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Can a Community of Practice Exist Online?

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The notion of community is at the heart of many epistemological theories of learning, both in organizations and in academia. CoPs or Communities of Practice facilitate not only the processes of learning about *knowledge* within a particular practice, but through enculturation practitioners learn *to be* identified with that profession. With the rise of the Internet, and its ability to reach out and connect people, it is unsurprisingly the focus of many community initiatives. The success of some commercial online communities is compelling other organizations and academies to follow suit. The aim of this article is to act like a speed breaker for those rushing to create online learning/knowledge communities, urging them to stop and heed the numerous, and often neglected, social aspects associated with such developments. By drawing on research done by John Seely Brown, Paul Duguid, Larry Prusak, Peter Cohen, and Malcolm Gladwell, and by companies like British Petroleum, we hope to implant the notion that "virtuality" is only effective when it is used as an add-on to already existing social structures and not as a stand-alone initiative. Similarly, learning is facilitated through complementing and extending existing social networks with technologies that can enhance the learning processes.

Learning from Communities' Perspective

Knowledge Visions

One day, Orr studied a rep at work with a finicky machine. It had been recently installed, yet never worked satisfactorily. Each time it failed, it produced a different error message. But following the prescription for each report—replacing or adjusting parts—didn't fix

the overall problem... Having reached his limits, the rep summoned a specialist. But the specialist couldn't understand what was going on either. So the two spent cycling the machine again and again, waiting for its intermittent crashes and recording its state at that time. Simultaneously, they cycled stories about similar-looking problems round and round until these stories, too, crashed up against the peculiarities of this machine... in the course of the afternoon, the two brought their separate understandings closer together and simultaneously came closer to a collective understanding. The machine's previously erratic behavior, the experience of the two technicians, and the stories they told finally formed a single, coherent account. They made sense of the machine and as a result could fix it and satisfy the customer. (Brown & Duguid, 2000, pp. 103–104)

The researcher here is Julian Orr, and his subjects are technical reps at Xerox Corp. His research at Xerox focused on the work practice of service technicians. His account of the technical reps' daily work is at the heart of many knowledge management visions leading many organizations and academic institutes to put up knowledge exchanges, or knowledge communities, in the hope that this would encourage similar stories.

The reason why Orr's account is so intriguing and desirable to organizations is because it depicts the ease with which a shared understanding is reached and new knowledge created. Here, two technical reps, both working in tandem, solve a finicky problem. They do so by having a conversation. This conversation enables them to come to a shared understanding of the machine, which ultimately leads to the solution. In the end, this process makes both of them richer in knowledge and experience. Now, just imagine if all the workers in an organization, or students in a university, exhibited similar attributes when confronted with problems.

Although the story above is of two technicians solving a finicky problem by coming to a shared understanding, much of Orr's account is of communities of technical reps behaving much the same way. Orr observed technicians indulging in work-related conversations when they gathered around water coolers, during lunch breaks or at social meetings—they would share their "war stories," exchanging tips and suggestions, or bringing out pressing problems.

David Weinberger, co-author of *The Cluetrain Manifesto* (2000) and the editor of the *Journal of Hyperlinked Organization* (<http://www.hyperorg.com>), provides his working definition of a knowledge worker:

So, here's a definition of that pesky and borderline elitist phrase, "knowledge worker": A knowledge worker is someone whose job entails having really interesting conversations at work. (Weinberger, 1999)

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Note, in the discussion above, two words were under the spotlight—conversation, and community. Although conversations are a part of community life, their intensity and influence determines the type of community they belong to.

Before we embark on all-out initiatives to design knowledge communities in the expectation that they would spawn Xerox-like stories, we need to take stock of recent research into the underlying factors affecting knowledge communities. For the rest of this article, we shall explore some of these studies.

Communities of Practice Vs. Networks of Practice

The type of community that Orr mentions above is one of two distinct types of communities that John Seely Brown and Paul Duguid write about in their book, *The Social Life of Information* (2000). In attempting to chart the difference between strong and weak communities, Brown and Duguid bring out the notion of *Communities of Practice* and *Networks of Practice* (p. 141).

The technical rep community that Orr mentions falls under the *communities of practice* category, or CoPs for short. These types of communities are characterized by tight-knit groups of people who know each other well. They've been working together for sometime, and they are bound together by their shared practice. Such communities are usually face-to-face communities that have a greater degree of reciprocity—sharing, contributing, supporting, helping, etc., occur effortlessly in these communities.

