

14 Organizing for strategic knowledge creation

Often the limiting and enabling factor in organizational renewal is the organizational skill-base, and its capability to adapt. Therefore organizational-level mechanisms for adaptation, innovation, knowledge generation, and learning have been intensively studied during the last few years. The need to regularly change organizational processes and structures has led to competence-based strategies, team and process-based organizations, and discussions on novel organizational forms that provide flexibility (Prahalad & Hamel, 1990; Powell, 1990; McMaster, 1996; Pinchot & Pinchot, 1995; Miles, Snow, et al., 1997; Nonaka & Takeuchi, 1995; Volberda, 1996). One of the drivers underlying interest in organizational learning and knowledge management has also been the fact that many companies have downsized their operations, losing accumulated skills and knowledge in the process. Together these challenges mean that there is considerable interest in improved ways to manage both existing competencies and developing new competencies that provide strategic competitive advantage for the organization. The previous chapter discussed measuring and diagnosing existing intellectual capital. In this chapter, I will focus on new organizational forms that support the development of knowledge and competencies.

The organizational dimension of the knowledge management framework presented above deals with questions on processes, structures, roles, and responsibilities. Previously I argued that when we consider organizations as units that are capable for effective intelligent action, we should abstract an organization as a fractal community that comprises several communities of practice. From the knowledge and competence development point of view, the fundamental unit of analysis is a community of practice. It defines what counts as knowledge within the community, and acts as a focal unit for knowledge creation. In many cases, these communities extend beyond the boundaries of a legal organization. Even in those cases where the community consists of people with contractual relations with the legal organization, the community may in many ways be out of the scope of control of the organization.

An organization can, however, form units that approximate communities, and which it can control and define as accountable agents. Such bounded approximations of community I earlier called teams. Teams are organizational structures that collect together

members of those communities of practice that have developed knowledge and skills that are needed to get a job done. As teams are viewed as agents, they can have goals, as well as criteria for success. Indeed, the standard definition of a team is a tightly integrated group with complementary skills, mutual accountability, and a common goal (Katzenbach & Smith, 1997).

In actual organizations we therefore need to integrate four units of analysis: the legal organization, its communities of practice, teams, and individual humans-in-society. Knowledge management requires mobilizing knowledge at all these levels, as well as managing their interdependencies.

There is no single concept that would solve the questions for structuring and institutionalizing activities within the organization once and for all. However, one relatively generic way to organize for knowledge creation can be derived from the theory developed above. This organizational design is discussed in the following section.

14.1 Team-based communities

As was pointed out above, meaning processing in organizations overlaps the conventionally used bounded constructs of individual, team, and organization. These bounded constructs are not appropriate, as such, for understanding organizational knowledge processing. When we take the fundamental unit to be a human-in-society, the appropriate meta-level system is a community of practice or a society. When we understand society as a collection of functionally diversified communities of practice, which form the centers for knowledge production and re-production, an organization may be understood as a legally and institutionally bound subset of such communities. Specifically, all the members of an organization are practitioners within one common community: that of the organization itself.

Recent discussion on organizational learning and knowledge creation has emphasized the role of project teams in knowledge generation. As was pointed out above, teams are bounded units, and therefore they can be managed as autonomous units. Teams can be held accountable, responsibility may be allocated to them, and they can have goals. Although teams are not, by default, real communities of practice, in practical organizational settings they approximate communities. Therefore they may also bring some of the benefits that result from collaboration, for example, in the form of improved knowledge appropriation and collective articulation. However, the analysis I have presented in the previous chapters suggests that teams are not the best possible constructs when knowledge generation is considered.

When a team has a well defined goal and most of the knowledge required to fulfill the goal already exists within the team, it can be an effective way of “getting things done.” Therefore, teams are well suited to the prototypical cases of project implementation. However, for the broader task of supporting organizational learning and knowledge generation, team-based organization has problems. The construct of team makes those communication relations invisible that actually form the basis for its knowledge generation. Although teams rely on networks that bind the team members to communities that provide knowledge and expertise to the team use, these informal networks are based on social ties that are not managed. Indeed, often

the development of such social communities is discouraged by organizational practice.

