Communities of practice in and across 21st-century organizations

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When my colleague Jean Lave and I coined the term of community of practice in the late 80's in our quest for a new theory of learning, we had no idea that the concept would have the impact it is having today. We were merely hoping to contribute something useful to the debate on education. As turned out, the concept has influenced the thinking of both researchers and practitioners in a surprisingly wide range of fields.

Two developments have contributed to this explosion of interest in the last decade or so. On the one hand, the web has enabled people to interact in new ways across time and space and form new breeds of distributed yet interactive communities of practice like CSI. On the other hand, communities of practice have attracted increasing interest in organizations and associations trying to manage knowledge as a strategic asset—in the private, public, and professional sectors. The concept of community of practice has helped these organizations in two ways. At a conceptual level, it has given managers a perspective to see where knowledge "lives" in their organizations. And at a practical level, it has helped them figure out what to do about it—cultivate communities of practice and integrate them in the functioning of the organization. As a medium for peer-to-peer learning, communities put the responsibility for managing knowledge where it belongs: in the hands of practitioners who use this knowledge in the performance of their tasks.

I am often asked whether I think that "communities of practice" are just a fad, which will fade away like so many fads in business. It is important to remember that communities of practice are not a recent invention. They are not a new business technique. They have been with us since the beginning of humankind, long before we even had "organizations." And they have been playing a key role in "sustaining" the knowledge of our organizations long before we started to focus on them. And as knowledge increases in importance, they will continue to play this critical role whether we pay attention to them or not. Communities of practice are here to stay.

Today the main question in organizations is not so much whether there is value in communities of practice, but how to cultivate them intentionally. We know a lot about communities of practice because we have lived with them for so long. But when it comes to communities of practice in and across organizations—their development, their role, and their transformative potential for the organization of the 21st century—we are at the beginning of a steep learning curve. The plane has lifted its nose, but it has not taken off yet. The story of every community adds to our growing collective knowledge.

Cultivating communities of practice is an art; and even though we have learned quite a bit about this art in the last two decades, it remains a difficult art. An appreciation for this art is the proper mindset for approaching the topic. For this reason, I have structured this essay to explore three aspects of this art: the human art of cultivating communities of practice, the paradoxical art of integrating them in organizations, and the emerging art of structuring a strategic dialogue around them.

The art of cultivation: a romantic metaphor

A community of practice is a bit like a romantic relationship. It is as fragile and as resilient. It is as dependent on the personal engagement of members, on their social connections, and on their sense of individual and collective identity. And it requires as much care. Like the growth of a couple, the development of a community is a delicate process involving interpersonal dynamics, trust, and mutual commitment—and resulting in a new social entity.

Like relationships, communities of practice go through stages. Consider a typical relationship in the Western tradition. First, there is an early stage of attraction; then comes a dating period, possibly followed by a wedding. This sets the stage for parenting, and eventually for grand-parenting. Communities of practice go through rather similar stages.

Falling in love: discovering the relationship. People often wonder whether one can "start" a community. For our relationships, we find partners in all sorts of ways, ranging from pure chance to systematic search such as profile matching through an internet dating service. If you have two friends who you know are made for each other, you don't just sit there and hope they meet one day. You invite them for dinner. You plan the right music, the right bottle of wine, and the right candles. You don't necessarily invite them to meet each other, much less to a start a life together. Just a nice dinner. But a lot can happen during a dinner. Maybe dinner is not the best idea; a nice picnic or a hike might do better. Or for a potential community, it could be a series of conversations, a small project, a request for help. You have to know your friends well enough to arrange what will most likely work. You can't fall in love for them, but there is a lot you can do. The birth of communities usually depends on a few people who see the potential and make it happen. There is often at the start of a community of practice the same mixture of excitement and apprehension we find at the start of a relationship. The attraction is palpable; it feeds the imagination. But the prospects remain uncertain.

Dating: growing the relationship. When loose networks evolve into communities, they often go through a process not unlike dating. The spike of energy you feel from having discovered a potential partner needs to be nurtured. To test whether the initial attraction can lead to a viable relationship, you need to spend time together. Dating is a process of exploring the chemistry and discovering the value of being together. My father once told me that, for their first date, he invited my mother to a museum. If you go to a concert or a movie, his idea was, you just sit there. But in a museum, you discuss the paintings and learn about each other. It was a good little dating "technique." The point is to let a relationship develop. You do not come to your first date with a life plan; you come with a rose. You do not hope for a contract; a kiss will do. Unlike teams that depend on a clear plan of action, communities start more tentatively. They grow on social energy and learning opportunities. They need "dating time" to discover the value of being a community. And they need activities that play the role of the museum visit, such as hearing each other's stories or helping each other with a problem.

