Designing for Growth:
Enabling Communities of Practice to Develop and Extend their Work Online

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Abstract

A teaching professional's community of practice (CoP) can affect professional growth through informal collegial interactions. The desire to support professional growth though community has led scores of teacher education, induction, and professional development providers and educators to seek online virtual spaces to meet their CoP needs. This chapter provides examples of using a phased approach to help CoPs become virtual CoPs in Tapped In®, a Web-based virtual environment for professional development providers and educators, and CLTNet, an online network; CLTNet supports the United States National Science Foundation's Centers for Learning and Teaching in graduate training, research, and practitioner development. As many organization leaders and users have noted, the greatest value to the organization and its CoP is the phased assistance that CoP community developers provide to CoP leaders and participants. This phased approach enables leaders to articulate their CoP vision, understand what is possible online, support and scaffold their initial online activities, and gradually remove the scaffolding as the organization's capacity to use the online environment to sustain and scale its CoP's activities grows. Through this phased approach, leaders gain an understanding not only of what is possible online, but also of what is possible in growing virtual CoPs.

Keywords: pre-service; induction; technology; cyclic community design; peripheral participant; community manager

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"Communities of practice… cannot be legislated into existence or defined by decree. They can be recognized, supported, encouraged, and nurtured, but they are not reified, designable units." – Wenger, 1998, p. 229.

Wenger and others who develop online learning environments state that communities of practice (CoPs) cannot be designed (Barab, Kling, & Gray, 2004; Schwen & Hara, 2004), but that they can be designed *for (*Schlager & Fusco, 2003). In this chapter, we share our experiences in developing online environments that support existing, emerging, and new CoPs. Specifically, we have developed Tapped In®, a Web-based virtual environment for professional development providers and educators, and CLTNet, an online network developed to support the work of the United States National Science Foundation's (NSF's) Centers for Learning and Teaching (CLTs) in graduate training, research, and practitioner development.

In creating support strategies and infrastructure for educators, the Tapped In community developers have been guided by the theoretical CoP framework (Brown & Duguid, 1991; Lave & Wenger, 1991; Wenger, 1998). The framework suggests that a teaching professional's CoP can provide professional growth through informal collegial interactions (Barab & Duffy, 2000; Brown & Duguid, 2000; Schlager & Fusco, 2003; Schlager, Fusco, & Schank, 2002). This desire to support professional growth though community has led scores of teacher education, induction, and professional development providers and educators to seek online or virtual spaces to meet their CoP needs. More than 60,000 have joined Tapped In for this reason. Many organization leaders and users have noted that the organization and its CoP benefit most from the phased assistance that community developers provide to the CoP leaders and participants and early adopters of the system.

The phased approach used in Tapped In and CLTNet enables leaders to articulate their CoP vision, to understand what is possible online and start moving the work of their CoP to a virtual environment, to model and scaffold their initial online activities, and to gradually remove the scaffolding as the organization matures in using the online environment to sustain and scale CoP's activities. Before we describe and provide examples of this three-phase approach of bringing a CoP online—Getting Started, Modeling and Scaffolding, and Maturing—we define CoPs and present an approach for designing their virtual environments.

Defining CoPs and their Virtual Environments

We define CoPs as self-reproducing, emergent, and evolving entities that frequently extend beyond formal organizational structures (Schlager & Fusco, 2003). Individual members focus on learning through practice to improve their own practice and that of the

CoP as a whole. Riel and Polin (2004) distinguish a CoP from other learning communities that focus solely on completing specific tasks or gaining knowledge about something specific. Although CoP members certainly complete tasks and acquire knowledge, their collective mission of engaging in and improving joint practice is what fuels the CoP.

CoPs, as Wenger (1998) states, must be recognized and understood but must not be artificially created in the real or virtual world. Schwen and Hara (2004) in their review of the CoP research literature conclude "all the fully functioning CoPs we have observed in our work and have read about in the literature were not designed. Instead, they evolved quite naturally over several years" (p. 163). Our work with education CoPs supports that conclusion (Schlager & Fusco, 2003): we cannot design virtual CoPs per se; instead we must design the social and technological aspects of the virtual environments (Kim, 2000; Preece, 2000) that virtual CoPs can use for learning and for improving their practice.

In designing online community infrastructure, we have studied the social aspects of existing CoPs to create fertile online environments in which mature CoPs coming to a virtual environment will flourish and in which emerging CoPs—both in the physical and virtual worlds—will grow. A CoP's *social aspects* are the artifacts of, and dynamics among, individuals: the CoP mission, structured activities, resources, and the CoP members' interactions with each other, the community manager, and other CoPs. The *technical structures* consist of the online tools (e.g., chat, discussion board, group creation and management, member management, event management) that support these artifacts and communications.

The social aspects of physical and virtual CoPs inform the initial design and ongoing refinement of the technology structure (Farooq, Harris, Schank, Fusco, & Schlager, in press). In turn, the technology, or more precisely its affordances, influences the interactions and artifacts of the virtual CoPs using the system. Orlikowski (1992) calls these ongoing exchanges between the technical and the social the *duality of technology*. To let virtual CoPs evolve naturally, our team has reinforced this duality or dynamic between the social and the technical.