From a developmental point of view teams are problematic because there is no concept of graded membership for teams. In a team, you are either in, or out. The full external accountability of the team requires that its members are collectively accountable, and therefore all team members are full members with responsibility for the shared goal.

Conventional teams are also problematic as much of the knowledge generated in the team is knowledge only in relation to systems of activity within wider communities of practice. Therefore, teams usually have to “implement” and “communicate” their results as a separate activity. Finally, as teams are bounded constructs, there is no natural way to get to a meta-level unit from using a team as a basis. An organization is not a team of teams, and it can not be effectively managed as a network of teams. In the knowledge perspective, the construct of team leads to a question of effective organization for inter-team knowledge sharing. The question does not have a good answer, as the question is misplaced.

However, if the generic goal of teams was to improve learning and knowledge sharing while keeping the units of activity accountable, we can ask whether we can combine the centers of organizational learning, i.e., communities of practice, with some forms of accountability. In general, a community of practice was an emergent division of work and identities within a culture. It is therefore not normally set up by any decision maker, nor does it have accountability. Although it may be possible to find explanations and legitimation for the existence of functionally diversified communities of practice, as such, they do not have externally defined “goals.” On the other hand, teams do have goals, but their structure limits the possibilities for the team to generate knowledge, and for the organization around it to appropriate the knowledge generated by the team.

One solution to this trade-off between communities and teams is to define organizational units that combine the characteristics of teams and communities of practice. This can be done, for example, by simultaneously extending the concept of team to include a periphery that is not responsible for the goals of the team, and by extending the concept of community of practice so that teams can be community members. When we compare a traditional community of practice, a team, and the proposed combination of these, we get an organizational

unit that can be represented as in Figure 50. I will call the resulting unit an *organizational community*.

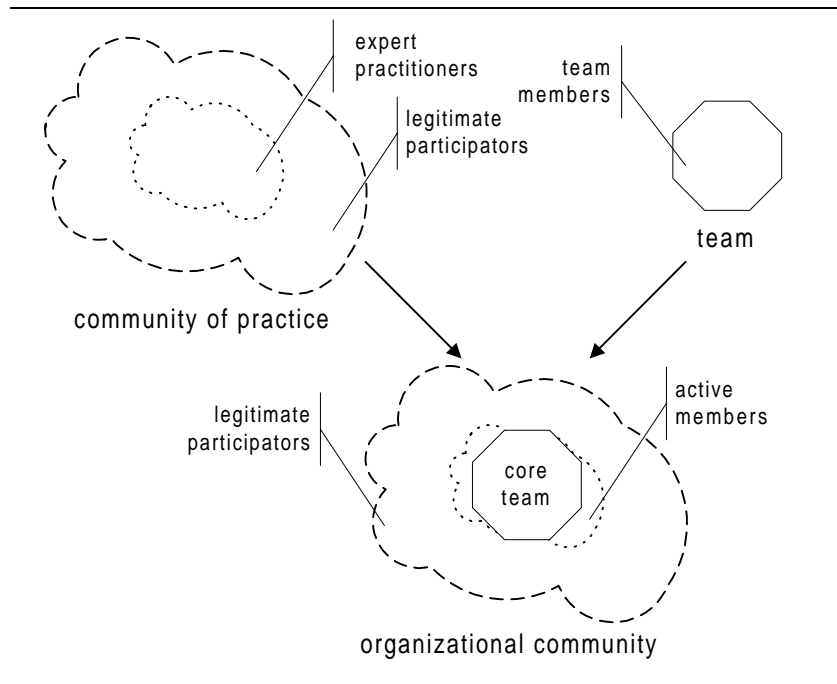


Figure 50. Combining the community of practice and team constructs.

The idea underlying organizational communities is simply that some of the members of the community are given organizational responsibility over some of the activities of the community. Using organizational communities, therefore, we can combine the processes for knowledge generation at the community level, and the accountability that is needed for the organizational level distribution of work and responsibility. Similarly, we can measure knowledge processes within an organizational community using the community level knowledge processes, as was discussed in the previous chapter.

