

### Draft

From “*Cultivating Communities of Practice: a Guide to Managing Knowledge*” by Etienne Wenger, Richard McDermott, and William Snyder. To be published by Harvard Business School Press.

Companies at the forefront of the knowledge economy are succeeding on the basis of communities of practice, whatever they call them. The World Bank delivers on its vision of fighting poverty with knowledge as well as money by relying on communities that include employees, clients and external partners. Shell relies on communities to preserve technical excellence across its multiple business units, geographical regions, and project teams. McKinsey counts on its communities of practice to maintain a world-class premium on its expertise in topics important to clients who are themselves becoming smarter and more demanding. The list could go on and on. In all industries, companies are discovering that communities of practice provide a critical element to address the increasingly difficult knowledge challenges they face. They are learning to recognize these communities and cultivate them. Moreover, once these communities find a legitimate place in the organization, they offer new possibilities—many yet undiscovered—for weaving the organization around knowledge, connecting people, solving problems, and creating business opportunities. And because communities of practice are not confined by institutional affiliation, their potential value expands beyond the boundaries of any single organization.

## What is a community of practice?

Communities of practice are groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their understanding and knowledge of this area by interacting on an ongoing basis. Engineers who design a certain kind of electronic circuits called phase-lock loops find it useful to meet regularly, compare their designs, and discuss the intricacies of their esoteric specialty. Soccer moms take advantage of the time when their children practice their sport to discuss their dilemmas and share tips and insights about the subtle art of parenting. Artists congregate in cafés and studios to debate the merits of a new style and to compare their experiments with new techniques, as the Impressionists did in Paris in their heydays. Gang members learn to live on the street and deal with an unfriendly world. Frontline managers in charge of running manufacturing operations get a chance to commiserate, to learn about upcoming technologies, and to foresee shifts in the winds of power.

These people don't necessarily work together on a day-to-day basis, but they get together because they find value in their interactions. As they spend time together, they typically share information, insight, and advice. They solve problems. They help each other. They discuss their situation, their aspirations, their needs. They think about common issues. They explore ideas and act as sounding boards to each other. They may create tools, standards, generic designs, manuals, and other documents; or they may just keep what they know as a tacit understanding they share. However they accumulate knowledge, they become informally bound by the value that they find in learning together. The value they find in their interactions is not merely instrumental for their work or their survival. It also has to do with the personal satisfaction of knowing each other, of having colleagues who understand each other's perspectives, and of belonging to an interesting group of people. Over time, they develop a unique perspective on their topic as well as a body of common

knowledge, practices, and approaches. They also develop personal relationships and established ways of interacting. They may even develop a common sense of identity. They become a community of practice.

Communities of practice are not a new idea. They were our first knowledge-based social structures, back when we lived in caves and gathered around our fires at night to discuss the hunt, the shape of arrowheads, strategies for cornering the prey, how to recognize certain berries, or which roots were edible. In ancient Rome, “corporations” of metalworkers, potters, masons, and other craftsmen had both a social aspect (members worshipped common deities and celebrated holidays together) and a business function (training apprentices and spreading innovations). In the Middle Ages, guilds fulfilled similar roles for artisans throughout Europe.<sup>1</sup> Guilds lost their influence during the industrial revolution, but communities of practice have continued to proliferate to this day in every aspect of human life.<sup>2</sup> Every organization and industry has its own history of practice-based communities, whether formally recognized or not. Why else are the surviving U.S. automakers all based in Detroit? What explains the high-tech fertility of Silicon Valley? And why can’t you buy a world-class flute outside of three small manufacturers based in Boston?<sup>3</sup>

Communities of practice are everywhere. We all belong to a number of them—at work, at school, at home, in our hobbies. Some have a name, some don’t. Some we recognize, some remain largely invisible. We are core members of some and we belong to others more peripherally. You may be a member of a band, or you may just come to rehearsals to hang around with the group. And you may or may not be aware that the lunch group you belong to is one of your main sources of knowledge. You may lead a community of consultants who specialize in telecommunication strategies, or you may just stay in touch to keep informed about developments in the field. Or you may have recently joined a community and are still trying to find your place in it. Whatever form our participation takes, most of us are familiar with the experience of belonging to a community of practice.

Cultivating communities of practice in strategic areas is a practical way to recognize that knowledge is an asset that needs to be managed as systematically as other critical assets. Indeed, the explosion in science and technology creates a difficult paradox. At the same time as the

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<sup>1</sup> In fact, the term community of practice was coined in the context of studies of traditional apprenticeship. Apprenticeship is often thought of as a relationship between a master and a student. Yet, we observed that learning took place mostly in interactions with journeymen and more advanced apprentices. Community of practice is the term we used to refer to this social structure. Once we had the concept, however, we started to see these communities in all kinds of other settings, where there was no official apprenticeship. See Lave and Wenger (1991).

