

## Eye Tracking: Measurable Customer Insights

The capacity to observe existing and potential customers' behaviour as they engage with your products and services in real time is a source of competitive advantage.

Observing customers is the vital, raw energy which provides data and information and sparks the process of analysis and interpretation. An interactive, synchronous exchange enables you to accurately analyse and interpret customer behaviour in context and understand customer goals, needs and desires.

The distillation of this process is insights into customers' experiences, the meaning they assign to them and their significance for your company. Insights inform the design of brands, products and services to create a coherent customer experience and assist your company to manage that experience.

The potential for observation in real time has changed rapidly in recent years with new technology, tools, techniques and data sources expanding the customer view in unprecedented ways. Expanded capacity to understand customers is at the heart of innovation and a true customer focus.

This paper focuses on eye-tracking technology to provide an in-depth example of how to use a cutting edge observation option. It also provides an overview of three trends affecting customer observation. Finally it provides a guide to audit the internal and external sources you have available for customer observation.

### The Challenge of Observing Customers

Observing customers behaviour is challenging because behaviour is contextual and multi-faceted and has both conscious and unconscious elements. A variety of tools and techniques are needed to elicit and understand behaviour and its meaning. Understanding behaviour and its context enables organisations to connect with customers at a deeper level and provide meaningful experiences to them.

Any company can take an ordinary experience that offers functional, economic, or emotional values and increase the significance level to that of meaning. However, it usually requires reversing the order of its traditional development process to start with understanding customers rather than an understanding of materials, functions or identity.<sup>1</sup>

Given the challenges of understanding customers' behaviour and the pressures of a dynamic, results-driven business culture, it's clear that designers and product managers, producers and marketers need a streamlined approach to observing customers to inform their decision-making. The good news is that customer observation is evolving rapidly providing increased choices and capacity to be genuinely informed about what customers' value.

## Customer Observation at the Cutting Edge

Eye-tracking technology provides new ways to observe customers during product and service development.

Eye-tracking technology has diverse and fascinating application

Eye tracking technology will be present in high end laptops five years from now! ... By using the eyes to “point” at user interface objects on your computer screen ...it becomes possible to create very fast and intuitive man-machine interfaces. <sup>2</sup>

Measuring eye gaze and eye/head position enables behavioural detection and analysis with many applications such as improved displays of 3D objects eg during an operation the surgeon sees a display which adjusts in real time according to the position of his/her eyes or cars which monitor driver fatigue and distraction by measuring presence of eyes and eye gaze patterns. <sup>3</sup>

### What is Eye-tracking

Eye tracking is a general term for techniques used to measure the point-of-regard or eye gaze (where you are looking) or for determining eye/head position. Most commonly eye-tracking technology uses image processing to detect reflections in a person’s eyes.

Research suggests that what a person looks at indicates the thought “on top of the stack” of cognitive processes. This is termed the “eye-mind” hypothesis and it means that recording eye-movements can show where a person’s attention is directed when they interact with a visual display. <sup>4</sup>

How long a person looks at an element in the display (fixation), eye movements between fixations (saccades) and the overall sequence of fixations and saccades (scanpath) provide a rich source of information. This information can enhance interaction, usability, brand and advertising for both digital and print displays.

An eye-tracking device embedded in a monitor is generally used for interactive media such as websites, software, e-mail campaigns, online advertising, computer games, and interactive TV, as well as print advertising, TV commercials.

Eye-tracking software aggregates, analyses and plots the data in a variety of ways eg heat maps show where the greatest intensity of gaze occurs for a group of customers.

### Interpreting Eye Movements Correctly

The interpretation of eye movement for interaction, usability, brand and advertising is still relatively new. Standardised measures and principles about when and how to conduct sessions with customers which include eye-tracking are being explored in academic and commercial circles.

Whilst eye-tracking movements provide extensive data about what a customer sees it is widely accepted that additional information must be obtained to interpret the why or significance of the data. If a customer fixates on certain text or an image, for example, was it difficult for them to process and understand or simply of particular interest?