A special case of organizational community is the traditional team, where there are no formally legitimated peripheral participants. Also in that case, the team typically needs contributions from experts outside the team. From the organizational point of view, however, the problem

is left to team members to take care of. Indeed, often the members of the team are selected because of their known ability to mobilize resources outside the team, and their capability to use their “informal networks.” In practice, team members use their existing memberships in communities of practice to recruit services from outside the team. In many cases, these services come from within the focal organization, but often the recruited contributors may come from scientific communities, industry practitioners, associations formed around common interests, or, for example, from a golf club membership. However, as the team construct assumes that teams are autonomous, there is no institutional support for managing such external connections.

Another special case of organizational community is a pure community of practice. It has no formally defined core, nor does it have externally assigned goals. These are the foci of organizational knowledge generation, but as they have no formal legitimation, they usually have no institutional support. Sometimes such communities of practice are viewed as beneficial for the organization, and they have some legitimacy. This is specifically so when the community of practice is actually a community that is based on the division of labor within the organization. Even in such cases, however, the community is often conceptualized as a functional division. Therefore, its social dimension is reduced to production dimension, and the community is understood as a set of people who share the same tasks. In many cases communities of practice are institutionalized as various types of coordinating mechanisms, such as “steering groups” and “forums,” which, more accurately, should be viewed only as expressions of the existence of an underlying community of practice.

Most organizational communities fall somewhere between these two organizational forms of a team and a community of practice. From the organizational point of view, they also require different institutional support. To the extent that freely emerging communities of practice increase organizational knowledge and support its renewal, an organization may want to allocate support for such communities. However, if the organization wants to assign responsibility for a community, it needs to provide sufficient resources.

The appropriate way to organize for effective knowledge creation would then be to combine the various types of organizational communities according to the strategic needs of an organization. In practice, the organization can, for example, develop legitimate roles for various types of community membership, provide infrastructure for

forming communities, and reserve a suitable amount of its resources for community activities. For example, an organization could define standard types of communities, with pre-designed roles, rules, and uses. A set of such possible types of communities is shown in Table 16.

Type of community	Intended use	Expected life-time	Mode of emergence	Institutional support
Interest group	thought community	long	emergent	basic
Expert community	action-group	long	emergent	according to strategic needs
Extended team	community with accountability	long	by fiat	extensive
Team	closed team	order of project time cycle	by fiat	total
Light-weight team	extended team, task force	short	by fiat, ad-hoc	basic-total

Table 16. Possible standard community types in an organization.

14.2 Community based core competence development

Prahalad and Hamel defined core competencies as organization-wide largely tacit intangible assets that deliver clear customer benefit. This definition, however, has proven to be problematic in several ways. For example, it includes only proven and validated assets, and therefore the idea of strategic development of new core competencies is somewhat contradictory. Also the organization-wide nature of core competencies is ambiguous. As Boisot (1998) notes, it is not clear what is the unit that possesses the competence: is it in the heads of a few individuals working as a team? Or is it widely distributed within the firm? What makes core competence a source of competitive advantage, instead of making it a core rigidity? (Leonard-Barton, 1992)

I have analyzed the problems of conventional core competence strategy in detail elsewhere (Tuomi, 1998b). Here I will focus on making some suggestions on how to organize for effective strategic competence development.

The conventional approach to core competencies tried to find components of core competence from a list of abstract skills that were detached from the organizational practice. If these skills can not be developed or learned in isolation from the practices they are part of, the approach, however, should be modified. Instead of breaking a core competence into sets of skills, we should analyze a core competence into its constituent communities of practice. Therefore, a specific core competence would not be created by putting together a set of skills, but a set of functionally diversified communities of practice.

When we conceptualize organizational competencies based on their underlying communities of practice, we can more easily understand the way core competencies emerge and develop. At some point of time an organization may include only employees that are peripheral members of a specific community. At that time most world-class competence is outside the control of the focal organization. Through recruiting and competence development, however, the company may eventually acquire a substantial part of the community, thereby becoming able to control the practice. Most important, knowledge development within a community is based on social interaction that leads to the creation of new concepts, models, and language; but also socialization of newcomers into the community practices. This situation is presented in Figure 51.

