6 ways to improve marketing ROI measurement

Rex Briggs of **Marketing Evolution** explains that, for ROI modelling to be truly effective, we need to make changes at the system as well as the mindset level. Enter the ROI Brain™, which uses elastic net and other machine learning approaches to transform data into insights in real time and at the individual level

Over the past decade, the rate of advancement in the amount of data analysed has been astonishing. As a point of comparison, today's ROI optimisation has more than 1,000 times more data points than a decade ago. To put that into context, we've expanded the rate of ROI data processing 50% faster than Moore's law, which paces the rate of growth in computer processing power.

The era of Big Data and cloud computing allows us to deliver much greater detailed optimisation than ever before. The benefit of the increased data processing means, on average, 31% better marketing impact for every single campaign we optimise. If every marketer used such a system, we'd see over $100 billion in incremental media productivity in the US alone. For a typical brand spending $20 million in media, and a current ROI of $1.75, it equates to a little over $10 million per year in increased productivity.

True, it's a relatively small percentage of marketers that are using the system we call the 'ROI Brain'. Nonetheless, consider William Gibson's quote, "The future is already here, it is just unevenly distributed." In 2016, we've increased the number of companies using the ROI Brain™ platform by over 50%.

One of the companies we've helped in implementing the ROI Brain platform is Citibank. Its primary reasons for adoption are the increased speed and increased detail of optimisation. In the words of Mike Eichorst, SVP of Citibank: "Marketing mix modelling is not enough. Marketing mix modelling looks back. It is too late to make any changes. Marketing Evolution's approach allows us to go in and make changes on the fly. It's a lot more than just deciding how much of the pie goes to TV. It's about deciding how do I spend that pie within each slice."

In our journey to develop the ROI Brain, we found that there were six changes that were necessary. The first three are mindset changes. The last three are system changes.

MINDSET CHANGES

1 'MEDIA ROI' IS A MISNOMER

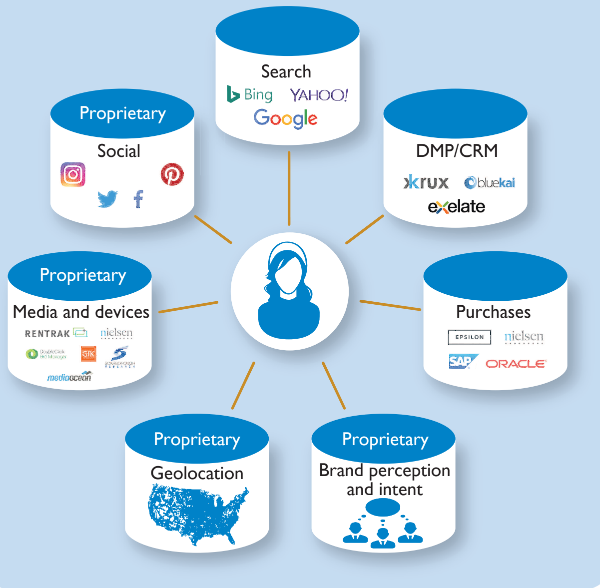
We still hear a lot of people referring to the ROI of TV, or digital, or social. We can trace this practice back to mix models, which couldn't measure individual messages. Instead, mix models average several messages together over a multi-year period and report the 'media' ROI. It's helpful to evolve our thinking to appreciate that what we are really measuring is the impact of the message and its delivery to specific people. Change the message, or change the targeting, and you will get a different ROI.

The power of acknowledging this flaw in the old approaches is that it opens our eyes to the possibility of increasing the average ROI of a media by optimising at the message and person level while the campaigns are still live.

2 LINKING BRAND EQUITY TO BEHAVIOUR

Most of the time, attribution and marketing mix models leave out brand equity. Occasionally, a mix modelling firm will attempt to connect brand health with

FIGURE 1: THE GRAPH SCHEMA



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sales by comparing aggregate trends, using time-series analysis. While this may show a general pattern, it isn't detailed enough to fully capture the value of brand equity.

Early in my career, I had the good fortune to work for two excellent companies handling person-level data. One company was expert at measuring brand health. The other specialised in needs-based segmentation, often merging sales data with consumer survey data. This taught me the power of linking the attitudinal data directly to behavioural data – which is something that very few attribution and mix models do. We've applied this person-level 'brand linkage' approach with great success. To quote Citibank: "We always suspected that brand advertising had an impact on the business in a measurable way – in new accounts, new credit card usage, bank account openings, and deposits. But we never knew how much. We discovered brand has a very, very significant business impact, both in the short and long term... What we've discovered, then, is that we need to figure out how to optimise the mix for brand and product... So there's been a tying together of two pieces that have always been very separate in most companies. We realise there is a great synergy there. Discovering that was a big deal. Now figuring out how to leverage that and optimise it is an even bigger deal."

