Adalyser®

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Why Adalyser?

Not all attribution models are created equal.

This document highlights a number of signs to look out for and avoid when adopting a TV attribution model.

Developed for our business - now used throughout the world

Adalyser was launched in 2011 following OneSoon's own experience of media planning and analysis.

We understand TV attribution and have over the years seen a number of attribution models with fundamental problems. This document highlights some of these issues.

Sign #1: A Fixed Response Curve

Intuitively there is a period of time after a spot is aired where the response to the advert is at its greatest and a point where the response drops off.

A curve can be used to model the distribution of responses after the advert and apply weightings to a particular type response when deciding how to attribute and resolve spot clashes.

Applying a response curves also ensures that responses which are received a long time after the broadcast of the spot are not attributed to it.

If your model applies a response curve the next question should be "What is the shape of the curve and does it vary between different spots?"

Examples of response curves are shown in diagrams 1 to 3.

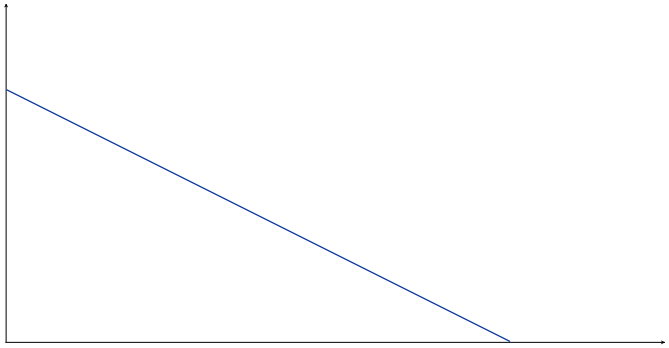

Diagram 1: Linear Response Curve

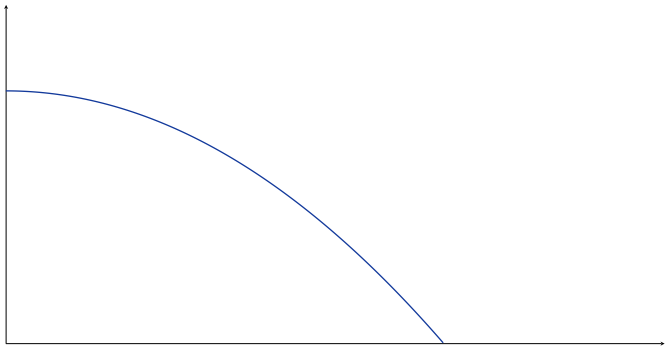

Diagram 2: Parabolic Response Curve

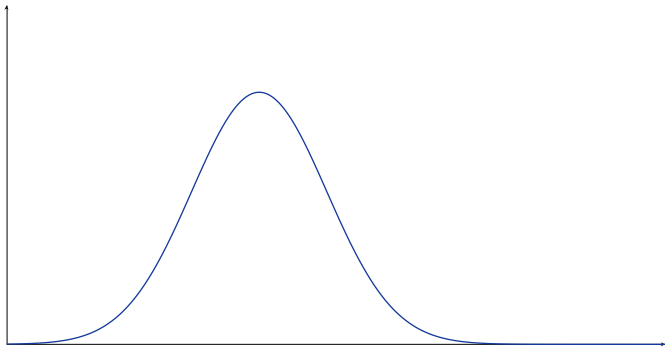

Diagram 3: Gaussian Response Curve

Applying a fixed response curve assumes that all viewers behave in the same way.

At Adalyser we know that this is not the case. The behaviour of viewers varies between channel and time of day and therefore a fixed response curve is not a good way of modelling behaviour.

The red curve on diagram 4 represents an averaged response curve for spots broadcast on a specific channel. The previously mentioned linear, parabolic and Gaussian have also been overlaid for comparison purposes.

The channel specific response curve mostly resembles the Gaussian curve but in reality is much closer to a skewed-Gaussian distribution. This distinction is crucial when attributing response for this channel.

The channel specific response curves highlight a peak around 60 seconds.

It also shows an elongated tail slightly above the baseline level with the majority of direct response arriving within the first 100 seconds.

If your model were to use a linear or parabolic response curve then the model would be placing too much importance on the first 20 seconds after spot broadcast.

