



Webcams FOR Contractors

Finding a way
to meet the needs
of the entire
project team

BY K. DENISE JENNINGS

WEBCAM TECHNOLOGY IS MAKING INROADS INTO THE CONSTRUCTION industry as a tool to help manage and archive projects. Webcams have been used in recent years for several reasons, namely as a way to promote high-profile construction projects and improve remote surveillance. But for some construction companies the technology also has become a vital project management tool.

While webcam images of construction projects are a great tool, they are only valuable if someone reviews and records the photos, along with the project's progress. Many aspects of project management can utilize webcams, but administration and maintenance for the surveillance systems often can be a full-time job in itself.

That's one reason Jeremy Simpson launched Memphis-based Systems Technologies, LLC. His goal is to answer the needs of project owners, architects and contractors by creating a state-of-the-art comprehensive turn-key monitoring system, complete with archival software and time-lapse video capabilities from start to finish.

"We combined all the technology into one system," Simpson, president of Systems Technologies, says. "We didn't want to just offer pictures; we wanted to offer a service."

Simpson hails from a construction background. Working as a partner in his father's general contracting firm, he saw the need for this kind of project monitoring system. He launched Systems Technologies in 1998. "Being in construction really helped me facilitate such a product," he says. "I speak the same language as contractors."

His system uses NetCam web cameras and software designed by WareNet to archive images and link them to a calendar. Systems Technologies programmers created a proprietary program that integrates all these technologies and data from several camera sites into one program that archives the project in a calendar.

The NetCam web camera system allows customers to log on and program the camera to take photos at various times of the day (i.e., every hour or half-hour between 7 a.m. and 5 p.m.). The images are shot and transmitted to Systems Technologies' web server, to be stored by time and date in a calendar for that particular project. The look of the calendar also can be customized for specific customer or project needs.

According to Simpson, Systems Technologies' monitoring system can be used with a dial-up, broadband or wireless Internet connection and does not require clients to have any computer equipment. The camera acts as a server and can be accessed globally 24 hours a day, seven days a week.

"Our monitoring system allows (contractors and architects) to view construction activity in real time," Simpson says. "It documents critical construction events, like the pouring of concrete, steel framing

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Lessons Learned: Webcams for Construction

By Chandler McCormack

When the first-ever webcam came online more than 10 years ago at Cambridge University, it was used to monitor the coffee room. People could make sure the coffee pot was full before wasting time walking down several flights of stairs. In the last three years, the number of webcams has grown 600 percent, and their use on construction sites is valuable.

As the technology evolves, the potential for these systems to enhance and simplify project management at construction sites is limitless.

Webcams allow everyone involved in the construction process, no matter how far apart, to have a presence on the construction site. Design consultants have the ability to effectively coordinate revisions with contractors; contractors can coordinate with subcontractors; subcontractors can coordinate with suppliers, etc. Webcams provide a creative solution to improving coordination and saving time.

THINGS TO CONSIDER

Contractors, owners and architects should consider the following questions when searching for the right system:

- **What are the hidden costs?** Webcams are not all the same. While many off-the-shelf cameras are inexpensive to buy, they require high-speed data connections to transmit the video. The infrastructure for inexpensive DSL and cable lines isn't available in most areas, especially on new construction. It's also not uncommon for the installation time on these less expensive high band-width lines to take several months or never happen at all, missing the webcam's usefulness in being able to document construction progress. Systems that use standard telephone lines are more reliable, cost-effective and better suited for construction sites, and may even provide higher-resolution images.
- **Do you want to monitor the progress of the project?** Many webcam systems simply push the same image to the web over and over again, overwriting the previous image each time. Look for webcams that store the images automat-

ically on a remote server, so they can be used for a time-lapse presentation.

- **Who will manage the camera?** Many systems require some level of technical expertise for setting up the hardware and configuring the software, not to mention special software on the user's side.
- **What kind of image quality do you seek?** A common misconception is that live images on the web provide something similar to television. They do not. The Internet today does not have the speed to broadcast a television-quality signal although most webcams are based on video technology. Even at their best, the vast majority of webcam solutions provide a grainy and jerky image. Image resolutions from webcams typically are 320 x 240 dpi, but advanced systems specifically for the construction industry offer resolutions 40 times higher.
- **Are you just looking for a security camera?** Webcams are not the same as security cameras. Most webcams don't record video, and the ones that do only store limited amounts of low-quality video. If you're looking for a solution solely for security, consider a more typical security camera and video recorder. If you're looking for a project management tool, a security camera is not the best fit. They typically only provide a clear picture for a relatively small area.
- **How can you be sure it's the right system?** It helps to work with companies that specialize in construction site webcams. These companies offer more reliable, higher-quality, turnkey solutions tailored specifically to the construction industry. Some offer automated archiving systems that allow project teams to track construction progress in real time and retrieve past images, which can be used to resolve issues quickly.

McCormack is cofounder of OxBlue Corporation, an Atlanta-based company specializing in remote monitoring solutions for the construction industry. For more information, visit OxBlue Corp's website, www.oxblue.com.

and site preparation and acts as an archive of all site activity for use in such things as legal disputes and project scheduling."

In addition to basic project management, the webcam monitoring system aims to improve coordination by keeping construction teams up-to-date on daily activities. Contractors can use the service for site security and to make sure workers abide by OSHA regulations, Simpson says.

"We have cameras that have the ability to show such detail as the time and date the shot was taken and what the temperature was outside," he says. "Clients may have as many cameras as they want on any jobsite with the unique ability to pan, tilt and zoom on that particular project."

However, companies that choose to use

webcam technology and surveillance systems for project management purposes must be willing to make a small investment for this service.

Complete surveillance systems can cost \$20,000 to \$150,000 and more, depending on the size of the project. Systems Technologies charges a set fee for the set up of the camera equipment and image-archiving program, plus a monthly support and maintenance fee over the life of the project.

Systems Technologies' webcams are currently being used at the FedEx Forum, the new home of the Memphis Grizzlies NBA franchise.

The construction industry is always trying to find ways to build more advanced facilities faster and for less

money, according to Simpson. He finds that many owners think that utilizing existing and emerging technology can help in developing and improving work processes at the site level, making their businesses more efficient and adding more profit to the bottom line.

"We are using the latest technology and targeting it to an industry that is typically behind when it relates to technology," Simpson says. "I believe if it starts to prove its worth, then owners and architects will start making monitoring systems part of the project specifications and contractors will use this as a value-added tool in their proposals."

Jennings is a freelance writer based in Memphis.