Yes, it requires ROI measurement firms to capture brand equity survey data at a person level in such a way that it can be directly linked to sales behaviour, but it is worth it. In our work with retailers, banks, consumer packaged goods brands, car manufacturers and more, we consistently find that the old models systematically undervalue brand-building advertising and overspend on short-term tactics. The old approach directly hurts the marketer's sales and profits. Changing our mindset to build in person-level brand plus behaviour analysis ensures the balance of brand building and conversion advertising is truly optimal.

3 INSIGHTS TO ACTIONS

Along the journey, we had to present to a division president of a Fortune 500 company. I was told we had to do it in thirty minutes. The president arrived late. With seventeen minutes available, he wanted us to boil our entire PowerPoint slide deck down to just two: the 'so what' slide and the 'now what' slide. We boiled down the core essence of what we learned into a 2 × 2 brand and sales impact matrix. We specifically stated the actions that should follow, and how much more profit they could make if they implemented our recommendations.

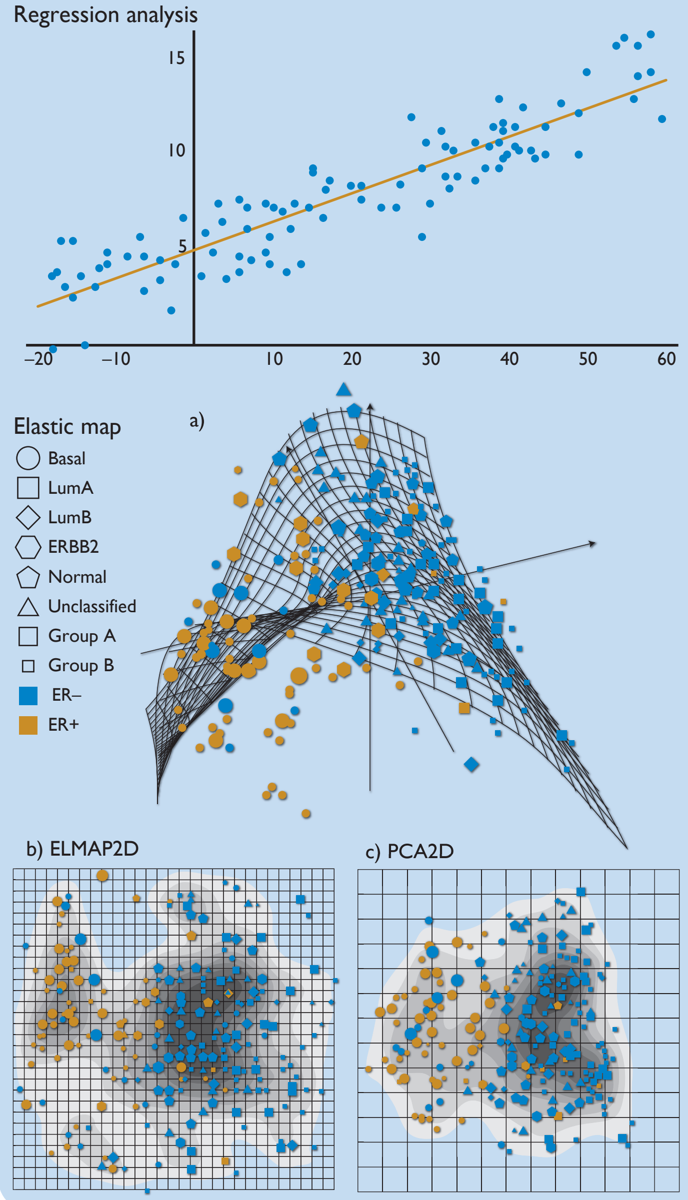
This caused a mindset shift: from the value being the analytic work itself to the value being what a marketer can do with the analytic work to increase business sales and profits.

Today, the ROI Brain platform focuses on a 'hero' chart showing the current state vs. the upside from implementing our recommending optimisation. There are drilldowns for those who want to understand the basis of the recommendations. The optimisation drivers are standardised to make it easy to understand how the message, targeting and media mix are simultaneously optimised. At a glance, anyone accessing the dashboard can see the 'so what/ now what'. The mindset shift can be summarised with the words of Leonardo da Vinci: "Simplicity is the ultimate sophistication."

