The digital attribution challenge

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ScanmarQED gives marketing departments the tools to analyse and fine-tune the marketing mix, based on their own data and drawing on their own intimate industry knowledge.

Sophisticated modelling, using PC software that is no harder to handle than a spreadsheet, makes budgeting, planning and forecasting quick, accurate and practical. Devising the best marketing mix no longer depends on hunches and guesstimates. Past performance can be analysed and future performance predicted, with answers available within hours, rather than weeks.

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If you work in marketing and you've not been bombarded with the term "attribution" in recent months, think yourself lucky.

Everywhere, people have been talking about the "attribution challenge" and asking how they can bring some science to bear on the "attribution puzzle".

This problem for the modern marketer revolves around one key challenge: how do you measure the effectiveness of the multitude of marketing activities consumers are exposed to? In particular, people are using this term in relation to the digital world (though, as marketers know, it's not only a digital challenge).

In the recent past, attribution was about helping digital marketers know what was effective and what was not in the areas of display and search. It is now laying claim to a wider sphere of interest that covers email, affiliates, mobile, video and social media, and other digital marketing channels, such as price comparison and aggregator websites.

What makes digital so special?

So much data is created now that it sometimes seems we're drowning in it. IBM famously estimated that 90% of the data in the world today had been created in the last two years . Consumers know that every online click, website visit, mouse movement and period of time on site is being tracked and recorded to help marketers work out how best to get their messages across.
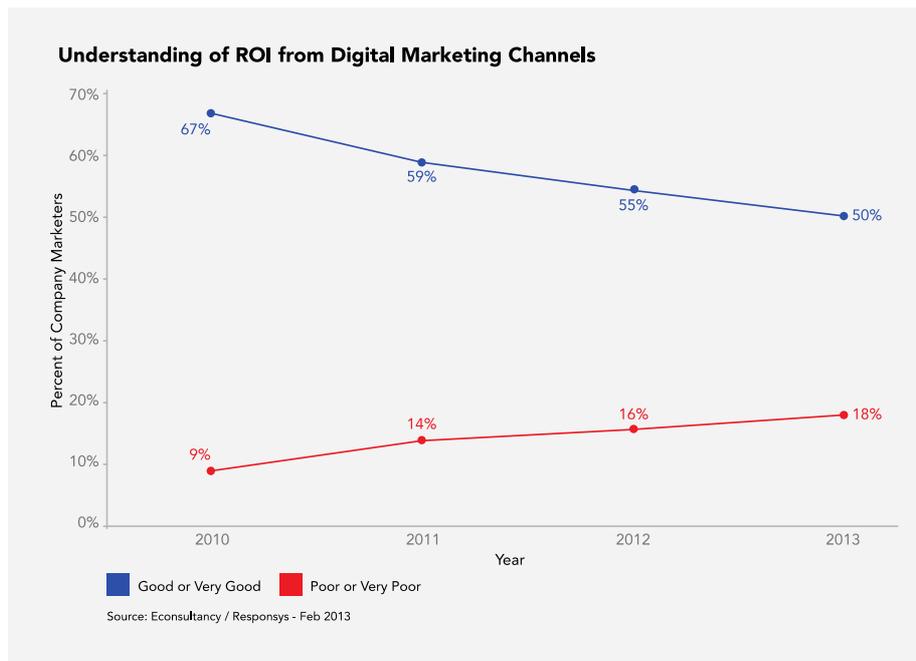
Digital media thrive on this mass of data. Looked at in isolation, none of the individual data points tells you much. In the aggregate, though, significant patterns, trends and insights emerge which can drive business forward.

Since Google introduced AdWords in 2003, advertisers have flocked to digital media, often in the hope that it can offer a level of accountability that goes beyond what's achievable in offline media, such as television, radio and the press.

But it has become clear, over the years, that while AdWords and the many digital channels that followed could deliver spectacular levels of detail, they could not offer a substitute for the large audiences one could reach elsewhere. At the same time, the increased level of accountability that had been promised was largely a mirage – a point highlighted in a recent survey by Econsultancy/Responsys, which found marketers are now becoming less confident about their understanding of the ROI from digital marketing channels.