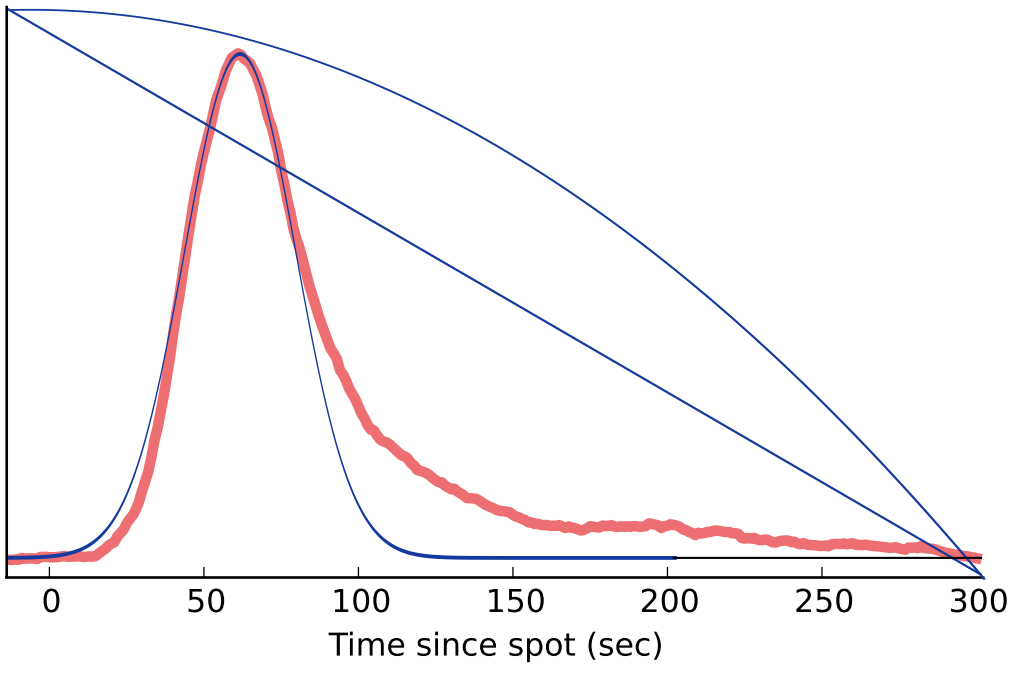

Diagram 4: Channel Response Curve

More importantly if a linear or parabolic curve was applied significant amounts of baseline traffic would be incorrectly attributed to the spot as it over estimates the size of the tail by a large margin.

If a linear curve is applied significant volumes of peak visitors would be excluded as the peak is considered to be at the time of broadcast.

If a Gaussian response curve is applied then the model would under attribute responses occur during the tail.

Response behaviour is not fixed so why model it using a fixed response curve?

However peak position and shape of the response curve can change subtly between spots due to factors such as time of day, channel and random human behaviour.

Diagram 5 illustrates this point. It shows different response curves based on channel and time of day and it's clear no fixed response curve fits all.

Our V4 attribution model does not attempt to apply one type of response curve .

Once a behavioural fit is obtained the response curve is then used for the specific spot.

Adalyser Solution: Build a library of curves and use machine learning to select them.

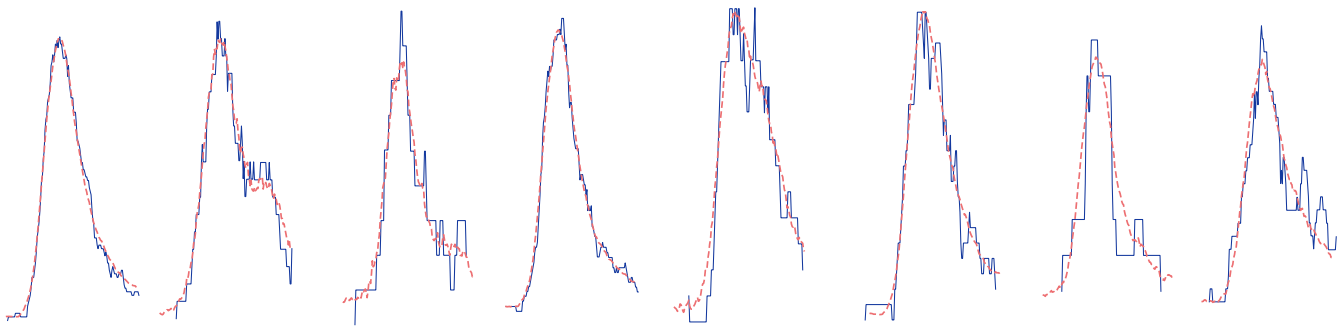

Diagram 5: Response Curve Variations

Sign #2: Using impacts to estimate response

A common method of measuring a spot's performance is to look at the viewing figures (impacts).

