IPSOS VIEWS

On the Move:
Measurement for Out of Home Advertising

by Andrew Green

> **There has never been a more exciting time in the OOH industry. The industry has exploited all the benefits of digital technologies, but retained a unique geographical footprint in a way that no other medium can.**
>
> Michael Cooper, CEO, Rapport

OUT OF HOME ADVERTISING – AN OVERVIEW

The Out of Home (OOH) medium, which comprises everything from roadside billboards, bus shelter signs, train and taxi ads to panels in gyms, pubs and car parks - has transformed beyond recognition over the last decade. Long associated with men in boiler suits carrying buckets of glue to paste up billboards in the middle of the night, it now offers interactivity, time-based buying and increasingly sophisticated audience analysis.

OOH advertising has a lot of good things going for it. In recent years it has opened itself to more innovative creative executions, as well as improved data to support media planning and buying. It has also entered the world of programmatic trading, enabling 'audience buying', which targets behaviourally-defined customers and potential customers rather than broad demographics. This, in the eyes of many, is the future of all media buying.
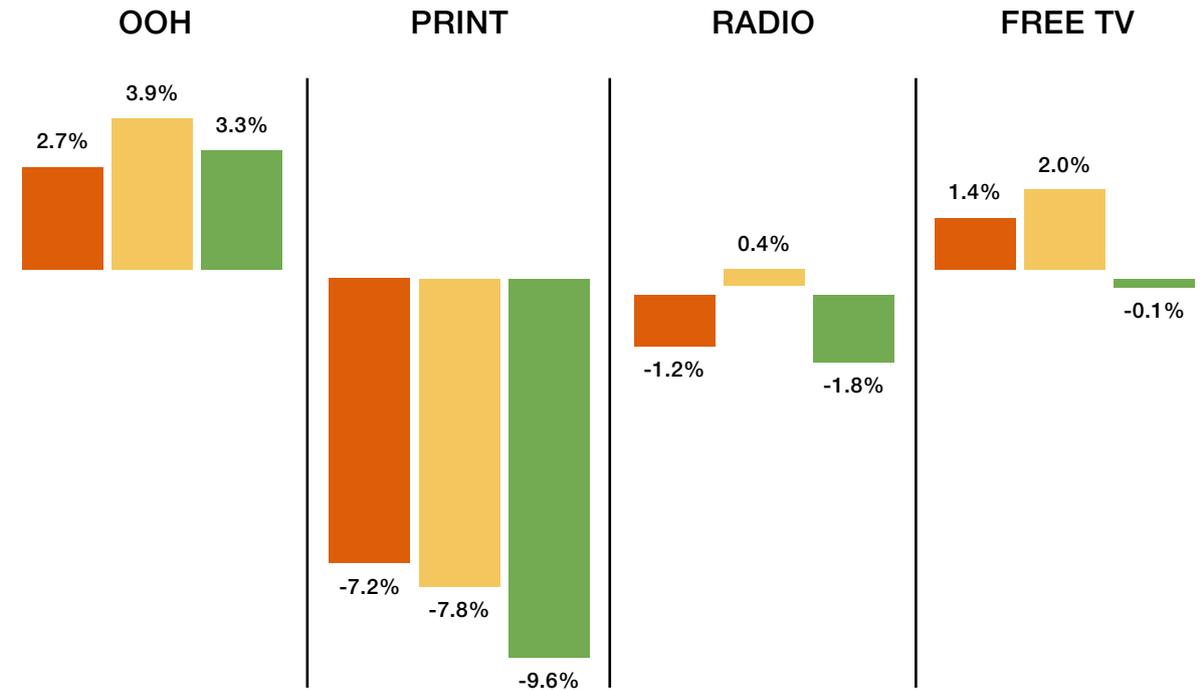
Digital technology has enabled content to be uploaded at any time, with marketers no longer confined to making monthly or fortnightly copy changes. Instead, advertising messages can be targeted to specific locations, contexts and time periods. Posters can also be programmed to interact with people in various ways.

Data from Rapport show how OOH advertising has grown over 10 years (2007–2016), and is expected to grow in the coming years (see below). This compares favourably to other 'legacy' media like print, TV and radio, which are looking more challenged.

Recent projections from Zenith[1], predict that internet display, search and classified advertising will contribute some $82 billion of spending to total global advertising growth between 2018 and 2021. Print is expected to decline by $11 billion while OOH is projected to be the second largest contributor to growth, ahead of television and radio.

According to WARC[2], this growth will be driven almost entirely by increases in spending on Digital Out of Home advertising (DOOH). Legacy audience measurement systems were not built to report fully on DOOH audiences. The next generation of measurement will need to plug this gap.

