

HAVE YOU EVER WANTED TO SEE WHAT IS HAPPENING IN ANOTHER PART OF THE GLOBE, RIGHT NOW? WEBCAMS CAN TAKE YOU 'VIRTUALLY' THERE, OFFERING WINDOWS ON A SHRINKING WORLD

AUTHOR FAY SUDWEEKS

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Visit any popular tourist attraction, in person, and there is a very good chance that at some point your image will be transmitted live to potentially millions of viewers on the web, via a nearby camera linked up to the internet. And this 'webcam' phenomenon is by no means confined to tourist sites. More and more public spaces, of all descriptions, are having cameras trained upon them, broadcasting images to an internet audience. Webcams are also increasingly being set up in homes, offices and other formerly private spaces, for a myriad of reasons. The entire world is becoming accessible to all, via the internet.

What exactly is a webcam? Essentially it is a web page displaying images from a digital camera wired directly to a computer. The images are updated periodically, depending on requirements and the system being used, from many times a second (the live 'stream' of images simulating a video camera output) to as little as once a day or less.

The webcam concept can be traced back to 1991, to a networked video frame-grabber pointed at a coffeepot in the Computer Laboratory of the University of Cambridge, in the UK.

Installed by some computer scientists, the camera was intended as a timesaver for the stressed-out academics in the building who could check the status of the coffeepot, on their own computer screen, before ascending several flights of stairs for their drink. Years later, the coffeepot has become a worldwide celebrity as images of the pot are beamed over the web (www.cl.cam.ac.uk/cgi-bin/xvcoffee).

What began as a functional timesaver in Cambridge has, in just a decade, become a major medium for communication and observation. The ease with which people can now set up their own webcams (digital color cameras start at around US\$50, and the software can be downloaded free or at a small voluntary cost) has greatly expanded their use. There are almost as many reasons for webcams as there are cams themselves, but their main applications include:

- **ENTERTAINMENT** – perhaps the most popular use for a webcam, the opportunities for entertainment are almost endless. You could begin by exploring the world, visiting those places that you always longed to see (try the pathways 20-stop world tour, right). There is nothing quite like seeing a real-time image of

the River Danube followed, in the space of a few seconds, with a live view of an Indian Ocean sunset. Alternatively, you could watch your favorite singer perform in a live broadcast from the other side of the world. Or you may decide to switch light bulbs on and off in Gifu, Japan, as part of an art project (<http://light.softopia.pref.gifu.jp/LONcgi.exe?onoff=22>). Or try your hand at ghost-hunting, looking for the White Lady of Ordsall Hall, in Salford, England (<http://www.ordsallhall.org.uk/ghostcam> – weekends only). Some entertainment-based sites may charge for access to their webcam, but by far the majority are free.

- **FUNCTIONALITY** – helping ensure that a trip to the coffee machine is worthwhile is only one of many functional uses of a webcam. Set up a live cam in your weekend home and have the security of being able to keep an eye on it during the week, or point a cam at your children and babysitter to watch from your office. With new wireless technology you will even be able to see the children at home while driving and dining. The many webcams covering major roads and junctions can also help you avoid traffic jams.

- **COMMUNITY** – haven't seen your Aunt Beatrice in Uzbekistan in a long time?

No need to send a video, just set up a webcam to show how the children have grown. Throwing a party? Set up a webcam and a cast of web surfers (perhaps friends in faraway places) can join in.

FACILITATING CULTURAL TOLERANCE

Those Cambridge coffee addicts could not have anticipated the far-reaching impacts on society when they installed their camera in the lab. The extraordinary proliferation of webcams worldwide is, I believe, facilitating cultural tolerance, helping us learn a great deal about other people and other places just by watching them. Crucially, the effect on the people or culture being observed is







negligible – the passive webcam does not harm cultural diversity.