Designing the Virtual Environment: Focus on the Social

The authors have developed the technology for and currently manage two online environments, Tapped In and CLTNet. Tapped In (http://tappedin.org) is an open online environment that has supported the online activities of diverse educator communities worldwide since 1997. Although not every member of Tapped In is in a CoP, some are and some of the communities in Tapped In meet our definition of a CoP. In 2003, the Tapped In team extended the Tapped In infrastructure to develop CLTNet (http://cltnet.org), an online network to support the NSF's CLTs. CLTNet is a closed community limited to CLTs. Each center is a multi-institutional consortium focused on research and graduate training in science, technology, engineering, and mathematics education. Members of these interdisciplinary Centers may belong to several CoPs, including their Centers, their existing home institutions, and other CoPs in the education community.

For both CLTNet and Tapped In, we found it important to start designing the technology in cooperation with representatives from *existing* physical and virtual CoPs rather than with *emerging* CoPs. We had two reasons for doing so: (1) members of existing CoPs have accumulated experience about their needs in an online environment to share with developers; and (2) emerging CoPs need to focus on getting started (see below) and to have a technology (and active community management team) in place to support their emergence. For these reasons, we first highlight the technological design process for an online environment that will support existing CoPs and encourage the growth of new virtual CoPs.

It is easy to begin thinking about technology features when designing an online environment; indeed, many organizations approach us with a list of online tools or features that they want. However, focusing first on users' needs, practices, and social dynamics is key to developing an online community environment (Carroll, 2000; Cooper, 1999). We use a scenario-based participatory design approach guided by theory-informed principles derived from the broader literature on communities (Koch, 2000; Schlager & Fusco, 2003). The following guiding principles serve as a designer's checklist of fundamental elements required in the online environment. The needs and characteristics of the CoP members being designed for dictate the specific form and interplay of these principles:

- ✓ Learning Process and Practice: Each CoP can easily share its approach and commitment to a specific practice within and across the CoP.
- ✓ Identity and Trust: Everyone's identity in the online environment is consistent and persistent. We know with whom we are dealing and that it is safe to do so.
- ✓ Communication: We have ways to share information and ideas.
- ✓ Groups: We can relate to each other in smaller groups, including separate communities of practice and smaller groups within a community of practice.
- ✓ Environment, Tools, and Artifacts: We interact in a shared space that is appropriate to our goals.
- ✓ Boundaries: We know who belongs and who does not.
- ✓ Governance: We regulate and moderate behavior according to shared or stated values.
- ✓ Exchange: We have a system of exchange or barter, and can trade knowledge, support, goods, services, and ideas.
- ✓ Expression: We have a group identity and know what other members are doing. We can easily indicate our preferences and opinions.
- ✓ History and Culture: Both new and veteran members can develop, reproduce, and review cultural artifacts, norms, and values over time.
- ✓ Community Reproduction and Evolution: We can grow and evolve the CoP.

Phases of Bringing a CoP Online: Becoming a Virtual CoP

When the technology features are ready, new and existing CoPs can be brought online. We focus here on organizations that have an existing or emerging CoP they plan to bring online. We have chosen this focus, rather than *ad hoc* communities that contact us or that

start using the online system on their own, because we have found that the case studies of these organizations have a great deal to tell us about "recogniz[ing], support[ing], encourag[ing], and nurtur[ing]" CoPs (Wenger, 1998). These formal organizations are distinct from the CoPs—the CoP is a part of the organization, but not limited to the organization—and frequently have leaders who are not members of the CoP. However, the leaders of the organization are in a position to recognize the need for the CoP and encourage its development.

Helping an organization move its CoP to an online venue occurs in phases with the assistance of a community developer—a member of the technology development team who works with an organization to bring its CoP online—or a designated community manager from the organization who has experience in working with online communities. In the first phase, Getting Started, the organization focuses on defining its goals and vision for a CoP, learns to use the online features, and undertakes an initial online activity. Next, in the Modeling and Scaffolding Phase, CoP members identify their community leaders and carry out a range of activities to see what works for them; in this process they consult with the community developer and gain confidence in working online. Finally in the Maturing Phase, the new CoP leaders bring in new members and manage the overall health of the CoP (see Figure 1 for a visual representation of this process.)