Getting married: establishing the relationship. When a couple becomes serious, the focus shifts from exploring the relationship to structuring their life together—minutiae like who's taking out the garbage as well as grand questions like how many kids. The lovers also start to introduce the other to family and friends. A wedding is both a private and a public event. It is a private commitment to be a couple and a public request to be treated as one. The couple is becoming a recognized entity. But this expanded circle introduces new dynamics into the relationship just at the time when the couple needs to focus on solidifying its new identity. Communities also come to a point of commitment where they design themselves. They establish a rhythm of togetherness. They assign roles. They create a public face and debate how they want to interact with the outside. They may convene a launch workshop. When a community goes public, it is not enough to be a cozy group of friends; for the community to reach its full potential, it needs to make sure that all the relevant people participate. But growth introduces new agendas that may disrupt the intimacy of the initial core group.

Living as a couple: putting the relationship to work. In the early days of a relationship, much of the activity is about the relationship itself. Later activities, such as having children, starting a business, supporting an ailing parent, or doing volunteer work, at once use, test, and build the strength of the relationship. Just as mature couples put their relationship to work in the world, mature communities seek challenges that go beyond the early focus on the community itself. They invest their cohesion in tasks such as solving recurring problems, establishing standards,

building a database, training newcomers, or coordinating work across boundaries. They expect to have a voice and make a difference.

Growing old growing young: reinventing the relationship. Like good relationships, healthy communities live on by reinventing themselves. The reason we fall in love is often not the reason we stay together in the long run. What makes a relationship work as high school sweethearts is not what will make it work in old age. You have to keep the flame alive, but not necessarily by hanging on to the past. The early emotions give way to a deeper commitment, which does not so much replace as fulfill them: the transformations are what ensures the continuity of the relationship. The continuity of communities of practice is also a series of transformations. They reinvent themselves as they explore what they are about and seek to deliver value. And even a successful relationship will have to face the finality of life at some point—to live only in the memories and identities of those it has touched.

Communities of practice may look quite different at different stages, engage in different activities, have different expectations, and show different abilities to take on tasks. Timing is important in the development of a community. You do not invite your friends to your dates, but you invite them to your wedding. Having a kid when you fall in love in high school is usually not recommended, but it can be the blossoming of an established relationship. Questions people frequently ask about communities of practice—whether they should be open or closed, or depend on the energy of one person, or undertake joint projects, or meet face-to-face--will often have different answers over the life of a community.

There is a sequence to developmental stages, yet, like the evolution of a relationship, the evolution of a community is not linear. Even if you have three kids and two jobs, you need a regular date, just the two of you. Even if you are old and secure in your relationship, you need to fall in love again. And on your anniversary, you renew your commitment to the relationship. Communities too evolve by constantly revisiting earlier stages. They need a regular rhythm of moments when the community can assert its commitment to itself. They need new challenges. They hold renewal workshops. All stages remain part of their evolutionary process as new members join, new issues arise, and organizational circumstances change.

Successful couples treat their relationship as an entity that needs nurturing. They are not free of conflict, but their care about the relationship enables it to contain conflict and make it productive. In a couple, ideally both members care equally, but in a community, it is not unusual for a small core group to tend to the community as community. The importance of caretaking does not disappear as the community matures, though the role may be more distributed. Just as for couples, attentiveness cannot wane, lest the relationship slips into habitual deadness. And like relationships, communities go through crises and some fail—out of neglect, closed-mindedness, lack of challenge, competition from other demands, or inability to adapt to new circumstances.