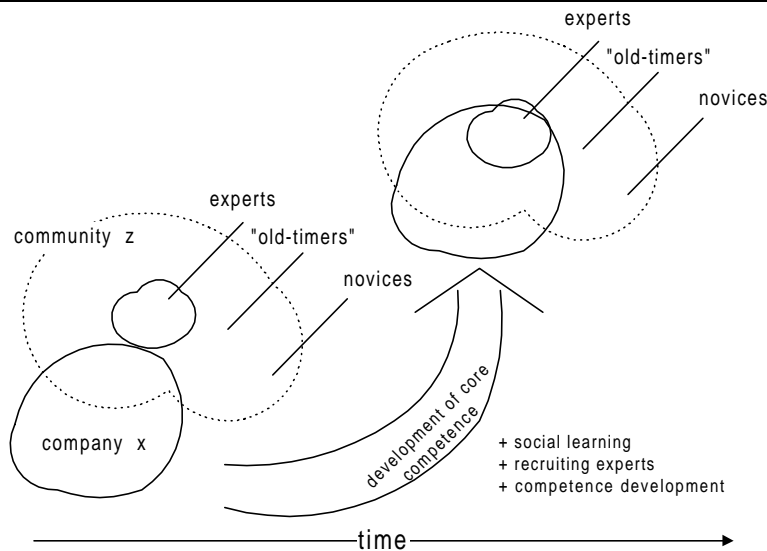


Figure 51. Internalization of a competence community.

In practice, organization level core competence in most cases comprises several communities of practice. The development of core competence, therefore, requires that a portfolio of communities needs to be managed. We have to understand what are the constituent communities that underlie a core competence, and facilitate knowledge development within these communities if we want to develop the core competence in question.

More generally, such an analysis of communities of practice may reveal latent core competencies. As core competencies emerge through combined activity of the underlying communities of practice, it may be that a specific complementary practice is missing that is needed to bundle the community practices into a core competence. Therefore, strategic development of core competencies may require intentional development of a specific missing community. This can happen, for example, by recruiting community experts, or even by giving a competent group of people the task of becoming experts in the area. Or, if there already exist some experts within the organization, they may be given the task and time of mentoring novices so that the community learning process is accelerated.

Development of core competencies can therefore happen through development of communities of practice. This is a natural approach to organizational development as learning in many cases happens through communities of practice. Those stocks of knowledge that need to be learned exist within the community, as well as experts who are able to guide novices in acquiring needed knowledge and praxis. Strategic development of core competencies, then, becomes strategic management of communities of practice. Based on the vision of the organization, its top management may define some areas of practice as strategically important, and manage a portfolio of communities of practice. As these communities of practice are inherently bound with their systems of activities and roles of people, there are also obvious ways to integrate knowledge development, work, and organizational roles and responsibilities.

These communities of practice could be characterized as spaces of meaning processing. These spaces are fundamentally social and cognitive. Their stocks of knowledge are accumulated through a sociohistorical process, and their knowledge creation can be described using the 5-A model. Using Nonaka's concept of *ba* we could say that these are the fundamental *ba*'s of a knowledge creating organization. However, in most cases these *ba* are not completely contained within the focal organization, and, indeed, could not be if the organization wants to provide value to the society around it.

14.2.1 Implications for skill management and organizational design

It is interesting to consider how these concepts lead to novel managerial practices. As was argued that the beginning of this work, this actually is one criterion that we can use to see whether these theoretical developments have been worth our effort. In a very compressed form, we could note that, for example, the current conceptualization of competence management leads to the analysis of their constituent skills and skill sets. The community- and activity-based view on organizations, however, implies that skills are not something that can be analyzed independent of the underlying social system. This means that skills, in a very concrete sense, exist only within communities of practice. Their value, in turn, is defined through those systems of activity where these skills are utilized. Moreover, the appropriation of skills is a process of social learning. Major

components of relevant knowledge are tacit and bound to practice, and implied in “knowing-in-action,” to use Schön’s term. To develop organizational skills, it is therefore inappropriate to rely on those models of training which assume that knowledge is transferred from someone who knows to someone who doesn’t yet know. Instead, both appropriation and articulation require spaces of social interaction. The development of organizational level core competencies, in turn, requires the management of portfolios of knowledge communities. If we use the generic name community of practice to denote those homogenous communities that underlie the organizational competence base, some of these observations can be summarized in the following way:

