring.

The last case example demonstrates the effects of the breaking up of an organizational unit which formed the context for a community of practice: such a community of practice going diagonally to the project teams is sorely missed by the employees from the former 'Business' sector and is kept alive informally. This is not an easy task due to the lack of daily contact and togetherness and of official support by the management. The example also shows that, besides the relations prescribed in the official organizational charts, and in addition to the project teams set up by the management, there is a need for other forms of community, for example in the form of communities of practice.

4. Discourse and/or practice

In the case studies presented here, the aim was not to prove the 'correctness' of the concepts or to demonstrate the superiority of either of the two concepts. The purpose was to determine the degree to which the two concepts together can contribute to analyzing text and knowledge production in organizations and grasping in a more precise way the interactions between social relations, organizational context, communication processes as well as text and knowledge production. The case studies show that communities have a strong effect on how texts and knowledge are produced and passed on in organizations or departments and project teams within them – or at least how this could happen. The communities which can emerge within as well as between departments and organizations often have the characteristics of discourse communities

and / or communities of practice, a fact which illustrates the social and interactive character of the production of texts as well as of knowledge in organizations.

In some cases it is difficult to make a sharp distinction between text production and knowledge production and between discourse community and community of practice – especially when the aim of the 'practice' of the community is the (in the widest possible sense) social or collaborative production of texts and discourses. The two types of community are important parts of the context of text and knowledge production and at the same time a result of them; but other contextual aspects can also shape membership and a sense of belonging (see for example the "all-in-the-same-boat" community of the university department). Furthermore, other aspects of the social and organizational context often have a similar strong effect as communities have (see for example the distribution of power and the division of labor in the university department).

In all three analyses, collaborative text production and / or other collaborative practices play a constituent role for the existence of communities which can promote knowledge production and learning in organizations.

- The first case (the energy concept of the engineers) shows that the project team must learn how to demonstrate membership of the discourse community of engineers and technicians while simultaneously showing consideration for other discourse communities (of politicians, business people, administrators) in order to be taken seriously as consulting engineers. It also shows how important communities of practice are in order to acquire soft knowledge necessary to solve planning and counseling tasks.

- In the second case (emails of a university department) the email-to-all discourse provides two different images of the department: the dominating image of a department which has a certain purpose to fulfill within the university, i.e. to provide teaching and research, and the much rarer image of a community of employees who are 'all in the same boat', and in which some employees indirectly complain about the lack of mutuality, common practice and a sense of belonging. The email-to-all communication is primarily aiming at spreading the information necessary for the functioning of the department and its 'production'. Voices expressing the lack of communal spirit have problems making themselves heard in this community. Email-to-all communication allows a lot of information to be passed on, but not much new knowledge is produced, and a sense of belonging becomes only visible in a negative way - if it becomes evident at all.

- The last example (project teams in a bank) also shows the need for communities of practice in order to be able to maintain and develop knowledge (soft knowledge in particular) without which the new 'Development and organization' department cannot execute its work in an optimum way. If they are not planned as part of the organization by the management, they arise nevertheless, thus confirming that membership in communities of practice is of a relatively voluntary nature.

All three examples show how important it is to be conscious of the potential of discourse communities and communities of practice for successful text and knowledge production. This also

means recognizing them as important components of organizational contexts and promoting them if possible.

In the project teams and the department examined, ICTs (and email in particular) sometimes play an important role in addition to telephone and fax. In none of the examples, however, do purely virtual communities (in the sense of Rheingold 1993) occur. Teams and departments nevertheless temporarily function as such, i.e. without face-to-face interaction of the members. But in contrast to purely virtual teams or electronic networks of practice, the focus is on cooperation at a certain location (co-located communities); in phases in which this is not feasible, other means of communication are used as compensation. For processes such as planning and counseling, organizing work and production processes as well as coordinating text production or the production and sharing of knowledge, various different electronic media are used then – a characteristic strategy of geographically dispersed teams and communities.

At the end of this paper I would like to raise the question, if it would make sense to transfer the concept of the community of practice to virtual communities (cf. Kimble / Alexis / Feng 2000). Whereas the concept of the discourse community easily can be expanded to take in virtual and geographically dispersed communities, this is not so easy to do in the case of communities of practice. The attempt to transfer it to virtual teams has been criticized on the grounds that there is no shared practice in many cases – at least not a communal one and not one constituted in virtual space. In virtual space (e.g. in electronic newsgroups), the criticism goes, people report *on* a certain practice, discussing it and sharing common knowledge on it, but the practice *itself* is conducted outside of the virtual community. This at least is the way Christopher Lueg puts it in his analysis of the newsgroup "de.rec.bodyart", which deals with tattooing and piercing (Lueg 2000). This criticism can be countered in two different ways at the end of this paper. Either we expand the concept of practice so as to include discursive practice as a form of social practice, or we examine the newsgroup primarily as a discourse community whose common discourse is the end **and** the means of the community, i.e. the reason for its existence and cohesion. Whichever way is chosen, in the relevant newsgroup in which the virtual community comes together, the practice dealt with is not so much the practice of decorating the body but that of 'talking' (i.e. the discourse) about it.

Summing up, we can say that both discourse communities and communities of practice are important components of the social context of the production of texts and knowledge, even if they are not the only components. Expectations, practices and norms of the communities have an effect on the production of texts and knowledge in these communities – inversely, it is the common practice and / or the common discourse which makes the groups turn into communities.

In all three cases, two factors are decisive for the existence of the communities: firstly the participation of the members in a common practice, which is necessary in order that the feeling of belonging can arise in the first place, and secondly the consolidation of the practice in the form of norms, expectations and rituals – all signs of reification (Hildreth & Wright 2001: 231) of the practice into artifacts (for example narratives, written texts etc.). The three examples differ as to the way in which the common practice is primarily carried out. Does the community come into being during daily interaction and during the solving of practical problems, which for the concept of the community of practice are most important, or does the common practice consist of the production of texts and discourses, which does not only inscribe problem solu-

tions and shared knowledge into texts, images, tables etc. but also itself produces problem solutions - and herby knowledge?

The examination of the explanatory value of the concepts of discourse community and community of practice made in this paper shows that they can be used beneficially for the description of the discursive and social processes of text and knowledge production in organizations. It also confirms the close link between the two concepts which already was demonstrated in the theoretical section of the paper – especially with a broad-minded understanding of 'discourse' and 'practice'. For this reason, I believe one should take the influence and the constitution of both, the communities of practice **and** of discourse communities into account when analyzing text production, when analyzing knowledge production in organizations and when analyzing the interplay of the two production processes. Such analyses can then give information on whether texts are mainly there for reification purposes or whether text production is also the reason for the existence of the community. In the first case, the community would mainly be classified as a community of practice (with discourse as the means) and in the second case primarily as a discourse community (with discourse as the means and the end).

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