The eyes have it

Software that notes how your eyes move across a computer screen could change the
way we measure usability. **BY MARCUS AUSTIN**

Sit back for a minute and imagine what sort of insight you would get into somebody's personal preferences if you could see things through their eyes. Everything they look at you can look at, every thing they ignore you ignore. As you track their movements you could begin to establish their thought processes. It would be handy woudn't it if you could monitor them and use the findings to measure a Web site's usability? Well the tool to do this is here and you can use it now.

eyeTracking.com was set up out of a research project at San Diego State University run by Dr Sandra Marshall. The project for the US Office of Naval Research and the Air Force office of the Department of Defence attempted to find out the thought processes behind the actions of some screen-based US Naval officers. It was important that the information they were viewing was easy to understand and that they weren't confusing an enemy fighter with a friendly fighter. After some three years of research and work into eye tracking for cognitive theory for the military, Marshall and her colleague Cassandra Davis decided that the work they were doing could be applied to any discipline. So to exploit this new market she set up eyeTracking in February 1999. The company was set up as a joint venture with San Diego University. The University allows eyeTracking to operate within the University research facility and funds

Naval Research set the wheels in motion for eyeTracking.com.
Now the system is being used for more commercial projects.

eyeTracking. In return the University benefits from the research carried out by eyeTracking and from any revenue generated by the company.

Despite the intention to move into other areas eyeTracking was initially doing the same sort of projects that they'd been doing for the Department of Defence. Tim Drapeau, director of sales and the third member of the team, takes up the story. "The idea that we could use this anywhere came when Mobil called Sandra one day and asked if we could track where people looked on their Web site. But our first job as

eyeTracking came about when we called Yahoo one day explaining the company. They invited us to show them the product." Drapeau continued, "the hardware for this sort of thing has existed for quite sometime. We take off-the-shelf eyeTracking hardware. We throw out the manufacturers software and add our own, and we enhance that software with each company we look at." Usability according to Drapeau is still in its infancy. "For years companies have been at the mercy of people telling them what people did before. We are able to not only tell them what they did, but to show them."

eyeTracking outfits up to eight panelists at a time to test the technology. The panel—all in one location—is attached to eyeTracking hardware. They then look at the company's Web site. Left to their own devices they wander around the site and are given tasks to perform, such as find the Frequently asked question (FAQ) part of the site, or they're asked to buy an item. from the site.

Once the tasks are completed the site is analysed. The information that eyeTracking provides is a simple through-the-eyes real-time video showing where the panelist looks on screen. So in essence you watch the display through your user's eyes. And this, according to Drapeau is normally enough to send the designers running for their copies of their [eyeTrack's] Web software to make immediate updates. Bringing designers into the equation is also a new idea pioneered by
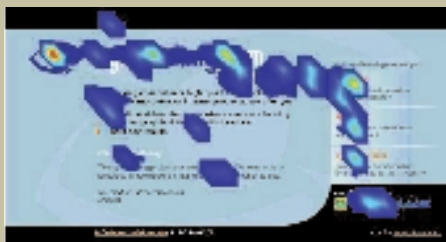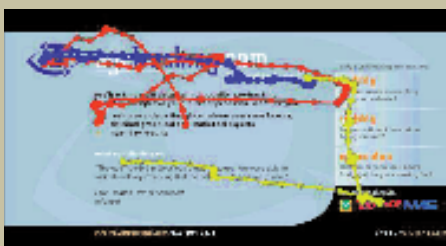
eyeTracking. "We bring in designers and developers to do the testing rather than management. If two or three users fail a task the developers can make the change there and then," says Drapeau.

Watching me watching you

The usability market is a huge unseen iceberg according to Forrester Research who estimate that Fortune 1000 companies shell out an average of £1 million to £1.4 million per year on site redesigns. Other companies chasing this market with technology similar to eyeTracking's include Vividence and UIE. eyeTracking's clients include AT&T, Akamai, Gateway, Go Network, Stamps.com, Mcafee.com, Yahoo and ZDNet.

Maritza DiSciullo of AT&T Customer Sciences chose eyeTracking.com because he saw their demo at a research expo and "was impressed with the improvements in technology. "Most of the usability testing I have done in the past has been qualitative, with some softer metrics (eg-timing how long it takes to complete a task). Therefore, results were often more likely to be considered subjective or open to interpretation by the researcher. I have seen older versions of eyeTracking, but they were clumsier and less accurate than the systems used by eyeTracking.com.

"We followed up the eyeTracking session with a qualitative interview. So, we got a deeper understanding of why people clicked where they did." Says DiSciullo.

US Web site Stamps.com also uses eyeTracking after attempting to "do" usability the traditional way. "We carried out focus groups and traditional one-on-one interviews. The results were all over the place. We chose eyeTracking so that we could have a quantitative basis for evaluating user behaviour." Said Ian Siegel VP Web development, Stamps.com. "The subtleties of our redesign were driven by the eyetracking results."

eyeTracking also works on advertising within Web sites. The placing of advertising on Web sites and the type of advertising used is central to some sites' revenue and so any help eyeTracking can provide to measure usability, is helpful.

eyeTracking are branching out to test the

eyeTracking

eyeTracking also produces four different types of additional data.

GazeStats provides the percentages of time spent by one or more users in client-defined regions of interest.

GazeSpots show the relative amount of time spent by one or more users across the display.

GazeTraces provide a visual summary of a users point-of-gaze over all areas of the display.

GazeTransitions document the logical progression of a user's interaction with the display.

The Eyetracking.com team from left: Drapeau, Marshall, Davis

way users perceive advertising. Their testing includes basics such as, did they actually see the advert? And if so did it increase brand awareness? And to this end eyeTracking have partnered with market research companies to add additional research to back up eyeTracking's qualitative research.

Questions have been raised about just how useful usability is, as after all one man's favourite site is probably another's most hated. Jacob Nielsen the guru of usability testing has a very strict view of what makes a good Web site and he charges up to £20,000 per site to pass on his advice, which can be largely summed up in one phrase "keep it lean and keep it mean." However his testing is based largely on his own views and those developed from traditional usability testing.

So is eyeTracking scientific and is it the answer all usability issues? David Wooding, from the Institute of Behavioural Sciences, at the University of Derby one of the biggest eye-movement research and consultancy centres in the UK with clients such as Royal Mail and Yellow Pages implies that we have not yet found the usability holy grail. "As the eye-movement system belongs to a human rather than a computer, there is a degree of variability in the data, and so a population of experimental subjects is required before any generalised conclusions might be reached. The data from an individual is usually of very limited value on its own. While there is no precise formula for predicting what the eyes will be attracted to, it is usually possible to say something useful about the attractiveness of particular features in an image and to say that someone is more likely to visit one feature than another."

eyeTracking meanwhile have their plans firmly set on expansion. In the next 6-12 months they plan on opening three more offices in the US and further offices in Europe and are currently building up strategic partners to help them gain ground in overseas markets. The early signs from their work are encouraging but only time will tell if eyeTracking is really the answer. ■