

KNOWING ME, KNOWING YOU

*Psychological profiling:
it works in murder hunts.
Can it expose the traits
of web site users?*

Psychological profiling is the stuff of serial killer hunts and TV crime dramas. By analysing clues about a murderer's behaviour, criminal psychologists can narrow the search to specific types of individual. But now the techniques of psychological profiling are finding enthusiastic support beyond law enforcement, notably in the field of online retailing. A handful of software companies are developing programs that help companies profile their web site users with a view to targeting them more accurately and more profitably.

"In the traditional world, gathering profile data on individuals is time consuming and expensive," argues Paul Mitchinson, initiative manager for e-intelligence at analytics software company SAS. "But online, you can automatically record whatever a person does in terms of requests or interactions." Any web server can log which pages, images, and other files a web browser has requested, as well as details about the individual browsing, at a cost of little more than the price of storing the data. That analysis gives valuable insight into the visitor's behaviour and, indeed, their personality.

"The aim is to learn about a person in more ways and in more depth than anyone else," says Daniel Brown, CTO of London-based Applied Psychology Research (APR). "That means at some levels capturing some relatively straightforward information about a person, such as what information they are seeking in a typical search enquiry. But it also involves profiling a person when they know the sort of product they want, but haven't decided on a specific item."

Brown, who started APR using technology he devised while a psychology researcher, says his company's software can make generalisations about people that apply over time and with different levels of confidence. It uses psychological techniques and procedures to build up profiles of people – who, as Brown points



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out, "can appear more different from themselves than from other people".

He explains: "One minute you might be searching for information related to work and the next searching for something related to your social life. As a result, you appear at times to be a very different person from your work colleagues."

Although Brown says that psychological techniques such as the 'Beck Depression Inventory' (a formal questionnaire for determining individuals' level of depression) are not used in the software, more general techniques from the 'State-Trait-Anger Inventory' are used "to monitor both [a visitor's] state of mind at a given time and their traits over a longer term".

One of the biggest advantages of psychological profiling is that it can be

completely anonymous. In contrast, the goal of most traditional online analysis is to tie in the data obtained from the online interaction with that gathered offline (for example, a retailer aligning details obtained from loyalty card applications with subsequent online shopping).

That dual approach leads to privacy issues. "There are two factors in e-commerce: what marketers want and what consumers want," admits Amanda Chandler, director of data protection for US Internet advertising company DoubleClick. "Marketers think it's a fantastic idea to link [online and offline data], but individuals think the marketers often know too much about them."

It is also difficult to do. The critical thing with traditional profiling, says APR's Brown, is that you have to have a unique identifier for each person. "The challenge is that

most unique identifiers are sadly not so unique. You might have a unique identifier for your supermarket loyalty card but that doesn't actually correlate with your bank details, your petrol purchases or your TV viewing habits. So it's a very limited assimilation of your world view."

Moreover, most e-tailers only convert 3% to 4% of their visitors into buyers or persuade them to register. That means 95% to 99% are anonymous visitors.

Behavioural analysis that does not rely on knowing real-world identities is, therefore, far more likely to produce effective results. And, because psychological profiling does not require any knowledge of personal data, it is a far less worrying idea for the average consumer and far less likely to clash with European privacy laws.

Split personalities

ONLINE psychological profiling has plenty of technical issues to overcome, not least of which is identifying separate web interactions carried out by the same user. "One of the most difficult challenges is unique visitor identification," explains Ian Thomas, strategic development director for London-based WebAbacus, a start-up that develops a web-log analysis package of the same name. "One technique is a session ID," explains Thomas. By generating a long string of numbers for each browser and adding this identifier to the links on the pages sent to the user, all requests are uniquely identified in the web log. By studying the order of requests that contain the identifier, the profiler can analyse the browser's clickstream.

But, if customers leave the site or close their browsers, the web site will no longer recognise who they are when they return. And if they have not registered at the site and are anonymous, organisations will not be able to track their behaviour over time, only within that access session.

