Supporting communities of practice

a survey of community-oriented technologies

How to make sense of this emerging market, understand the potential of technology, and set up a community platform

Etienne Wenger
Research and Consulting

Draft
Version 1.3
March 2001
A “shareware” report

Because of the time-sensitive nature of the information contained in this report, I have decided to self-publish it on a “shareware” basis.

- Feel free to forward, photocopy, or otherwise distribute this report, but always include this page and mention that it is shareware.
- If you receive a copy and find it useful, please go to my website to make your payment.

The price for this report is:
- Individuals: $20.00
- Institutions: $100.00

To make a payment by credit card or order a copy, go to http://www.ewenger.com/tech

You can also send a check to:
Etienne Wenger
PO Box 810
North San Juan, CA 95960

Send comments and corrections to: etienne@ewenger.com

Thank you.

P.S. The following people and institutions are welcome to use this report free of charge:
- Employees of the US Federal Government, who can request copies from Wendy Stoner (wendy.stoner@gsa.gov) of the General Services Administration
- Members of CPsquare, our practitioner’s consortium on communities of practice

Many thanks to Shereen Remez, Wendy Stoner, and Jon Desenberg of the General Services Administration of the US Government for their sponsorship of the early phases of this project.
Table of contents

Executive summary 1

I. Communities of practice 2

II. The market of community-oriented technologies 5
   Communities of practice and technology: typical facilities 5
   The broader market: a chart 8
   Knowledge portals: the knowledge worker’s desktop 11
   Team work: online project spaces 15
   Community management: website communities 18
   On-line conversations: discussion groups 23
   Synchronous interactions: on-line meeting spaces 28
   On-line instruction: community-oriented e-learning spaces 32
   Knowledge exchange: access to expertise 35
   Knowledge repositories: documenting practice 39
   Combining dimensions: convergence in the market 43

III. Understanding the role of technology 45

IV. Development and evaluation strategies 60

Additional resources 65
Executive summary

This report is intended as a guide for selecting and assembling a technological platform to support communities of practice across a large organization. To this end, the report addresses four questions:

1. *What makes communities of practice different from garden-variety online communities?*

   Every group that shares interest on a website is called a community today, but communities of practice are a specific kind of community. They are focused on a domain of knowledge and over time accumulate expertise in this domain. They develop their shared practice by interacting around problems, solutions, and insights, and building a common store of knowledge.

2. *What categories of community-oriented products exist and what are they trying to accomplish?*

   The ideal system at the right price does not exist yet, though a few come really close. But there are eight neighboring categories of products that have something to contribute and include good candidates to start with. Analyzing these categories of products yields not only a scan of products, but also a way of understanding the various aspects of a knowledge strategy based on communities of practice.

3. *What are the characteristics of communities of practice that lend themselves to support by technology?*

   Technology platform are often described in terms of features, but in order to really evaluate candidates for a technology platform, it is useful to start with the success factors of communities of practice that can be affected by technology. The third section of this report provides a table of thirteen such factors with examples of how a technology platform can affect the success of a community in each area.

4. *How to use the answer to these questions to develop a strategy for building a platform for communities of practice?*

   Most of the product categories can be a starting point for building a general platform. In fact, this analysis of the field suggests a strategy for approach the task. Decide what kinds of activities are most important for your communities. Select a product in that area, and expand it with elements from the other categories.
I. Communities of practice

The word community has become immensely popular. As a result, a large number of groups are called communities, even though they display very different characteristics. Among online designers and facilitators, just about every group that interacts around a topic is called a community. In particular, discussion groups are usually called communities.

Communities of practice can take very different shapes. They can vary along a number of dimensions. They can be tight-knit and small or loosely connected and large. But they all share a few characteristics. The term "community of practice" is of relatively recent coinage, but the phenomenon it refers to is age-old and social scientists have talked about it under various guises. In a nutshell, a community of practice is a group of people who share an interest in a domain of human endeavor and engage in a process of collective learning that creates bonds between them: a tribe, a garage band, a group of engineers working on similar problems.

Not everything called a community is a community of practice. A neighborhood for instance, is often called a community, but is usually not a community of practice. Three characteristics are crucial:

1. **The domain**: Since a community of practice is focused on a domain of shared interest, it is not merely a club of friends or a network of connections between people.