Today, the digital landscape continues to develop, giving marketers a range of entirely new options, such as real-time bidding and dynamic content creation.

Understanding of ROI from Digital Marketing Channels

Source - http://www.marketingcharts.com/wp/interactive/more-marketers-having-trouble-understanding-roi-from-digital-channels-26778/attachment/econsultancy-understanding-roi-from-digital-channels-feb2013/

But of all the tools currently being pushed by digital marketing practitioners, those relating to attribution are the most likely to be adopted in the near future.

Are attribution models even necessary?

Attribution is about trying to determine which marketing activities are delivering value for the advertiser, especially in relation to digital marketing.

That might seem like an essential part of any marketer's toolkit. Yet a mid-2012 study by Forrester Research indicated that 44% of interactive marketers did not have any processes at all in place to assign credit to their efforts.

Among those who do, by far the most common approach used for digital attribution is known as "last click". This involves crudely awarding the whole credit for a sale or other desired "conversion event" to the last click that preceded conversion. It has obvious limitations and inadequacies, and is frequently held up to criticism. Yet in the absence of any other strongly-supported claimant, it remains today's king of the castle.

Because "last click" gives 100% of the credit for a customer's action (purchase, download, enquiry or other desired response) to the last click the customer made to initiate the action, it's easy to track, and superficially attractive. But you could drive a bus through the logic without too much trouble.

"Last click is a lowest-common denominator, brute force approach. It's almost universally derided and yet it remains a dominant model," was the comment recently in one respected marketing blog. (http://www.digiday.com/platforms/the-last-click-attribution-dilemma/)

The reasons for this derision should probably be obvious. But they are worth spelling out before we start to suggest alternatives:

1. "Last click" ignores all the other online marketing activity and impacts that came before, at earlier stages in the customer journey.
2. "Last click" ignores all offline (and inconveniently hard to measure) marketing activity.
3. "Last click" thinking generally treats all clicks as equally valuable, though some clicks are demonstrably more equal than others.

Even Google acknowledges these problems are real (http://analytics.blogspot.co.uk/2011/08/introducing-multi-channel-funnels.html). Google proposes that we should be paying much more attention to approaches such as multi-channel funnel analysis, but that's only one option among many.

KNOWLEDGE-POINT

How 'last click' short-changes online display

For branded campaigns where the call to action is not immediate, "last click" clearly fails to give a realistic picture of the full effects of the various strands of marketing activity.

In particular, last click makes no allowance for the growing use of affiliate or "cashback" sites, which offer special deals or loyalty points.

But ScanmarQED has recently used Google clickstream data to tease out and examine the influence on consumers of display, search and affiliate marketing activity across a large number of transactions. When these were looked at on a last click basis, it seemed as if almost all the value was attributable to online search and affiliate activity. For advertisers investing in banners, videos and site takeovers, it was important to know whether online display activity was worth the effort.

Understandably, it turned out that the number of adverts seen by buyers increased sharply as they drew closer to making their purchases. This could have been because of smart work by the advertisers (including retargeting) or simply because potential buyers were searching more for the category in which they were about to make a purchase.

Our approach was to group the click data into five time segments for each of three categories – display, search and affiliate – and use these segments as the basis for some serious modelling.

This allowed us to isolate the impact of each channel and prove, for example, that display advertising was having a positive effect.

It was exerting this influence early in the purchase cycle. But it was actually having nearly twice as much impact on purchasers as other methods of analysis had suggested.

This is good news, obviously, for media owners. It is also good news for marketers, who had previously more or less had to take it on trust that display advertising was worth paying for. And it should come as a warning to those who insist on believing that last click is "good enough".

It's not. It substantially overrates the value of affiliate and paid search activity (by margins of 21 per cent and 28 per cent in our study). And, in doing so, it underlines the fact that when it comes to measuring marketing effectiveness, there is simply no substitute for careful statistical analysis.

What are the options?