We have learned a lot about relationships over the centuries. Countless books have been written about them. Counselors of various sorts make a living helping couples. All these resources are immensely useful. Yet sustaining a relationship beyond the energy of the initial attraction is always hard interpersonal work. Books and marriage counselors cannot replace the unique feeling that two partners have for each other and the attention they pay to their relationship. Like relationships, each community is unique. There is no failsafe recipe or infallible expert. If someone tells you they know how to do it, check whether this person ever has. Given the importance of culture, identities, and personal commitment, cultivating communities requires what I call an "anthropological" nose. There is no substitute for engaging your intelligence in the uniqueness of the community you care about. What we write about communities— the stories we tell, the principles we outline, the advice we give—can never be a substitute for the spirit of a community, the engagement of its members, and the skill and generosity of its leaders.

The art of integration: organizational paradoxes

If organizations are going to cultivate communities, in their midst or across their boundaries, they have a responsibility to create a context in which these communities can thrive. Large numbers of communities of practice today live inside or across organizations that influence them in many ways. And most of the failures of these communities are at least in part due to a lack of organizational support or understanding. So the organizational side of the cultivating equation is a critical success factor.

Creating such an environment is not an easy task. Our organizations were born in an age when formal processes were more important as a source of value creation than knowledge, learning, and active sense-making. As a result, traditional organizations can be rather inhospitable to the kind of personal engagement and focus on learning that are the hallmark of healthy communities of practice. The point is not to demonize organizations and romanticize communities. Each has a dark side. Just as organizations can be bureaucratic, bloodily political, and focused on counter-productive measures, communities can be petty, parochial, and exclusionary. And each has a bright side. Just as communities can provide a context for practitioners' learning and professional identity, organizations can provide communities with a context of large-scale performance challenges, complex coordination, and deliberate management of resources. I do not believe that communities are to replace organizations. Rather than choose between structures, the point is to integrate them productively. Organizations and communities have always coexisted, but in the past, they have lived parallel lives, as it were. Today, they need to learn to recognize each other and function together in ways that let each do better what each does best.

Integrating communities of practice in an organization is an exercise in paradox. Communities of practice mostly run on passion and engagement. It is essential that communities of practice manage their development themselves with a sense of ownership. I often tell managers that if you could manage communities of practice, you would not need them. Their value lies precisely in the fact that they have the expertise, perspective, and experience of practice to take charge of their own governance. Some managers conclude that they should leave communities of practice alone. But leaving them alone is merely the other side of the same coin: "If I can't control them, I leave them alone." Leaving them alone risks marginalizing them. What is required is engaging with them without attempting to control them. The paradoxes inherent in the integration of communities and organizations are reflected in questions I am frequently asked in workshops on communities of practice.

Integration and institutionalization: a subtle distinction

> How can we integrate communities of practice into the organization without institutionalizing them and possibly squelching the very self-organizing principle that makes them thrive?

Organizations tend to integrate structures or issues by institutionalizing them. When it comes to communities of practice, organizations have varying degrees of institutionalization, which even vary from community to community. It is useful to distinguish between two kinds of institutionalization: institutionalizing communities of practice themselves, and institutionalizing their existence in the organization.

Institutionalizing communities. There are cases in which institutionalizing a community makes sense. When the domain is of critical strategic importance, it may require the investment of substantial resources, including some full-time core members. Some communities include a center of excellence; some even become departments in the organization. But even when they do, it is useful to maintain a distinction between the formal center or department and the community of practice it represents. For one thing, their boundaries are likely to be distinct— some members of the community may not be part of the department, especially the more peripheral ones. And the underlying community may well have different sources of motivation, qualities of relationships, and governance expectations. The institutional part is often best understood as the core of a broader community.

Institutionalizing the existence of communities. Institutionalizing a community into a formal structure requires caution; but it is always helpful to consider ways to institutionalize the existence of communities of practice in an organization—the fact that they are integral to the organization's ability to achieve its goals. (This is true whether the relevant communities are fully inside an organization or exist across organizations.) Institutionalizing their existence can give them access to executive sponsorship and to resources, such as time, travel, and technology. Time is a good example because it is invariably a central concern for community members in organizations. Institutionalizing the existence of communities helps legitimize the time members spend on their communities without dictating what they do. Participation in communities can also be integrated in HR processes, such as developmental plans, training, and career advancement. This type of institutionalization aims to structure an explicit organizational context for communities. It does not reach into communities, nor attempt to substitute for the practitioners' self-governance. It is a way to integrate communities by carving a special place for them in the organization, not by molding them in the image of the organization.

Position and voice: two sources of power

What about power? Wouldn't communities become a threat to the organizational hierarchy?

