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Mars' ACE: Using AI and Behavioral Data in Ad Testing with High Correlating Sales

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Laurent Larginat describes Mars' ACE, a proprietary AI tool which analyzes large sets of consumer behavioral data to predict the sales effectiveness of the company's adverts far more effectively than traditional methods.

Advertising testing is a traditional method used by marketers to gain insights into a consumer's response to ads. Researchers typically use standard survey methods in which

respondents are asked about ad recall, ad preference, or desire to purchase in future before the ad is launched.

But traditional ad testing is limited by its declarative survey

approach. We need an alternate method to drive sales and create a sustainable competitive advantage. Mars developed its own proprietary method of assessing effectiveness by using consumer

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behavioral methods and applying artificial intelligence (AI).

We used AI algorithms to analyze behavioral data, including eye tracking, facial reactions, skin conductivity, EEG, and more, and ultimately link benchmarks to sales success. The result is an 85 percent accuracy in predicting whether ads are likely to lead to a sale.

The Mars approach

Mars has been proudly family-owned for over a century. Having the independence of a privately held company allows us to think along a timeline spanning generations, not fiscal quarters. Guided by enduring principles, we can invest in the long-term future of our business, our people, and the planet. Our longevity gives us the freedom to try new things, developing our own tools to forge new paths.

In the consumer packaged goods (CPG) industry, Mars is widely recognized for its strong insights culture, an evidence-based approach to marketing decisions, and a reluctance to use biased or unscientific approaches to understanding consumers. For more than fifteen years, Mars focused its media research on the best behavioral tools. We used industry-leading single source panels and natural experiments to measure the direct sales impact of media exposures at the household level.

In a world of data-driven marketing, measuring sales impact is important but not fast enough to drive agile business decisions. To achieve extreme agility, we developed a behavioral proxy measure of business performance. We call it Agile Creative Expertise, or ACE.

ACE and sales prediction

ACE is an ad-testing tool powered by AI that emphasizes the emotional response of a test audience to a video ad while also weighing traditional metrics such as skip and click rates. The viewers, who were recruited by Mars partners and are compensated, consented to being tracked. We anonymized and aggregated their data before sharing the results with Mars. In designing ACE, we tested a few hundred pieces of content for which we already had a clean and reliable measure of market sales performance (single source). For each of these pieces of content we tracked attention, emotion, views and skips, and sales, all second-to-second.

To this information we added the data we collected through the largest ever CPG behavioral science study, which we conducted with Nielsen. In it we tested 300 creative executions, or marketing components, on participants in seven countries. We applied AI on this combined dataset to understand if and how the emotion, attention, and views predicted sales impact. The result was an algorithm that is nearly 85 percent predictive.

In 2019, AI models were evolving, enabling emotional recognition directly from a mobile device. This development helped the technology to jump from the lab into the living rooms, kitchens, and cars of consumers. After more than six years of testing and re-testing AI-fueled advertising research approaches, Mars Horizon, our insights team, launched ACE in 2020.

Validation: considering other solutions

To ensure ACE's credibility, we had to link it to predicting sales. Without this confirmation, the company would have rejected any new approach to advertising research.

To this end, we rated our content between one star (no impact on sales) and four stars (more than 15 percent impact on sales and in the top quintile of all content in a

given category). Before ACE, about 40 percent of all the content we developed was rated three or four stars. ACE increased this number to more than 70 percent.

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We were able to prove that ACE correctly predicted consumers' sales response to more than 4,000 ads, making us confident that our facial response data offers a proxy metric for sales and, ultimately, the effectiveness of the ad. Our monitoring of the correlation between facial response data and sales is, of course, ongoing, and allows us to correct our course and benchmarks as our volume of data increases.

This approach to testing is proving to be better at predicting in-market success than the more traditional methods we once used. It is also faster and more affordable.

We also investigated a number of more invasive technological solutions, including skin conductance and EKG, but found that these methods are more complex and do not provide any additional information about consumers' attention and engagement.

Deployment and adoption

The Mars company has now widely embraced ACE. In 20 months, we completed more than 1,000 studies in over 25 countries. Our results helped Mars to improve its digital adverts on TikTok, Facebook, Instagram, YouTube, Amazon, and more, generating an additional \$30 million in sales.

Today, we use ACE to test ads for all our brand's digital channels. We proved that an ad with a higher attention score will travel across media channels better, driving sales. We also use attention to understand

which components of ads are winning consumers' minds, and which are just confusing them.

The future of AI in ad testing

Through this AI approach, we ensure that our ads inspire attention and emotion, guaranteeing that we increase consumer engagement.

Ultimately, advertising is a mix of science and art. And art is difficult to evaluate without human input. Consumers will always play an important role in future advertising research. At Mars, we are excited to continue producing adverts and digital content that resonate with consumers.

We believe that AI will only become more valuable to ad testing. As tools that replicate real consumer behaviors proliferate, using AI for eye tracking, determining attention, and more, marketers will be better able to optimize ads. Perhaps one day, the AI itself will optimize the ads on the fly. ■

Author Bio



Laurent Larginat leads the Mars Horizon team, responsible for marketing and sales sciences at Mars Inc. The team collaborates with world-class academics, research organizations, and start-ups to solve the company's marketing and sales challenges.