Consider the following scenario. The Association of Technology Enthusiasts decides that it can save a tremendous amount of time and expense—for itself and its membership—by eliminating its annual conference. Since its members come to the annual conferences for the thought-provoking presentations on applying technology to anything and everything, why disrupt members’ day-to-day routines by having them come to a conference at a distant location and stay at a costly hotel when existing technology can streamline the conference experience? And the streamlining process is so simple: all sessions that are scheduled to be presented at the annual conference will instead be posted on the association’s Web site. Members will be able to download any and all presentations. And these are not simply lecture notes or documents; these are full-featured videos of the presenters, including animated PowerPoint slides with voice-overs and with Web site links to additional references. The association’s members will have all the content they would have experienced at the conference, and more—because they won’t have to choose among overlapping conference sessions.

You don’t automatically throw a great party by hiring a room and buying some beer. Someone needs to invite an interesting mix of people, greet people at the door, make introductions, start conversations, avert fisticuffs, encourage people to let their hair down and entertain each other.

What's wrong with this scenario? The answer is obvious: conferences are only partially about content. More important than the content—and after six months, usually much more memorable—are the opportunities for collaborative learning, for networking and relationship-building, and for developing new research or funding opportunities that emerge from personal interactions. It's the social context of the experience—not simply the content—that energizes a conference and makes it worth the effort and expense. Should the Association of Technology Enthusiasts actually eliminate its annual conference, before long even its members would likely call for the reestablishment of their face-to-face meetings.

We attend conferences for the conversations, among other experiences. Through conversation, we create a common ground from which we can explore the issues and problems of our professions and practice, as well as potential solutions. Conversation is the engine for work, for community, for decision-making, and for collaboration. However, the conversations we have at conferences are ephemeral. If we could find a way to make the conversations persistent, what effect would that have on our ability to construct knowledge collectively? Certainly, synchronous digital communications, such as chat or instant messaging, can be persistent in character, especially if a transcript is saved. According to Thomas Erickson: “Persistence expands conversation beyond those within earshot, rendering it accessible to those in other places and at later times. Thus, digital conversation may be synchronous or asynchronous, and its audience intimate or vast. Its persistence means that it may be far more structured, or far more amorphous, than an oral exchange, and that it may have the formality of published text or the informality of chat. The persistence of such conversations also opens the door to a variety of new uses and practices: persistent conversations may be searched, browsed, replayed, annotated, visualized, restructured, and recontextualized, with what are likely to be profound impacts on personal, social, and institutional practices.”

Further, part of the power of conferences is that we are co-located. We are together in space and time, and we are able to give and receive immediate feedback. If we could find a way to provide a powerful sense of the presence of others who were not physically at the conference, how might that expand the network of interconnections that conferences make possible?

New social software technologies can support the conference experience, and perhaps go beyond, by providing such a “container” for persistent conversation and for the social presence of those participating remotely. Indeed, new technologies are emerging that not only deliver content on demand over the Web but also support what might be thought of as the social architecture of an organization or community. When these technologies are brought to bear on the experience we call “conferences,” they can significantly enhance the value and effectiveness of the learning experiences and personal interactions that occur when people gather in traditional face-to-face venues to share knowledge and ideas, explore new directions for their professional work, and connect with colleagues whom they may see only occasionally. When handled with skill, these social software technologies promise to transform the conference experience.
Pascal Kaplan and Soren Kaplan, co-founders of iCohere (http://www.icohere.com) and developers of the Web-based collaborative environment of the same name, worked with Vicki Suter and a team of NLII Fellows (past and present) and NLII VCOP (Virtual Community of Practice) facilitators to create a temporary parallel virtual environment, termed the San Diego Experiment, at the NLII 2004 Annual Meeting. Every meeting attendee had access to the San Diego Experiment to explore new Web-based collaboration technologies and to share resources during the meeting. Most meeting presentations, handouts, related URLs, and notes taken by theme synthesizers were available on the site immediately after sessions. As a keynote speaker, Bryan Alexander utilized the environment. Those who wanted to comment on his presentation during his session could do so publicly via the wiki he set up; others could discuss the presentation in the San Diego Experiment—synchronously in informal virtual meeting spaces and asynchronously with the presenter and others in a discussion on “New Learning Ecosystems”—and attendees contributed additional resources relating to the presentation themes. Recommendations, feedback, and activity within the San Diego Experiment informed the design of the Bridging VCOP, which then served as the environment for the NLII spring 2004 online focus session, “Empowering Institutional Communities of Practice to Transform Teaching and Learning,” and as the virtual environment for the NLII face-to-face summer focus session, “Bridging Communities of Research and Practice to Transform Higher Education Teaching and Learning.”