By far the best method of identifying returning visitors and of tracking them between pages is cookie technology. If the web server has 'extended logging' activated, and the browser does not have cookie inhibition turned on, then it can record this identifier with every request listed in the log. The cookie will remain between sessions so that it can identify returning visitors.

"Do I have a right to see what a business thinks of me?" mulls Brown. "It's an interesting philosophical question."

There are various ways to make psychological profiling work in practice. Both Site Intelligence, based in Didcot, UK, and Cambridge, UK-based NCorp, observe visitors' site interactions by using clickstream and search engine analysis. The UK car magazine Auto Trader, for example, uses NCorp's Ijen product on its web site to understand what is important to different customer types by observing the searches they make and the results that interest them. "It might find certain people are price sensitive, for example, or that they prefer prestige German cars," suggests NCorp's CEO Nick Bidmead.

"You can pretty much do all personalisation by group without knowing the identity of the individual and flying into data protection implications," says Mitchinson of SAS. "The vast majority of profiling isn't one-to-one marketing: it's done as tight segmenting, targeting groups of between 10 and 500 rather than a million."

Raw technical information can also contribute to those psychological profiles. Web logs, together with JavaScript routines, can give information about the time zone, the Internet service provider (ISP) that provided the Internet connection used by the visitor, the referring page that linked to the site and the time of day at which the visitor arrived.

Site Intelligence's CEO John Woods says that his company's studies of consumers' ISPs have revealed interesting differences: "A Freeserve user is twice as likely as an AOL user to buy something online."

Site Intelligence's products analyse the behaviour patterns of web site visitors, and Woods says the time of day that a customer arrives at a site can be significant. "During the working day, you'll get a lot of visitors who are sat at work, browsing sites for product information. They'll probably be in a hurry because they don't want to be caught not working. And they'll have relatively good jobs because they have Internet access. Those browsing in the evenings and at the weekend are a more general group. So you can customise your home page to make it give as much information as possible during the day, and alter it for the evenings and weekends."

Organisations can also use the referring site (the site the user clicks through from) to gather demographic analysis. SAS's Mitchinson says the most common determinant used in lifestyle and behaviour analysis is the referring site. Ian Thomas, strategic development director for London-based WebAbacus, a start-up that develops a web-log analysis package of the same name, gives an example. "One organisation we worked with runs a recruitment site. They discovered the kinds of jobs people were looking for were very closely related to the search engine they came from by quite a wide margin. Those looking for IT jobs largely came from the Google search site, while those



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looking for secretarial jobs typically came from Ask Jeeves for instance."


However, Thomas cautions against some of the claims made by various log analysis companies. "Some say you can narrow down which city the visitor comes from. What you end up discovering is there are apparently a lot of people in Leeds in the UK – but, actually, that's where Freeserve's based. A lot of log file analysis is intrinsically inaccurate and you have to work round it to get meaningful and defensible conclusions."

According to SAS's Mitchinson, one of the benefits of this kind of clickstream and behavioural analysis is determining how visitors respond to and use the web site. "The biggest uplift comes from analysing how individuals use the organisation's web infrastructure and [analysing] which marketing campaigns are drawing in visitors. You can get average spend up by another 60%." APR's Brown agrees, but says the uplift is more like 30%.

But computers are still a long way from understanding people. "How far have we got? About 5%. In my view, we're creating a piece of technology that's helpful and understands," says Brown.

One of the things that the company is working on now is being able to put its profiles into a more easily understandable form. "Making it visceral is quite a challenge." Moreover, he says, as with any psychological work, there are always going to be inaccuracies. "We're aware that in everything we do, there is error. Error in eliciting information, error in building the profile, error in classification, error in matching. So each process is error prone. One of our goals is to minimise error and minimise the consequences of error."

Although online psychological profiling is in its infancy, it is starting to produce useful results for its customers. But as it becomes more widespread, how will customers react to the idea that their behaviour is being monitored and businesses are building up 'mental' pictures of the type of person they are – judgements that will affect what products and services they are offered?

Psychological profiling may simply be too precise for consumer comfort. 

C O N T A C T

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