Global advertising spending trend (% change)

OOH
2.7%
3.9%
3.3%

PRINT
-7.2%
-7.8%
-9.6%

RADIO
-1.2%
0.4%
-1.8%

FREE TV
1.4%
2.0%
-0.1%

■ Last 10 years (2007–2016) ■ Last 5 years (2012–2016) ■ Next 5 years (2017–2021)

Source: Rapport

A NEW MEDIUM FOR A NEW AGE...

OOH is the last advertising format that consumers can't skip or block.

Vincent Letang, MAGNA

The average adult in the UK spends around 3 hours and 10 minutes every day outside of their homes and offices, of which 16 minutes is in view of a poster advertising panel - according to data from Route, the UK's OOH audience measurement body.

These data are captured passively from meters people carry with them. This is similar to the amount of time people spend potentially exposed to radio advertising.
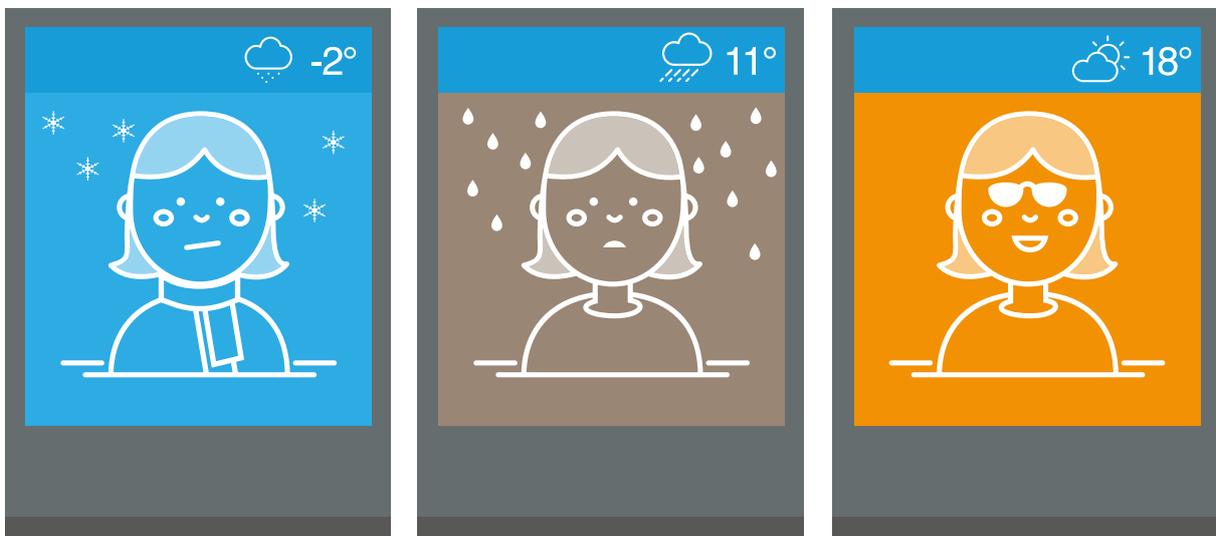
The great innovation of Digital Out Of Home advertising is that the content shown on poster panels can be uploaded dynamically. Advertising messages can be targeted to specific locations, contexts and time periods and can also be programmed to interact with people.

For example, poster panels within a certain distance of retail outlets can vary the messages they display according to the time of day. Restaurants can advertise daily specials or vary the messages at lunch and dinner times. Retailers can promote special offers, with the goal of driving potential customers in their direction.

Messaging can also be programmed to change according to external data such as traffic conditions, interest rate movements, the pollen count or the weather and promote different products to fit the current environment. To take just one example of this, beauty retailer Marionnaud took advantage of the technology by promoting different brands when it was snowing, raining or sunny, for example.

Posters can also be made interactive. This can be done as simply as placing a QR code on it, allowing people to scan it into their smartphone and access extra content or an exclusive offer. Or cameras can be placed in and around the site which enable all sorts of games and gimmicks to be presented, and in this way entice people to interact with the content. To date, we have seen brands take advantage of these opportunities with posters that allow people to charge their phones, guide them to park their cars or respond to facial and body movements with video content.

AUDIENCE MEASUREMENT

Digital Out of Home media are place-based and time-sensitive. Marketers need to know two things:

1. *How audiences ebb and flow between and across different panels at various times of the day.*

2. *Whether their advertising is having an impact.*

With the OOH medium, which is the only pure advertising medium (other media also deliver programmes and editorial content which need to be measured) technologies now exist which can help us get closer to what is often called 'audience-based' targeting, as opposed to more generalised demographic targeting.

This has been made possible by the collection of information about consumers via the smartphones they carry with them. Most phones have apps installed which, via SDKs installed within the app, collect data on where their owners are and what they are doing online. This information is aggregated and anonymised by various companies and packaged for sale to marketers and media vendors.