Networks of practice, or NoPs, on the other hand, are loose communities of practice in which most members are unknown to one another. Thus, for example, *Slashdot* (<http://www.slashdot.org>) is an open-source news community which draws members from all parts of the world. The members join the community because they feel a need to be part of the open-source movement. The members hardly meet face-to-face, yet they contribute and help each other out regularly. This type of community readily adapts to the Internet and other communication technologies. With the help of the Internet, members are mostly bound together via indirect means by Websites, mailing lists, Weblogs, discussion boards, etc. Table 1 lists differences between CoPs and NoPs.

In the following sections, we shall focus on the subject of learning in these networks, and see how learning in CoPs is very different from learning in NoPs, which due their very nature readily adapt to the new forums of virtual communication technologies.

Learning “to Be” Vs. Learning “About”

Jerome Bruner at Harvard University first pointed out the difference between these two phrases, which is explained in detail by John Seely Brown and Paul

Table 1. Differences between CoPs and NoPs.

Communities of Practice (CoPs)	Networks of Practice (NoPs)
Members usually meet face-to-face	Members are usually unknown to one another
Tightly-knit groups within organizations	Loosely-knit groups spanning many organizations
Strong reciprocity among members but narrower reach/spread of the network	Weak reciprocity among members but larger reach/spread of the network
Bound together by direct implicit and explicit flow of knowledge	Bound together by only indirect explicit flow of information
Can lead to “ties that blind”	Can spawn innovations (strength of weak ties)

Duguid in their book, *The Social Life of Information* (2000).

Here is an example: How does one become a doctor? He or she becomes a doctor by diagnosing patients, interacting with them, discussing medical issues with other doctor practitioners, engaging in medical research and sciences, etc. One cannot become a doctor by merely reading about, or having discussions about, the practice. The distinct characteristic of enculturation within CoPs is that of *learning to be*. Certainly, most of one's knowledge is about knowing many things, that is, products of knowledge. We know about American football, baseball, statistics, physics, etc. In other words, *learning about* is the accumulation of factual knowledge of “knowing that” (Brown & Duguid, 2000, p. 128). *Learning to be*, however, is about “knowing how” by application and practice. *Learning to be* involves enculturation within the rich context of social community life and practice.

Jean Lave of the University of California, Berkeley, and Etienne Wenger, a consultant formerly at the Institute for Research on Learning, further explored this process of *learning to be* in their book, *Situated Learning: Legitimate Peripheral Participation* (1991). According to Lave and Wenger, within CoPs, members who begin as novices engage in a process referred to as legitimate peripheral participation. This process begins with peripheral participants (as novices) appropriating an identity through lurking and observing “masters” at work. After extended opportunities of practicing the “trades” of the community, these novices begin to behave and think like the experts in the community of practice. Lave and Wenger held that by exposing a

newcomer to the practices of a community and providing for opportunities to engage in those practices, the newcomer would move from peripheral participation to a more central participation. In other words, there are levels of participation and contribution through which members in a community make advancements over time. The hypothesis is that, in every step forward, members' appropriate fuller identities similar to the central participants of that particular CoP, and in doing so, *learn to be* a member of that practice.

If strong relationships build knowledge ties within CoPs, then the weak relationships build *information* ties within NoPs. This characterizes the difference between *learning to be*, and *learning about*. Now we know that NoPs can readily adapt and thrive the Internet, but the question is: Can virtual CoPs exist?

To fully understand this question, we need to first question what factors determine or influence the sharing and the camaraderie the CoPs display? Or, what are the forces that make knowledge flow in CoPs? It turns out that there are a few factors, which can be lumped together, and their effectiveness can be gauged by their influence on *social capital*.

Social Capital: Enabling CoPs

In their book, *In Good Company* (2001), Don Cohen and Larry Prusak, define social capital as follows:

Social capital consists of stock of active connections among people: the trust, mutual understanding, and the shared values and behaviors that bind the members of human networks and communities and make cooperative action possible. (p. 4)

Cohen and Prusak list "trust" and the "space and time to connect" as important factors affecting social capital.

