



# People tracking

The acceptance of being tracked by your mobile is accelerated by ticketless transport systems, increased surveillance and successful location-based services.

Anyone who has used an iPhone will be aware that location services are now embedded in most smartphones. By the start of 2010, there were over 6,000 location-based iPhone apps, with 600 new ones being released every month. Equally, those who make use of Google Latitude will know how easy it is to see where their friends are, in real time, on the basis of where their phones are. Facebook Places similarly allows you to openly share your whereabouts. For many, the ability to be located via the position of our mobile phones can seem like a new development but it has actually been used for quite some time.

From a security perspective, when needed, and with the cooperation of the mobile networks, security services in many countries have been able to locate suspects to within a meter or so by triangulating signals from a mobile phone to the communications masts and this has been a key asset in the police's toolbox for over twenty years now. More specific location of people has been possible in recent years, even when a phone is switched off. As long as there is a battery in the phone, it can be remotely turned on, located and turned off in milliseconds and this

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too has now become an additional security issue. Especially with products like the iPhone, where the battery is integrated into the product and cannot be removed, this essentially provides 24/7/365 tracking potential of phones. This capability is now also being exploited in the commercial world. Services such as Loopt, Venti Coffee and Njection are using this information to respectively broadcast your whereabouts, find the nearest Starbucks and notify you of speed traps.

Moving forward, as phones are used to enable ticketless travel through charging the owner when the phone rather than the person gets on and off public transport networks, the use of the location of a personal mobile device as a reliable surrogate for the individual is stimulating new applications in healthcare, financial payments and social networking, to name just a few. However, it is not all just about your mobile.

In the US, the On-Star in-car communication system has been around for several years now and provides drivers with a back-up whereby emergency services can be called and locate a vehicle in case of a breakdown or accident. As this technology has become more widely adopted, the ability to use it to track vehicles has also evolved. Car hire companies have for some time had the capability to actively track where you drive and make sure that you don't cross state and national borders without prior agreement

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– or, if you do, then they charge you for the privilege. Although there was a privacy backlash initially, today there is widespread acceptance of this capability. The EU is also mandating the incorporation of this type of technology into every new car from 2012 and so soon the whole vehicle fleet, and hence its drivers, will be able to be tracked. Not only does this allow for better emergency assistance, it also facilitates the introduction of pervasive road pricing and similar schemes – without the need for toll booths.

Moving away from device-enabled tracking, but on similar lines, many of us are already being clocked in and out of transport systems and many public and corporate buildings. In the UK, the Oyster Card on the London Transport system is increasingly linked to an individual credit card holder and so can tell the system where you enter and exit the tube or get on and off buses. Similar systems in Hong Kong and Melbourne provide the functionality and so, as non-contact payment is adopted more widely, this tracking of us in and out as well as within transport networks will increase.

While passes are common for many corporate employees and visitors, the introduction of biometric entry systems – whether based on fingerprints, voice recognition or iris scans and which are a common

feature at many airports – are adding an extra layer of traceability. While the security benefits are clear, major issues around privacy are bubbling under the surface.

In addition, the ubiquity of security cameras in many urban centres and transport networks also allows for the monitoring of people and their movement via facial recognition software. In London, the most monitored city in the world, with over 7,500 CCTV cameras, the average person is photographed over 300 times a day. After being refined, again in the first instance by the security services for national security and counter-terrorism surveillance, this is now going mainstream in the commercial world. Although the subject of some concerns about privacy, after trialling in Picassa, Google's Goggles project is bringing facial recognition to a wider audience to allow them to search for something on the internet simply by taking a picture of it on a mobile phone.

Privacy campaigners have cautioned that adding facial recognition to Goggles allows users to track strangers through a photograph, making it into an ideal tool for stalkers and identity fraudsters. But as other companies, such as Israeli start-up Face.com, are also developing face-recognition tools, a global rollout is not far away. Although a privacy invasion backlash is possible in some areas, most see that with more customer-focused applications coming on-line every day, providing new information to all, consumer resistance will be marginal.

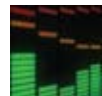
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Looking ahead to 2020, we can therefore see a world in which, whether we want it or not, and whether we seek to avoid it or not, we are no longer just monitored by border control when we leave and enter countries but are all constantly tracked for both security and commercial applications. Pervasive people tracking will fast become the norm in most regions.

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