experience; afterward, communities might even coalesce and continue to work on their collective knowledge-building. We have already seen some experimentation in this area for individual presentations. A conference-wide example is the San Diego Experiment at the NLII 2004 Annual Meeting.

The social software idea has taken off as a movement recently, based on the key insight that technologies can work not only as autonomous entities, such as a game's artificial intelligence, but also as social multipliers, enhancing our abilities to connect with other people, share ideas, work collaboratively, and form communities. As Howard Rheingold notes, we should “expect the unexpected when previously separate technologies meet.”

New Web applications have proliferated to support this social drive: Friendster (http://www.friendster.com/), LinkedIn (http://www.linkedin.com/), Tribe.net (http://www.tribe.net), orkut (http://www.orkut.com/), Flickr (http://www.flickr.com/), Eliyon (http://www.elion.com/), and even a campus-based version, Thefacebook (http://www.thefacebook.com/). And Web publishing tools, such as blogs and wikis, have developed new means for connecting people: the URL post-connector Trackback, the personal linking analysis tool Technorati, and the blogosphere-scanning index Blogdex. At the same time, social network analysis (SNA) theory has grown in depth and application, allowing us to better understand the connective patterns between people.

The social software movement rekindles our thinking about the socializing features of virtual spaces, which cease to become individual sojourns in isolated content and emerge as zones for information-sharing, collaboration, exploration, and extended community process. In this sense, the software supports a sense of social presence as well as place. At a conference, such a virtual space can help strangers connect through content items, even if they don't recognize each other's appearance. The content can be pre-populated or can be generated live during events. Public and private interaction levels offer different ways to approach other participants. Synchronous and asynchronous options allow different timelines, and time can be shifted in another way as well: the conference experience can actually begin before the conference and extend well after it.

Let's look ahead to the near future, to a conference in which the material and the virtual are fully intertwined and functioning through well-designed, well-integrated social architecture and technical architecture. The social architecture would enliven the experience and includes “the roles, processes, and approaches that engage people together—whether face-to-face or online—in relationship building, collaborative learning, knowledge sharing, and action.” The technical architecture would include software and hardware for social computing, communication, collaboration, geolocation, and content/knowledge management—all working together in a wireless mesh that is persistent, pervasive, and mobile.

Before the Conference

Registering for a conference provides a participant with immediate access to a secure conference Web site. This Web site provides the standard travel, hotel, and scheduling information that one expects from a site publicizing a conference, but it is based on collaborative community software. Such software delivers content and also provides a variety of mechanisms for launching the interactive and social networking dimensions of the conference.

To begin, each participant fills out a professional/networking profile and uploads a photograph. Because these can be searched by keyword, participants start contacting one another using the built-in tools of the platform: real-time meeting (chat) capabilities or private messaging within the platform. As shared interest areas emerge—areas that might reflect the structure of the upcoming conference or complement it by expanding on core themes—subgroups form spontaneously among the participants. Such subgroups or special-interest groups organize themselves into discussion forums and begin the process of collaborative interchange and learning. Because sufficient time is allowed before the conference, participants are not limited to exploring just one or two “tracks” but can dip into as many of these special-interest areas as they like, expanding the horizons of their own understand-
ing and learning by seeing how lines of exploration of secondary or even tertiary interest to them might nevertheless relate to their areas of primary concern.