The theory being that if more people have viewed a spot then you would expect more people to respond to the spot.

Relative impacts can then be used to apportion response in the event of a spot clash and give a larger share of response to the spot with the greater impacts.

Here at Adalyser we undertook an analysis using in excess of 1000 spots to see what kind of relationship existed between impacts and response.

Diagram 6 and 7 illustrate our findings.

Each dot on diagram 6 represents a spot whose position is determined by the impacts delivered and response attributed. A spot delivering large numbers of impact and driving a significant response will be positioned in the top right.

The dashed red line on diagram 6 shows that a positive correlation does exist but it's not a very strong one.

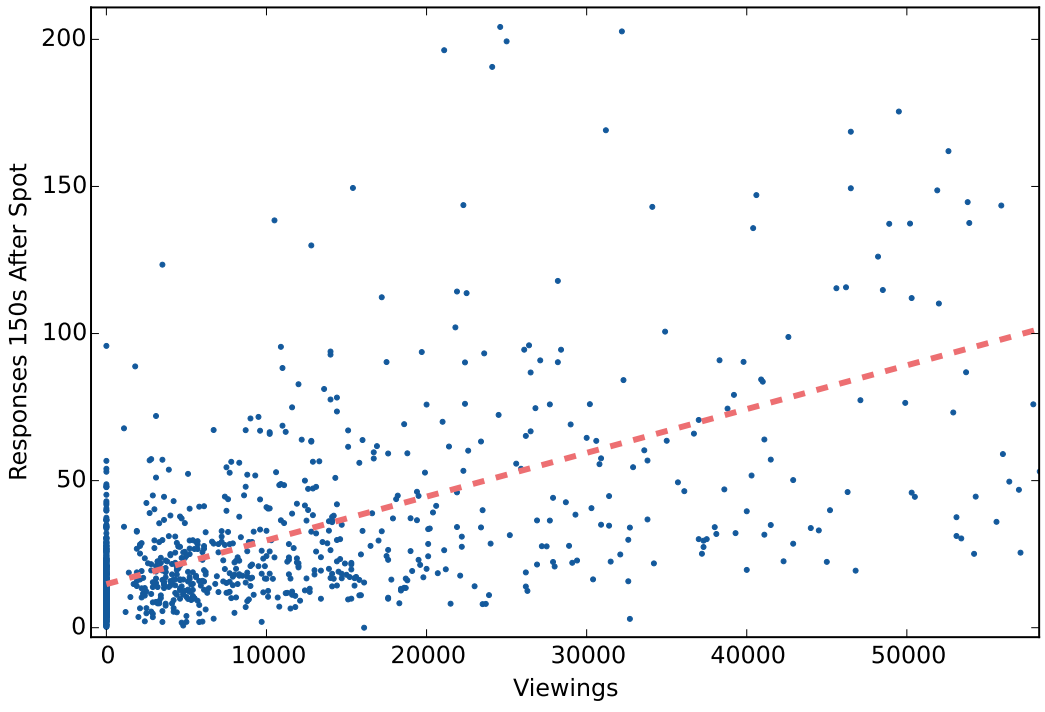

Diagram 6: Impacts vs Response

Diagram 6 shows large numbers of spots which have zero or low impacts outperforming much spots delivering more impacts.

Diagram 7 shows the volume of attributed response for a single spot from Comedy Central and highlights the fact that impacts are not always a good corollary for direct response.

Adalyser Solution: V4 does not use impact data to perform attribution. Adalyser uses the raw data itself to decide how much to attribute see diagram 8.

