



Prescriptive analytics: the next phase of data analysis

By Jordan Thaeler

Too often merchants are distracted by trends. In 2009, it was the perilous daily deal; in 2016, it was delivery and online ordering. Now we are hearing whispers of “big data” everywhere.

Big data certainly has many powerful uses, which we will discuss, but merchants should always evaluate what a solution will actually do for their business. Having a “big data” solution simply for the sake of having one is worthless!

Let’s say you have a reporting tool that shows revenue up 5 percent compared to the same period last year. Now what? Do you know what caused it? Do you know if it can be accelerated?

If big data can’t be converted into something actionable, it is useless. Merchants already have more than enough to do; spending hours trying to figure out what data are telling them is not a solution — it’s a waste of time!

The History of Big Data Solutions

In the vernacular of data science, big data refers to large databases of information that must be analyzed by computers: The quantity of data is sufficient to overwhelm our limited brainpower. Collecting, maintaining and analyzing this much data is more than the average individual merchant can afford, so most data solutions did not start this way.

The first evolution of data solutions was historical analysis. It was the capture, organization and presentation of “the rear-view mirror.” These reports would tell you what happened in the past, but the user would need to interpret what might have caused the outcome.

The next phase was predictive. It was evaluating what happened in the past, identifying trends with algorithms and forecasting future events. This phase is often associated with big data as computer systems ingested loads of information to improve the accuracy of outputs — think weather, GDP and other factors. Spreading this cost over multiple clients made big data affordable for the masses.

Making Big Data Actionable

The most recent phase — and what merchants should demand — is prescriptive analytics. Prescriptive analytics take the predictive output of big data and recommend an action. The action is clearly outputted in dollars and cents so a user doesn’t need to spend hours looking at charts and tables. For example, prescriptive analytics might tell an employer that “working Bob next Thursday will lose you \$48.” Now the employer only needs to decide whether to work Bob.



Sadly, the majority of merchants have never even had access to basic data solutions. Simple reporting tools from their own POS transaction data were often too expensive, and some POS systems (like Micros 3700) would dump the data needed to do the analysis! Predictive solutions had a hard time being cost-competitive because most POS data was a nightmare to access.

Technological Progress Opens Door to Better Use of Big Data

Luckily for merchants, technological democratization is happening at an amazing rate. Cloud POS enables application program interfaces (APIs) that make interacting with transaction data easy. In legacy POS systems, data was stored locally and in mostly odd formats. Connecting to a local machine, with its weird quirks and instabilities, made data access expensive. Cloud POS pushes neatly formatted transaction data to the cloud automatically, making usability easy. With quick access to data, analytic software providers can focus on delivering higher quality products at lower costs.

Keep in mind that POS transaction data, while arguably the most important data set to a business, is not the only data that should be considered. Data from your marketing programs, inventory software and payments providers should be examined (and often combined) with your POS data to produce even more value. Good solutions here will have an interface — usually called an application programming interface, or API — that can seamlessly extract and join data with other sources. Again, choosing the right POS will make a world of difference in this regard.

In another positive turn of events, merchants are seeing a leapfrog effect common in third-world countries. For instance, because Kenya lacks major infrastructure, many residents have progressed straight to mobile phones for communication and payments. Merchants are likewise benefitting from advanced analytics proven in other industries over the past several decades.

Where Big Data Can Best Be Used

Labor. We've seen prescriptive analytics that not only produce more accurate forecasts, but also identify the right people for the right shifts. Merchants admit that overstaffing bleeds profits while understaffing yields poor customer service that lowers revenue. More accurately forecasting customer demand enables improved business alignment. Further, in an environment with labor shortages and increased labor costs, it's critical to identify the top performers and keep them motivated, while dropping dead weight as fast as possible. Prescriptive labor solutions do both.

Supply chain and inventory. Prescriptive solutions are more accurately forecasting what to stock, and when. These solutions require merchants to keep detailed inventory information, which is something many food-service merchants unfortunately ignore. However, with such data, prescriptive solutions alert them to buying patterns, keeping the right amount on-hand while avoiding overstocking.

Marketing. Most merchants spend non-trivial amounts on marketing. Determining if that marketing works is difficult. Using the same forecasting tenets in the above solutions, prescriptive solutions can back out external influences — like weather and holidays — to determine more objectively if marketing is successful.

The solutions will recommend when to run (or not run) campaigns and what the expected outcomes are.

Pricing. Determining how to price items to maximize revenue (or profit if you keep your cost-of-goods data) is another easy win for prescriptive analytics. The tools can recommend pricing changes and the net impact that will have on your business.

There are a number of applications for prescriptive solutions that can provide these data-based solutions. When evaluating such an application, remember to ask this question: What problem needs to be solved?

The right answer might require data from a number of sources, not just the POS. Learn about other solutions and the types of data they are collecting. Ask solution providers about what they are seeing; we are always open to sharing unfiltered opinions with those looking to get better.

Big data holds enormous value for merchants of all sizes. You can earn a piece of it by becoming the expert. That said, don't forget: If the solution is not actionable, if it requires more work and time or if it's unclear or ambiguous, then it is not prescriptive analytics and you do not need to use it.

It doesn't matter what is trendy, what matters is finding effective solutions to business problems.

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