In addition, small subcommunities of interest organized around a particular conference theme might identify all the conference presentations on that topic, contact all those speakers, and offer the speakers the opportunity to share their presentations beforehand, so that they can get feedback from the community and learn about the relationship of their projects to those of others who are already working in the same area. (This approach is already being used by the NLII Electronic Portfolio Action Committee [EPAC] Virtual Community of Practice.) The result might be better presentations and more fully integrated tracks, with each presentation being a clear part of a larger, thematic whole.

The conference community thus starts to coalesce and become energized before any session presenter begins to talk.

**At the Conference: Day One**

With social software environments—where content, interaction, and collaboration are integrated—the conference experience is no longer confined to content delivery. Because presentations have been available online weeks before the face-to-face session, the time that people are actually together in physical space can be transformed from the standard one-way lecture format into a wide array of interactive and experiential learning opportunities.

Of course, additional content may still be presented in conference plenary sessions and smaller breakout sessions. But now these sessions are recorded—in audio and/or video, including slides and even drawings made on physical whiteboards or flip-charts—and are uploaded into the virtual conference space. Thus, new content becomes available almost immediately for those who could not attend the session or those who want to deepen their understanding by reviewing it again. And since this new material is posted directly into discussion forums in the virtual conference space, it not only is available for downloading and viewing but also becomes the basis for further interaction among audience members. During session breaks or after conference hours—indeed, even during the plenary itself if the presentation has been uploaded beforehand—participants can discuss the material online and can expand on the presentation threads that seem most worth exploring.

**Meanwhile, Back at Campus**

The capability of uploading conference activities in real time (or immediately after an event) opens the possibility of extending the reach of the conference to an even larger audience “back home.” Those who can afford the time and expense to attend the face-to-face conference benefit from the many forms of interaction that unfold during a multiday conference, of course. But those who are unable to participate physically can nevertheless participate virtually by logging into the conference site, either individually or with organized gatherings of colleagues in “extended breakout rooms.” As individuals and as self-defined...
subgroups, they can actively participate in the parallel, online dimension of the conference. Overall, conference attendance increases thanks to the accessibility of these extended breakout rooms; the impact of the learning and of the knowledge-sharing is broadened.

In October 2004, at a meeting during the EDUCAUSE 2004 annual conference in Denver, a spontaneous demonstration revealed the power of intertwined virtual and face-to-face environments, the social presence that blended environments can afford to those who are not in attendance, and the high quality of dialogue that can result from such interaction. Several members of the Horizon Virtual Community of Practice (VCOP) were meeting to discuss emerging technologies, and Jim Gaston was briefing those in attendance about an interactive agent (a robot, or “bot”) developed by his team at South Orange County Community College District. Jim was explaining that the agent uses instant messaging (IM) networks and a conversational interface based on natural language processing to respond to student queries about administrative policies and procedures (http://mysiteagent.com).^8

During the meeting, one of the VCOP meeting attendees, Gardner Campbell, was engaged in a chat with several staff members back at his home campus, the University of Mary Washington in Fredericksburg, Virginia. He mentioned Jim’s interactive bot to one of these colleagues, Martha Burtis, and sent her the URL for the project. In the chat, Martha commented about the possibility of “using these types of bots/avatars for any kind of academic use—rather than just providing general university information.” The participants in the face-to-face meeting were beginning to explore the same question at that very moment!

From that point on, off and on synchronously for over three hours, a conversation occurred simultaneously in three environments: in the face-to-face meeting in Denver; in a three-way chat among the University of Mary Washington staff; and in a shared virtual meeting space (one of this article’s authors, Vicki Suter, was taking notes about the face-to-face conversation in an iCohere virtual meeting space, where several of the meeting attendees were also posting notes and comments). One person, Campbell, was participating in all three environments and so served as a conduit between them (and posted the exchanges from the other chat window into the Horizon VCOP meeting space).