<sup>2</sup> In his Second Preface to *The Division of Labor*, sociologist Emile Durkheim in 1913 traced the history of professional groups from ancient times through to the twentieth century. He argued that occupational communities could provide much-needed social connections to strengthen the fabric of societal trust and mutual commitment, even as forces of industrialization and attendant social disruptions threatened to tear apart historical ties that bound people together in ancestral towns and villages.

<sup>3</sup> Cook & Yanow (1993) describe a cluster of flute-making companies in Boston. More generally, Porter (1998) showed that various types of industries—such as shipbuilding, auto-manufacture, and textiles—tend to cluster by geographic region. Spender (1989) found that industries themselves constitute a kind of knowledge-based cluster that includes companies that share a common “industry recipe.” A number of scholars have documented the ways Silicon Valley operates as an industry cluster with a concentration of technical and management skills related to high technology (Saxenian, 1996; Cohen & Fields, 1999; Brown & Duguid, 2000: 161-172).

increasing complexity of knowledge requires increasing specialization and collaboration, the half-life of knowledge is getting shorter. Without communities focused on critical areas, it is difficult to keep up with the rapid pace of change.

## **The nature of knowledge: a managerial challenge**

Though executives recognize the value of knowledge and the need to develop an intentional knowledge strategy, exactly how to manage knowledge is less clear. Recently, new information technologies have inspired dreams of capturing all the knowledge of an organization into databases that would make it easily accessible to all employees. Early attempts at knowledge management, however, were beholden to their origin in IT departments. They tended to confuse knowledge and information. Building the system was resource-consuming enough but it turned out to be even more difficult to motivate people to use these early knowledge bases. Companies that had invested their entire knowledge strategies in such information systems sooner or later found out that they had created digital junkyards. For instance, one consulting firm did an audit of its knowledge systems to find that it had 1100 databases. Only thirty of them were active, and of these active ones, about twenty were actually news feeds. Companies discovered the hard way that useful knowledge is not a “thing” that can be managed as a self-contained entity the way other assets can. Nor does it just float free in cyberspace. If companies are going to compete on knowledge and manage and design structures and technology for it, they need to base their strategy on an understanding of what the knowledge challenge is. The essence of this challenge comes down to a few key points about the human character of knowing.

***Knowledge lives in the human act of knowing.*** If a friend told you that he had read many books about surgery and was ready to operate on your skull, you would be right to decline politely. When surgeons operate on a patient, they do not apply blindly knowledge they have gleaned from books and or procedures they have stored in their heads. Engaging their expertise to deal with a situation is an active, inventive process. They keep in mind the patient’s medical history, monitor vital signs, look at tissues, make incisions, draw conclusions, and possibly revise the plan to make sure that the procedure is constantly responsive to the evolving situation. Their expertise lies as much in the ability to engage with a situation as it is in the store of knowledge they carry with them.<sup>4</sup> It helps them construct an understanding of that situation and it is their understanding of the situation that directs their action. To develop their knowledge, they need opportunities to engage with others in real situations. Neurosurgeons, for instance, will travel long distance to be able to operate with a colleague in order to refine their technique.<sup>5</sup> The knowledge of experts is a result of experience—a kind of “residue” of their actions, thinking, and conversations, which remains a dynamic part of their ongoing experience.<sup>6</sup> It is much more a living process than an object. Communities of

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<sup>4</sup> In his studies of professional practice, in particular architects, Schön (1983) talks about having a “conversation with the situation” which is framed by the experience of the professional, but is always an interactive, improvisational, and reflective engagement with a problem.

<sup>5</sup> Drucker (1993) describes a group of surgeons, who have formed a community of practice to develop their art together and regularly visit each other to perform surgery together. Cohen and Prusack describe the problem when a doctor has no colleagues to keep current in the field. They recount the story of FDR’s doctor who in his dedication to his one famous patient fell behind in his field and was not able to offer his client the best available care, which contributed to FDR’s premature death.

<sup>6</sup> See McDermott (1999)

practice do not reduce knowledge to an object. They make it an integral part of their activities and interactions. They serve as a living repository for knowledge.