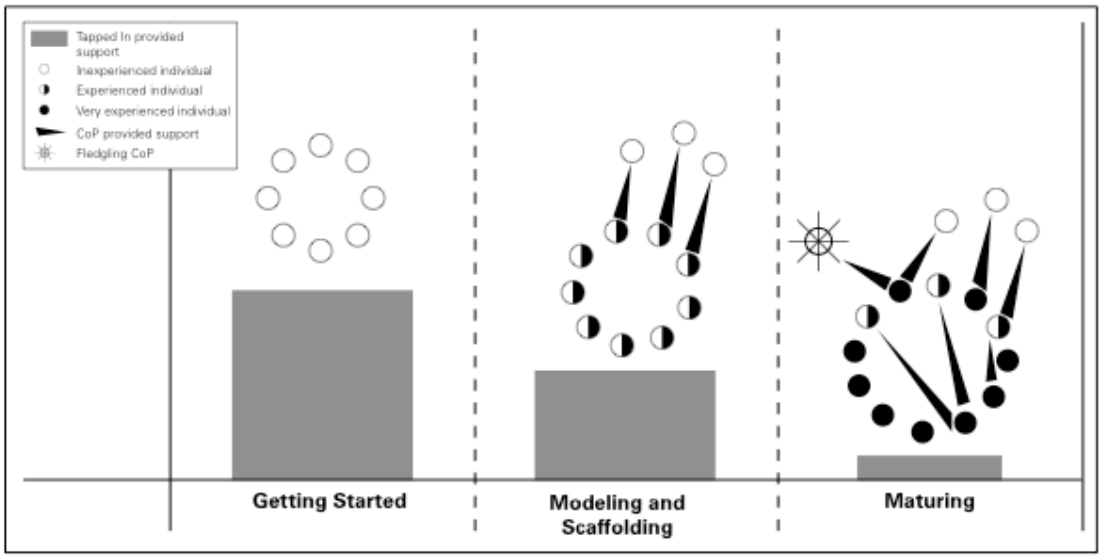

Figure 1. The three-phased process of moving the work of a CoP online. The community developer's support of the CoP decreases as individual CoP members' online, CoP, and community support experience increases. This process enables the CoP to support themselves.

The Getting Started Phase

The Tapped In community developer works first with the organizational leaders and a few initial participants to begin training online leaders and to move one or two of the CoP's activities online. Throughout all three phases in the CoP's membership cycle, the

online leaders, in turn, work with all the CoP members through this same Getting Started Phase to bring them online.

Identify goals and needs. It is important to spend some time talking with different members of the organization and CoP to ascertain their goals for their organization and for a CoP, as well as members' needs. This process helps members articulate their goals for their CoP—both online and off—and gives the community developer some ideas for activities they may want to start with online. Differences and similarities between the goals of the organization and CoP are noted. The community developer fosters activities that have immediate value for both entities.

Demonstrating the *immediate* value of an online CoP is crucial: the majority of people will not spend time now if a CoP only has *future* value.

Meeting an immediate need for an existing CoP or an organization's vision for a CoP works well to bring an organization online. However, some organizations may have only immediate needs to fulfill and no vision for the practice; a community of purpose is not a CoP. They may view the online venue as a way to *create* a CoP rather than a means to support its work. If an organization has conflated CoP with community of purpose and views an online option as the answer to its problems, the community developer should provide examples of communities of purpose as well as CoPs and their work (see *Connect with other CoPs* below in this phase for details).

Identify online leaders and initiators. Once the community developer has interviewed organization leaders about prospective members and online leaders to understand needs, vision, and existing community elements, identifying potential *initiators* and working with these individuals must begin immediately. Often, the online leaders identified are too busy to address online CoP needs immediately. It thus may be better to work with individuals who are ready to get started (i.e., the initiators) and draw the online leaders of the organization in through the online activities. To determine who is ready for online work one-on-one phone conversations can be conducted with each potential initiator. Talking with these individuals also helps build relationships with them and the organization.

Identify level of experience. Learning what experience the initiators and organization have with online technologies and the CoP aids the community developer in planning how to get them online to participate in activities that matter to them and their CoP. A two-dimensional chart is useful in depicting initiators and the organization as a whole in planning technology training, CoP discussions, and online activities.

For example, if many of the initiators are inexperienced with online technologies, online training with audio capabilities can be held to provide basic guidance in using the system. All initiators should be in the same room, with the person who has been working with the community developer. The community manager is online. If the members are experienced in using online technologies, the members could be in different locations and

meet in a specific room online. A phone number for the community manager serves as a backup if anyone has trouble getting online.

If CoP experience is limited, the community developer can provide examples of other CoPs online, including their goals and activities. The community developer may contrast these CoPs with communities of purpose that focus on tasks or gaining knowledge about specific areas.

		CoP Experience		
		High	Medium	Low
Online Technology Experience	High			
	Medium			
	Low			

Table 1. Mapping both individuals' and the organization's CoP and Online Technology Experience helps the community developers focus their efforts.

Introduce the technology space. The initiators first meet online in the technology space that the group will use. Once the initiator or other leaders are comfortable, they should organize a face-to-face training session with other CoP members who have access to the online environment. The community manager co-leads the training with the initiator online. The training session introduces the tools needed in the planned CoP use. Another online meeting or activity, but this time with members not in the same room, should be scheduled a week or two after the initial training session.