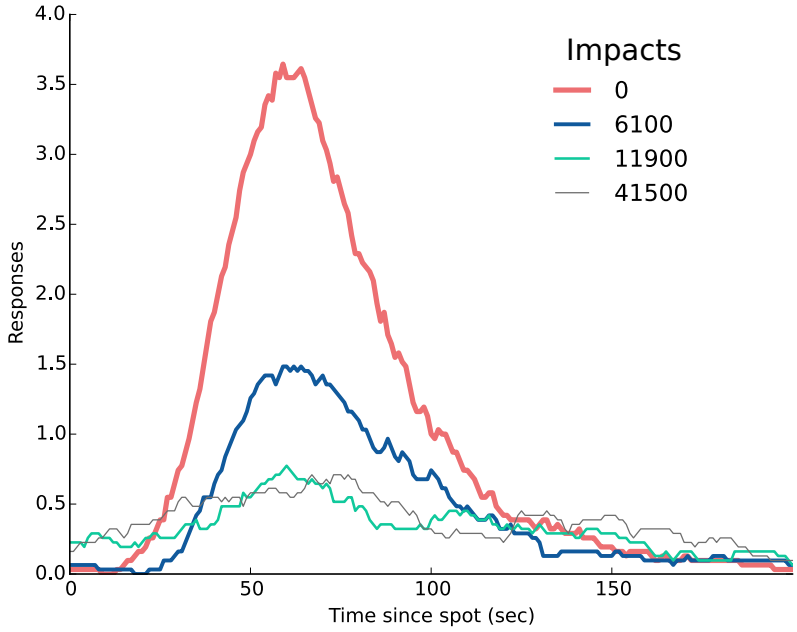

Diagram 7: Single spot response curves

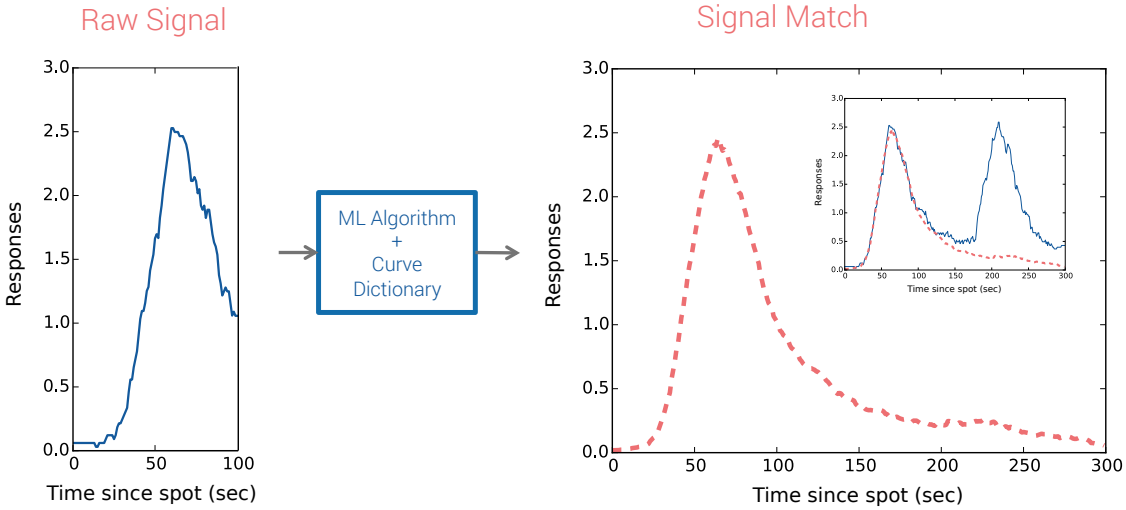

Diagram 8: Adalyser V4 Attribution

Sign #3: No filtering of signal noise

Traffic to a website is highly susceptible to random fluctuations in visits.

In diagram 9 we see a spot peak (dashed line) followed by a series of noise peaks (shaded blue area).

Your attribution model may be including these random peaks in attributed numbers, especially if you have a long response window or are using data with minute level resolution.

This can be a significant problem for spots that produce little or no direct response. The noise fluctuations are therefore significant in size and may over inflate the figures for the spot. The cumulative effect of this across a single channel may mean that it looks like good value for money!

