

Webcams @ McMillan

In late 2008, we became aware of the Gates Foundation funded project in [Alabama](#) to provide webcams to public libraries. Their immediate goal was to provide a way for families to stay in touch with deployed service members. At the same time, the Wisconsin National Guard's [32nd Infantry Brigade Combat Team](#) was alerted that they were going to be called up for duty in Iraq. McMillan decided that we would provide a similar service.

After looking at the Alabama project and subsequent newspaper articles ([here](#), [here](#), [here](#)), we came to some conclusions.

- The lack of privacy is a major drawback to users. Webcams come with an integrated microphone, but relying on it means that one has to use an “outside voice.” The simplest webcam setup relies on existing PC speakers, which also provide little privacy. Since these are family discussions, often between spouses, we wanted to provide more privacy than such a setup afforded.
- Synchronicity (both parties being available at the same time) is major barrier. Iraq is nine time zones away from Wisconsin. Deployed service members work long hours and their free time would be unlikely to coincide with when family members could come to the library. Since the Alabama project focused on Skype, which requires synchronous communication, we wanted to provide an asynchronous alternative.
- Service members do not always own laptops. If they are using military provided or Internet café computers, they might be unable to use Skype, which requires downloaded software. While major IM services offer video communication, they do so only with the downloaded version of those services, while the library supports only the web-based version. We wanted to provide Internet based access to the video capabilities of the major IM services.

Our solution

- The speed of the computer used affects the frame rate and resolution of the webcam video. Older computers can not handle that many images flowing through the computer. Newer PCs also have headset jacks on the front panel. We selected two PCs (Dell Optiplex 755) that were recent purchases and had enough horsepower to meet the demand.
- The speed of the Internet connection also affects the frame rate and resolution of the webcam video. We could not use our fastest connection, which runs the Library's backbone, due to security concerns. The Library's backbone also uses traffic shaping, which does not play nice with webcams. We settled on a DSL line provided by [Solarus](#). In testing that provided sufficient for quality video.
- Our computers are heavily secured, since they are logged into an average of 3,500 times annually. We used [Windows Steady State](#) to provide control and security.
- The computers involved used Windows XP, since its security model is stable and well understood by our technical support people.

- For webcams, our technical support recommended a [Logitech Quickcam Communicate Deluxe](#) webcam. It is a model he had personal experience with, it is relatively inexpensive (under \$100) and it would be easy to replace if stolen or broken. We decided to not use some of its features (RealLight2 and face tracking) since they actually degraded the video in most cases.
- To provide better privacy, we purchased [Logitech premium stereo headset with noise-canceling microphone](#). When these were used, there was minimal echo and no need to talk above a regular conversational level.
- Both PCs were loaded with the most recent version of [Skype](#). Skype provides high quality synchronous audio and video communication and it is free between registered users. Registration is also free.
- We provided links to [Tokbox](#). Tokbox provides synchronous and asynchronous options through a web service that doesn't requiring any software installation. It does require an up-to-date version of Adobe Flash and free registration.
 - Tokbox synchronous. Tokbox will work with instant messaging software, including MSN, AIM, Yahoo and GTalk. It will import contacts, track which contacts are available and connect to them for video calls. It also works with registered Tokbox users. Even in synchronous mode, video can be one way if one side does not have a webcam or doesn't activate it.
 - Tokbox asynchronous. Tokbox can be used to record and send video emails to any email address. Videos can be up to ten minutes long and there are a number of templates (masks, holiday themes, animation). Recipients need only to read their email and follow the provided link to view the video. If they have a webcam, they can respond in kind, even if they don't have a Tokbox account.
- At this point, we are limiting use to adults. After we fully implement, promote and evaluate the service, it is quite possible we will remove that restriction.
- The expertise that Library staff is building will be useful as webcams become more common. It will help staff assisting patrons using their own webcam equipped laptops with our wireless network. This service also builds a foundation for a future move into video reference.