Trust. Trust is the glue that binds the members of a community to act in a sharing and adapting manner. Without trust, members would hoard their knowledge and experience and would not go through the trouble of sharing with or learning from others. And when it comes to an organization, much of the trust within members of a community of practice depends on the existing levels of trust in the organization itself. This type of trust, termed "organizational trust" by Cohen and Prusak, plays a crucial role in communicating the desired set of behaviors that the organization expects from its employees. "In lower-trust firms, people are guilty (and not to be trusted) until proven innocent; in high-trust firms, they are innocent until they prove themselves guilty" (pp. 36–37). Thus, in higher-trust firms, knowledge flows smoothly through the communities or networks, resulting in a "learning" organization. In lower-trust firms, the flow of knowledge is cut off, resulting in independent islands of knowledge, leading to "fragmented" knowledge networks in the

organization. Cohen and Prusak (2001) suggest that organizations show trustworthiness themselves by making processes, rewards, selections, promotions, etc., open and visible to all people in the organization:

By and large, as we have suggested, people tend to be pretty much trustworthy or devious as you expect them to be. Assume that they will try to get away with doing as little work as possible, and many will. Measure their work by the clock, and they will watch the clock and go home when they have put in their time. Assume, on the other hand, that they are capable, conscientious, and engaged, and most will prove you right. (Cohen & Prusak, 2001, p. 49)

But, there is no such thing as instant trust. Trust takes time to develop. It is the numerous hours of working together, sharing learning experiences, being part of both failures and successes that build the bonds that lead to trust. Space and time provide the breathing room for trust to strengthen and grow.

Space and Time to Connect. Relationships built on trust cannot be hurried. They need their space and time to grow organically. In an article titled *Designs for Working*, written for *The New Yorker* magazine, Malcolm Gladwell cites several examples of organizations that have risen to the realization that providing social spaces for their employees to connect increases social capital, which leads to greater innovation:

The office used to be imagined as a place where employees punch clocks and bosses roam the halls like high-school principals, looking for miscreants. But when employees sit chained to their desks, quietly and industriously going about their business, an office is not functioning as it should. That's because innovation—the heart of the knowledge economy—is fundamentally social. Ideas arise as much out of casual conversations as they do out of formal meetings. More precisely, as one study after another has demonstrated, the best ideas in any workplace arise out of casual contacts among different groups within the same company. (Gladwell, 2000b)

In a study, which has now become a sort of a classic, *WIRED* magazine charts the radical modification of office space by Chiat/Day, one of the world's top ad agencies. In July 1994, *WIRED* magazine interviewed Jay Chiat, the founder of Chiat/Day, on his new concept and this is how he described it:

Under the new organization at Chiat/Day, you don't have to come to work at 9 a.m. if you don't need to be here. By the same token, you don't win any points for staying at the office late at night. What you get when you come in to work is a locker—and a computer and phone you can check out for the day... We don't have

titles on our business cards. No one really gets any special treatment. No one gets a corner office to put pictures of their family and their dog in. Everyone answers their own phones and makes their own coffee. (Dix, 1994)

Chiat's vision of the office of the future caught the attention of the media, and bigwigs like *The New York Times* and *Time Magazine* carried prominent stories on the concept.

In a follow-up article, *Lost in Space*, that appeared five years later, in February 1999, *WIRED* magazine reported the subversion at Chiat:

They finally cleared out last September, moving to new digs down the road and abandoning the Frank Gehry-designed binocular-shaped building in Los Angeles where Chiat, five years earlier, had first unveiled his cocky attempt to tear down the walls of the American workplace... And with that, Jay Chiat's much-ballyhooed "virtual office," the work-from-anywhere workplace for the knowledge workers of tomorrow, was officially pronounced dead. (Berger, 1999)

So, what happened?

The problem with kind of "virtual" office space is that people don't have space they can call their own. Having a static personal place, people, over time, build relationships with other people over that space. This broadens the environment and encourages incidental learning (Brown & Duguid, p. 72).

Incidentally, Chiat/Day has learned its lesson well. It has now re-designed its office architecture and has incorporated many principles of community, such as seating the top executives in the middle of the room so that they can see and be seen by other employees. This act displays organizational openness and enhances serendipitous meetings. The new design also has ample rooms where employees can meet for discussions. There are even pubs, cafes, bars, and a large central open space, aptly called "central park" (Gladwell, 2000b).

The Chiat/Day study goes on to show the importance of providing the social space for people to come together to discuss and share stories. This goes a long way in building social capital. But providing the social space has to be complemented by providing social time for relationships to grow; organizations need to give provide the time required for interactions to take place in these social spaces.

The managers of many organizations seem to regard time to talk and get together as an unaffordable luxury, but we believe that this apparent luxury is in fact a necessity, and essential social capital investment. Building relationships takes time. We are not talking about large chunks of free time or even about time away from work—trust relationships develop in the course of working together—but relationships and

networks need some time—some breathing space to grow. (Cohen & Prusak, 2001, p. 98)

Cohen and Prusak cite two case studies of organizations and people within organizations realizing the importance of providing for time (2001, p. 98):

- (1) Hewlett-Packard employees are encouraged to go to meetings early, so that in the few extra hours they can meet old acquaintances, initiate new relationships, discuss what's going on in their departments, etc.
- (2) The case of a Xerox supervisor who intentionally delayed the start of his meeting to give his technicians a chance to meet and to share stories.