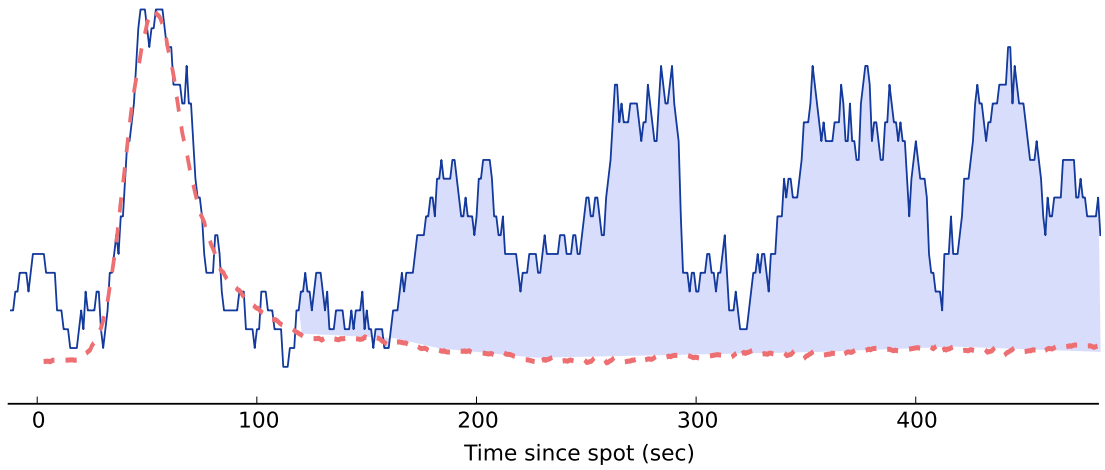

Diagram 9: False peaks

Adalyser fits response curves to the data ensuring that the excess noise peaks are not attributed. Since we know the profile of the response curve we can decide accurately what is and isn't caused by the spot. In the example above the shaded area above the dashed line is identified as noise and not included in the attribution.

In addition, for scenarios where no matching curve fit can be made the spot will not be attributed anything, further limiting noise attribution.

Adalyser Solution: Curve fitting limits how much can be attributed.

Sign #4: Quality of input data

If your attribution model is using spot or response data with minute level resolution then your model will not be able to resolve spot clashes accurately.

The issue of data quality and granularity with regards to attribution are discussed in more detail here.

Diagram 10 shows the same response data for a clash between two spots (S1) and (S2) using minute (top) and second (bottom) level resolution.

When data accurate to the minute is used the responses from the two spots merge into a single peak hiding the fact that there is a dip in traffic between the spots. The result is an over attribution of responses to S2.

The level of inaccuracy is compounded if spot broadcast times are not recorded to the second.

Depending on the type of inaccuracy the spot time could be incorrect by up to a minute of the actual broadcast time causing response peaks to be missed or more importantly peaks occurring before the broadcast time.

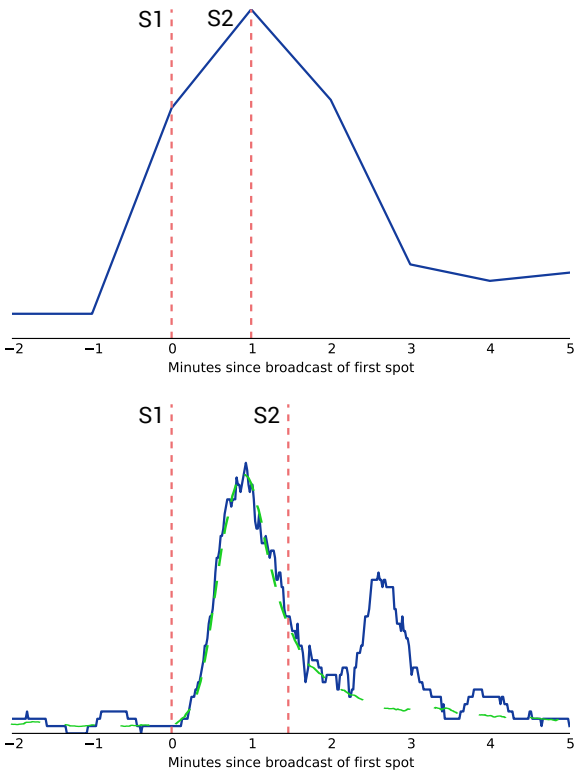

Diagram 10: Data Accuracy

Adalyser Solution: Automatically collects data with second level granularity.

