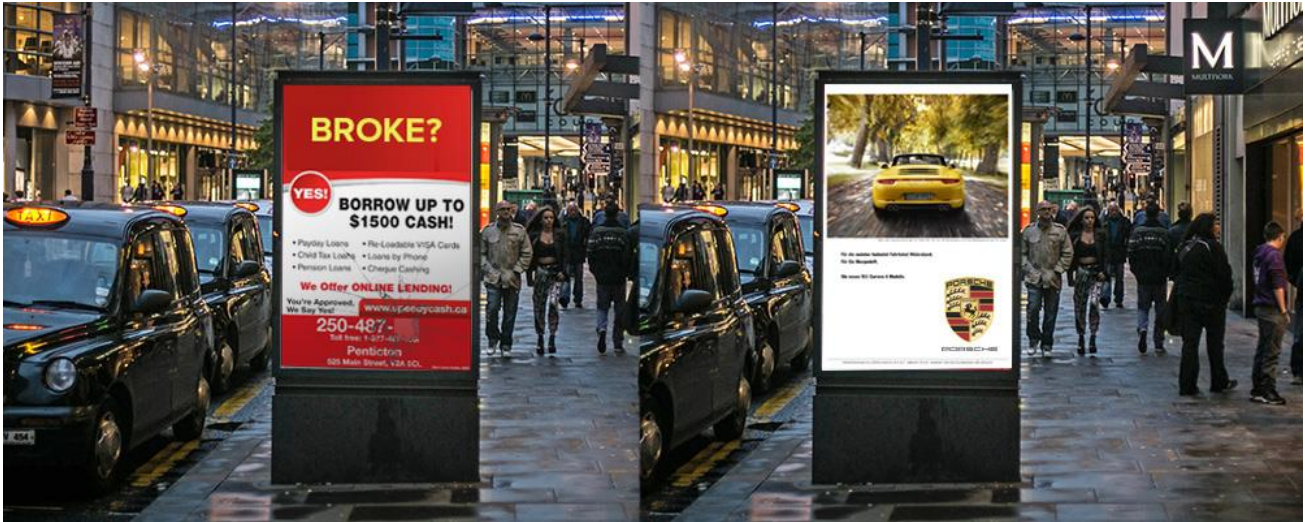


# Examining Yahoo's Nightmare Vision of 'Smart' Billboards

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On October 6th, when the company frankly had [bigger PR problems](#) to worry about, Yahoo filed a [patent application](#) for a smart billboard – a poster hoarding which proposes using an array of privacy-invading tools to deliver targeted ads to passers-by, or motorists.

Anyone who has seen the 2002 SF epic *Minority Report* will find the concept familiar, and perhaps rather chilling – in it we see the central protagonist trying to blend into a shopping mall while ‘smart’ advertisements [call out to him by name](#), in a public context where no anonymity is available.

The billboard proposed is very smart indeed – a real-world analogue of the very personalized ad-targeting which has become so controversial in the past couple of years, yet with no analogous technological remedy, such as adblocking software provides online.

The systems envisaged would use an array of data-exploiting techniques and technologies to personalize the ambient advertising experience, including cell-tower location data, facial recognition, and vehicle and license-plate recognition. The scheme proposes many sensors, including drone-based cameras, to facilitate this level of targeting.

*‘Various types of data (e.g., cell tower data, mobile app location data, image data, etc.) can be used to identify specific individuals in an audience in position to view advertising content. Similarly, vehicle*

*navigation/tracking data from vehicles equipped with such systems could be used to identify specific vehicles and/or vehicle owners. Demographic data (e.g., as obtained from a marketing or user database) for the audience can thus be determined for the purpose of, for example, determining whether and/or the degree to which the demographic profile of the audience corresponds to a target demographic.'*

If smart advertising becomes ubiquitous, it promises a range of scenarios ranging from the absurd to the potentially actionable.

## The Uninformed Billboard

First of all, what happens when a fully-arrayed smart hoarding is placed on a busy thoroughfare with multiple passers-by, more or less in a daily stream? Assuming the failure of any useful image recognition, cell-phone tower or other data that could target a particular passer, the board will likely default to the prestige (or lack thereof) of the locale, using time-of-day as a context, serving up coffee ads at 8am; job-hunting services and hot-desk meeting locales at 10.30am; food services from 11.30am-1.30pm; real estate, travel, cinema and supermarket ads for homeward-bound commuters after 4.30pm; thereafter descending on an hourly basis from the promotion of drinking locales and hotels (7pm-9pm) to religious and legally/morally sketchy material for the night owls.