Usability professionals explore the “why” of a customer’s spontaneous reactions, responses or behaviours using one or more techniques concurrently or immediately after eye-tracking. There are several appropriate techniques including the “think aloud”, screen-cue and PEEP protocols.

In the “think aloud” verbal protocol the customer describes what they are thinking and feeling as they interact with the visual display concurrent with the eye-tracking recording. Alternatively the screen-cue protocol may be used after the eye-tracking recording to cue a retrospective report by the user. A usability professional may provide the cue by playing back a recording of what happened during a task eg user selection of specific items or manually recreate the user’s selection.

Recently a retrospective protocol known as PEEP has gained recognition. In this protocol the eye-movement recording (which is layered over the user screen selection) is played back to the customer as a cue to encourage retrospective reporting.

**How is eye-tracking best used for product and service development?**

There are no hard and fast rules about when to use eye-tracking and which technique to use with it to interpret the “why” of customers’ eye-movements. There are pros and cons to each of the “why” techniques eg a recent research study showed that PEEP provided greater depth of feedback (ie identified more usability problems) than screen-cued feedback for an interactive website that participants were not familiar with versus a site that was familiar.<sup>5</sup>

The research raised many questions and suggested that it would be valuable moving forward to identify which techniques suit specific interaction tasks. Of course it is early days and it is not possible to be definitive however from a commercial perspective use of eye-tracking and “why” techniques have been underway for some years now. In addition eye-tracking technology continues to improve making new uses possible. We suspect that the potential of eye-tracking for use throughout the product or service lifecycle is being generated through practical experience.

We take a broad view of the value of eye-tracking and its use in targeted ways throughout the product or service development lifecycle. In our commercial experience it is a tool for both design and evaluation – it can be difficult to separate out the process of design and evaluation in practice since each informs the other.

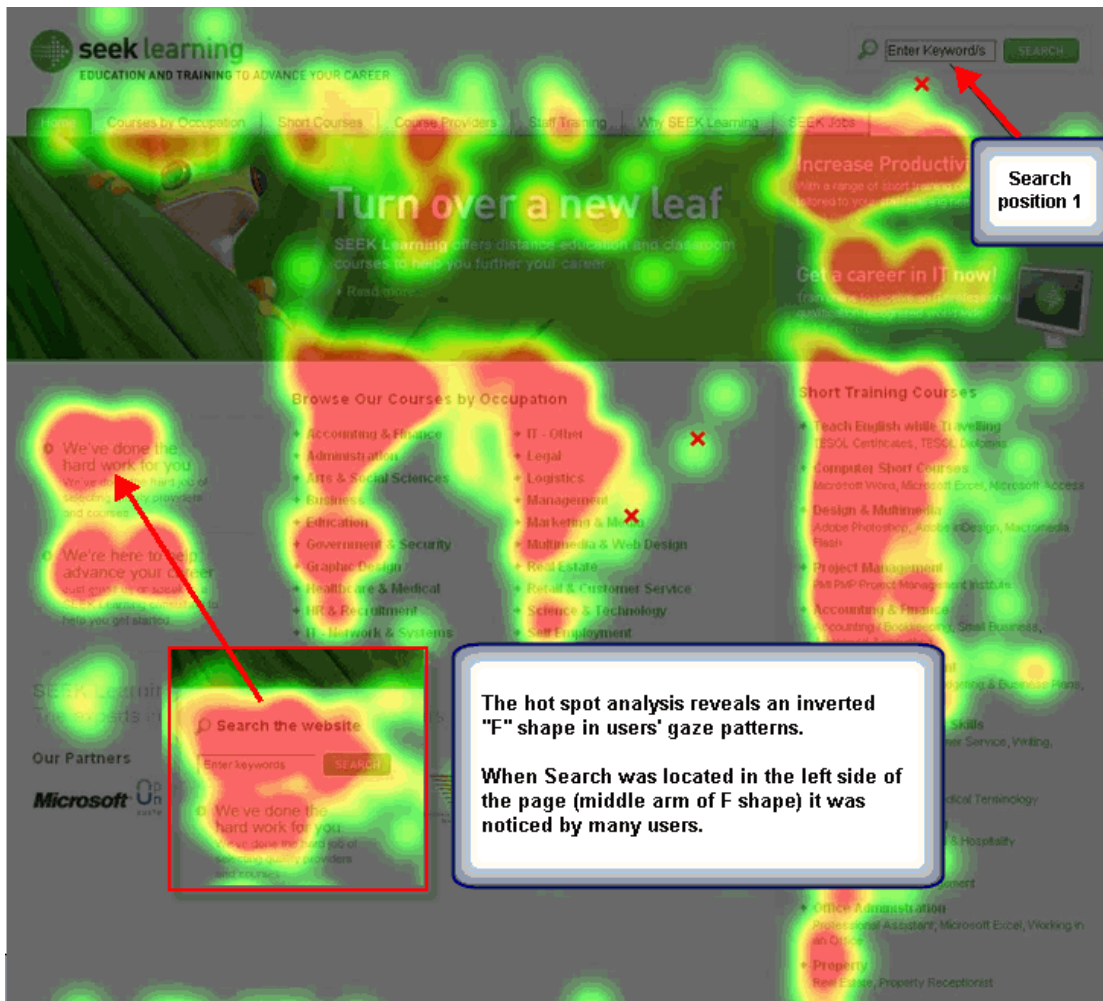
Based on our experience we provide some ideas about when to use eye-tracking and the various techniques that provide the “why” of customers’ eye movements focusing on website design or re-design.

