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Machine Learning in the Automotive Industry

Aligning Investments and Incentives

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Machine Learning in the Automotive Industry

In the automotive industry, machine learning (ML) is most often associated with product innovations, such as self-driving cars, parking and lane-change assists, and smart energy systems. But ML is also having a significant effect on the marketing function, from how marketers in the automotive sector establish goals and measure returns on their investments to how they connect with consumers. ML is poised to become as much an organizing principle as an analytic ingredient for sophisticated marketing campaigns across industries. This is especially true in the automotive industry, a capital-intensive, high-tech sector riven by disruption.

Our global executive study of strategic measurement, "Leading With Next-Generation Key Performance Indicators," highlights the widespread but uneven adoption of machine learning among marketers.[1] 78 percent of automotive companies invest in skills and training for ML. We see a gap, however, between the automotive industry's ambition to use ML in marketing and the creation of incentives to use ML for marketing.

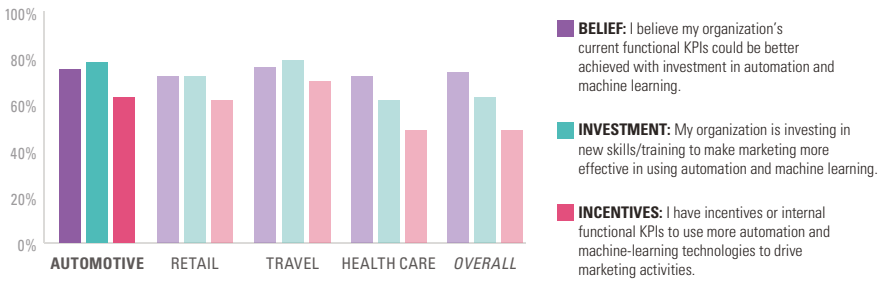
Even though most players in the automotive sector are investing in ML for their marketing efforts, a much smaller group is putting in place incentives and key performance indicators (KPIs) to use more ML and automation. Closing the gap requires a stronger commitment to developing a ML capability that is not just useful but also used.

The Auto Industry's Adoption of Machine Learning

We surveyed more than 1,600 North American senior marketing executives and managers about their use of KPIs and the role of machine learning in their marketing activities; of these, 336 were from the automotive sector. In this group, 78 percent report that their organization is investing in new skills or training to allow marketing to more effectively use automation and machine learning. That percentage was 63 percent in the overall sample. Furthermore, 63 percent of automotive executives say that their organization has incentives or internal functional

> Machine learning is an artificial intelligence discipline geared toward the technological development of human knowledge. Machine learning allows computers to handle new situations via analysis, self-training, observation, and experience.[i]

FIGURE 1: MACHINE LEARNING ACROSS INDUSTRIES — BELIEF, INVESTMENT, AND INCENTIVES



KPIs to use more automation and ML technologies to drive marketing activities. In the overall sample, just under half (49 percent) have such incentives. (See Figure 1.)

A set of novel insights emerged when we parsed the data using our KPI Alignment Index (described in more detail in "Leading With Next-Generation Key Performance Indicators"). The KPI Alignment Index — based on a set of questions in our global survey — grouped respondents into three categories: Measurement Leaders, Measurement Capable, and Measurement Challenged. These groupings describe the level of sophistication the respondents have with using metrics to advance their strategy and, more specifically, the extent to which their metrics of strategic success align with those of functional success. Measurement Leaders had a distinctive approach to ML compared with the other two categories.

The automotive industry had more Measurement Leaders (30 percent) than the overall sample (20 percent) and had fewer Measurement Challenged (12 percent) than the overall sample (20 percent). The numbers of Measurement Capable were roughly equivalent.

ABOUT THE RESEARCH

This report explores some of the key findings from the authors' 2018 research study of KPIs and machine learning in today's corporate landscape. The research, which involved a survey of 4,700 executives and managers (more than 1,600 in marketing) and interviews with more than a dozen corporate leaders and academics, has far-reaching implications for modern businesses. We focused our analysis for this industry brief on 336 marketing executives in the automotive industry.

The study strongly suggests that data-driven organizations that align incentives, KPIs, and machine-learning capabilities have distinct advantages over those that move too slowly to develop their data capabilities. For business leaders serious about succeeding in digital market environments, these shifts offer a clear and urgent call to action.

Measurement Leaders Use More Machine Learning

Measurement Leaders are far more likely than the other groups to invest in machine learning-based approaches to marketing. Measurement Leaders also use KPIs to help them lead — to find new growth opportunities for their companies and new ways to motivate their teams.

Measurement Leaders in the automotive sector strongly believe in machine learning's potential to help achieve KPI outcomes in the marketing function. They provide investments and incentives to make good on that belief. An overwhelming majority (93 percent) of Measurement Leaders in the automotive sector agreed or strongly agreed that their current functional KPIs could be better achieved with greater investment in automation and ML technologies.