***Knowledge is tacit as well as explicit.*** We are all aware that “we know more than we can tell.”<sup>7</sup> Not everything we know can be articulated into documents or tools. From a business standpoint, the tacit aspects of knowledge are often the most valuable.<sup>8</sup> They consist of embodied expertise, deep understanding of complex, interdependent systems, or dynamic responses to context-specific problems, which are the most difficult for competitors to replicate.<sup>9</sup> Sharing tacit knowledge requires interaction and informal learning processes such as story telling, conversation, coaching, and apprenticeship of the kind that communities of practice provide.<sup>10</sup> This is not to say that it is not useful to document knowledge and make as much of it explicit as serves the needs of practitioners. But even explicit knowledge is dependent on tacit knowledge to be applied.<sup>11</sup> Companies have found that the knowledge bases that were most used were the ones that were part of the life of a community. The success of Chrysler’s EboKs is largely due to the fact that the Tech Clubs are in charge of the process and view it as part of what their community is about. Communities of practice are in the best position to produce and manage the explicit codification of knowledge, because they can combine the tacit and explicit aspects into one process.<sup>12</sup> They are able to take responsibility for producing useful documentation, tools, and procedures that serve the needs of practitioners. These objects have meaning because they are not objects by themselves, but are part of the life of the community.

***Knowledge is social as well as individual.*** You know that the earth is round and in orbit around the sun, but you don’t just know that as an individual. You depend on the understanding and practice of long-standing communities. Though our experience of knowing is individual, knowledge is not. The whole idea that we know as individuals is a myth. What counts as scientific knowledge is the prerogative of scientific communities, which interact to define what facts matter and what theories are valid. There may be disagreements; there may be mavericks. But it is still through a process of communal involvement—including all the controversies—that a body of knowledge eventually emerges. And it is by participating in these communities—even when going

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<sup>7</sup> Polanyi (1966). Nonaka & Takeuchi (1995) provide a detailed description of the nature of tacit knowledge, from both eastern and western perspectives.

<sup>8</sup> Stewart (1997); Spender & Grant (1996). Nonaka & Takeuchi (1995) and Leonard & Sensiper (1998) argue that tacit knowledge is a critical source of innovation. Executives at Chapparral Steel were never worried about competitors visiting their operations, because they claimed that in a visit you only get the visible, and it is the invisible that really matters (Leonard-Barton, 1992b).

<sup>9</sup> See Schon (1983) for examples of the highly tacit nature of individual professional expertise in areas such as architecture, psychotherapy, engineering, and town planning. Nelson & Winter (1982) describe the nature of tacit knowledge embedded in “routines” at the organizational level that no one person understands completely.

<sup>10</sup> See Marsick & Watkins (1990).

<sup>11</sup> Law is a good illustration of the dance of the tacit and the explicit. Our societies have found it very useful to articulate our social norms into laws, but we also have judges and legal experts who interpret these laws. What makes laws effective is what literary theorist Stanley Fish calls the “community of interpretation” that gives them meaning in practice. You can never fully articulate how this community gives meaning to laws. In fact, the more you articulate, through briefs and precedents, the more you need a community to make sense of the new documents. You need both: the laws and the community. The explicit and the tacit always need each other to be effective (Fish, 1994).

<sup>12</sup> Practice is a tangled combination of tacit and explicit and dimensions. The interplay of explicit and tacit dimensions of knowledge has been described as a “generative dance between organizational knowledge and organizational knowing” (Cook & Brown, 1999) and as a “balancing act between process and practice” (Brown & Duguid, 2000b). Markus et al. (2000) emphasize the importance of communities to screen and steward codifiable knowledge assets.

against the mainstream—that members can claim to having produced scientific knowledge.<sup>13</sup> The same is true of doctors, engineers, managers—and babies who learn to speak, think, and behave in their families. Knowledge belongs to human communities and knowing is an act of participation in these communities. Appreciating the collective nature of human knowledge is especially important in an age when any domain of knowledge worth paying attention to is far too complex and dynamic for any one individual to claim full ownership or mastery of it.<sup>14</sup> Serious problem solving requires multiple perspectives. The days of Leonardo da Vinci are over. We all need others to complement and develop our own expertise. This collective character of knowledge does not mean that individuals don't count. In fact, the best communities bring together and encourage strong individualities. They have a lot of disagreements and debates. But these debates are part of what makes the community productive. In fact, it takes a community of people who care about a domain of knowledge to even have these debates in the first place.