There are several choices available to the marketer wishing to meet the attribution challenge. This table describes some of the more common digital-only approaches that various providers are currently offering:

Method: Last click	
This method counts how many of the activities were the last click prior to a "conversion	
PRO:	CON:
Simple to execute, Easily understood	Assumes only the activity that had the click counts – no earlier activities are given any

Method: Last view	
Using this method, it's not the click that counts but the last advert viewed	
PRO:	CON:
Simple to execute, Easily understood	Assumes only the "last view" activity counts. Earlier activities are given no share of the credit. Views may be off the page, yet still

Method: Fair share	
All interactions are given equal weighting within the scoring method	
PRO:	CON:
All interactions have value. We're getting closer to the view that every touchpoint can potentially add some value	It's unlikely that all interactions are equally valuable. Which are included is usually arbitrary, determined by availability or

Method: Weighted share	
Similar to the "fair share" method, but with weightings applied by an individual or group,	
PRO:	CON:
his method allows for differences in response for different types of activity, and for differences based on timing	Weightings are arbitrary, open to interpretation. Users cannot safely re-use weightings for a different product, or the

Method: First click	
This obviously simplistic method assigns 100% of credit to the first contact or exposure	
PRO:	CON:
Simple to execute, Easily understood	Assumes only the activity that had the click counts – no earlier activities are given any

Looking at this list, it should be obvious that these methods are all subjective in the value and weighting they give to the interactions they are trying to represent. Using an arbitrarily chosen set of weights might offer some conceptual benefits, but it has been shown many times that this is exactly the sort of decision-making that humans do particularly badly. Weighting is the sort of activity that needs to be grounded, as far as possible, in facts, rather than assumptions.

Unweighted attribution is clearly wrong. Arbitrary weighting based on prejudice, experience or subjective judgment cannot be right either, except by luck or coincidence.

What is needed is a third approach that incorporates an objective method of arriving at the correct weights for the various interactions. This is where some basis in factual data might be useful. And this, of course, is where statistical methods, such as marketing mix or econometric analysis, come in.

No easy answers

"Big Data" has sometimes been presented, naïvely, as the key to knowing everything about everybody, even at the individual level. But we still need statistical methods that look at the average response across a population if we are to make sound predictions about the effectiveness of one-to-many marketing activities.

Campaigns succeed by changing behaviour en masse, and we need to be able to aggregate data, recognise what is significant and average out the noise. This is where statistical methods are at their most powerful. Used correctly, the mountain of data we have available can allow us to peel back the layers and understand the overall impact of various marketing initiatives.

A soundly-based statistical approach can provide reliable weights that will predict and explain events more dependably than the gut feel of even the most experienced marketer. Indeed, because that "most experienced marketer" is likely to be in a senior position, over-confident in his or her judgment and unduly influenced by events experienced many years ago, in the early days of a long career, that gut feel may be particularly unreliable. In some respects, experience is a trap, because no individual career can possibly encompass enough campaigns and enough data points to match the information provided by the historical data.

KNOWLEDGE-POINT

Let's face it…

Humans are fallible. Even compared with quite crude and simple rule-based systems, human beings do not perform well in tests of prediction or diagnosis.

The idea that we should apply weightings to our digital marketing data that are based on an individual marketer's judgment is extremely suspect, as experimental psychologists can easily demonstrate.

More than 50 years ago, Professor Paul Meehl – a true polymath, who held university appointments at various times in psychology, law, philosophy and neurology – decided to compare the performance of experienced doctors with relatively simple algorithms or rule-based systems, usually based on combining a few basic test scores.

The machines won hands down, over and over again. Their clinical predictions were just much better.

More than 200 experiments since then have looked at medical consultants, fund managers and company bosses, economic forecasters, probation officers and loan assessors. It's always the same.

A handful of the very best professionals in each field can just about keep up with a simple formula. The rest can't get close to equaling its results. The experts are nowhere near as good as they think they are. And they are all vastly overconfident of their own predictive and diagnostic skills.

We need to listen to science. In establishing weightings to apply to attribution issues, looking at the data and deriving some simple statistical rules is always likely to produce consistently better results than relying on human experience and judgment.

Statistical modelling holds the key

Marketers seeking to determine the impact of a particular activity should always try to account for moderating factors before drawing any firm conclusions. In analytics, this is done by collecting data on factors that are believed to influence the behaviour the marketer wants to understand and then examining the data to assess the impact of each activity.