Hyundai Motor Co. created, for instance, a marketing campaign for its 2018 Sonata that used machine learning to sort through billions of data points on factors like personality, demographics, and brand relevance to identify social media influencers ideally positioned to boost the brand and to link those influencers with Hyundai's "Better Drives Us" slogan.[2] On the basis of the initiative's success, the company expects to deepen its commitment to similar marketing efforts in the future.

A strong majority (83 percent) of automotive Measurement Leaders are investing specifically in new skills or training so that marketing can use automation and machine learning more effectively. Eighty-one percent also say that their organization has incentives or internal functional KPIs to use more automation and ML technologies to drive marketing activities. In short, the Measurement Leaders have effectively aligned their levels of ML investments and ML incentives in marketing.

Gap Between Investments and Incentives

Both the Measurement Capable and the Measurement Challenged automotive industry executives, in contrast, see a gap between their ML investments and their ML incentives. The investment in skills and training exists, but the presence of incentives to use ML in marketing lags behind. (See Figure 2.)

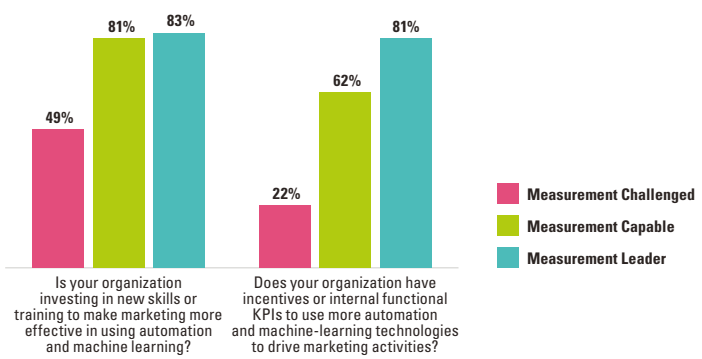
There are perfectly rational explanations for the gaps among the Measurement Capable and the Measurement Challenged. Given that the gap narrows as companies score higher on the KPI Alignment Index, we could infer that companies with more well-developed machine-learning technologies are better positioned to offer their teams incentives to exploit ML. On the other hand, companies that are investing in ML from zero may prefer not to offer incentives if the technology is not ready to be used.

Realizing Benefit From Machine Learning

Those in the Measurement Capable and Measurement Challenged categories must work to close the gap between their belief that machine learning will help them achieve their key marketing outcomes and the investments and incentives being marshaled to realize this belief. In addition, to get the most growth benefit from ML and automation, automotive industry marketers, regardless of category, should consider taking the following steps:

FIGURE 2: KPI ALIGNMENT AND MACHINE LEARNING — INVESTMENT VS. ACTION

While Measurement Leaders have aligned their machine-learning investments and incentives, Measurement Capable and Measurement Challenged organizations are making investments but are less likely to have incentives.



Promote organizational behaviors and set expectations about using machine learning. Create metrics around the actual use of ML in marketing. It is not enough to communicate why ML applications are important to the marketing function or to have the right suite of ML tools or to have ML-trained personnel at the ready. If ML applications generate insights that are not relevant to KPIs, machine-learning investments can be easily wasted. ML algorithms, for example, can predict which bundles of car, financing, and servicing options will appeal to which prospective customers. But, if "bundles" optimization isn't a significant outcome that executives care about, why go through the exercise of developing these ML-based insights in the first place?

Identify a narrow set of marketing KPIs. KPI parsimony is critical to ensuring that the right metrics are guiding how employees spend their time and effort, and what tools they use for accomplishing their tasks. Design machine-learning applications that support these KPI outcomes. Avoid trendy measures and ML apps that do not have a measurable impact on your business. The interviews for our global study exposed a genuine struggle to slow "KPI creep" brought on by data proliferation. Colgate-Palmolive's CMO Mukul Deoras says there's a need to winnow down to the few indicators that will help drive growth: "The biggest challenge that we have today is to sift through tons of meaningless KPIs, focus on really those few, and not get carried away. Just because we can measure everything does not mean we need to measure everything. We just need to focus on a few things that are really going to make a big difference to our business."[3]

Take seriously that you are operating in a new business environment. A new intermediary — influencers — is increasingly integral to the experience of buying a car (often a social experience to begin with). Expect more initiatives like Hyundai's, in which machine learning is used to identify those influencers who can help close a deal. Use ML to understand, predict, and prescribe influencer behavior (if relevant).

What's Next

Many structural shifts are transforming the automotive industry. Digital media platforms are disrupting traditional dealer relationships, making the process of buying and selling cars more data-driven, while new entrants like Tesla and ridesharing services like Uber, Lyft, and Zipcar are altering customer expectations around automotive value. The automotive sector is already among the most advanced in regard to machine learning and marketing. However, many companies are making investments in ML without a commensurate investment in incentives that support the actual use of ML. Bringing ML incentives in line with investments will help companies remain competitive amid all these momentous changes.

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i. "Machine Learning," Techopedia.

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