The conversation was a lively, intense, and productive discussion about the pedagogy and technology of intelligent agents for instructional use. The separate but parallel discussions were only periodically connected—a kind of syncopated pacing, via Campbell, so that they did not disrupt each other. Occasionally, Campbell would share insights between the two parallel conversations, setting off a new line of thought and inquiry in each. The quality of the combined discussion—and some of the group insights that were achieved about interactive agents, intelligent agents, and how these might be used for teaching and learning—are no less than remarkable and will likely prove the source of much more reflection and, ultimately, publication. Campbell remarked, “This was equal to a
An extended version of this article—the online-only, Web bonus “The Future of F2F”—adds scenarios, digital stories, and links to resources describing in more detail how new social software technologies can support face-to-face experiences such as conferences and meetings. More speculative ideas are explored, including how such software might provide a container for the social presence of remote participants and also for a shared, persistent cognitive space that can better support ongoing personal learning, as well as collective knowledge-building. See Vicki Suter, Bryan Alexander, and Pascal Kaplan, “The Future of F2F,” <http://www.educause.edu/er/erm05/erm051.asp>.

Over the course of the next week, participants reflected on what all agreed had been a compelling, generative experience, and they continued their analysis of what had happened. Nick Noakes, one of the participants, speculated that it was a matter of pacing; neither of the parallel discussions settled into a pattern but instead accepted and incorporated the periodic dissonance (one discussion into another) in a creative, productive way. Campbell agreed but suggested that the “chat/f2f” dynamic was a kind of interactive multiple-conversations event—a kind of 3D turn-taking.

The entire exchange was captured in the Horizon VCOP virtual meeting space and was then made publicly available on a wiki, <http://careo.elearning.ubc.ca/wiki?VickiSuter/HorizonVCOPNotes>. Participants continue to use these notes to reflect on the experience (and Burtis and her University of Mary Washington colleagues continue to explore the educational use of intelligent agents).

At the Conference: Day Two
The best professional-development conferences are, at heart, learning environments. Many of the deeper learning principles suggested for the use of technology in higher education teaching and learning hold true for professional development as well. Deeper learning

- requires ownership,
- encourages engagement,
- is a social process,
- is contextual or situated, and
- is an active process.9

It’s a bit ironic to attend a conference on deeper learning and the improvement of teaching and to find oneself sitting in a large auditorium, watching PowerPoint slides, and listening to someone deliver a traditional-style lecture. Even if the presentation is thought-provoking, even if the presenter is charged with enthusiasm, even if the slides are animated, even if the podium is shared with a panel of highly respected thought leaders in learning theory, even if . . . , one is left with the feeling that a grand opportunity has been missed, that gathering together so many creative and talented people could have resulted in an experience with a very different quality—or at least different from that of sitting in a lecture hall.

Although a well-prepared and enthusiastically presented lecture can indeed spark ideas and insights, the electricity really starts to flow after the formalities, when those who have been sparked by some idea or insight in a presentation come together at the front or the side or the back of the room and engage with colleagues and the presenter(s), to share stories and experiences that play out the implications of what has just been presented. Further, if one thinks of a conference environment as a learning environment, and reflects on how technologies might facilitate learning for the participants (which is certainly reasonable if the conference is about the use of technology to transform teaching and learning), the idea of a virtual environment that echoes the physical and intellectual conference space—and likewise, of a physical conference space that has virtual extensions—becomes even more compelling.

We already know many of the benefits of using virtual space for teaching and learning. For example, one of the best-known advantages of a virtual space is the lack of geographical identification. A student posting to a class blog or wiki could be living in Vermont or Moscow, whereas the class lecturer next week might be streaming audio in from Tokyo. In the conference context, those who aren’t able to attend because of geographical restrictions can still participate and make important connections with ideas, practices, and people.