***Knowledge is dynamic.*** Knowledge does not stay in place. It changes. It is in motion. In fact, the rate at which our knowledge of any field is changing is accelerating. Any domain of knowledge critical to an organization's success is part of a broader field that is constantly developing. What was true yesterday has to be adapted to take into account new factors, new data, new inventions, and new problems.<sup>15</sup> This dynamism does not mean that there is not a stable core to a domain of knowledge. In all fields, there is a baseline of knowledge that everyone needs to have. And it is essential to have this baseline well covered and standardized so that people can focus their creative energies on the more advanced issues. One of the primary tasks of a community of practice is to establish this common baseline and standardize what is well understood. But the baseline just gets you in the door. You have to have the baseline to even be in the game. It is pushing on the leading edge that gives you a competitive advantage. That is why knowledge, even explicit knowledge, has to constantly updated by people who understand the issues and can appreciate how their field is evolving. But they must work as a community to stay abreast of any non-trivial domain of knowledge because there is just too much to keep track of. In one community, for instance, members list the relevant conferences for a year and they each choose one to go to and report back to the rest. Interacting with a community helps filter out the noise and deal with information overload, bounce off new ideas and get knowledgeable feedback, and keep in touch with leading thoughts, techniques, and tools.

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<sup>13</sup> Sociologist of science Bruno Latour (1987) emphasizes the importance of having colleagues with whom to debate facts and interpretations in order to establish a scientific domain. He argues that the “first principle” of technology and science (or “technoscience”) is that “the construction of facts and machines is a *collective* [his italics] process” (28). He describes the existential dilemma of a technoscience practitioner who finds himself without colleagues: “What happens to the inside of a specialty made up of only one person? This is the question that makes Joao so despondent: the inside disappears as well. Since he has no one to discuss the draft of his articles with, no one to try out the links he makes between various parts of chip architecture, no one to whom he can submit his proposals for trials of strength, no one to debug his prototypes, Joao ends up not *knowing* what is real and what is fictional in MOS technology” (152).

<sup>14</sup> For a further discussion of the collective and individual character of knowing and learning, see Wenger, 1998, Chapter 3, Coda I, and Intro II.

<sup>15</sup> Badaracco (1991: 24-25) offers evidence of how quickly the stocks of knowledge are growing and changing. For example, he cites studies by bibliometry and scientometry scholars (an emerging field itself) who have found that the growth rates of scientific journals, books, and papers has been doubling in quantity every fifteen years for the past two centuries—a kind of Moore's Law of exponential growth in scientific insight. He explains that knowledge is becoming more specialized as it grows—there were 54 scientific specialties listed in the National Register of Scientific and Technical Personnel after World War II, and 20 years later there were 900.

In short, what makes the knowledge of an organization a challenge to manage is that it is not an object that can be stored, owned, and moved around like a piece of equipment or a document. It resides in the skills and understanding of its members, in the relationships among people that allow them to learn together, as well as in the tools, documents, and processes that embody some aspects of this knowledge. Companies must “manage” their knowledge in ways that do not merely reduce it to an object.<sup>16</sup>

What managers have been missing so far is a clear understanding of the kind of social structure that can take responsibility for fostering learning, developing competencies, and managing knowledge.<sup>17</sup> Managers have discovered clear structures for other purposes. For instance, in the last three decades many firms were able to move to customer-focused project-based organizations because they had discovered teams—the ideal social structure to which managers can assign the responsibility for projects. Understanding the right social structure was the key enabler for managing through projects. But what about the ownership of knowledge? Conventional structures do not address knowledge-related problems as effectively as they do problems of performance and accountability. Even though a lot of learning happens in business units and teams, it is easily lost. Business units focus on immediate opportunities in the market in order to achieve their business goals so learning usually takes the back seat. Project teams are temporary, so their knowledge is largely lost when they disband. Ongoing operational teams are focused on their own task, so their knowledge often remains local. Traditional learning-oriented structures such as corporate universities and centers of excellence have usually been located in headquarters, separated from people with line responsibility who would put the knowledge to use.<sup>18</sup> Many companies are discovering that communities of practice are the ideal social structure to assign responsibility for “stewarding” knowledge. By enabling the practitioners themselves to generate and share the knowledge they need, these communities provide a living forum that does justice to the “living” nature of knowledge.

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<sup>16</sup> Walsh & Ungson’s (1991) review of organizational memory describes the variety of ways in which knowledge can be stored or embedded in organizations; See also Pea (1993) on the ways knowledge is distributed in the context of practice and social relationships.

<sup>17</sup> Senge indicated that managers aren’t the only ones coming to this conclusion. He responded in a recent interview (Pulmer, XXXX) that one of his key realizations about organizational learning since writing *The Fifth Discipline* has been the nature of various social structures—including but not limited to teams—that foster learning.

<sup>18</sup> Effective centers of excellence seem to be approaching a more community-like model in which a group of working practitioners—instead of or in conjunction with full-time staff based in headquarters—takes the initiative to steward their practice (Moore & Birkinshaw, 1998).