Establish trust. Building members' trust—both in organization leaders and with other CoP members—is key to CoP success (Carlson, 2006). Going online adds two new dimensions of trust. Two-way trust must develop among the community builder, organizational leaders, and online initiators. That is, the leaders and initiators must trust the advice of the community builder, and the community builder must trust the commitment of the leaders and initiators to enact the agreed-upon strategies. The second dimension of trust is between the CoP members and the system itself. Community members must trust that the system will meet their needs, overcome constraints, and match their capacity. The trust, established with the community builder, must be reinforced by the tools available in the online environment.

Along each dimension, trust among members is based largely on multiple positive interactions, comprehensive understanding of each member's identity, and concurring opinions of other trustworthy members (Buskens, 1998). Trust-building encounters among the community builder, organization's leaders, and initiators may begin offline, but eventually moves online. Online interactions frequently allow people to get to know each other in new ways. Online tools such as discussion boards and chat tools that enable and capture conversations, and profiles that indicate members' online activities and connections with others in the community make members' activities visible over time to each other.

Initiate an activity. Working with the initiator(s), community developers form a plan for implementing an activity online as soon as possible with the CoP members who are ready. Getting started involves translating activities regularly conducted face-to-face into a form that works well online and serves a purpose. As noted, starting with an activity that connects to an immediate need and is comfortable for the organization is important. Planning often involves choosing a motivating activity that cannot be accomplished face to face (e.g., collaboration between two classes of geographically distant students) or a face-to-face activity that can be accomplished more effectively, accessibly, or cost-effectively online (e.g., engaging students who are quiet when face to face in reflective discussion online).

Frequently, Tapped In community developers begin working with the initiators online as a group so that they can interact online with their peers before bringing others online. If possible, we also introduce the new leaders to leaders from other CoPs who have mastered the online environment. Such interactions are illustrative of the power of the constellations of CoPs: another CoP in the online system is supporting the new organization.

Not every organization successfully progresses past the Getting Started Phase; initiating an activity takes time and investment. On average, 4-5 hours of one-on-one work are required with the community developer for initiators to reach the point of being ready to work online.

Encourage collaboration. Some CoPs members may struggle with collaboration. An individualistic approach to practice is deeply ingrained in the U.S. cultural psyche and specifically in the teaching culture (Hofstede, 1991; Lortie, 1975). In fact, some view sharing and collaborating as a "loss" rather than a "gain" (Toole & Louis, 2002). The community developer thus often needs to work with the organization leaders and the initiators to find ways to demonstrate to CoP members the benefits of collaborating and sharing information to further CoP work.

Connect with other CoPs. Educators have referred to Tapped In as a network of communities or a *constellation of practices* (Schlager & Fusco, 2003; Wenger, 1998). Tapped In members can participate in more than one CoP within Tapped In or elsewhere. Tapped In facilitates the sharing of expertise and ideas across CoPs in forums such as After School Online (ASO), a weekly series of hour-long real-time discussions on topics suggested by Tapped In community members, led by volunteers recruited from the community and available to any member of Tapped In (Schlager, Fusco, & Schank, 1998). The virtual reception room of Tapped In is also a gathering place for members of different CoPs to connect and a place to meet with experts who are part of the Help Desk (volunteers in the chat system who help with problems) (Schlager, Fusco, & Schank, 2002). The members who belong to multiple CoPs act as "bridges" between CoPs, helping with the flow of information among CoPs (Kossinets & Watts, 2006). ASO and places like reception allow interactions among members that encourage the growth of

existing, emergent, and new CoPs; these gathering places are built into the social-infrastructure of Tapped In (Schlager, Fusco, & Schank, 2002).

Case Study: Organizations Getting Started

In 2006, the Tapped In team began working with six university teacher education programs whose common mission was to support teacher candidates in the field and graduates during their induction into teaching. Each organization had received a 5-year grant to help improve the way new teachers are prepared and to help graduates of the programs thrive during and beyond their first years of teaching. The six organizations, with faculty and pre-service teachers, had formed internal CoPs. However, they were reaching a point in their work at which their candidates were graduating and the faculty needed a way to keep in touch and support these teachers as they began to teach.

Faculty, administrators, and pre-service teachers from the six programs reviewed many technology options and chose to use Tapped In primarily because it would enable them to create an umbrella CoP for all of the organizations, in addition to meeting the needs of each organization (see Figure 2). Tapped In was the only system that made it easy to communicate across organizations and among their existing CoPs. Members could make the spaces as open to others or as private as they needed. To promote cross-institution sharing, common virtual spaces (e.g., reception rooms, conferences rooms, cross-institution group rooms) were provided for collaboration.

