



Eye Tracking Defined

Eye tracking is the science of understanding and improving the user experience through measuring eye movements – this state-of-the-art methodology shows us what users pay attention to and how they process the information they see in real time as they interact with a visual stimulus (e.g., a website, commercial, product, or software application). The basic idea behind eye tracking is that *where* people look indicates *what* they are paying attention to – which determines *how* they will use or interact with it. Thus, by analyzing a user's eye movements, we can identify what aspects of the stimulus they find important, interesting, or confusing, and we can make adjustments and improvements as necessary.

Eye tracking provides:

- A rapid and scientific edge in web development, ecommerce, design, usability, advertising effectiveness and product/software development
- Improvement to all things visual – from print and online ads to websites, software and application developments
- The knowledge to determine if design weaknesses exist – where they lie, why they fail and how to fix them

When eye tracking is used, design, interactive and creative teams get the clarity needed to improve the user experience by understanding unequivocally how visual information is assimilated and used. Standard usability sessions and click patterns only measure at the margins and tell us about the end state of user interaction. This type of research misses many of the factors that actually determine advertising, website or software success – spontaneous emotive reaction, areas of interest, time spent to find needed information, patterns of usage and more.

With so much being spent on driving site traffic, interactive experiences and user adoption, equal attention should be paid to usability and user experience design. Eye tracking research quickly pays for itself in reduced support costs, increased conversion rates and improved customer engagement.



Eye-tracking analysis typically yields two types of output: Heatmaps and Gaze Timelines. A **heatmap** is an aggregate image that represents the eye gaze data of all users viewing a given page. Heatmap images provide:

- Specific points on the page where people’s viewing patterns converge; thus, they show which items or regions draw the most attention from the group
- A single-glance depiction of information viewing and patterns of usage
- Those areas that users never see at all – and if they didn’t see it, they can’t use it or choose it, which is even more important

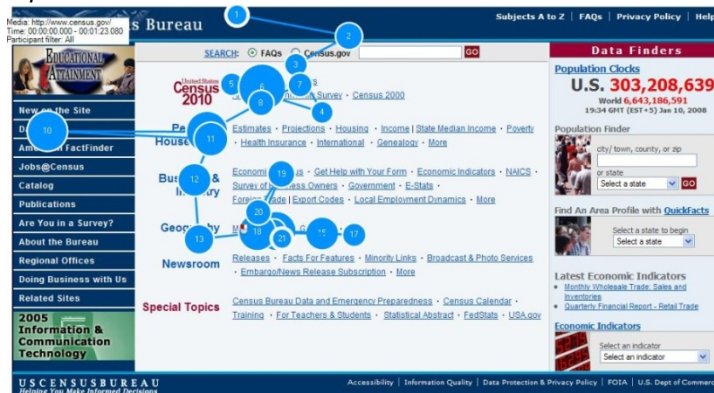
Heatmap Example:



A **gaze timeline** indicates the path of one user’s eye gaze for the duration of each page, view or visual stimulus. Each circle indicates a fixation, and larger circles indicate longer fixations. Analyzing gaze timelines allows us to answer fine-grained questions such as:

- What elements are viewed first, second and so on for a given task or impression?
- What elements of the medium are considered before a user actually makes a selection?
- Did users have trouble comprehending the information or design before taking action?
- Did users see and then choose to skip over an area or simply not see it at all?

Gaze Timeline Example:



Proven Results

Eye tracking has traditionally been an academic methodology used in cognitive science, psychology and human-computer interface research; however, as the technology has become more accessible and unobtrusive, commercial interest has quickly risen. A few key ways this methodology has proven valuable include the following:

1. Sentient Services conducted eye tracking research for a F100 ecommerce company on a newly launched portal. Click stream patterns and standard usability sessions showed little use of the top tabbed navigation; instead users were using the left -hand navigation. Eye tracking uncovered that almost all users actually looked at the top tabs first, but quickly looked elsewhere on the page as the tab titles were not clear in terms of content and next actions. With this research, the client was able to capitalize on eye tracking and page usage and make the necessary nomenclature changes instead of changing the layout or design for increased effectiveness.
2. Google's "Golden Triangle" was created after examining the eye movements of users viewing Google search result pages. The study found that most viewers looked at results in an "F" shaped scan pattern, with the eye traveling vertically along the far left side of the results looking for visual cues (relevant words, brands, etc) and then scanning to the right. This pattern was deemed, "Google's Golden Triangle" and is currently used for their paid and page search rankings.
<http://www.internetnews.com/xSP/article.php/3502611>
3. Online clothing retailer Charlotte Russe uncovered lost sales opportunities after using eye tracking to discover that lifestyle shots drew significant attention but had no interactivity to purchase the clothes. Standard usability and click stream analysis would have missed this opportunity to drive sales since no one "clicked" or "used" these images. Charlotte Russe is now working on making the lifestyle shots interactive with purchasing paths tied to the images for increased sales and emotional customer connections.
<http://www.internetretailer.com/dailyNews.asp?id=25274>



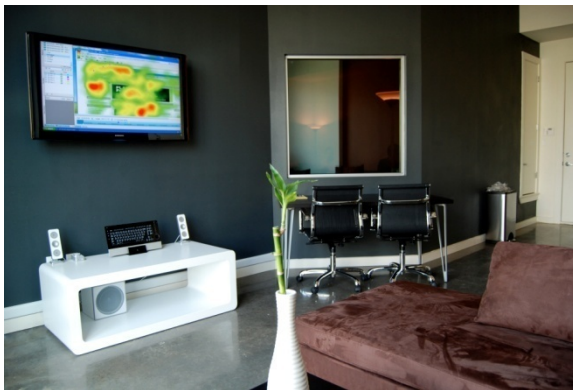
SPROUT Usability Labs – A Sentient company



SPROUT Usability Labs is a state-of-the-art usability center with eye tracking located in Austin, Texas. Sentient launched this stand alone facility to provide our clients with the best usability lab available, in addition to providing a resource to the user experience community. SPROUT Usability Labs is unique in several ways:

1. It is solely dedicated to being an innovation and insights lab – all equipment is set up (no taping down wires, scheduling vendors or worrying)
2. It is devoted to only one client and project at a time – completely private and secure
3. The location is convenient and fun – in Austin on South Lamar (we are located on the first floor so you can bring in models and equipment easily)
4. SPROUT has the latest technology, including a huge HD viewing screen, remote web viewing, studio-quality video/sound, and eye tracking

We have developed a cutting edge usability platform with eye-tracking hardware and software. Our eye-tracking monitor is a single unit with all tracking hardware built into the monitor (it looks just like a normal monitor, creating a realistic user experience). You can view real-time gaze timelines in the client lounge or remotely, allowing for instant feedback, discussion interjections and more. This lab also has all the usual that you find in focus group facilities: audio/video recording, remote web viewing, client lounge with one-way mirror and so forth.



To learn more about SPROUT Usability Labs and its unique services and amenities, visit www.sproutusabilitylabs.com or call 512.912.1240.

Services are completely scalable, from facility rental to full project design and execution by Sentient Services. To discover more about Sentient Services, visit www.sentientservices.com or call 512.288.1706.