SYSTEM CHANGES

To achieve advances beyond those of the past decade, shifting our mindset is necessary, but not sufficient. How can we measure each message, and each person? How can we directly link brand to behaviour

FIGURE 2: LINEAR AND NON-LINEAR ANALYTICS



to ensure a proper optimisation? How can a marker or agency implement detailed optimisations while the campaigns are live? This requires more than mindset changes: it requires system changes. Specifically, we recognised that the old relational databases, regression models and PowerPoint reporting couldn't keep up with what marketers really needed. The next three changes relate to the underlying technology that powers the ROI Brain.

FIGURE 3: CHANGES IN MARKETING ROI MEASUREMENT

	FROM	TO
Marketing and sales inputs at...	The region level	The person level
Data structured in...	Relational databases	A graph schema
Analytics	Regression	Machine learning
Output	PowerPoint	Dashboard
Activation of recommendations	By hand	By API

4 NEW DATA INPUTS AND STRUCTURES

A decade ago, we could report the effectiveness of TV by daypart and digital by broad categories, such as search, homepage takeovers, lower funnel endemic websites, etc. Now we report each media down to the individual message, media placement, and person-level targeting.

The only way this is possible is to take massive amounts of data linked to each individual person. This requires ditching the old mix modelling data structure of tables and relational databases in favour of the Graph Schema (Figure 1, page 40).

Here are the advantages of the Graph Schema:

- Person-level data is represented as raw atomic facts.
- The Graph Schema represents relationships between facts.
- This fact-based data model allows us to easily handle partial information.
- This combination allows our data set to evolve as new types of data become available.

We connect over 700,000 data points per person, from hundreds of different data sources. Some of these are proprietary data sources; some are from the massive supermarket of data points available from data brokers.

The 100 trillion+ data points from thousands of data sources are connected to individual people, and processed through the ROI Brain analytic system. This allows the ROI Brain to deliver: real-time person-level marketing mix and 'next best message' decisioning; person-level propensity to purchase, shop, etc.; leading indicator prediction of sales trends; detailed message-level optimisation, down to the person level; and overall budget optimisation.

5 NEW ANALYTICS

If you are like me, we grew up on structural equation modelling, such as LISREL, and discrete choice. Cutting-edge twenty years ago. Dinosaurs today. The useful analytics today come from fluid dynamics and artificial intelligence.

We use elastic net and other machine learning approaches to transform the data into insights (Figure 2, page 41). The analysis is performed in the cloud.

Do a quick search on Wikipedia for 'discrete choice' and 'elastic net' and you can get a sense of the generational differences between linear and non-linear analytics. With the increased data, and increased processing power, we find it is both useful and necessary to embrace a new generation of analytics.

6 NEW OUTPUT

A decade ago, we delivered a report. Today, we have direct linkage to media buying systems. The need for speed and detailed optimisations has given rise to application program interfaces (APIs) for implementation. In the case of our ROI Brain, we pass information directly to web-based marketing calendars, agency trading desks, media buying platforms such as TubeMogul and MediaMath, data management platforms such as Krux, MediaMath, and offline/online systems such as Mediaocean.

This has meant opening our minds to all kinds of partnerships – including with companies we had regarded as potential competitors. We work in an 'open' data ecosystem. We integrate other analytic models, where appropriate. We connect to media buying systems.

The benefit to marketers is speed, better integration of data, and lower cost activation. Today, the ROI Brain is smart enough to integrate data and analytic models. It is smart enough to optimise down to the individual person and individual message. It is smart enough to translate all this into media buying details that can be activated with a click of an approval button – and in some cases, automatically.

Measuring marketing ROI is changing (Figure 3). More than a decade ago, *Admap*'s coverage of Marketing Evolution's path-breaking ROI work (*Admap*, October 2005) focused on the ability to compare online and offline advertising ROI. Thanks to the unique person-level analysis, we could connect online advertising with offline sales. We could see how advertising types (e.g. homepage takeovers) influenced brand and behaviour.

A decade's worth of innovation with Big Data, software and algorithms has greatly enhanced the value of the optimisations to marketers. Yet we are just beginning to see the transformation. Only about 1% of Fortune 1000 companies tap into the ROI Brain today; nevertheless, we've seen this adoption rate accelerate over the past 24 months. We expect to look back in another decade and see that the majority of marketers have adopted the ROI Brain, or an ROI system like it.

This article was first published in Admap magazine December 2016 ©Warc
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