Adalyser uses spot and response data accurate to the second. It is collected automatically with our tracking tags and allows us to resolve individual peaks during spots clash to ensure the responses are attributed accurately.

Sign #5: Using consolidated data to calculate costs

Consolidated impact data includes time-shifted viewers who are not eligible for direct response attribution.

Impact figures are updated after the airing of a spot. On day 1, live data reports viewings that take place at the time of the original broadcast.

In subsequent days the impact figures are consolidated to include additional playback of time-shifted content that occurs within 7 days of the original broadcast.

This time-shift viewing is added to the live data to produce consolidated viewing data. This is made available 8 days after the original transmission date.

Consolidated data is the BARB Gold Standard used by the industry to report trade and price.

The final cost of each individual spot includes both live and consolidated impacts.

This can cause an issues for TV attribution because attribution only considers the immediate impact of TV advertising.

Consider the example below shown in Diagram 11.

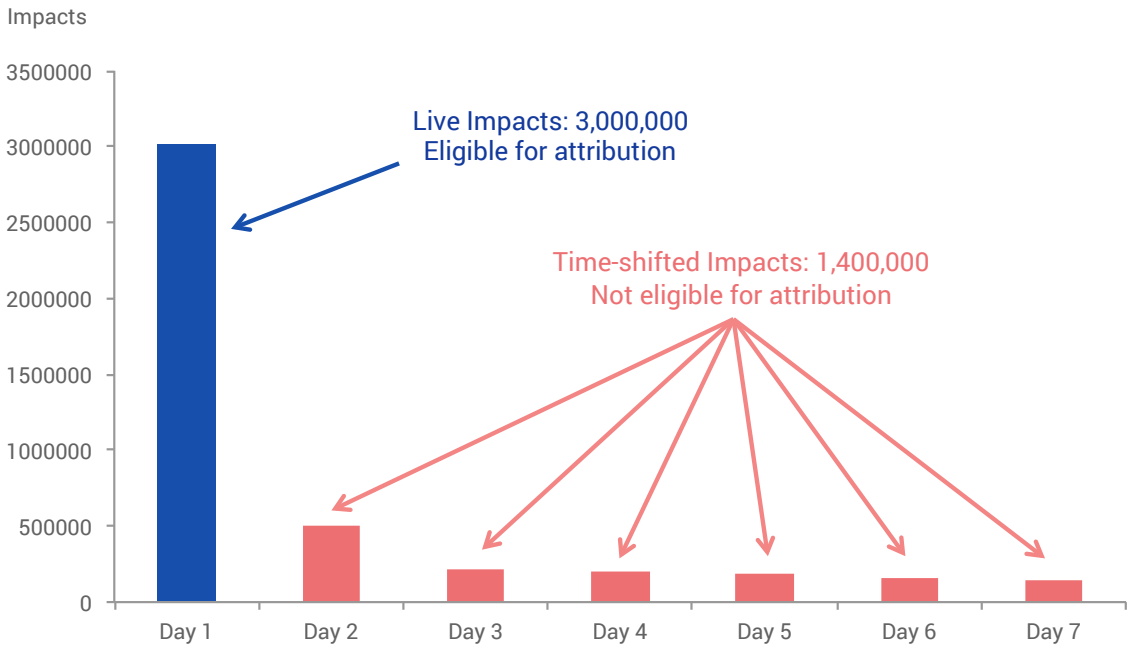

Diagram 11: Live vs Consolidated Viewings

Diagram 11 shows 3m impacts were delivered from the live broadcast and a further 1.4m from catch-up viewing.

Assuming a CPT of £3.20, the spot cost can be broken down as follows:

- ***Live cost: £3.20 * 3000 = £9,600***
- ***Overall consolidated cost: £3.20 * (3000 + 1400) = £14,080***

If the spot generated 1000 responses, the cost per response is as follows:

- ***Live (true cost per response): £9.60 per response***
- ***Consolidated (overall cost per response): £14.08 per response***

This represents a difference in the calculated cost per response.