Online isn't everything. Statistical modelling makes it possible to account for the impact of offline activity, such as mass advertising, price promotions or competitor activity, as well as online activities. For smaller advertisers that focus on online marketing, the impact from these other activities may be small. For big brands, with a broader marketing mix, it would be patently negligent to analyse the digital world and ignore the physical one.

How to get started

One bonus for the modern business is the wide availability of data to help solve attribution challenges. There are six steps marketers must follow to identify what is really working and improve marketing effectiveness – and the principles apply to both offline and online activity.

Step 1 - Be clear about the question – and about what you're trying to explain

You must be able to express the attribution puzzle you're trying to solve through data. For example, are you looking to quantify the impact of marketing activity on web visits, leads or sales, by either volume or value? Whatever you're trying to explain, you'll need to be able to express it quantitatively, in terms of relevant KPIs (key performance indicators). If what concerns you is something that is hard to measure directly, such as brand perception or awareness, it may be necessary to use survey data or to devise suitable proxies that can be measured.

Step 2 - Determine possible influences sequentially and gather data

Thinking your way, step by step, through the classic 4Ps model of the marketing mix (Product, Promotion, Price, Place) can help identify all the influences that might be affecting performance in the important areas. This will often be harder than it appears. Price, for example, might seem easy to measure. Comparing apples with apples is simple enough for food retailers. But how does a manufacturer of consumer electronics make meaningful comparisons between its prices and those of its competitors? Should they look at the price difference to the industry leader or gap to the most popular product in each market? If other factors, like unusually wet or sunny weather, are likely to be influencing consumer behaviour, data may need to be pulled in from publicly available sources.

Step 3 - Decide on the metrics that matter and adapt and combine them as necessary, including stratifying the clickstream data

Once the factors that make the difference for your business have been identified, the next step is to collect metrics to show how each of these elements changes over time. Bear in mind that your raw source data may need to be adapted or processed in some way to provide something meaningful that can shed light on attribution questions. In cases where there is simply too much data available, rather than drinking from the fire hose, you may want to summarise the data to make it useful for higher level analytics. For example, you may decide to aggregate clickstream data to make it more manageable or to pool data into groups based on the duration of an interaction or how long before purchase the interaction took place. It is sometimes possible to recognise patterns in the data that will allow it to be stratified in a way that makes it particularly useful for modelling and the analysis of attribution issues.

Step 4 - Model your situation (repeatedly)

Modelling data is an iterative process, and you won't get the right model first time. It may be necessary to look at the data in many different ways. In practice, the analyst will put in place objective criteria, based on market mechanisms and statistical validity, and then test many thousands of models. This is done through the use of an automated software package, and it leads on to a set of answers that can be taken as being worthy of closer inspection. From the interrogation of these answers, realistic conclusions can be drawn about what activities should be credited with purchases, sign-ups or other conversion events.

Step 5 - Optimise within individual channels, but also across media

Optimisation is the holy grail for marketing planners. But optimisation within a single channel -- just online, say, or just television -- can only take you so far. What's really needed is comprehensive cross-channel optimisation that can capture the benefits of moving investment to the activities where it can deliver the most impact. The marketer needs to know whether switching money from online to TV, or vice versa, will produce better results in a particular set of circumstances. Taking such decisions on the basis of last click attribution would be extremely risky, but statistically based analytics can provide reliable guidance.

Step 6 - Repeat, test and adapt

Consumers change and markets develop. The right answer from two or three years ago may not be the right answer for now, and the gradual build-up of a historical data sequence will enable trends to be identified that would not be apparent from a single snapshot. It is self-evident that marketers need to make sure they are constantly reviewing and adapting their plans. The same applies to the analytics that drive these plans, and to the attribution methods that are used to inform the planning process.

The Forrester research mentioned earlier emphasised that marketers would increasingly need access to accurate multi-channel measurement. Attribution systems will need to produce reports that cut across different channels or that can isolate the effects of one channel on another (such as the impact of display media on search). This will eventually bring an end to today's familiar disputes in which several channel-based systems – such as ad servers, bid management systems and email service providers – all put their hands up to try to claim credit for the same conversion event.