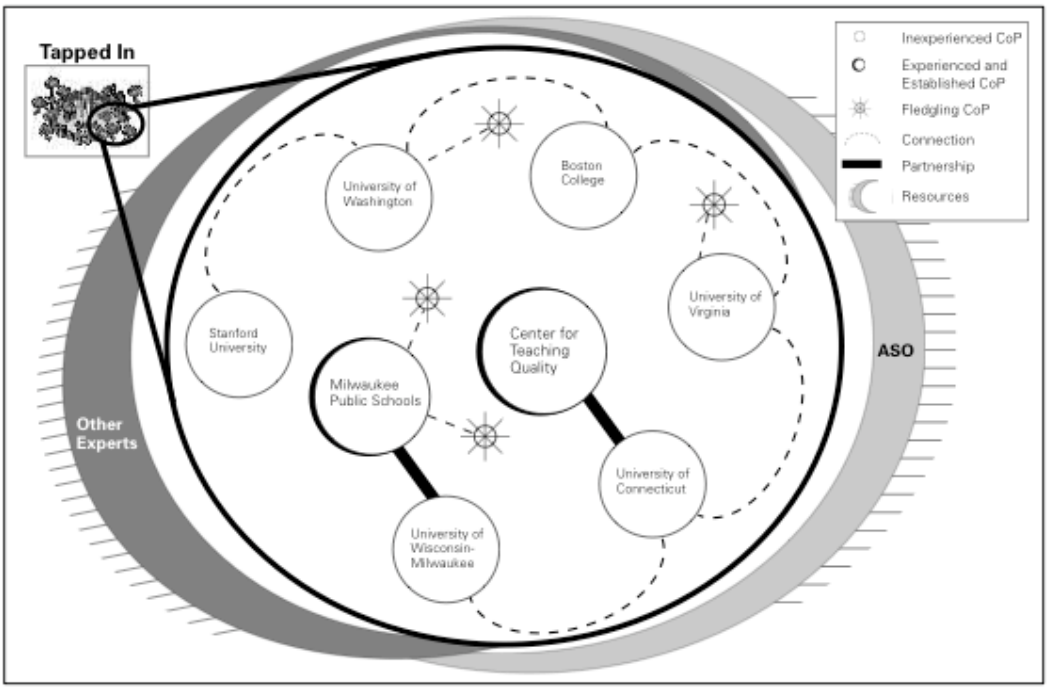

Figure 2. Several CoPs in a segment of Tapped In that have connections to and partnerships with each other and are developing new CoPs. These CoP connections and resources embedded in the Tapped In environment enhance the work of each CoP.

During the Getting Started Phase, Tapped In community developers talked with leaders from each of the institutions, usually on the phone, to **identify their goals and needs** as well as with the online **leaders and initiators** who would start working online. The

community developer **encouraged collaboration** among the six organizations and promoted the idea of sharing resources rather than having each organization duplicate the same activities. The community developer also spent time putting cross-institution supports in place (e.g., a panel of Tapped In experts from different CoPs in Tapped In that the six institutions could call on for help). A Managers Group Room kept everyone informed of the activities across institutions. In the Managers Group Room, the community developer **modeled online facilitation strategies**, such as posting articles for people to read and discuss, offering starting prompts, and raising questions. The community developer modeled the types of posts that encourage participation and discussed with the initiators and leaders how to use these facilitation strategies in their own groups.

The community developer **introduced the organizations to the technology space** after talking with the leaders and inviting eight of the initiators to an initial technology training and brainstorming session. This session provided an understanding of the initiators' **technology experience** and some insight into the **initial activities** that might work well. The initiators needed to see the technology, its capabilities, affordances, and limitations to visualize their initial activity. Two months passed before an initiator, a professor working with pre-service teachers, developed her first online activity to bring other participants online. The community developer's goal was to *integrate* the online activities into existing, *timely* projects. Making the activities immediately relevant to the CoP was important. For the pre-service teachers, introducing the online activity early in the course (the professor did so in the first class period) was crucial so that they knew it was an important part of their whole course experience, not a peripheral activity.

The community developer and the professor discussed ideas for the **initial activity** and considered how best to use **the technology space**. The community developer **identified the professor's level of experience** in regard to both the technology and CoP dimension. From this information, the community developer knew that they needed to focus on making sure the professor gained experience with the online system. The professor had 3 weeks to prepare for the class and integrate the Tapped In system into her curriculum. The community developer and professor used the course syllabus as a collaboration point: the community developer suggested online activities, and the professor reviewed these suggestions.

Because the initial activity went well, the community developer and the professor now began to work with a second group of pre-service teachers, with focus on getting them comfortable with the technology, **encouraging them to collaborate** with each other, and **connecting with other CoPs members**. The community developer was able to point out experts and public discussion sessions that would be of use to the professor and pre-service teachers. Through experiences in their CoP and the larger Tapped In community, we worked to **build their trust** in the Tapped In tools, community, and members of their CoP.

After the initial activity where leaders and participants began to see the possibilities of a virtual CoP, they moved into the second phase of **Modeling and Scaffolding**. In this

phase, with the community developer they focused on building the capacity in the organization to lead and manage the online CoP itself.

The Modeling and Scaffolding Phase

At first, the organization's leaders may have had only a theoretical understanding of an online CoP and may have wondered if it actually could be implemented. The Getting Started Phase has created a successful experience for several CoP members online. The community developer may have worked with them to create a class experience, a mentoring relationship, or a dialog among organization leaders that demonstrates to them the value of working online. With that experience, they now know that they can do work online. The initiators and leaders of the organization are also experiencing or envisioning specific benefits for themselves resulting from the online CoP. These benefits may take the form of a professor learning that her students have more questions about the materials than she realized, indicating a need for further clarification, or a professional development leader realizing that teachers will go online at all hours to use the discussion boards to discuss a pedagogical issue.