- processes and systems for skill management should be organized around communities of practice
- competence development should be supported by institutionalizing roles and incentives that reflect the level of expertise and engagement within communities of practice
- social learning within communities of practice should be supported by tools and processes that make it easy for community experts to accelerate competence development of novices and newcomers
- social learning and diffusion of innovations within communities of practice should be supported by facilitating communication within the community
- learning across communities of practice should be supported by creating mechanisms for inter-community knowledge sharing
- utilization of knowledge should be supported by providing mechanisms that enable communities to access expertise and knowledge created in other communities, e.g., by publishing meta-knowledge on community competencies and translations of knowledge created within communities
- core competencies should be developed by defining their constituent communities of practice, by facilitating social learning within the communities, by facilitating learning and communication between the constituent communities,

and by recruiting central members of the communities in question

- core competence strategy should be based on analyzing the opportunities and ability to internalize communities of practice
- organizational renewal should be supported by facilitating the registration of latent communities of practice, and by regularly giving latent communities opportunities to show their relevance for organization

The list above gives some proposals on how to manage knowledge creation and core competencies in practice. One should, however, note that although homogenous communities may underlie organizational competencies, their competencies are realized through systems of activity. Therefore, in practice, it is also important to analyze those inner contradictions that make the realization of competencies difficult. On a more abstract level, an organization may also develop a meta-level competence, for example, in the areas of organizational learning, or knowledge management.

Of course, the implementation of these ideas in any actual organization depends, for example, on its current strategic priorities, culture, and information systems. The list is provided mainly to show that the theory presented can be translated into practical organizational initiatives. Core competence development is not only analysis of competencies, or selection of those capabilities that an organization decides to use to gain competitive advantage. It is also facilitation of those processes that underlie the creation of expertise and knowledge. In practice, this leads to new organizational structures, managerial approaches, measurement systems, incentives, as well as new design requirements for information systems.

It is instructive to compare this approach with the hypertext organization proposed by Nonaka and Takeuchi (1995:160-96). According to Nonaka and Takeuchi, organizational knowledge creation and utilization can be supported by an organizational design that combines several interconnected contexts where people work. The central layer is the “business-system” layer where routine operations are carried out. Since routines are efficiently conducted by organizational hierarchy and bureaucracy, this layer is organized as a hierarchy. On top of this hierarchy, however, there exists a dynamic “project-team” layer. On this layer multiple project teams engage in

knowledge creating activities, such as new product development. Nonaka and Takeuchi propose that the team members are brought together from the different organizational units according to the requirements of the team, and for the life-time of the team. This project team layer is, according to Nonaka and Takeuchi, the primary source of new knowledge.

In the hypertext model of Nonaka and Takeuchi there is also a “knowledge-base” layer. This layer does not exist as an organizational entity; instead, it is embedded as corporate vision, organizational culture, and technology, including databases. One could then say that the knowledge-base acts as a repository that maintains organizational knowledge, both in its tacit and explicit forms. According to Nonaka and Takeuchi (1995:167), “while corporate vision and organizational culture provide the knowledge base to tap tacit knowledge, technology taps the explicit knowledge generated in the two other layers.” The hypertext organization can be represented as in Figure 52.