2. **The community**: In pursuing their interest in their domain, members engage in joint activities and discussions, help each other, and share information. That is how they form a community around their domain and build relationships. Having the same job or the same title does not make for a community of practice unless members interact and learn together. The claims processors in a large insurance company or the students in American high schools may have much in common, but unless they interact, they do not form a community of practice. The Impressionists, for instance, used to meet in cafes and studios to discuss the style of painting they were inventing together. These interactions were essential to making them a community of practice even though they usually painted alone.

3. **The practice**: A community of practice is not merely a community of interest—people who like certain kinds
of movies, for instance. Members of a community of practice develop a shared repertoire of resources: experiences, stories, tools, ways of addressing recurring problems—in short a shared practice. This takes time. A good conversation with a stranger on an airplane may give you all sorts of interesting insights, but it does not in itself make for a community of practice. The development of a shared practice may be more or less self-conscious. The “windshield wipers” community of practice at an auto manufacturer makes a concerted effort to collect and document the tricks and lessons they have learned into a knowledge base. By contrast, nurses who meet regularly for lunch in a hospital cafeteria may not realize that their lunch discussions are one of their main sources of knowledge about how to care for patients, even though in the course of all these conversations, they have developed a set of stories and cases that become a shared repertoire for them to think about and discuss new cases.

We all belong to communities of practice. They have been around for as long as human beings have learned together. At home, at work, at school, in our hobbies, we belong to several communities of practice at any given time. And the communities of practice to which we belong change over the course of our lives. In fact, communities of practice are everywhere.

The concept of community of practice has found a number of practical applications in business, organizational design, education, and civic life.

**Business organizations.** The concept has been adopted most readily by people in business because of the increasing need to focus explicitly on knowledge (Wenger, McDermott, and Snyder, 2001). Initial efforts had focused on information systems with disappointing results. Communities of practice provided a new approach, focused on the social structures that could best assume ownership for complex and dynamic knowledge with substantial tacit components. A number of characteristics make communities of practice a natural fit.

- Unlike training or research departments, they are not separate units. Rather they pervade the organization, since people belong to communities of practice at the same time as they belong to their business units or teams.
- Communities of practice address the informal and tacit aspects of knowledge creation and sharing, as well as the more explicit aspects.
- They allow a much closer connection between learning and doing, while still providing structures where learning can accumulate.
- In a time of globalization and disaggregation, they create connections among people across institutional boundaries and potentially across the globe.

From this perspective, the knowledge of an organization lives in a constellation of communities of practice each taking care of a specific aspect of the competence that the organization needs. However, the very characteristics that make communities of practice a good fit for stewarding knowledge—autonomy, practitioner-orientation, informality, crossing boundaries—are also characteristics
that make them a challenge for traditional hierarchical organizations. How this challenge is going to affect these organizations remains to be seen.

**Education.** In business, focusing on communities of practice adds a layer of complexity to the organization—a kind of orthogonal structure focused on knowledge, while the core structure of the organization still focuses on business processes and results. But they do not imply a restructuring the whole system. Schools have been a bit slower at adopting the concept of communities of practice because sharing knowledge is already their main activity, and adopting communities of practice as a basic organizing principle implies a deeper rethinking of their structure. In educational circles, the hope is that communities of practice could bring the experience of schooling closer to everyday life along three dimensions.

- **Internally:** How to ground school learning experiences in practice through participation in communities around subject matters?
- **Externally:** How to connect the experience of students to actual practice through peripheral forms of participation in broader communities beyond the walls of the school?
- **Over the lifetime of students:** How to serve the lifelong learning needs of students by organizing communities of practice focused on topics of continuing interest to students beyond the schooling period?

From this perspective, the school is not the privileged locus of learning. It is not a self-contained, closed world in which students acquire knowledge to be applied outside, but a part of a broader learning system. The class is not the primary learning event. It is life itself that is the main learning event. Schools, classrooms, and training sessions still have a role to play in this vision, but they have to be in the service of the learning that happens in the world.

