

# Location matters



While it's now possible to collect location-based data at a relatively low cost, commercial applications have yet to go mainstream. Kerry Sunderland reports.

**G**eographic data has been fused with market and social research for decades but technological advances are starting to help researchers understand the impact of a respondent's location on their attitudes and behaviour. Not only are researchers starting to experiment with technologies like global positioning system (GPS) devices, radio frequency identification (RFID) and Bluetooth, they are integrating platforms like Google Earth and other advanced mapping tools to append geographic information to individual households and customer files.

'One of the most exciting elements of smartphone surveys is the opportunity it presents in relation to GPS integration,' says James Burge from Research Now. 'The smartphone provides a means of capturing opinions on the go. When we then look at linking this to geo-location, "moment of truth" responses are suddenly achievable.'

Bob Chua at Pulse Group also believes GPS and other geo-location technologies are going to be a goldmine to marketers, enabling more location-based surveys to be delivered to the right respondent at the right time and place.

'Location-based research is very topical and everyone wants to know how to do it,' says Jason Buchanan, founder of GPS Interactive (GPSi) and new managing director of SSI APAC. (Buchanan founded GPS Innovations in late 2009 and then launched a new subsidiary called GPS Interactive earlier this year to enable decision-makers to better understand the movement behaviour of consumers. As part of his employment agreement with SSI, Buchanan says SSI will become an official GPSi reseller and its project managers will help deliver the location-based services.)

Buchanan says one of the biggest challenges is that some people have the romantic notion that conducting GPS research is as simple as asking someone to participate in a study that tracks their location. If only it were this easy.

## Key barriers to adoption

Recent media reports have raised concerns about companies like Apple and Google collecting location-based data. Facebook and FourSquare have also been under attack in the mainstream press for terms and conditions that appear to give them omnipotence when it comes to sharing their members' movement behaviour. The end result of this general climate of suspicion about privacy is that a lot of people are wary about location-based data being collected – research is effectively tarred with the same brush, especially when it's 'live' or 'real time' data. But this is not the only barrier to adoption by researchers.

'There are technical issues we need to address – not to mention the fact that there are competing uses of the technology. If a company can invest in delivering a targeted ad based on someone's location, or a survey, I'd wager that they're going to put their investment into advertising.'

'While it's now possible to analyse movement behaviour at a relatively low cost and you can't cheat the technology – it delivers factual data that's particularly appealing to market researchers – it's a slow research and development (R&D) process. Every time we turn a corner, there are new opportunities and challenges. The results are, however, extremely encouraging.'

The other big barrier for location-based research at this time is that GPS is very unreliable indoors.

'There is already a lot of talk about the use of the GPS functionality within a smartphone, and on the surface the idea is extremely attractive. However it should be remembered that GPS is an outdoor technology and depends significantly on the hardware,' explains Buchanan. 'For example, it is certainly possible to have an application on a smartphone that allows a respondent to take a photo, and the phone will automatically capture the respondent's GPS location. However if that location is indoors, very few smartphones (yet) have the capability to reliably deal with this situation, and will instead offer a pinpointed location with a large margin of error. The wrong use of the technology produces unreliable data. With the limitations properly understood, there is a very powerful combination of a phone's normal features (camera, video, dictaphone, GPS, bar-code scanner) that represents an exciting future for mobile research.'

'If I had a dollar for every time I've been asked to set up a GPS tracking survey indoors, I wouldn't need to work anymore,' he jokes. 'One day, GPS receivers will be located indoors but we're not there yet. We're also a long way from rolling out this technology in big quantitative studies.'

Another barrier is lack of financial investment from clients. Derek Jones from D&M Research says, 'It's easy to pique clients' interest, but more difficult to get them to put their hands in their pocket. It's understandable, though, as it takes a lot of time and discussion and a willingness by clients to explore the possibilities together in order to find the right kind of application.'

'We need to find the "sweet" application – I keep saying I am waiting for the right kind of business problem and brief to come

across my desk to say, "that's it, this is the clear way forward". The more we talk to potential clients the more potential applications we find – so client dialogue is critical.'