More recent work has also reinforced a kind of spatial tethering—the linkages between virtual space and physical space—by seeking to geolocate digital materials. Web sites like GeoURL (http://www.geourl.com) and thinkers like David Weinberger (“The Semantic Earth”)10 have followed the pioneering work of J.C. Spohrer, whose 1999 work “Information in Places” first argued for the possibilities of tying access to spatial location. For example, a student in an arboretum could annotate a digital space for an arboreal point with comments and images, to which a faculty member could reply from elsewhere. Geolocation overlays the physical with the digital, adding a layer of data associated with the space. Thus documents and objects could be stationed throughout a conference. A meeting room for an interactive session could have a virtual echo, with all of the necessary materials (e.g., white papers, handouts, PowerPoint presentations) and resources (e.g., URLs) placed on a table in the back of the room, virtually speaking. Even more important, this virtual room could continue to exist after the face-to-face session, with participants (and other interested parties) coming back to engage in dialogue after they’ve had a chance to
reflect—or returning to pick up a resource they had not earlier realized they needed. The digital reinforces the physical by adding a layer of meaning and description, just as an e-mail conversation can enhance one's sense of a Web forum or as a telephone call can deepen one's perception of a person known via the Internet.

Groups that emerge through discussions could also stake out new virtual spaces for themselves. This can lead to breakout sessions grounded more firmly in the rich intellectual and social content brought by all the participants, not just by those selected as presenters. And groups, such as work groups and committees that typically conduct side meetings in and around conferences to complete specific tasks, can have their own meeting spaces within the virtual conference space to support their collaborative efforts.

Finally, learning is intensely personal. The experience of using such a learning environment through a wireless, mobile connection is subtly different from the experience of working on a tethered desktop machine. Most of us feel a more personal connection to small portable devices, especially as they become more like clothing that we wear. A highly networked, wireless conference setting provides the entire conference space with a parallel virtual layer; the two layers can be intertwined into a complete, robust learning environment. Participants can check out, on the spot, resources and ideas that the presenter is mentioning. A remote participant can post comments to a presenter's wiki during a busy question-and-answer session. And because the virtual representation for the presentation persists past the particular time slot of the session, the presenter and other participants can reply to commentary from attendees later, continuing and building on themes that would otherwise fade into memory. In short, mobility combined with asynchronicity can enhance the social multiplier effect of the software.

After the Conference
As currently organized, the three- or four-day conference tends to be one of those experiences that are discontinuous with the rest of our activities. We leave home and office, travel to the conference venue, reacquaint ourselves with people we have met at previous such venues and acquaint ourselves with new colleagues, open ourselves to be stimulated (and overstimulated) by the nonstop opportunities to listen to and actively participate in discussions on topics of professional interest, and then pack up and return home—soon to find ourselves reimmersed in our day-to-day responsibilities, with the fresh energy awakened at the conference fading (slowly or quickly) from our awareness.

That's not bad; after all, vacations are discontinuous, and they are refreshing precisely because we remove ourselves from our day-to-day habits of thought and feeling and open ourselves to new interactions and engagements. The difference between a conference and a vacation is that conferences are ideally designed to stimulate ongoing learning and to reinvigorate the intellectual and professional lives of the participants. Conferences
cannot become vehicles for deep learning if all sense of continuity is lost as soon as the last suitcase is loaded into the airport shuttle. Moreover, some amount of retrievable conference discussion could bring back that moment of reflection into even the busiest schedule.

