Mobile consumer applications using location-based services are set to double their user-base in 2009, according to the Gartner Group's latest report, but the backroom conversations at mobile industry conferences tend to disparage the hyping of the technology as something for the frequent flyer. The most common use-case: you arrive in a new city and need to find a good Indian restaurant.

What most industry critics have missed so far is that the implications of location-based advertising are revolutionary for the ailing web advertising industry. The problem most websites with large volumes of web advertising inventory are facing is that they cannot sell local advertising unless users have profiled themselves on their site. There is no compelling reason for the pastry shop on the corner to advertise on a national newspaper site because the owners really only want to reach people within a 15km radius of their shop. For this type of advertiser Google Adsense and the Yellow Pages make much more sense than the New York Times Online.

Regardless of whether the content on a news story has location, a user always has location and one of the most important challenges for publishers over the coming year is figuring out how to get access to that location and begin selling and delivering advertising that is location-relevant. This is where the difficulty comes in.

Technologically there are several ways of getting a user’s location. Many mobile operators already have the systems in place to triangulate the position of a mobile phone based on the relative strength of the signals from the surrounding masts and access to these systems is made available to application developers for a fee. Generally speaking location information can be inaccurate by one to two kilometres depending on the density of cellular masts in the area.

On the opposite end of the spectrum, GPS systems are increasingly being incorporated into mobile phones and other devices. In the United States, where the bulk of mobile internet access has been driven by Apple’s iPhone, access to the phone’s location information is easier than in developing countries which have massive volumes of users but low-specification handsets. The other problem with GPS is that it doesn’t work that well in buildings.

There are several other ways to determine location, for example the geo-coordinates of Wi-Fi base stations, the hybrid model that Google uses that combines the location of your IP address with a patchwork of other data from different sources. The most recent and interesting development is that Firefox, the popular Open Source web browser recently introduced location information into the type of data a page can access via the browser.

But the technology is only a small part of the picture, and as location-based services continue to grow, the intensity of the debate about the privacy and safety of users is going to grow too. Many users seem to think that there is something subtly dangerous about revealing your location over the internet but, as always, it depends what gets done with this information. The potential to have your movements tracked simply by surfing the web has an ominous feeling about it, even if it helps make advertising more relevant and this is the crux of the matter: simply improving the quality of advertising is not enough of a value-proposition for the general public to agree to reveal their location.