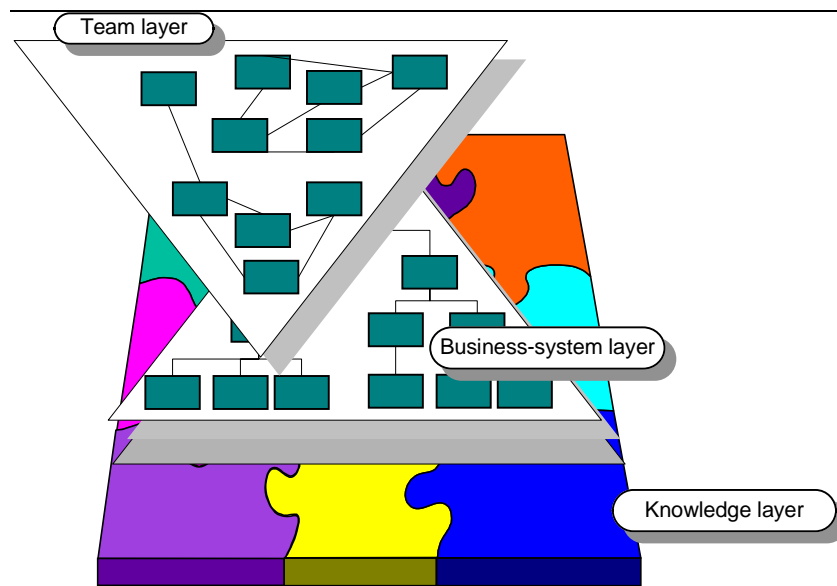


Figure 52. A community-based hypertext organization.

In the light of the discussions and theory presented above, the hypertext model proposed by Nonaka and Takeuchi should, however,

be reinterpreted in the following way. Instead of conceptualizing the knowledge-base layer as a repository of organizational knowledge it needs to be conceptualized as a set of communities of practice. My claim is that the knowledge layer, in any organization, is essentially bound to such communities. Therefore, in contrast to the original proposal by Nonaka and Takeuchi, the knowledge layer should not be conceptualized as a repository of documents, technologies, or “corporate culture.” Instead, the knowledge-base layer of the hypertext organization should be interpreted as a social meaning processing space. This space is not a homogenous repository where organizational knowledge is accumulated. Instead, it consists of the various communities that create and recreate organizational meaning and knowledge structures. Therefore, I have also modified the original representation of the hypertext organization so that the knowledge-base layer has some structure. One could read the representation as saying that the knowledge layer is formed by a set of communities of practice. I have also renamed the bottom layer to reflect the idea that the knowledge layer is not only a “knowledge-base” or a repository, but that it is actually the layer where knowledge is actively processed and created. As social systems, the communities that form the knowledge layer can, of course, also use cognitive artifacts, including documents and tools, to store some of their knowledge and meaning structure.

This modification also means that the way knowledge work is organized becomes quite different in the original hypertext model and in its modified form. Nonaka and Takeuchi proposed that knowledge work is organized so that people have a “home-base” in the hierarchy of the business system layer, and that they are moved to project teams when there is some project work that needs to be done. Such project-based way to organize facilitates dynamic allocation of competencies and promotes knowledge sharing and knowledge creation in teams. However, whereas Nonaka and Takeuchi assumed that new knowledge is created mainly on the project layer, and shared on the knowledge-base layer, the modified model suggests that much knowledge creation also happens on the knowledge layer. As was pointed out before the focal unit of collective knowledge development is a community of practice, and a team is only an organizational artifact that tries to emulate some aspects of community knowledge processing.

Indeed, it seems that the more recent work by Nonaka around the concept of *ba* would be easy to integrate with the idea of the hypertext organization when the knowledge-base layer is conceptualized as a set of *ba*'s. However, this would also require that the concept of *ba* is

reinterpreted as a social meaning processing space, as I suggested before. Therefore, the concept of ba also becomes at least to some extent incompatible with the SECI model.

In practice, the main difference between the original and modified forms of the hypertext organization is that the latter indicates that people need to have a “home-base” at the community level in addition to the home-base at the business system layer. This means that memberships and participation in the communities need also to be managed within the organization. Moreover, people are typically members in several communities, so that the Figure 52 gives a rather simplified picture of the structure of the knowledge layer. Indeed, one could say that finding the rights practices and tools for the management of the knowledge layer is one of the key challenges for knowledge management in the coming years.