Artificial Intelligence – Implementation for Business Decisions

By Benjamin Cortese, Ph.D. *(Senior Statistician and BI Consultant)*

Artificial Intelligence (AI) has transcended from buzz word to being a required capability for Market Research firms and business teams focused on strategy, marketing innovation, and business development. Advertisements consistently use phrases such as, "Using AI…" or "Developed with AI…", but what does this mean? Despite the use of the term in advertising and marketing, there is still disconnect between understanding what AI is and, most importantly, how it can drive strategic decision-making.

In this discussion, we will explain what AI can do and how it should be used in marketing research to ultimately drive better business decisions.

Artificial Intelligence

When most people think of AI, they think of robots, virtual assistants (Google Assistant, Alexa, Siri, etc.) or machines that are able to mimic human intelligence and interactions. While this is a good example, AI actually covers many more applications. Some of these include developing/identifying optimal products from millions of possibilities, as well as predicting customer satisfaction, understanding price sensitivity, and clustering individuals into similar groups (segments).

In Market Research and business applications, there are several instances where we use advanced analytics and implement AI techniques. In reality, we are using these techniques more often than given credit for. Moreover, there is usually a specific method or technique under the AI umbrella to address a business problem. The key here is to understand the balance between the strengths, weaknesses, and results that each method or technique offers.

The Main Goal – Accurately Fulfill a Task

In essence, AI is utilizing advanced analytics and processing algorithms in order to perform very specific tasks. Despite the connotation that AI is too complex, certain techniques are simple and easy to understand. These simple techniques provide a great introduction into AI because they are easy to conduct, build, interpret, and share with external/internal audiences. While these models/algorithms are simple and approachable, they still do an excellent job at performing those tasks. Nonetheless, we can potentially improve the ability of these models/algorithms to perform the task by allowing for more complexity in the AI model. If you are more interested in whether or not someone will buy a product when in-store, and the accuracy of that task is a big concern, then it could be possible to implement these models.

However, with more complexity and accuracy, comes the trade-off in transparency and understanding what the model/algorithm is doing behind the scenes. These complex models are less able to showcase why they will, or will not buy a product. In other words, we take a hit in the ability to interpret and understand why the model performs the way it does. So if your interest is in understanding what and how things determine whether or not someone will buy a product, the simpler, easier explained AI techniques will better align with your purpose.

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Business Problems and AI Solutions

The most prominent benefit of AI is being able to make predictions. By using past information, AI can make predictions in areas where the outcome/event has not yet occurred. Predicting a product purchase is one great example. Using profile information from people who purchase or do not purchase a particular product will allow an AI model to predict whether a new person is likely to buy a product. These AI techniques are able to do this by looking at the relationships and interactions of behaviors, attitudes, and demographics with the desired outcome. This same approach can also be applied to addressing other outcomes, such as customer churn/retention/acquisition, potential spend, sales forecasts, revenue projections, perceptual changes, satisfaction, likelihood to recommend, and attitudinal measures.

When you understand what predicts specific outcomes, you can implement techniques to change behavior and change the outcome to something more favorable for your company. However, there are a lot of variables that are related to the outcome, so where do you start? With certain AI techniques, you will be able to understand the hierarchy of relationships associated with an outcome (i.e., buying a product). This understanding allows you to determine what techniques or approaches will have the greatest impact on influencing the outcome.

Suppose you want to understand differences in your client database to employ specific, targeted, and efficient marketing strategies. AI models/algorithms can find patterns and specific relationships in your client data and can assign individuals into specific clusters. If this sounds familiar, it probably is, given this is segmentation. Segmentation is a great first step into AI because everyone has applicable data to use and models/algorithms can range from very simple to complex.

AI segmentation can be applied to your company's client database. Once the segment characteristics are defined from survey data, they can be appended to your database to classify each client into a relevant cluster. In addition, AI can be used to analyze the vast amount of information already available in your database without ever collecting additional survey data. If you are missing certain pieces of client information, AI models/algorithms can be utilized to fill in those information gaps and missing data points.

There is a great deal of rich information that we can get from qualitative questions in surveys. But, it usually takes a lot of time to mine those insights. We also see similar value in the vast amount of unstructured data from social media posts, social conversations, customer reviews/posts, and qualitative transcripts. After manually coding a few of the unstructured data points and applying the correct technique, AI models can be used to breakdown this information into more manageable and actionable summaries. These summaries can then be used to understand brand perceptions, emotions, and other patterns/themes across responses.

Consider the common problem of keeping survey length manageable. With proper planning and AI, it's possible to develop lengthier surveys by breaking them up into smaller pieces. In this example, respondents would see different versions of the survey, each containing a different subset of questions. AI can use the information from the entire survey database to predict and fill in the blank questions. It does this by looking at the relationship between demographics and the way questions are answered, and then predicts how someone would respond to a section they did not see.

Conclusions

Despite the buzz and complexity that is associated with AI, there are many places where it can be easily implemented. No matter the goal, there is a viable AI method for you. These techniques and applications will give you and your business a rich amount of information to make actionable, data-driven decisions.

Contact KS&R to find out how we can make AI approachable for your company and help you implement your next AI-driven research project.

About the Author

Ben Cortese is a Senior Statistician who leads the Marketing Sciences Group at KS&R. With over a decade of experience in advanced quantitative methods and nearly 5 years in the industry, his focus includes conjoint analysis, predictive modeling and machine learning, among many other advanced statistical techniques. During his time at KS&R, he has developed a novel approach to driver analysis using Bayesian networks, as well as a proprietary text visualization tool to uncover themes in unstructured data. Ben received his PhD in statistics from Syracuse University. When he is not busy running models, Ben spends his time coloring with his children, binging Netflix with his wife and playing beach volleyball (when the Syracuse weather allows).

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