OOH AUDIENCE MEASUREMENT: COMPONENTS

There are a number of key components comprising the current industry OOH measurement system. These include:

An *inventory management system* for listing, storing and classifying all the poster panels that need to be measured. The system stores details on the exact location of each panel, various physical characteristics (such as its size, height, angle to nearby roads), whether it is illuminated or not and the presence of any obstacles which may impede the view of the panel.

The *visibility* of each panel. This is a combination of defining the area from which the panel can be physically seen (which depends on the information collected in the inventory management system) and adding more qualitative data on how likely it is to be seen (which depend on its size and other environmental factors).

A measure of *traffic flows* where available. In some countries we are able to ingest data into the system on the number of vehicles and/or pedestrians travelling along certain streets or routes. In the UK for example, automatic traffic counters are installed on many thousands of roads, continuously counting traffic, while periodic surveys are made

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Ads can then be targeted against consumer behaviours, as well as their demographics. Their effectiveness can also be measured.

This kind of consumer profiling has not been part of what is usually defined as 'audience measurement'. The core mission of an OOH audience measurement system is to provide an accurate and detailed picture of the number and type of people passing within view of individual frames. Consumer profiling and audience-based targeting can then be layered on top of the system.

Accurate audience-based targeting cannot exist in the absence of a firm audience measurement foundation.

The 'gold standard' approach to OOH audience measurement employs bespoke meters which can tell us the precise location of individuals, both inside and outside, to within a metre, every second of the day. If this precision is not required or cannot be afforded, another option is to track people via a dedicated app downloaded to their smartphones, which will ping their location every 30 seconds or so. But this will not often work within indoor environments.

of volumes of road and pedestrian traffic on other routes. Bus and train operators, as well as station and shopping mall owners, often have detailed information on the number of people visiting their locations or using their services. Although the data is never perfectly complete – it does not measure every location, every hour of every day – it exists to varying degrees in many countries and can be used in conjunction with survey-based measures.

A *travel survey*, which allows us to turn traffic data into audience data. It applies demographic descriptors and journey patterns to traffic volumes. In the most sophisticated systems, dedicated meters are carried by representative panels over a 14-day period. This gives us an accurate picture of the journeys these people take and allows us to project the data across the population.

Data science techniques are applied to this array of data sources in order to present an integrated set of audience data. This would ideally be audience estimates for every panel by time of day and a system for evaluating advertising campaigns using multiple panels over a period of time.

A *software delivery system* for reporting the data to end users and enabling panel and campaign analysis.

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LEVELS OF SOPHISTICATION

Although the OOH measurement system will be built around the components listed above to some extent, not every market can afford the 'gold standard' solution. But other options are available for each part.

The inventory management component is the critical foundation for any measurement system, but it is also one of its less costly parts. Costs depend on the scope of the measurement (how many and what kinds of panel), the amount of information collected on each panel, and whether it is collated by the panel owner or an independent party.

The cost of importing different datasets on traffic flows begins with locating data sources and then testing the data for quality and accuracy. Costs are dependent on the number and quality of data sources employed (the UK system uses more than 150 different datasets in its' Route system), which can be managed by users. Where such data are limited or unavailable, traffic and pedestrian surveys can be carried out. Digital mapping and traffic analytics data can also be layered in from various sources.

Probably the biggest variable cost is the Travel Survey. This involves recruiting a representative sample of people (the correct sample size will depend on the size and complexity of the populations to be measured) and finding out about their travel behaviour. The lowest cost option is simply to ask people about the journeys they took on the previous day. These individuals can be recruited and questioned using any number of approaches, such as face-to-face or by telephone.

A more accurate approach which does not rely on recall is to deploy a Smartphone-based solution where people are asked to download a tracking tool (such as the Ipsos G-Quest app) onto their Smartphones. The app monitors locations at regular

intervals using GPS from which journeys can then be calculated. It is more accurate outside than it is in closed (indoor) environments.

The gold standard approach is to ask a representative sample of people to carry a bespoke meter such as MGE Data's MobiTest meter, currently used by Ipsos in the UK and France. This meter not only records where people travel in outdoor environments second-by-second, but it can also detect journeys inside buildings.

Using an array of sensors, the meter enables us to measure and evaluate typical behaviours including walking speeds, waiting times, use of escalators, sitting, running and so on and then assign these behaviours to precise locations (which, in turn, can be related to the locations of poster panels).

The sensors include a digital accelerometer, gyroscope, barometer, magnetometer, thermometer and wi-fi, as well as GPS – all synchronised by time code. The sensors detect and record direct differences in motion (acceleration, direction) and indirect differences (altitude, temperature, distance to access points, speed).

BEYOND AUDIENCE MEASUREMENT

The techniques used to estimate the number and demographic profiles of people passing any individual panel continue to improve. The meter approach described above enables accurate estimates to be made of these audiences by individual panel, by time of day.