In the Modeling and Scaffolding Phase, these experiences enable the community developer to move from modeling community management behaviors to making those behaviors explicit and scaffolding them for the identified CoP leaders.

Try different types of activities. Once they have seen how it works, CoP members should be encouraged to try out different types of activities on their own. Community developers can encourage members to view themselves and other members as resources for reflecting with them on the activities and developing ways to assess what has happened.

Engage in ongoing reflection on online activities. Reflective dialog may be the most important process during the creation of the CoP. In this intermediate stage, the participants and leaders in the CoP are gaining a deep understanding of how collaboration works. They are learning strategies and starting to adapt these strategies for use in their organization.

In this phase, the community developer helps groups assess their progress and shows them some of the functionality built into the system to help with this assessment. For example, the "About Us" area in group rooms is a quick way for a leader of a group to see how active all of the participants have been. It shows the last login and the number of discussion board posts, and it provides posters' e-mail addresses and a way to e-mail from the About Us area. Tapped In community developers emphasize the importance of communicating with their members who "go missing" to find out why they have done so. Are they missing because they cannot remember their passwords, are they shy about participating, or do they not feel it is important to interact online? The CoP leaders need to "take the pulse" of their nascent community frequently to determine what is happening in their CoP.

Make online facilitation explicit. Throughout the Getting Started Phase of bringing the CoP online, the community developers model best practices in online facilitation. As the new CoP leaders do more facilitating, the community developer introduces resources such as *Facilitating Online Learning: Effective Strategies for Moderators* (Collinson, Elbaum, Haavind, & Tinker, 2000) or the article "Facilitating Deepened Online Learning" (Haavind, 2005) from the E-Learning 2005 conference to increase their understanding.

Help CoP leaders define specific roles for online leaders. In a new virtual CoP, the organization needs to define the specific roles and responsibilities for CoP staff and facilitators so that new members understand where to go for help. Typical roles include community manager, cadre facilitators, help desk staff, and discussion leaders. Those in the defined roles should have associated ongoing tasks and responsibilities, and should report CoP development progress regularly to the CoP leaders. Identifying a Community Manager from the organization or existing CoP is a critical step in moving from community developer modeling and support of the community to a sustainable model that the CoP itself can support.

The CoP leaders also need their own group room in which to meet (see Figure 3). As critical resources for one another, the leaders need a place to share their collective wisdom. An essential leadership role is the community manager, who conceives of and manages the activities and services that keep people engaged, connected, and feeling supported.

