This appendix will provide more detail on some of the technology tools available to virtual teams. Note that this is not intended to be a specific endorsement of any product, nor is the list designed to include all features that might be available—it is simply a brief survey of the authors’ experiences in using the tools within virtual teams.

**Audioconferencing bridge lines** – Audioconferencing technologies allow virtual meeting participants to gather easily via telephone to conduct meetings. Meeting attendees are provided a dial-in telephone number and a meeting identification number in advance of the meeting. After dialing the phone number, attendees enter the meeting ID via their phone’s numeric keypad to gain entry into the meeting.

The capabilities of audioconferencing services vary (as well as their costs); however, most service providers have services that can accommodate anywhere from several attendees to hundreds of attendees. Audioconferencing services can have a variety of features, depending on the service provider in use. Here are some of the features that we’ve found most useful in conducting virtual meetings:

- Individual line mutes – This feature allows individual participants to completely mute their lines (both talking and line noise) via the service.
(Note that the mute feature on telephones usually only mutes the talking from that line, not noise on the phone line itself.)

- All participants mute feature – Some audioconferencing services have a feature that allows the meeting coordinator to immediately mute all lines at once. This can be particularly helpful if there is excessive line noise on the call that cannot be narrowed down to the individual, someone puts the conference call on hold (and starts music playing in the background), and so forth.
- Breakout sessions – Some services offer breakout sessions that allow smaller groups from the meeting to gather individually to meet.
- Recording – Some services have a feature where the call can be automatically recorded for off-line listening. This is particularly helpful if you know that you have some team members who cannot attend due to time zone issues.
- Toll-free and international numbers – In addition to a main dial-in number, many services can offer toll-free and international numbers, particularly useful if you have mobile users or a virtual team that crosses geographies.
- Roll call – This feature allows meeting coordinators to listen to a recorded listing of all attendees on the line, culled from how attendees identified themselves when they joined the call.

Meeting management software – Meeting management software provides another layer of features for virtual team meetings, enabling functions such as application sharing, shared viewing of slide sets, and so forth. Use of meeting management software typically involves all participants connecting to a central location (either a PC host or Web site) to join the meeting.

Some examples of meeting management software that the authors have used include Microsoft Netmeeting (for smaller group meetings), Hewlett-Packard’s Virtual Classroom (larger groups), and WebEx (larger groups). Here are some of the generic features that meeting management software (depending on the product in use) can potentially provide:

- Application sharing – Application sharing allows all meeting attendees to see simultaneously the same application displayed on their screens. Applications often can be shared in a way that allows all attendees to edit the file, if necessary.
• Shared notepad or white board – This feature allows all participants to see a common area for compiling notes, brainstorming, and the like.

• Hands-up feature – This feature allows participants to enter a queue to ask questions during the meeting. A feature like this is particularly useful for queuing questions or comments during large meetings.

• Attendee list – Attendees typically will be able to view a list of all other attendees during the meeting.

• Chat feature – Allows participants to send electronic messages to other attendees during the meeting.

• Message area – Presenters can utilize a message area that all participants can view during the meeting for general announcements. This feature, for example, can be used to advertise how to mute/unmute an individual line during the conference call, post a picture of the presenter, and so forth.

**Team spaces** – Team spaces is an umbrella term often applied to any number of software solutions and Web-based services that provide a tool-set for virtual teams (or any team, for that matter) to collaborate together off-line. Features often include:

• Shared file spaces – Shared file spaces provide an area for team members to place files for others to view, modify, and so forth, as well as for archival purposes.

• Notepad area – An area where team members can brainstorm ideas off-line.

• Discussion or chat area – A place where team members can initiate off-line conversations on areas of interest to the team.

• Shared Web browsing – Some team spaces will allow a group to browse the Web together, viewing the same Web pages, and so forth.

• Shared calendar – A shared calendar can allow team members to track meetings, project deadlines, and the like, in one place.

**Instant messaging** – Instant messaging is a software tool that allows users to view what is often labeled as presence information about their colleagues and to exchange short messages. While instant messaging first emerged as a way for Internet users to determine whether friends or family were currently online, it
can also provide valuable functionality to geographically distributed teams within corporate environments. Instant messaging can be used to help simulate the type of informal chatting that might take place around the water cooler, in the hallway, and so forth, within co-located teams. Some of the features of the typical instant messaging product include:

- One of the core features of instant messaging is the ability for individuals to quickly exchange short text messages. Team members can use instant messaging to ask quick questions and exchange information, as well as provide a way to allow geographically distributed team members to interact more informally, like co-located teams might chat around the water cooler. Instant messaging can also be very valuable during virtual meetings, allowing presenters or attendees to exchange messages (e.g., “Speak up, we can’t hear you,” “There are 40 attendees on the line,” etc.) behind the scenes.

- Users typically can utilize descriptive designators such as online, off-line, on the phone, away, busy, and so forth, to highlight their current availability within instant messaging products. Remote team members are then able to get a general idea of a colleague’s availability similar to the way that co-located team members would glance across the cubicles to see if someone was in their office or on the phone. For example, if a colleague you would like to talk to appears as online, you can send them a quick message (i.e., “Would it be okay if I called you to talk for 15 minutes?”). They would have the option of replying back, perhaps something like, “Sure, give me a call,” or “How about we link up in 30 minutes?” and so forth.

- Some instant messaging products allow additional users to be invited to join a chat session. In this way, three or four team members can be involved in the same electronic conversation.

- Some instant messaging clients also provide the ability to exchange files and photos as well as send simple messages to cell phone users.