More generally, the concept of community of practice has promise in suggesting ways to organize societies around issues and functions. The US government and the World Bank are experimenting with these approaches by connecting people across cities and countries with practice-based communities that complement place-based communities. New technologies such as the Internet have extended the reach of our interactions beyond the geographical limitations of traditional communities, but the increasing flow of information does not obviate the need for community. In fact, it expands the possibilities for community and calls for new kinds of communities based on shared practice.
II. The market of community-oriented technologies

There are not many systems explicitly oriented to communities of practice. In fact, I will assume right now that the space is empty and that the perfect product for a general community-of-practice platform does not exist. This is somewhat unfair because a number of products have enough relevant features to be useful. A number of companies are moving toward the community of practice area by expanding on their basic facilities. Some may even claim they have all it takes. Still, the market is in an early phase, with many products focusing on one or more aspects of the whole picture. At this point, it is more productive to assume that no one is really there and that ideal systems will arise from combinations and convergence in the market as it matures.

Typical facilities useful to a community of practice

The most common on-line facilities that communities of practice can use include:

- a home page to assert their existence and describe their domain and activities
- a conversation space for on-line discussions of a variety of topics
- a facility for floating questions to the community or a subset of the community
- a directory of membership with some information about their areas of expertise in the domain

- in some cases, a shared workspace for synchronous electronic collaboration, discussion, or meeting
- a document repository for their knowledge base
- a search engine good enough for them to retrieve things they need from their knowledge base
- community management tools, mostly for the coordinator but sometimes also for the community at large, including the ability to know who is participating actively, which documents are downloaded, how much traffic there is, which documents need updating, etc.
- the ability to spawn subcommunities, subgroups, and project teams

Furthermore, a technological platform for communities of practice should ideally be

- Easy to learn and use because communities of practice are usually not people’s main job
- Easily integrated with the other software that members of the community are using for their regular work so that participation in the community requires as few extra steps as possible
- Not too expensive. If it requires a lot of investment up front, potentially useful communities will not be able to take advantage of the platform. Indeed, many communities start with only a partial understanding of the value they will provide eventually.
A sample product

Even though I have assumed that the ideal system for a general platform for communities of practice does not really exist yet, a few systems were designed from the start with the goal of addressing the needs of communities of practice. They are not fully there yet, but Communispace will serve as a good illustration for this introduction because of the attention paid to community activities and social dynamics.

Communispace

Communispace Corporation
www.communispace.com

General description

Like many systems designed to support online communities, Communispace is a browser-based system that provides a virtual space for participation. What distinguishes Communispace is the company's effort to provide explicit support for typical activities that focused communities engage in, during their formation and their ongoing work. As a result, Communispace provides facilities for activities such as framing issues, brainstorming, making decisions, or analyzing the "community climate," in addition to more traditional facilities such as asynchronous discussions, chat, calendar, organizing documents, and creating profiles of users. This support is based on a model of these activities and provides direction for the process. For instance, the brainstorming facility will take the group through the various phases of brainstorming: generating ideas, discussing them, ranking them, and selecting.

By focusing on activity structure and social dimensions in combination, Communispace uses technology to encourage participants to engage in community-oriented activities. This includes reflection on the quality of the
Placing products on the chart

The placement of each system on the chart is a subjective attempt to represent approximately:

- In which category it falls: the main strategic intent behind the product
- How it clusters with other products it competes with
- How close it is to the boundaries of the category: is it a typical example or more of a hybrid
- How close to the center: how close it is to supporting communities of practice compared with other products in this category

An arrow means that the system is moving toward supporting communities of practice. The placement of a system is NOT a statement that:

- a system is better than others in an absolute sense (being close to the center is only a matter of potential support for communities of practice specifically)
- a system only provides facilities associated with its main category (for instance, many asynchronous discussion systems also have chat facilities)

Analyzing the market

The rest of this section describes the broader community technology market in its relation to communities of practice.

In the first eight subsections, I will describe each category of systems in detail, starting with the knowledge worker’s desktop and going through the figure in clockwise fashion. For each category, I will provide:

- A general description of the category
- The various perspectives and approaches as represented by groups of products in this category
- A list of common features
- An in-depth description of one or two paradigmatic products (chosen because they represent the category well rather because of their intrinsic quality)
- A list of other products, with URL for more information and sometimes with a brief comment

In the description of sample systems below, I try to give a sense of the cost. All pricing structures are provided as a general indication of the cost of the product. They are not meant to be exact and are not necessarily the price you would pay under a specific contract. They are subject to change. I only discuss pricing because pricing structures can influence the usability of a platform, especially for tentative communities and participants.

