Using AI to Give Customers What They Want

by Nikolas Jintri

Companies like Amazon and Walmart use AI to solve marketing problems, but using AI effectively is not as simple as pushing a button.

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Quick: Name three brick-and-mortar chain retail stores out loud. If you didn't include "Walmart," you were probably thinking too hard.

Once again, name three retail *websites* out loud. If you didn't include "Amazon," I suspect you may have been *living* in the Amazon for the past 20 years.

For that matter, where would it leave you?

There is no doubt that Walmart and Amazon absolutely dominate the world of retail. Walmart owns at least 5,295 retail stores in the U.S. alone, and operates no fewer than 11,718 stores internationally. With 2.1 million employees, and a net worth of around 386.3 billion dollars, Walmart has come a long way from its humble beginning as Walton's Five & Dime Store in Bentonville, Arkansas.

But we all know there is a relatively new kid on the retail block that rivals the dominance of Walmart, and by some measures even supersedes it. As I write this sentence, a single share of Amazon stock sells for $1,620.15, and Amazon is only the second company in history to be valued at over a trillion dollars — right behind Apple. In fact, less than one year prior to this writing, Amazon was already worth 2.5 times more than Walmart.

Walmart and Amazon each have advantages the other company lacks. To put it succinctly, Walmart dominates physical space while Amazon dominates cyberspace, but both companies increasingly rely upon artificial intelligence and data mining in order to survive and grow.

AI allows retailers like Walmart and Amazon to quickly figure out what their customers want, and then help them get it.

The Challenge of Leveling Up

"Find out what people want, and then help them get it." This age-old sales adage sounds simple enough when you deal with your customers face to face in a small-scale operation. But when your company is so large that it has more employees than there are active-duty military personnel in the United States, "knowing your customers" becomes an unmanageable task for the human mind.

Companies like Walmart and Amazon need all the help they can get when it comes to anticipating their customers' needs and desires — and that is where big data enters the equation. Without the ability to collect, interpret, and act upon enormous amounts of data, Amazon and Walmart would not not be able to compete in today's marketplace.

But applying artificial intelligence to retail is not as simple as pushing a big red button that says, "Make my company awesome." This is something Manuel Chica and his colleagues know quite well. In their essay, "Letting the Computers Take Over: Using AI to Solve Marketing Problems," Chica et al. point out that artificial intelligence works best when it is applied in careful steps:

1. **Define** a clear business objective.

2. **Collect** and sort an enormous amount of raw data.

3. **Choose** the data for your project, and organize it into a digitally digestible format.

4. **Create** a program that models how a human would use this data to reach the business objective defined in step one.

5. **Evaluate** the outcome to see if the AI application has met the objective defined in step one.

6. **Deploy** the AI application.

Gettin' CRISPy

The steps outlined (and paraphrased) above are known as the Cross-Industry Standard Process for Data Mining, or CRISP-DM for short. Here is a handy visualization of the process:

CRISP-DM Process Diagram

(Click to expand)

This may look like boring stuff on the surface, but it has enormous power.

CRISP-DM emerged in 1996 as a way of standardizing early insights into the data-mining process. In its original scope, CRISP-DM had nothing to do with the retail or service sectors, but according to Chica and his colleagues, companies like Walmart and Amazon can easily apply it to finding AI solutions for complex marketing problems.

For example, in the case of an online gaming firm that wanted to convert free users into premium subscribers, Chica and his colleagues were able to use the CRISP-DM process to create an AI model that discovers which word-of-mouth marketing techniques are most likely to result in user upgrades. This kind of application is called a Decision Support System (DSS), and it helps managers make good decisions instead of expensive mistakes.

Augmented Intelligence

It's hard to believe that marketing used to be as simple as going door-to-door, or perhaps shaking hands across a counter while looking your customer in the eye. Those techniques are still effective, of course, but not at the scale large companies need. Even when a personal touch is still the best solution, AI can help companies allocate limited resources.

Take Walmart, for example. They are famous for emphasizing personal service, even to the point of hiring senior citizens to greet their customers at the doors. Those doors stay open, however, not merely because of the human element, but also because of sophisticated AI and logistics solutions that keep your favorite toothpaste on the shelf when you need it.

Regardless of technology, it still takes smart human decision-makers and caring human service providers to give customers what they really want. In this respect, artificial intelligence is really just augmented intelligence — the human kind. AI is simply a tool that helps actual humans at companies like Amazon and Walmart give their customers what they really want.

And sure beats going door to door.

Nikolas Jintri Follow

Nikolas Jintri is a freelance writer, mentalist, and educator who teaches rhetoric and critical thinking in Philadelphia.