This largely follows the template of network TV, but with the advantage that this screen knows the demographic average value of the location; it won't serve payday loan ads in Mayfair or Porsche ads in downtown Bogotá.

## Better Information

Now let's assume that the billboard is able to make better identification of passers-by, either as specific individuals or as consumer segments. If it sees two passers approaching, and identifies one as a high-spending and affluent consumer with no record of recent known purchases, and cannot identify the other – but can recognize a new and expensive item of clothing he or she is wearing...who does it target? The rich clam or the mysterious prodigal?

As the Yahoo patent application notes, smart billboard content would be driven by auction mechanisms, much as online advertising currently is. Perhaps in the clam/prodigal scenario, the billboard will split the difference by advertising publications or services likely enough to appeal to either of the passers-by.

*'Third parties (e.g., brokers, agents, agencies, consortiums, networks, etc.) might also participate in the exchange, making connections between publishers and advertisers and, in some cases, representing and managing the advertising campaigns of multiple entities in the exchange.'*

*'Alternatively, some entities (represented by publisher server 116 and advertiser server 118) might establish direct relationships and deals with their advertising partners.'*

## Stalked by Public Ads?

But it seems inevitable that there will be 'prime' targets in the smart poster world – possibly even specific individuals. Such person-specific targeting already occurs in email marketing and other online forms of marketing, where entire campaigns are created for single, high-value targets.

The hottest property is one that is likely to 'convert', and the aforementioned 'clam' is not necessarily such a person. There may be more value to be had in targeting a moderately-prosperous person who is known to have just exited a relationship than a far more affluent person with a (currently) low vulnerability matrix.

Logically, if one smartboard can recognize you, so can the whole network, leading to the possibility that either specific ads or more general ad *themes* may 'haunt' a recognized individual as they go about town.

Even when outclassed by fellow pedestrians with higher demographic value, *the individual in crisis is always closer to conversion*, and could find themselves, to their annoyance, winning many an auction against richer competition on the sidewalks.

## Unintentional Disclosure

As envisioned by Yahoo, the smartboard seems set to replicate many of the *faux pas* experienced by social network users, such as those who have had their sexuality disclosed [against their own privacy directives](#). Feeding location information into personalized ad-streams also offers a potential minefield regarding the disclosure of unintentional 'clues' about a target's life.

Yahoo's proposed system defaults to 'groupization' – presenting general ads appropriate to the situation and time of day/year – but gets most enthusiastic about identifying specific individuals using facial recognition and car recognition.

So if you borrow your spouse's car for a quiet-traffic drive to your mother's whilst yours is being fixed, and find that the hoardings you pass have an uncharacteristic obsession with contacting the best divorce lawyers, or offering loyalty rewards at a restaurant you've never been to with your partner...you might consider that there were better ways to face the implications at hand.

## Smartboard Memes

If ambient advertising becomes a Litmus test for our socio-economic circumstances, some strange new memes and cultural mores may come into being. '[Shabby chic](#)' could end up counting for nothing, as a stream of wealth-management ads seems to follow around that innocuous mid-forties guy in the dull jeans (presumably now a mark for muggers and gold-diggers alike); confidence tricksters and hustlers may be able to 'game' their own data merchant profiles in order to make more opulent advertising bloom around them, for the purposes of deception; groups of passers-by will look around their immediate vicinity in an attempt to identify the target for the ad they're passing – perhaps to the chagrin (or delight) of that individual, if they are indeed easy to recognize from the context of the ad.

If pedestrians and drivers do end up feeling intimidated, victimized or just plain annoyed at having secret knowledge about them turned into glib ad-fare by inference and algorithms, it's hard to know what recourse they might be able to obtain for such an ephemeral series of occurrences.

In the United States the Federal Trade Commission [issues and enforces guidelines](#) and legislation; in the United Kingdom the [Advertising Standards Authority](#) is often criticized as toothless, though it often wins on familiar territory, such as intra-company disputes over broadband claims. Information about us can be resold in such a fractal manner as to become perpetual, and [hard to remove from the system](#) or to control or influence.