At the end of this section, I will come back to the overall shape of the chart and describe how to interpret its axes:

- Knowledge exchange versus social structure
- Conversation versus repositories
- Instruction versus work
- Ongoing integration of work and knowledge versus fleeting interactions

This closer interpretation of the figure will show how the market’s search for the ideal system depends on the convergence of these categories. At the same time, this evolution reveals something interesting about the deep structure of the problem of community-based approaches to knowledge.
community in terms of relationships, level of trust and participation, nature of conversations, etc.

Even for the more traditional offerings, Communispace has a few original touches that reflect attention to the nature of activities. For instance, its asynchronous discussion facility requests contributors to categorize their contribution according to a taxonomy of ten different “speech acts” including question, answer, request, offer, assent, dissent, etc.

Because Communispace places the emphasis on enforcing or fostering community-oriented behavior through the technology, it expects members to use the community space as their primary interaction locus, rather than, say, e-mail. In this sense it may require difficult behavioral changes. For use in a broader work context, the system may not always provide enough ways to integrate with others systems people use.

The ability to handle documents in a knowledge base is still underdeveloped for a full community. The search facility only works on keywords. Communispace is developing links to some of the major search engines and knowledge-base systems. In addition, it is working with a partner to develop some native full-text search capability for customers who do not have access to these other systems.

**Pricing structure**

**Contract:** Only available on an ASP basis, with SSL secure socket, and one machine per client.

**Prices:** Communispace just changed its pricing structure. These prices include the technology as well as a good amount of community administration support.

a) Per community pricing (up to 150 members):
- Initial launch: $30,000
- Monthly ASP fee: $5,000-6,000
- Additional members $40 per month
- Per-community price decreases 10% each time the number of communities doubles

b) Enterprise pricing per seat:
- Initial setup: $125,000
- Monthly ASP fee: $48-$16 per person, depending on volume

**Advantages**

- Very community-oriented design, based on a sophisticated model of community activities.
- Actively encourages community-building behavior.
- A number of subtly clever features.
- Based on a method to build communities, which is part of the service.

**Disadvantages**

- Relatively expensive for informal communities, in part because of the bundled administrative services.
- Not really a self-service system.
- The system is designed for close-knit communities that need to do a lot of activities together.
- Lacks document sharing infrastructure.
- The behavioral directiveness may require excessive commitment for looser communities.
Not clear how to handle “peripheral participants” because of price and lack of sophisticated membership management.

- Mostly stand-alone at this point; not easy to integrate with existing enterprise systems

**Comments**

Communispace is a good candidate for a system for communities of practice though it lacks some crucial features, which will be described later in this section. The pricing strategy, however, is not appropriate for a general platform. The relatively high price per community might discourage some communities from coming into existence if their initial sense of value is tentative. Moreover, Communispace pricing does not encourage open boundaries since a lurker takes the place of a potential active member.

With its pricing strategy, Communispace works best for specific communities whose business promise justifies the expense. In fact, it has largely been used as an online workspace by large, distributed business teams with a clear task whose immediate return could be easily described on the outset.

It is not clear what kinds of markets the company is going to focus on in the future and whether its business plan will push it toward supporting teams. As with many young companies, however, nothing is written in stone. For instance, Communispace says that they might offer licensing as well as ASP when the features of their software have stabilized, some time in 2001.

---

**The broader market: a chart**

While no one has everything for communities of practice, many products have something. In order to understand the market and its future, it is useful to cast a wide net and consider the potential of a variety of community- and knowledge-oriented technologies.

Figure 1 below is a graphic representation of the current market of community-oriented technologies in relation to the needs of communities of practice. The chart shows eight categories of related products that have relevance in considering technologies for communities of practice.

- Desktop of the knowledge worker: complete portal-like applications for managing participation in multiple groups
- Online project spaces for team work
- Website communities, such as customer communities, where the management of membership is important
- Discussion groups typically targeted at communities of interest with little commitment to a shared practice
- Synchronous meeting facilities, online auditoriums, conference rooms, and chat
- Community-oriented e-learning systems
- Access to expertise, through questions or expert profiles
- Knowledge repositories

In fact, all of these product categories represent activities that are important dimensions of a community-based knowledge strategy.