## Possible applications

Burge describes one possible application as follows: 'Think of the power a high-street store can have in sending a survey notification upon immediate departure from the shop. Link this with the ability to capture exact viewpoints through in-built cameras and we can access a prolific understanding of motivations, reactions and opinions of those who have shopped, browsed and even missed entering the store. The survey itself is enhanced by simply recording the interaction of certain demographics with frequency of visitation.'

Jones says his company has been exploring applications for GPS for about six months now and are finding a number of applications useful.

'Firstly geo-fencing is great for monitoring movements around places of interest such as a shopping centre or set of specific retail outlets. Add to this the data logger (pressing a button after a certain activity like a specific purchase, for example) and you can start mapping not only journeys but also where and when certain consumer activities occur. What we are finding is that these data logs can act as a more reliable memory prompt, which we call a 'geoprompt', to ask follow up questions through an interactive diary. For example, say you had respondents carry a portable GPS device with a data logger that they pressed every time they bought a beverage over a one week period. They would then log onto a portal which could ask them questions about that activity couched in a time-space co-ordinate; 'you bought a beverage at this place at this time – tell us more – what, how and why?' Contour or heat maps using aggregate journey data also have countless applications around any kind of planning whether it be roads, signage, advertising and so on – the applications are many.'

To date, GPSi has undertaken five location-based research projects funded by clients. It is important to note that these projects have involved the use of GPS devices rather than mobile phones.

'One day, everything will be done on mobile phones,' explains Buchanan. 'But at this stage location-based research and mobile research can't be lumped into one basket. Mobile phone batteries tend to go flat very quickly when you use GPS. It will be two to three years before we see significant improvements in both

the GPS technology and battery power that will make this type of research feasible using mobile phones on a large scale.'

Many assume that measuring the reach of outdoor advertising, for example, would be an ideal use for GPS technology, when in fact an enormous amount of data is needed and there is an insufficient volume of people willing and able to participate to make it work.

With literally hundreds of handsets on the market (not to mention operating systems and screen sizes), it's still incredibly difficult to make mobile phone research accessible to a broad range of people.

'To the best of my knowledge, no one has yet been able to reliably deliver location-based research surveys across all mobile phone platforms,' says Buchanan. 'Thumbspeak are really at the forefront of this type of research but at this stage, they have committed to the iPhone platform and not everyone has an iPhone.'

Instead of using mobile phones, GPSi has used a different GPS device that logs data every minute or so in the five projects it has undertaken, to record a research participant's GPS location. This data isn't delivered in real time; it is uploaded later. But it can be aggregated across the sample, which has been the challenge in market research in the past.

Buchanan says the most immediate potential of such location-based data is as a precursor for some other type of research. It effectively means that researchers can start from a new baseline (knowing a participant has visited a certain location, for example) and ask questions about their experience, without first having to ask them to recall where they've been and when. It means research is less susceptible to an individual's memory, which can often be unreliable.

## Recruitment and incentives

Finally, Jones believes research participants will need to be recruited and incentivised differently.

'I think conventional "hard" recruitment as opposed to a "soft" (panel) recruitment will be needed for these types of applications. When you are sending out GPS devices worth \$100 or more, that need to be charged daily and then uploaded to a server, it can be quite onerous for the respondent. You need to have a pretty good commitment from the respondent and therefore I see a role for the traditional recruiter.

'Incentives have to be activity based and proportional – no one is going to comply 100 per cent and that's just a fact; even we forgot to take our GPS devices out and about when we were testing them in the office. So I would think some sort of base incentive for agreeing to do the project and then a smaller reward for each activity – obviously this adds another layer of costs so you need a good system to track respondent behaviour.'

Of course, 'real time' GPS-based data collection is not the only technological advance in location-based research. An increasing number of panel companies now geo-code or geo-tag panel members so that it's possible to send a survey invitation to an individual based on their geographic location (which can be determined, with their permission, by tracking their mobile phone signal's proximity to a specific tower).



Derek Jones



Jason Buchanan

Queensland energy distributor and retailer Ergon Energy has geo-coded all of its assets and is experimenting with geo-spatial data analysis. It has partnered with Google to link the capabilities of both Google Earth and Google Maps with its proprietary aerial overlays, data mined from its customer databases and more conventional qualitative and quantitative consumer research.