Existing across an organization's formal structures, communities of practice rarely derive much power directly from positions in formal hierarchies. But communities do not usually seek positional power, with its control over resources and accountability for investments—tasks for which communities are not well suited. They do seek the power of voice, however: the power to be heard, to make a difference, and to have their practice-based perspective matter. In the knowledge economy, the power of voice becomes just as important as the power of position.

In an organization where the power of voice is acknowledged, managers would routinely ask: "Have you checked with your community about this? What was their reaction?" The one time I saw a community really angry was an occasion when its opinion had not been sought. The company had gone ahead with an acquisition in the domain of the community and the acquisition had not turned out well. Members of the community's core group were furious that their community had not been consulted. The community, they were certain, could have foreseen the problems. Interestingly, they were not asking for the responsibility to make the final decision. They did not care for the politics associated with such responsibility. But they wanted their voice to be included in the debate.

Executives who sponsor communities bridge between these two forms of power. A sponsor uses positional power to help communities find a voice in the organization. This integrating function is a new and sometimes uneasy role for executives to assume, because it does not identify power with control. Still it is a critical role, whose importance will increase with the growing emphasis on knowledge—and with it on the power of voice.

Power and community: reciprocity and reputation

If knowledge is power, why would anyone want to share it?

Knowledge is indeed a source of power; but hoarding knowledge is not necessarily the best way to benefit from its power, especially in the context of communities of practice.

Generalized reciprocity. In a community of practice, sharing knowledge is neither one-way nor merely a transaction. It is a mutual engagement in learning among peers. An improved practice benefits the whole community. Even experts benefit from having more knowledgeable colleagues. Contributing one's knowledge is an investment in the stock of the community. In this context, the distinction between self-interest and generosity is not so clear.

Reputation platform. A community of practice acts as a platform for building a reputation. It is a long-term interaction through which people get to know each other. Peers are in a position to appreciate the significance of each other's contributions in ways that make their recognition meaningful. And because communities of practice usually cut across formal structures, reputation can extend beyond one's unit. As one engineer put it: "The advantage of my community is that it allows me to build a reputation beyond my team."

With reciprocity and reputation combined, sharing becomes a major vehicle for realizing the power of knowledge. But it is often important that this process extend beyond the community and become an aspect of the integration of communities in organizations. This calls for mechanisms to translate community contributions and reputation among peers into organizational recognition, such as a rubric in performance appraisal for community contributions and career paths for people who take on community leadership.

Culture and communities: learning and change

> Our culture works against communities of practice. It is individualistic, competitive, and focused on the short term. We need to change our culture first.

Changing organizational culture is very difficult. Change initiatives to address cultural issues have had mixed results at best. One of the problems of these change initiatives lies in their scale: they have to happen in lockstep across the organization. As a result they remain for the most part distant from people's daily concerns. Communities of practice are very sensitive to culture because of their voluntary nature and their basis in identity. But for the same reason they are also a locus for the creation of culture. Each community inherits the culture of the organization, and needs to build on what the culture offers. But being self-governed, it can to some extent choose to produce its own culture. This process does not even need to be deliberate. Cultivating and integrating communities of practice is therefore likely to lead to a kind culture change in the long term, but one that takes place a community at a time. It is therefore less controlled and less uniform than traditional initiatives. But being in the hands of practitioners increases its chances of "taking."

Tasks and expectations: energizing and de-energizing

> Our organization is action- and results-oriented. Should an organization assign tasks to communities and set specific expectations for them or should all tasks and expectations be generated internally?

This question hinges on a key distinction between energizing and de-energizing tasks and expectations:

Energizing tasks and expectations. They usually allow practitioners to make a difference with their expertise; they help them connect with each other around their desire to perfect their craft; they have visibility in the organization (or at least with the people who can appreciate the results). Typical examples include solving hard problems, debating a hot issue, or inspecting a competitor's products.

De-energizing tasks and expectations. They feel like an imposition and make community participation seem like work as usual; they do not entail much learning; and they do not reflect the real value of the community. Typical examples include collecting data, logistics, writing, or answering the same basic questions over and over.