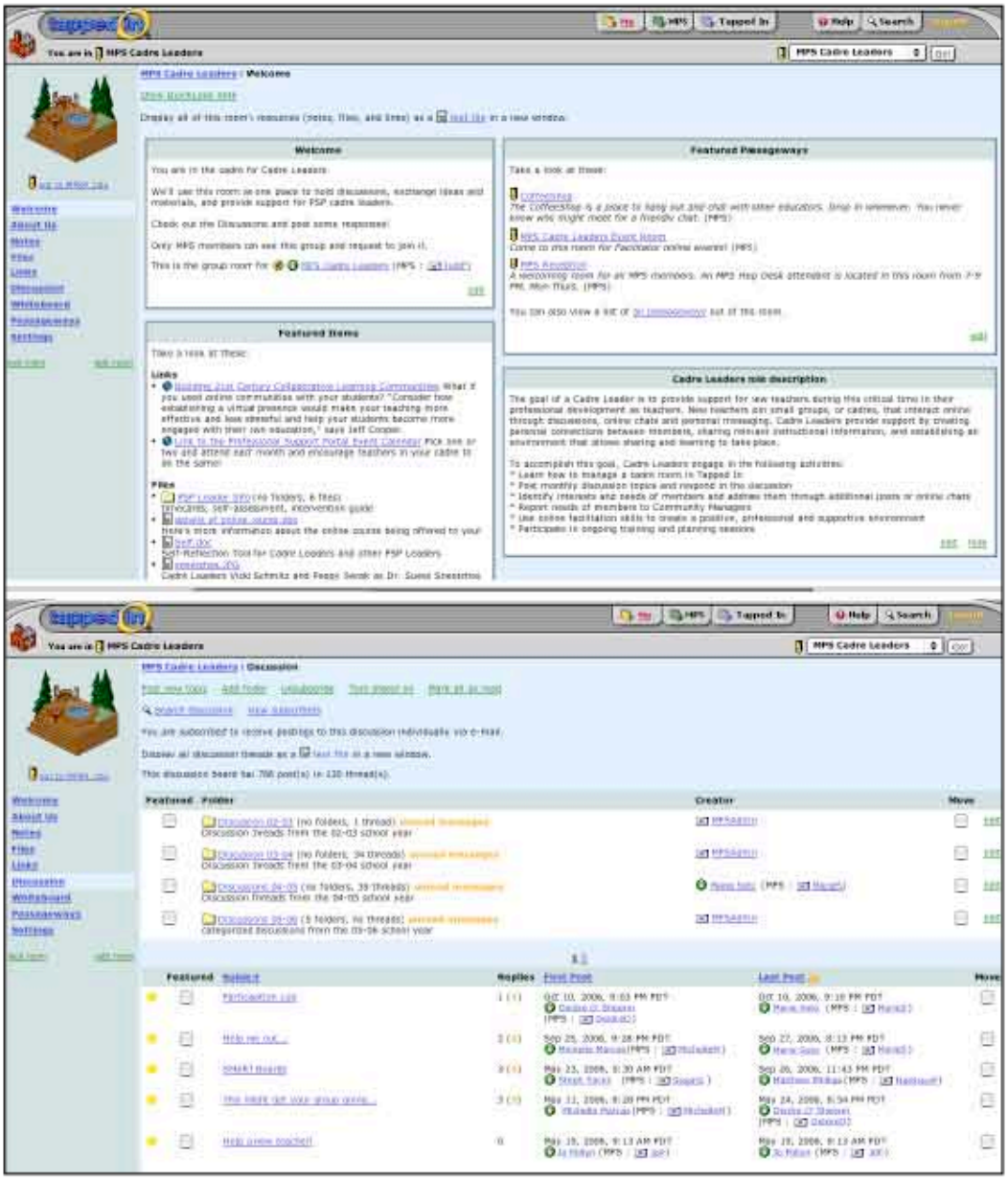

Figure 3. The Cadre Leaders Group Room of the Milwaukee Public Schools. Shown here are the Welcome page and the Discussion board.

Nonparticipation of the community developer. In Wenger's writing about CoPs (1998), he discusses the concept of nonparticipation that helps define identity as much as participation. In part, we are defined by what we are not. As CoP members become CoP leaders, the outside community developer must stop participating. Even though the community developer led the initial online effort, she has been facilitating the

participation of the CoP members, not her own. The community developer helps the new community leaders engage in legitimate peripheral participation (Lave & Wenger, 1991) in the Getting Started and Modeling and Scaffolding phases. As a result, they can become full participants and can take on more responsibility for managing the community. Transition to nonparticipation by the community developer is thus necessary. Bruckman (2000) argues that if this transition does not occur, the community is in danger of withering when the leader leaves.

Plan for growth and sustainability. In this phase, the organization and CoP members develop a plan for CoP growth and sustainability by answering questions such as: Who are the online leaders, facilitators, and technical supports? What are their roles? How will facilitators learn to facilitate? What is the plan for the types of activities we will offer? How and when will we check in with each other to reflect on how the CoP is going? How will we know we are meeting our goals? Having a flexible but concrete plan in place aids in the transition from the community developer's leading the effort to the CoP leaders' providing leadership**.**

Case Study: Modeling and Scaffolding for Milwaukee Public Schools

In 2002, the Tapped In team began working with Milwaukee Public Schools (MPS). This public school district for the city of Milwaukee, Wisconsin has more than 200 schools and 6,000 education professionals. This 1-year pilot program was mounted to determine if an online CoP could help support beginning teachers during their induction years. In addition, MPS was looking for a way to support teacher retention and continued professional growth at all stages of the teaching career continuum. MPS had immediate needs it wanted to achieve with its CoP, but it also had a long-term vision for the CoP to which many areas of the district were committed. MPS established a Professional Support Portal (PSP) of which Tapped In was a part.

During most of the first year of the project, MPS was in the **Getting Started** phase. The community developers worked with PSP leadership to **create community leadership positions and recruit and train MPS teachers to fill those positions** (as cadre leaders to support new teachers online). MPS assigned a full-time staff member to **the role of community manager**. The community manager, who conceives of and manages the activities and services that keep people engaged, connected, and feeling supported, then recruited a part-time trainer and five part-time help desk staff to serve as the core support team.

After the leadership decided what it wanted to accomplish and how to do so, the community developers worked with cadre leaders to **initiate activities**. They helped the core team, cadre leaders, and district experts develop their own competence with **online facilitation strategies** by being with them online in real time to model community norms and conduct, such as introducing themselves to and assisting new users, encouraging and assisting new community volunteers, and being respectful of multiple points of view. To help new teachers develop a sense of ownership in the network and competence with online discourse strategies, the community developers instituted a series of weekly online colloquia on topics suggested by the community and led by experts recruited by PSP

staff. The Tapped community developers worked with the guest speakers to help them prepare for their sessions and as moderators during sessions (via telephone and online private messaging) to help speakers model and foster appropriate norms of online discourse.

By the end of the school year 2003, 332 MPS staff members had established Tapped In accounts and formed 40 groups. From January 1 to May 31, 2003 this first year, 237 members logged into Tapped In.