In previous paragraphs, we looked at the nature of learning and knowledge flow in organizations. We noticed that the thick and thin of learning and knowledge flow depend on the type of community—in CoPs, there is mutual sharing and learning, leading to a thick flow of knowledge; while in NoPs, the ties that bind are weak, but wide. We also identified the social issues of trust, reputation, space, and time that are so important in maintaining the knowledge ties characteristic of CoPs. We now turn our attention to another related, but equally important, criterion in building strong communities—the people who make communities work: the connectors, mavens, and salespersons.

Connectors, Mavens, and Salesmen.

In *The Tipping Point* (2000a), Malcolm Gladwell investigates the factors that cause social events to "tip." For example, the crime rate in poor New York City neighborhoods had been steadily increasing until around 1992, when suddenly it started showing signs of changing direction. In the following five years, it decreased by 64%. Gladwell refers to the point where social events make an unpredicted and sudden change as the "tipping" point.

In another case study, Gladwell analyzes the sudden rise in popularity of Hush Puppies in late 1994 and early 1995. Hush Puppies is a shoe brand that in the time before late 1994 was in dire economic condition. But, in less than a year, it became the most sought after brand and a staple in many American homes, even winning the prestigious best accessory award from the Council of Fashion Designers in 1996.

So, what causes such events to tip? According to Gladwell (2000a), who refers to these events as "social epidemics," there are three rules to the Tipping Point:

- (1) Law of the Few—a few people make a big difference.
- (2) Stickiness Factor—making messages contagious.
- (3) Power of Context—influence of the immediate environment.

Although all of the three factors are important and

related to the study of communities, in this article we shall explore the first point only—the few people who make a big difference, whom Gladwell differentiates as being Connectors, Mavens, and Salesmen:

- *Connectors*: These are people who know lots of other people. They have the extraordinary knack of making friends and acquaintances. These are people who always remember to send you a birthday card, and who will follow up even after a brief meeting. They occupy several social circles, and “their ability to span many different worlds is a function of something intrinsic to their personality, some combination of curiosity, self-confidence, sociability, and energy” (p. 49).
- *Mavens*: These are people who connect other people with information. They are information specialists, or “information stewards.” These people are obsessed not only with collecting information, but also with wanting to tell other people about it—“The fact that Mavens want to help, for no other reason than because they like to help, turns out to be an awfully effective way of getting someone’s attention” (p. 67).
- *Salesmen*: These people are persuaders. They are the ones who will make you take a decision when you are undecided. When it comes to spreading social epidemics, these people take on the strategic role of reaching out to the unconvinced, and to persuade them to accept change, or to try out something new. They are “very good at expressing emotions and feelings, which means that [they] are far more emotionally contagious than the rest of us” (p. 85).

This notion may explain why some communities manage to thrive and grow while others wither away and die. If we plot a graph of *relationships* in a community, as would be done in social network analysis, the Connectors, Mavens, and Salesmen would occupy points of high density. This means that if an idea, concept, process, etc., is to disperse through a network, these people are in the most strategic position to make it happen. Conversely, the absence of such people in the community makes it hard for getting the kind of reach and commitment that is necessary for the community to grow and thrive.

Thus, when we consider learning from a community’s perspective, we need to bear in mind that there are many underlying social structures influencing the system. The mutual work and sharing that Julian Orr observed that day with the Xerox technicians does not happen instantly, or at will. It is the result of spending numerous hours with each other, testing each other’s trustworthiness, and building ties that bind. Further, spreading the learning experience to the entire community needs the capabilities of the Connectors, Mavens, and Salesmen present in the community.

Now, here’s the all-important question: Can such

interactions take place online? Or, Can we “learn to be” online? Or can purely virtual CoPs exist?

The next section aims to answer this important question.

Going Virtual with CoPs

Virtuality is still an experiment in progress. And being an experiment in progress, there are obviously no certain facts from both sides of the camp. Those eager to hail virtuality as the subsequent step forward in the work culture are at loggerheads with those advising more research, especially on the social front.