Obviously, this distinction is a subjective matter and the same task or expectation can have either effect depending on the circumstances. Still, I have found the distinction useful because it seems to matter much more than where the task or expectation originated. The critical issue is not whether a given challenge was initially self-generated or suggested from the outside. A technical

question from the CEO can be energizing; and a member's suggestion to review the literature de-energizing. The critical issue is energy. The source of energy in community participation can be an instrumental benefit such as saving time, but just as often, it is learning, excitement, and professionalism. A hallmark of a mature professional identity is a desire to make a difference.

Communities of practice can be propelled forward by energizing tasks and expectations; they can be killed by de-energizing ones. I have seen it happen. Communities of practice can be viewed as a convenient resource to perform tasks for which there is no funding. No matter how much you care about a domain of knowledge, if participation in your community inevitably results in hours of undesirable homework, you'll want to stay away. If an organization is going to ask communities of practice to perform tasks that are not energizing, but for which they are uniquely qualified, then it needs to fund these tasks explicitly and offer logistical support.

For good measure: adding value

In our organization, we measure everything: should we measure the value of communities of practice? Would measuring in itself ruin their informal character?

The language of many organizations is measurement. At its best, measurement provides guidance for the wise investment of limited resources. At its worst, it focuses practitioners on the wrong goals. Not surprisingly, measurement is a controversial issue when it comes to communities of practice. It seems to trigger ideological fights between community purists who would have nothing to do with it, and organizational purists who will do nothing without it. The assumption I most often encounter about measurement is that executives will ask for it; that communities will resist it; and that anyway it cannot be done. My opinion is just the opposite. It can be done reasonably well; communities should want it; and executives should resist the temptation to rely on it too much.

When done well enough to reflect their contributions intelligently, measurement is good for communities. Communities that have taken the trouble to measure their value systematically have come up with very good return on investment, even focusing only on their most tangible outcomes. Measurement allows communities to speak the language of organizations, ask for resources, and seek recognition. This can protect them from the vagaries of organizational politics, business cycles, or dependence on the vision of specific executives, who invariably move on. Good measurement also enables members to become more aware of the value their communities create, which is often only partially visible to them. It is an opportunity for taking the pulse of the community and reflecting on its activities. But good measurement of community contributions takes time and few communities are given the luxury to do it well.

That intelligent measurement takes time creates a conundrum for executives. Time is at a premium for communities of practice, whose members have "day jobs" that usually take priority. Do you want practitioners to spend their precious community time learning from each other or justifying their participation? Because good measurement does not come for free, its extent has to be commensurate to the resources a community uses. Moreover, a large part of the value communities produce is long-term, intangible, and difficult to capture in quantitative measures: stories and conversations are better vehicles for this. Relying too much on formal measures about communities is a good way to lose touch with them.

Chaos and order: the formal and the informal

If communities are self-governed, how can one prevent them from turning into chaos?

This surprisingly common concern reflects a mistaken assumption about the relationship between management and practice. It assumes that because practice is lived, improvised, and dynamic, it is "messy" and lacks order. And it assumes that management's main role is to bring order into this chaos.

First, practice is not inherently a source of chaos. There is a logic of practice, a logic of experience. It arises out of engagement in action and sense-making in situ, and reflects a history of learning on the part of a community. This combination of engagement and learning acts as an internal source of orderliness and coherence, even if it is not made explicit.

Second, viewed from the perspective of practice, management is not always a source of order. Managerial politics, volatility, careerism, rigid formalism, and constant reorganization often appear in the eyes of the practitioner to be rather capricious sources of chaos, with a knack for interfering with "real work."

That the logic of both perspectives frowns on the other as a potential source of chaos reveals an ironic symmetry, which makes the governance of a knowledge organization a real challenge. I will suggest in the next section that creating a strategic dialogue that leverages the meeting of these perspectives will be one of the hallmarks of the knowledge organization of the 21st century. Indeed, the key role of management in such an organization is not so much to mold other practices to its logic as it is to set their logic free so that their unique perspectives may become integrated into the conversations through which the organization governs itself as a learning system.

The art of stewardship: knowledge management as a strategic conversation

The interest in communities of practice in organizations arose mostly in the context of knowledge management. Over the next decade, I believe that the increasing focus on knowledge as a strategic asset and a source of value creation will make communities of practice all the more important. Historically, I see three waves in the evolution of the field of knowledge management:

- The first wave focused on **technology.** It reflected a view of knowledge as information and placed the emphasis on encoding, documenting, storing, classifying, and making information accessible. The promise of knowledge management hinged on the universal access to information made possible by computer technology.