The ongoing expansion of webcams into more and more locations does raise important issues about privacy. If you set up your own webcam, it is possible to restrict access to the images by having the web page password-protected. Only Aunt Beatrice, not the entire world, need see how the children have grown. We have no control, however, over the webcams of others. Few people would have any problem being observed using the pedestrian crossing at a busy junction that happens to be the location of a 'traffic jam-cam', but where does it all end? These issues remain unresolved,

but it is revealing that a nation as concerned with privacy as the US has enthusiastically embraced the webcam culture. This suggests that societal perceptions of privacy and civil liberty are beginning to change. Sheriff Joe Arpaio, who has installed webcams in Maricopa County Jail, Phoenix, (www.crime.com/info/jailcam/jailcam_pop.html – see image, far left) may be right to believe that virtual visits to his jail will deter crime. For now, with webcams clearly here to stay, why not take a look around?

Fay Sudweeks is senior lecturer in information systems at the School of Information Technology, Murdoch University, Australia

AROUND THE WORLD – AND BEYOND – IN 20 WEBCAMS

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|  <p>1 AT SEA – start on the bridge of the <i>Grand Princess</i> cruise ship, in the Caribbean, Atlantic or Mediterranean www.princess.com/fleet/grand/grand_cam.html</p> |  <p>11 DAR ES SALAAM – watch the shipping in this Tanzanian harbor and port http://io.spaceports.com/~africa/tanzacam_e.html</p> |
|  <p>2 LONDON – view the River Thames traffic at Tower Bridge www.livesights.com/cgi-bin/nph-VideoPages.plx?title=live</p> |  <p>12 SOUTH AFRICA – go on safari in the wild African bush www.africam.co.za/mirror/context/index.html</p> |
|  <p>3 LOCH NESS – look for the monster using both surface and underwater cameras www.lochness.scotland.net/camera.cfm</p> |  <p>13 ANTARCTICA – visit the four research stations at Casey, Davis, Macquarie Island and Mawson www.antdiv.gov.au/stations/live.html</p> |
|  <p>4 MOSCOW – use the 'KremlinKam' showing St Basil's Cathedral, Red Square www.kremlinkam.com</p> |  <p>14 SANTIAGO – a live view of the bustling Chilean capital www.cybercenter.cl/noticias/livecam.htm</p> |
|  <p>5 ROME – turn and zoom webcams to explore the Roman Forum, Imperial Forums and Coliseum www.capitolium.org/eng/virtuale/webview.htm</p> |  <p>15 PANAMA CANAL – observe the action at the Miraflores Locks www.panacanal.com/eng/photo/camera-java.html</p> |
|  <p>6 JERUSALEM – observe the Western Wall, also known as the Wailing Wall http://aish.com/wallcam</p> |  <p>16 MEXICO – monitor live images from the active Popocatepetl volcano www.cenapred.unam.mx/popo/UltimalmagenVolcan2.html</p> |
|  <p>7 KARACHI – see a live view over the city from Pakistan's original webcam www.insteddigital.com/1/idscam.htm</p> |  <p>17 OLD FAITHFUL – see the active geyser at Yellowstone National Park www.nps.gov/yell/oldfaithfulcam.htm</p> |
|  <p>8 MOUNT EVEREST – take a breath at the top of the world www.m.chiba-u.ac.jp/class/respir/eve_e.htm</p> |  <p>18 NIAGARA FALLS – live views of one of North America's most famous spectacles www.fallsview.com/English/pages/fallscam.shtml</p> |
|  <p>9 HONG KONG – see the views from six webcams around the city www.hkta.org/gallery/webcams.html</p> |  <p>19 NEW YORK – see what is happening in Times Square www.earthcam.com/usa/newyork/timesquare/index.html</p> |
|  <p>10 SYDNEY – travel down under to the famous harbor www.x-zone.canon.co.jp/WebView-E/sites/java/sydney_j.htm</p> |  <p>20 KENNEDY SPACE CENTER, Florida – view the live NASA cams, and if a mission is in progress, end your tour in space itself www.ambitweb.com/nasacams/nasacams.html</p> |

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