**When to use Eye-tracking and “Why” technique (website design or re-design)**

Focus	Intent	Evaluation	Eye-tracking	“Why”
Exploratory/ research	Conceptual understanding	Explore, compare high level ideas using simple prototype stimulus	Traces attention, correlate with mental model formation	Think aloud for immediacy, check mental model as it is forming
Conceptual Design	Validate design concept/s, obtain input to design challenges	Test how ideas are translating into design	Indication of where usability issues forming	Think aloud for immediacy plus screen-cue for specific design challenges
Design Iteration	High level to detailed design process	Identify usability issues, progressively refine the design. Increasing task focus and prototype sophistication	Specific interactions measured	Any of Think aloud, screen-cue or PEEP depending on how much task/ detail focus
Benchmark / Health-check	Measure user task performance & satisfaction, improve on it	Performance of own site and/or comparison with competitor sites	Assures accurate performance measurement	PEEP for streamlined task focus

## Eye Tracking in Action<sup>6</sup>

Tracking eye-gaze for placement during design iteration.



Customer research had identified the importance of browsing for target users of this website. The placement of search functionality required particular care to complement this primary focus.

Search functionality was placed in a conventional location at the top right of the home page (Search position 1) and subsequent pages. An alternate design had the Search location within the content body.

In usability testing eye-movements were recorded followed by a screen-cued retrospective protocol to explore participants' experience of the site.

Analysis of participants gaze patterns revealed that no-one saw the search functionality at Position 1. The heat map below shows a composite of where all participants looked. The colours red, yellow and green map eye-gaze from most to least.

Based on the test outcomes an informed decision was made to place the search functionality mid-screen on the left for the home page only. This choice improved visibility significantly and created internal consistency with the parent website and related sites which make up the brand.

Further validation of the decision could be obtained through A/B testing (in which two alternate versions of the home page go live on the website and are monitored to obtain usage statistics).

## **Choosing Appropriate Options to Observe Your Customer**

The key is to use internal and existing resources wisely. Knowing exactly what is available puts you in a position to make good decisions about which options will assist you and what is involved to use them.