- The second wave has been focusing on **people.** It reflects a view of knowledge as the property of human communities and places the emphasis on connecting people by cultivating, recognizing, and supporting their communities. Communities of practice have become central to the promise of knowledge management as a vehicle for targeted knowledge sharing among practitioners.

- The third wave is now starting to focus on **strategic capabilities.** It reflects a view of knowledge as strategic asset and places the emphasis on the strategic stewardship of knowledge domains. The promise of knowledge management now lies in a systematic knowledge strategy and in the potential of communities of practice as a vehicle for engaging practitioners in the required strategic conversation.

These three waves have not replaced each other, but are building on each other. Cultivating communities of practice has not made technology irrelevant but on the contrary has given rise to a series of technological developments aimed at supporting the work and connectedness of communities. Stewarding strategic capabilities is not going to make communities of practice irrelevant, but on the contrary expand their roles and usher a new dynamics in the interface between communities and organizations.

Whereas the second wave focuses on the operational aspects of knowledge management, the new wave focuses on its strategic nature. The integration of communities of practice in the organization follows the same logic. The main interface between communities and organization is no longer operational support; it is a dynamic knowledge strategy. It is no longer enough to be a cheerleader for communities of practice. They become key stakeholders in the future capabilities of the organization— strategic partners in a new kind of conversation that entails heightened commitments on both sides.

On the part of organizations, the commitment is to articulate a knowledge strategy that can engage communities of practice. This involves managing an explicit portfolio of strategic capabilities and investing enough attention and resources in their development. Because of the commitment to engage practitioners, the portfolio cannot be defined at the level of broad core competencies: it must be done in terms of domains of knowledge that correspond to living communities of practice. Portfolio management is something senior managers are used to doing with products and markets. Good portfolio management transcends silos and requires the commitment of the entire leadership team. The portfolio is dynamically calibrated, evaluated regularly across the board so that investments are responsive to changing needs. Here the same process is applied to knowledge domains in which the organization needs to invest. It requires new organizational roles and structures to bridge across business unit boundaries and to make the process visible and accountable.

On the part of communities, the commitment is to become partners in the strategic conversations required for managing the portfolio of capabilities. With respect to their domain, the commitment to stewardship may include: identifying issues, such as recurring problems or generic tools, that warrant a funded project for developing knowledge resources (documents, lessons learned, examples, tools, and processes); joint activities with other communities; seeking and managing relationships with outside entities such as universities or business partners; acting as a local chapter of broader communities of practice and managing the interface. While representing their practice, communities have to broaden their perspective to see their domain in the context of a responsive portfolio that allocates resources strategically. Community leadership is not just about coordinating the community as a knowledge-sharing operation, but also about articulating the community's perspective and integrating it into the organizational strategy-making process.

This mutual commitment to strategy making is crucial. A business strategy can arguably be the purview of a small team that analyzes market trends and opportunities. A knowledge strategy requires a distributed conversation because elements of knowledge are distributed throughout the organization and gain strategic relevance in unexpected ways. Communities of practice stewarding knowledge domains across business units are important nodes in this conversation. Practitioners bring to the table their domain expertise as well as their experience with customers, products, and competitors in the field. They are often already members of broader communities of practice and networks. But they need each other to surface the strategic implications of their knowledge, experience, and connections; communities of practice provide a forum for these reflections.

Learning citizenship

As our organizations move into successive waves of knowledge management, membership in communities of practice becomes an important learning experience at multiple levels. At the community level, it engages practitioners in the stewardship of their domain, expanding their identities through a strategic approach to knowledge. At the organizational level, community members learn to become "learning citizens," involved in the "learning governance" of their organizations by representing their domain in the context of broader learning processes. At a societal level, the effects of this experience spill over into members' lives more generally. Being a learning citizen will be a key capability for participating in a knowledge society such as is emerging in the world today.

This perspective gives a deeper significance to the focus on strategic knowledge management in the business world and in the public sector than the success of single organizations. The survival of our species today really depends on how well we manage our knowledge on a global scale. Having the motivation, the freedom, and the resources to take the lead in this area, business and government organizations serve as learning laboratories for the world. By involving members in the challenge of a distributed knowledge strategy, these organizations become an innovation space where the human community learns to conduct itself as a social learning system.