

# THINGS YOU SHOULD KNOW ABOUT... GOOGLE WAVE

## Scenario

Tamara, a graduate student and TA, is teaching one section of 20 students from Dr. Bristol's 200-student lecture course, Introduction to Psychology. Before the semester begins, Tamara and the nine other TAs meet with Dr. Bristol. He explains that assignments will be done by student teams using an application called Wave for the coursework. Wave, he says, is like e-mail, sort of, and like a chat and collaboration space, sort of, but that it is different from tools they have used before. Students will use Wave to collaborate, share resources and data, talk through their findings, and discover ways to apply what they learn to other projects. Wave can be used synchronously and as a place for iterative collaboration. In addition, TAs will use Wave to communicate with their student teams, checking in for questions and monitoring progress.

During the first lecture, Dr. Bristol assigns an exercise that involves observing interaction between people in public places: coffee shops, malls, libraries, or restaurants. Each team is to isolate five behaviors common in such environments and discuss their significance. When Tamara checks her students' waves the next day, she finds them involved in lively conversation but sees that three of the students have posted photos and video of their observations. She opens a discussion on Wave about privacy concerns and permissions, and students immediately pull the questionable media. One makes a quick video of herself instead to demonstrate the behavior she observed.

The following day, there is a Wave meeting scheduled where Dr. Bristol meets with all the TAs to discuss progress, raise concerns, and clarify requirements. He brings up the issue of what media are appropriate and why and recommends that the TAs work closely with students to ensure they understand university policy. This is especially important because Dr. Bristol discusses making the waves public so that others can follow the work in real time. When Tamara reviews student waves in playback mode at the end of the week, she sees that each of the teams has included some visual media—photos and videos with students as actors and sketches done by a student artist. One group has created an application that shows a video and collects viewer opinions; the group then embeds the wave on a departmental blog where anyone can take the poll.

## 1 What is it?

Google Wave is a web-based application that represents a rethinking of electronic communication. E-mail is 40 years old, predating most of the technology that people today take for granted, and the basic model of e-mail remains unchanged. Other forms of electronic communication have emerged, such as instant messaging, chats, blogs, and texting, and many communication tools have also migrated to the cloud rather than running on local campus servers. With these trends in mind, Google is developing an application that has elements of existing communication tools but is built around a different model of how communication—and collaboration—take place. With Wave, users create online spaces called “waves,” which may include multiple discrete messages and components—“blips”—that constitute a running, conversational document. Users access waves through the web, resulting in a model of communication in which separate copies of multiple messages are not sent to different people; instead, the content resides in a single space. People go to a wave to access the content, respond to it, change it, replay it, send it to a blog, or add new material or attachments.

## 2 Who's doing it?

Wave has only recently been released in beta form, and access remains restricted, though the group of users is steadily growing. As a result, answers to questions about who in higher education is likely to find value in it and how exactly they will use it remain speculative. Until the tool is released in a more developed form into wide circulation, it will be impossible to predict what groups of users will incorporate Wave into their academic—or nonacademic—activities on campus. That said, many in the technology community have been eagerly awaiting Wave's introduction, and developers who have had access for some time have already begun creating applications that work in and with Wave.

## 3 How does it work?

Wave offers a user interface suggestive of e-mail and chat but with a different set of features. A user creates a wave, enters content—a typed message, an attachment, a web-based widget—and adds other people to that wave. Although waves appear in a user's “inbox,” waves, unlike e-mail, are not sent. Users access waves online, where they can read and edit existing blips, respond to them, or add new content. Discussion can be real-time or asynchronous and is not necessarily linear, as those taking part can edit, delete, reply, or insert anywhere in the conversation. A playback feature lets participants review the history of all blips and activities that took place in the wave—like a movie that shows all the revisions and changes. Wave supports drag-and-drop of

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media from the desktop or other applications, such as interactive maps, trip planners, a weather service, or informal polls. Adding a blog to the contacts list will allow users to publish a wave to the blog while retaining complete Wave functionality. Inside a wave, users can respond to specific blips with “wavelets” (subordinate conversations) that can be open to all participants or “sent” privately to selected individuals. Developers are being encouraged to produce applications that work with Wave through automated processes, known as robots, and add-ons called gadgets. One Google robot, for example, allows Wave conversations to occur between people using different languages with text translated in real time.

### 4 Why is it significant?

If Wave enjoys widespread adoption, or if it serves as a model for other providers to build similar tools, it could usher in a new model of electronic communication. It removes traditional linear boundaries, allowing participants to brainstorm, troubleshoot, develop, or edit different portions of a project at the same time or asynchronously. Because Wave includes so many modes of communication and interoperates with other applications, it could significantly enhance the way students collaborate and communicate. The key contribution of Wave might be that it compels us to reevaluate how communication is done, stored, and shared between two or more people. If the model of e-mail is as limiting as Wave developers suggest, offering an alternative could lead to new ways of thinking about the kinds of activities that can be efficiently accomplished through digital media. Similarly, if users begin thinking “outside of the e-mail box,” other ideas about electronic communication might emerge, leading in other directions.

### 5 What are the downsides?

Despite early enthusiasm, it is not clear whether wave communication will catch on with enough people to represent a new form of communication. Moreover, development of the application remains incomplete, and it isn’t clear how soon that work will be done and the tool released to the general public. Even if current modes of communication are limiting, they are at least familiar and easy to manage cognitively. As a result, some will resist changing how they communicate, while others might find Wave confusing, given that so many voices can be active simultaneously. Even for users who are comfortable with Wave’s mode of interaction, the tool does not seem practical for very large groups, at least when used synchronously. Protocols and even a common vocabulary for Wave must be developed, and the extent of its interaction with other applications and standards remains uncertain.

### 6 Where is it going?

As new, smaller devices have made video a communication tool for the general public, Wave might similarly encourage the movement of more assignments from text to multimedia. Online courses could become more participatory because Wave supports the integration and synthesis of many types of interaction, creating an online meeting space that might be richer and more flexible than either face-to-face interaction or alternative online spaces. It has potential as a collaborative tool for groups to create joint documents, conduct analysis, and coordinate team-based learning. Google anticipates that others will eventually be providers of wave services—many elements of Wave code have been made available to developers, with an eye to allowing anyone to set up a wave service to interoperate with Wave. As it moves into general use, Wave might be known as a communication medium, a collaboration space, a repository where all of these things are stored and can be retrieved—or something else altogether.

### 7 What are the implications for teaching and learning?

Wave offers a compelling platform for personal learning environments because it provides a single location for collecting information from diverse sources while accommodating a variety of formats. By embedding mini-applications and other components, Wave makes interactive coursework a possibility for nontechnical students, moving larger numbers of students away from purely text-based assignments and into multimedia composition. Because groups can conduct real-time joint review not only of documents but also of multimedia presentations, Wave opens new avenues for critique of engineering projects, architectural designs, musical performance, or any discipline that benefits from peer or expert review. Instructors, using the playback function, could see how waves were built, step-by-step, and draw inferences about the thinking behind and evolution of student projects. Wave might also change how knowledge is created, stored, and shared. If adopted by professionals, it could provide an accessible way to model disciplinary thinking and processes with students. Whether Google Wave replaces existing applications, it likely will move communication from text alone into a wider environment more in tune with the variety of options we have come to expect from Web 2.0 technologies that enrich the human exchange of ideas.

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