When combined with additional information about what people are doing before and after they pass a panel, marketers can paint a fuller picture of who is likely to see their message, and whether they react to it.

Detailed information on the location of the panel (beyond its GPS co-ordinates) is one part of the puzzle. Locations can be classified by type, such as shopping mall, sports arena or airport, and filtered down to a finer level of detail, e.g. coffee shop, named retailers. These are generally referred to as 'Points of Interest' (POIs).

The second task is to track individuals in relation to these places. This is done using Software Development Kits (SDKs) - plug-ins added to various apps installed on most Smartphones. The apps enable the tracking of locations visited by people carrying the devices. Journeys can then be mapped to the Points of Interest noted above, as well as to individual poster panels. As journeys around and between POIs are tracked over time, it is possible to build a profile of the people behind the smartphones. Are they international businessmen, as evidenced by frequent use of airports, hotels and banks? Or sports-lovers who regularly visit arenas and sports retailers? Or heavy movie-goers often found at the cinema? And what else do they do?

When this works smoothly, marketers are able to target people categorised in one or more of these ways, and plan their OOH campaigns accordingly.

Such data can be used to evaluate the digital inventory and also to feed programmatic engines which automate buying and selling. Such automation is now the norm in the trading of digital display advertising - although it remains in its infancy for other media like TV and radio. In the OOH medium, digital panels represent a fairly small share of all sites but, just as premium airline seats make up a small proportion of the aircraft's total seats but earn the vast majority of the revenue, DOOH panels tend to attract greater revenue than their non-digital counterparts.

PROCEED WITH CAUTION

It is important to note that these Out of Home data are a **complement** rather than a replacement for standard audience measurement data. There are many reasons for this. The most advanced audience measurement data, based on a combination of bespoke multi-sensor meters, traffic modelling and data science provides a critical foundation for any valid assessment to be made of OOH audiences.

Smartphone data, while rich and potentially very useful, cannot claim the same degree of accuracy as a bespoke meter. In order to pinpoint the location of a smartphone, it is necessary for the phone to 'ping' its location to nearby points of interest. It does not do this continuously, as the bespoke meter does, but periodically Every app will do this at different intervals, depending on what it is used for, but as tracking peoples' locations accurately is rarely the main purpose, each app will vary both in how accurately it pinpoints location and how often it checks back.

As a result, while we know where the phone is on those occasions, we need to *estimate* how people travel between the points. Some estimates are easier to make than others. But they are not as accurate as observations.

Another issue for the data is that we are tracking devices and not people. We can, of course, make assumptions and predictions about who is behind each device, but this is not the same as actually knowing who they are.

> **Accurate audience-based targeting cannot exist in the absence of a firm audience measurement foundation**

Many people may have several apps on their phones, each of which is tracking their travel and behaviour at some level. It is important not to count the same people multiple times!

Not everybody who passes by a poster panel sees or reads it. They may be looking in another direction, talking to somebody or, most likely of all, staring at their phone.

When people are tagged as having gone into a store after passing a panel, they may have been headed that way anyway so we cannot say that they were driven by a special promotion featuring on nearby poster panels.

In short, for the medium to fulfil its potential, it needs both a solid and reliable audience measurement system and a complementary data stream which helps refine targeting. The first needs to be built around traffic modelling and a projectable mobility study using multi-sensor meters; the second needs to be used with care to refine, but not to replace the core audience data.

SUMMARY

Out of Home media are growing more quickly than other 'traditional' media, powered by a rapid growth in the number of premium-priced digital panels. It has not suffered from the erosion of audiences experienced by the likes of printed media and television. Digital technology acts as a boost, rather than as a dampener to the medium.

DOOH panels enable dynamic messaging, which can be varied according to location, time of day, external factors like the weather or pollen count and in response to special offers or promotions. It also allows advertisers to build interesting interactive sites, which can generate extra attention and interest, as well as providing a feedback mechanism for the advertising.

The medium has always sold itself as one where advertising cannot be blocked or skipped. Because that is all the medium is: 'pure' advertising, unencumbered by editorial content.

The task of audience measurement is to capture these strengths – ideally by reporting audiences by time of day to each individual panel. The extent to which we can use observation or modelling to deliver this will vary according to available budgets; the greater the role of observation in the mix, the higher the cost and the greater the precision that can be offered.

Audience measurement data can be complemented – but not replaced – by data harvested from peoples' smartphones as they are passing through an area, which can help marketers focus their messaging and locations more tightly.

In a world that is moving rapidly towards one where trading of the advertising inventory is automated, it is important that the data feeding the programmatic engines has a solid basis in fact and observation, as well as in models and assumptions.

REFERENCES

1. *Zenith Advertising Expenditure Forecasts, March 2019*

2. *Global Ad Trends: DOOH, WARC, November 2018*

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