As Adalyser is the only solution that integrates directly with all key sources of TV spot data (Media Ocean and BARB) we can calculate the difference between live and consolidated impacts and generate a 'true cost per response' metric.

This metric only includes the portion of each spot's spend that is eligible for attribution.

Additionally, the proportion of impacts delivered by catch up varies hugely between channels and programmes. For example Downton Abbey typically has > 25% of impacts delivered by catch up. Whereas live sporting events have a very low proportion of impacts delivered by catch up.

As a result the only way to accurately and fairly compare every spot in a campaign is to use live impacts and costs.

Adalyser Solution: Integrate with key partners to obtain impact figures at all stages of the spot lifecycle in order to provide a 'true cost per response'.

Sign #6: Assuming all device types are equal

Due to the second screen effect direct response is more likely to originate from mobile devices.

It is often more convenient for someone to grab their phone or tablet to quickly checkout a website rather than use a desktop device. Phones are usually with the person, so when the spot is aired they can respond immediately.

Diagram 12 shows the responses to a spot for both mobile and desktop / laptop devices. The number of responses from mobile devices is much greater than desktop devices.

In addition if different device types are not treated independently then their signal can get lost in the baseline. Diagram 13 shows the effect of this.

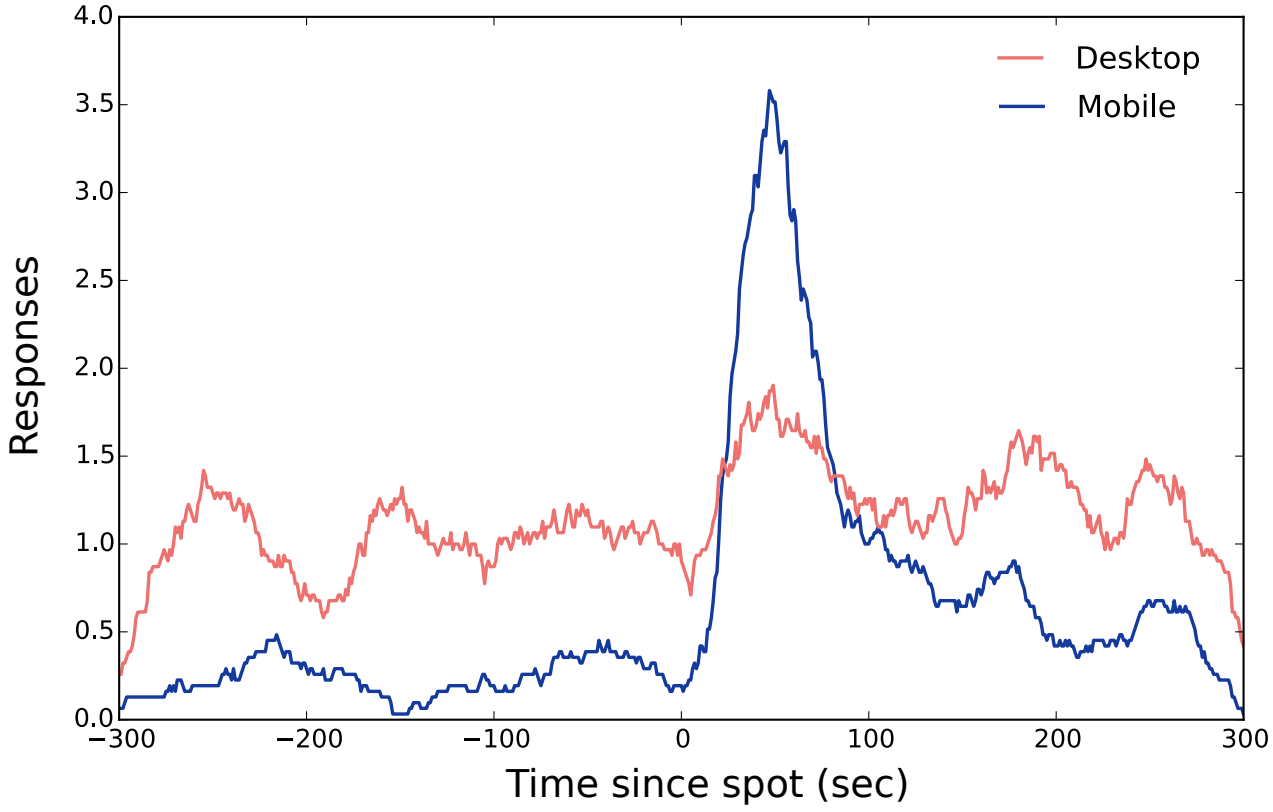

Diagram 12: Desktop vs Mobile Responses

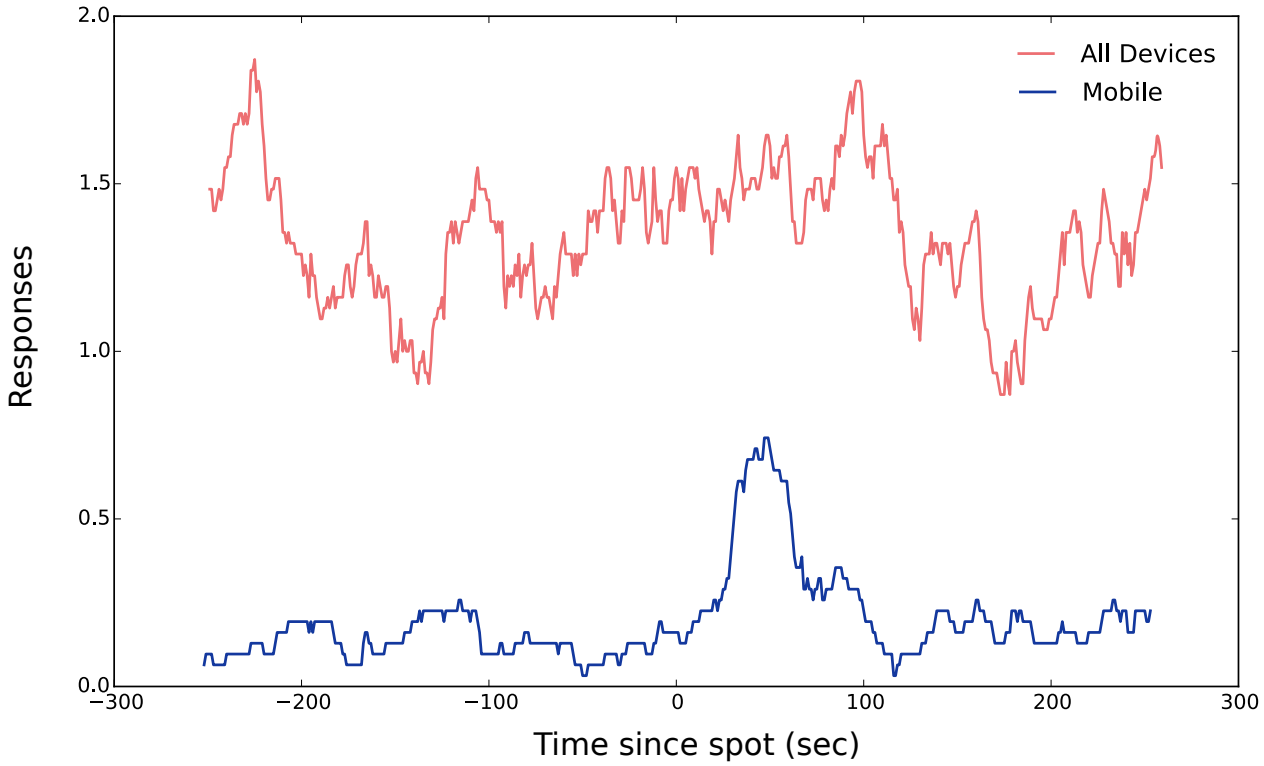

Diagram 13: All vs Mobile Responses

Diagram 13 shows compares the responses for all devices with just mobile.

The signal for all devices appears to have no peak after the spot's airtime. If you were to use this signal for attribution you would essentially attribute 0 responses to the spot even though viewed independently we can clearly see a peak in mobile responses.

Adalyser Solution: During capture our tags always capture device type and our models attribute different device types independently of each other.

Adalyser separates out the response by device and applies a separate baseline and attribution model to each. This means no signal will be lost amongst the noise.

Get in touch with **Adalyser**

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