MPS was dedicated to making the transition to managing its CoP itself. The district moved quickly through the **Modeling and Scaffolding phases** on to the **Maturing Phase**. Early in the second year, the MPS community manager, MPS help desk staff, and cadre leaders were leading the CoP online, and the community developers had transitioned from **central participants to peripheral participants**. The district **encouraged these leaders** through compensation and recognition within the CoP and the larger organization.

MPS's online CoP and PSP continue to thrive. In September 2006, 890 MPS education professionals had Tapped In accounts, and there were 49 groups. Between January 1, 2006 and May 31, 2006, a total of 587 MPS members logged into Tapped In. Their active participation in the online CoP more than doubled from their first year.

The Maturing Phase

In this phase, the leaders of the CoP, including the community manager, are central participants, leading the efforts of the CoP online, including bringing new members online and taking responsibility for CoP health. The initial outside community developer is now mostly a nonparticipant, but is available to take questions, make links to other CoPs, and serve as a strategic advisor whenever needed. New developments that sometimes occur during the Maturing Phase include a branching of CoP members' work that connects with an existing CoP or other organizations. New CoPs may develop.

Bring new members and institutions online. The community manager and other online leaders are now in charge and continue to iterate on the Getting Started Phase to bring new members and institutions online. The leaders help new members come online by setting up online trainings, with face-to-face trainings if necessary. They also determine whether facilitators have the resources they need to be effective.

Check the health of the CoP. Online leaders and facilitators use leadership group rooms to reflect on what is and what is not working in order to make improvements. Leaders know how to use community management tools—both technical and social—for assessing CoP health of and addressing its needs.

Keep in touch with related CoPs. Online leaders keep in touch with other CoPs that have similar interests to mine their expertise and to share resources.

Encourage the emergence of new CoPs. Sometimes groups within a CoP develop into their own CoP, or a member of a CoP may connect with others to form their own CoP. Often these new CoPs retain connections to the original CoP. The Tapped In online environment supports communication among these multiple, interwoven CoPs.

Encourage stakeholders to participate. Other stakeholder organizations within or connected to the organization now online may benefit from coming online in connection with the CoP to work together more effectively.

Case Study: Pepperdine University Maturing

Pepperdine University's Graduate School of Education and Psychology, located in Malibu, California, has used Tapped In for its master's and doctoral programs in education, working groups, and professional development opportunities for practitioners since 1998. Alumni and students participate in online activities and discussions; the community manager and instructors **check the health** of this community by seeing how many people are attending the events and participating in the discussions. The graduates of Pepperdine go on to be leaders in education in other settings, frequently **bringing new members and institutions** that they belong to into Tapped In. For example, two graduates who are now faculty at two other universities used Pepperdine's master's program as a model for their own programs. Both universities incorporated Tapped In into the work of their CoPs. Often these organizations have CoPs that are beginning to form. **A virtual CoP may emerge** as a result of the connection to Pepperdine and the organization's efforts to support a CoP. These new virtual CoPs may share activities and resources with faculty who are at Pepperdine, and with the CoP of Pepperdine alumni, allowing them to **encourage stakeholders to participate** and providing a means for **keeping in touch across CoPs**.

Conclusions

Virtual CoPs can start from *existing* or *emerging* physical CoPs that move online, or they may get their start online from the collaboration of another virtual CoP or group and then grow into their own virtual CoP. Our phased approach of bringing CoPs online encourages sustainable growth of the virtual CoP by developing an organization's internal capacity to use the system and provides a forum for them to further define and refine their vision for their virtual CoP: we provide the soil and the water while the organizations, such as Milwaukee Public Schools, bring the seeds. Some virtual CoPs also sprout new virtual CoPs (e.g., Pepperdine University).

It is important to note that not all online groups or CoPs that attempt to work online become virtual CoPs. For example, the CLTNet community mentioned earlier in this chapter has all the tools to support a CoP. Many CLTNet members who may belong to a CoP make use of CLTNet resources for various activities such as courses, working groups, and events, but no CoP has specifically moved into CLTNet to do its work. Why? It may be that the main users of CLTNet (university faculty and graduates students participating in a CLT) have CoPs that are not entirely defined by the CLT. For example, many university professors in education belong to a CoP through the network of professionals that they or their university has developed. Given the technologies available

to them, they may not see a need to move their existing CoP to a specific online environment. It also may be that their vision for their CoP is still being defined.

In our work with organizations and their CoPs, we have noted that the organizations with a vision for their CoPs and the role of online interaction in that vision are the ones that succeed. As noted in the description of the Getting Started Phase, we can work with them to articulate their vision and move forward online, but we cannot create that vision or design their CoP for them. We can help them connect an immediate need that they have to their vision so that members who might be reluctant to invest the time will have their immediate needs met while contributing to the growth of the CoP. However, an organization with many immediate needs that hopes that a vision will result from addressing those needs is likely to be disappointed.

Because vision is so important, we spend time at the outset in our phased approach helping an organization articulate its vision. Our phased approach enables us to help leaders understand not only what is possible online, but what is possible in growing virtual CoPs.

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