The main arguments against the case of virtuality, as seen from the perspective of social capital, are the following (Cohen & Prusak, 2001, p. 163):

- There are just too many nuances of a social meeting that cannot be replicated online. The whole set of gestures, grimaces, looks, tones, etc., which people readily associate in a face-to-face conversations are missing online.
- Virtual connections are brief and intermittent. But as we have seen, social capital is built over time.
- Serendipity is limited online. The chance discussion, which leads to new ideas and thoughts when people have face-to-face conversations, is hard to come by online.
- It is hard to build trust through purely virtual connections. A recent article in CNET News cites a research finding that “most people feel better giving out their personal information online to traditional banks and other well-known merchants than to portals or their Internet service providers” (Luening, 2001).

Here is a case in point: The WELL is a very well-known online community. *WIRED* magazine featured the happenings at the WELL, calling it “The World’s Most Influential Online Community” (Hafner, 1997):

The WELL had become a force whose influence was wildly disproportionate to its size. A discussion that started on The WELL had a way of bleeding into the larger world; it would be taken up and then written and talked about in more mainstream forums. As a result, many ideas generated on The WELL became pivotal in the history of cyberspace, including the naming of cyberspace itself—it was in a WELL posting that John Perry Barlow first took science fiction writer William Gibson’s term and applied it to the present. (p. 124)

But, here’s a point that might surprise many: Katie Hafner, who documented the WELL article in *WIRED*, observed among other interactions and personal stories that built strong relationships on the WELL, that many of these relationships were actually strengthened by the numerous face-to-face encounters that the “WELLbeings” used to have:

The WELL defied current notions about virtual community in that it wasn't one—entirely. In fact, the community probably wouldn't have thrived solely in virtual space. Problems that arose online got worked out offline, and vice versa. (Hafner, p. 111)

This facet of the WELL is also coherent with current notions of virtuality, and that is to opt for a *balance* between online and offline interactions. In an interview with Knowledge@Wharton, Larry Prusak says, "People have to get together in the real world. Three organizations I know are studying this: AT&T, Procter & Gamble, and the U.S. army. At different levels, they have all studied how much so-called face time you need for a community to have coherence. They all felt that people have to actually meet, either once a month or every other month or some such number. Without that, you get entropy. You lose your edge, and passion cannot be transmitted. Things also get ragged; it's like an orchestra being conducted without a conductor. I have yet to hear about a 'community' that has never met and still has coherence" (Knowledge@Wharton, 2000).

Even British Petroleum (BP), which has a good reputation in knowledge management circles for reaping the benefits of CoPs with the use of technology, opts for the balanced approach. Chris Collison and Geoff Parcell have documented BP's experience with creating knowledge exchanges in their book, *Learning to Fly* (2001). In giving notes to a coordinator of CoPs, Collison and Parcell advise "A rule of thumb is to meet face-to-face at least once year to establish and maintain relationships. Communication can be maintained electronically but the relationship gradually decays... Allow plenty of time for socializing in these gatherings... Distributed communities depend on a core group meeting face-to-face at least once a year and are in regular contact" (p. 134).

Going from the arguments presented above, we can say that a balancing act is needed when considering CoPs; one that blends the appreciation of social capital issues with the use of technology. In essence, CoPs are here to stay and they exist for reasons beyond what technology can afford in terms of how people are networked and how communities thrive. Technologies that support virtuality through online communities should thus be seen to support, complement, and extend participation to existing CoPs and social communities.

Conclusion

As we have mentioned earlier, as with Brown and Duguid's (2000) analysis, CoPs support a holistic perspective to learning, namely learning "about" and learning "to be." When we consider carefully the kinds of "learning" taking place in Internet communities (or, in essence, NoPs), participants are primarily involved in

discourse *about* knowledge rather than learning *to be*, hence fall under a loose notion of NoPs. There are some limited exceptions. In sites such as *experts-exchange.com*, although members are learning about programming, they are also to some degree learning to be as they learn to program in alpha-numeric language with someone else on the Net.

We need to understand how CoPs function and we need to know how technologies such as the Internet and online environments complement (not replace) the existing social capital and networks that thrive on both explicit and implicit flows of activities and knowledge. We have come to recognize that in real CoPs, there are social norms beyond the explicit, and these rules can hardly be replicated in online communities. There are also specific movers or roles, which make a CoP tick, e.g., Connectors, Mavens, and Salesmen, and these roles may not be able to be similarly experienced in virtual environments. These realizations cause us to reckon with the *limitations* of online communities, but these constraints can be worked to our advantage if we recognize that they can be used to complement CoPs and not replace them. Online communities can also be used to support learning when they can be seen to complement existing learning and professional communities. □

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