An integrated conference learning environment does not allow the continuity to be lost so easily. Instead, by remaining accessible and active for weeks or months or, potentially, years after the face-to-face event, the online collaborative environment sustains and augments the energy generated during the physical event. The site is not simply an archive of the original event: the environment now morphs from being a conference support site into a venue for one or more ongoing communities of practice to explore the important themes that surfaced. Such an environment builds a sense of continuity between the experience of attending a conference and the reality of returning to the “dailyness” of one’s professional life, by enabling a wide range of ongoing connections and interactions. It thus has real potential for changing practice. Consider the following examples:

- Threads of stimulating conversation sparked by a chance hallway interaction expand into ongoing topics in discussion areas, engaging colleagues from distant campuses.
- Research summaries that extend and illuminate presentations from the conference are linked to the online version of the presentation and help expand the context and deepen the significance of the issues being investigated.
- Private messaging and real-time chats/meetings continue to support spontaneous, ad-hoc interactions among the participants of the conference community.
- Because the community is an interactive site and not simply a repository of conference proceedings, the dynamism of the conference experience—the social and professional networking that is so central to such events—is extended over time as colleagues reflect on and share the practical and theoretical outcomes of what they learned at the conference.

In addition, as experiences from the blended, face-to-face/virtual conference are shared with colleagues across professional networks, new “attendees” request access to the living conference archives as a way of entering into the experience after the fact. These new participants can fuel additional dialogue.

**Conclusion**

We tend to think of a virtual space as some sort of alternate electronic analog for face-to-face, as a replacement location when the physical is not available. Given the evolution of increasingly sophisticated social software and of the social architecture that can manage its effective uses, we might realize significant advantages if we think of virtual spaces as interwoven or intertwined with face-to-face experiences in equal partnership. The combination may augment the benefits of each—through complemen-
tarity (the strengths of each compensate for the weaknesses of the other) and synergy (the joining creates properties that did not exist when the experiences were separate).12

Until recently, the models for conceptualizing activities in physical space and in Internet space have been limited by the thought that we have to choose one or the other. An initial integration of these apparently disparate spaces emerged when participants in face-to-face meetings (e.g., annual professional society meetings) supplemented their meetings in physical space by creating follow-up listservs and e-mail lists for communication in virtual space. The new conference paradigm we have identified here takes such integration to the next step, allowing the virtual and the physical to intersect. A face-to-face meeting becomes a social archive—accessible, amendable, and mixable throughout the year. The overall conference thus develops into a richer, more useful combination of event and object, an enduring container for experiences and knowledge.

Notes
2. Two examples are “Small Technologies Loosely Joined: Fast, Cheap and Out of Control,” an experimental presentation by Alan Levine, Brian Lamb, and D’Arcy Norman framed as a wiki-blog-chat-fest at the 2004 New Media Consortium (NMC) Summer Conference, which also tapped into participants around the Internet (see <http://carero.elearning.ubc.ca/wiki?SmallPiecesLooselyJoined>); and the NLII session at EDUCAUSE 2004, “Opportunities for Engagement: Creative Commotion and Focused Chaos,” which used wikis and weblogs for structuring and capturing the small group discussions (see <http://carero.elearning.ubc.ca/wiki?NLII>).
4. The blog “Many2Many” is a fine source of information about social software: <http://www.corante.com/many>.
6. The definition of social architecture—developed by Soren Kaplan, co-author with Vicki Suter and Darren Cambrige of “NLII’s Step-by-Step Guide to Designing and Cultivating Communities of Practice”—is available for download from <http://www.educause.edu/VirtualCommunities/576>.
7. See the Electronic Portfolios Virtual Community of Practice: <http://www.educause.edu/ElectronicPortfoliosVirtualCommunityofPractice%28EPAC%29/1154>.
8. For more information about the Horizon Project and the Horizon VCOP, see <http://www.educause.edu/HorizonCommunity/1155>. Jim Gaston presented on his interactive agent at the EDUCAUSE 2004 Western Regional Conference; see <http://www.educause.edu/Speakers/Session/1450/MODE-SESSIONS&PRODUCT_CODE=WRC04/SESS99&MEETING=wrc04>.