Based on this knowledge it's easier to champion a project or seek help from inside or outside your company. For example faced with a high profile strategic project in which conflict with decision-makers is looming bring in a consultant with eye-tracking technology and expertise to build consensus by providing high quality "evidence" and insights. This is an example of cost-effective and appropriate choice amongst options.

## **Observation Choices – A Four Step Guide**

Broaden your choices by conducting an informal audit. The audit will build or refresh your awareness of the observation options available to you. Here's a four step guide to get you started:

### **Step One: Fresh eyes for the known**

Look for new developments from known sources that complement your existing customer observation tools and techniques. Consumer or customer metrics– the hard, quantitative data on user numbers, hits per website page and so on is becoming increasingly sophisticated to the extent that tracking analysis can complement or segue easily into your work. Check the unit in your business responsible for consumer metrics to see what's possible now and what's in the pipeline.

### **Step Two: Scan broadly**

Scan broadly. Identify less visible and hidden pockets across the business where analysis talents and data sources are under-utilised or over-looked due to duplicated function, organisational re-structures, internal politics or lack of shared understanding and knowledge management across disciplines.

Consider unknown and evolving analysis sources. These may be generated in either the hidden or the leading edge of the business and where customer delivery channels and devices intersect or converge. They may draw on new, track-able data sources such as Consumer Generated Content ie blogs, forum discussion, rating/reviews, videoposts etc. For each business the edges will be different depending on factors including how critical consumer electronics and Information & Communication Technology is to core business.

### **Step Three: Widen focus**

Check other analysis sources your business creates or purchases eg competitor benchmarking in which actual and potential customers' behaviour is tracked, measured and analysed for your business, your competitors and the industry sector. Again this type of analysis is becoming very sophisticated, yielding rich insights into specifically why a competitor leads based on understanding what users want and use and why. If your business has not invested in sophisticated benchmarking services the good news is that your input into whatever service is available is often welcome and will increase its relevance to your work.

Now turn your focus outward and consider the offerings of consultancies, professional networks and bodies in your own and related disciplines and fields. Join a professional organisation if you haven't already. These sources support you to choose tools and techniques and analyse with rigor.

### **Step Four: Assess coverage and gaps**

Develop a realistic overview based on your audit of sources and analysis skills internal and external, formal and informal that you can draw on. Most importantly the audit increases your capacity to make informed choices about observation options. It's highly likely that your audit will reveal a gap or two. Take some time to consider what impact a gap has on your own or your team's effectiveness. A critical gap provides an opportunity or an informed call to action. Your audit now morphs into the leg-work for a briefing or business case, making it time doubly well spent.

## **Informed Choices Increase Effectiveness**

Customer Observation is one of the most powerful ways you can shift your focus from an internal view to truly seeing the world through customers' eyes. This is a precursor for understanding what is meaningful for your potential and current customers.

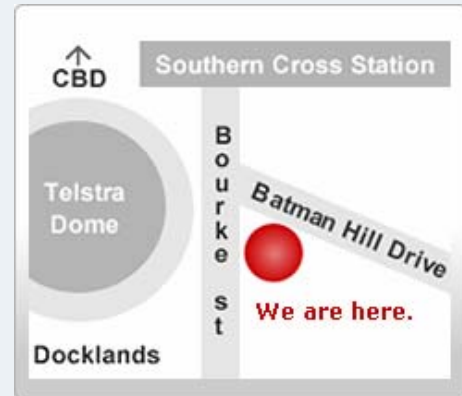
Understanding customers enables you to take an effective leadership role and work collaboratively with your colleagues to create a customer experience that goes beyond functionality, economic and emotional benefit to evoke meaning. This deeper connection with customers is a basis for innovation in brands, products and services.

Symplicit provides consultancy services in customer observation that can assist you to gain insights for innovation. Drawing on our unique toolset of eye-tracking technology, usability lab and field research techniques we support your customer focus with relevant options for the lifecycle stage you are working on.

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