Big data combined with current analytical capabilities puts us in control of backhoes relative to the shovels we dug with not long ago. The power we could and should have through these tools is great, but in many cases we fail to grasp the tools that are readily available to us. Many companies have goals that do not encompass the available capacities, and a large minority of companies lags on implementation of their own goals.

Big Data
The explosion of available data is everything we ever dreamed of. We have greater supply chain visibility in closer to real time than ever. Past challenges of formatting and cleaning this data are mostly overcome. The concept of big data has become mainstream, and its importance is recognized by nearly everyone, even outside the business community.

Predictive Analytics
Of course big data is only as useful as your ability to utilize it. Having large amounts of data without good analytics is like driving a car with a powerful engine and no steering wheel. You could go far, but you probably won’t get where you want to go. Predictive analytics forges elements of statistics, forecasting, optimization, and modeling sciences. Analytics has become the cornerstone of current supply-chain-related applications using current data collection.

Recently a survey by Bloomberg Business Research Services highlighted how, in spite of our lightning-speed advances in technological capacity, many companies lag behind. Seventy-three percent of the executives surveyed considered supply chain analytics to be central to their company’s organizational goals. However, only 48 percent said their company had implemented supply chain (SC) analytical tools. Seventy-three percent also claimed they would either upgrade or replace their SC analytics systems in two years or less. This high demand for replacing analytics systems might not be necessary if we were harnessing the full analytical capacity currently available to us.

Adaptive Analytics
No forecasting model is perfect. A model is developed based on historical data, but processes can change after the sample period on which the model is based. Whenever a situation that is an exception to the model arises, the models will make the same mistake, and if it is not corrected, this error will occur over and over again. To continue the analogy of the car, with these analytics you have to take the car in every now and then to buy a new steering wheel, because the old one slowly loosens up. Wouldn’t it be great if, instead of rebuilding our analytical programs every time they get off track, we could create analytics packages that learn from their own error, and develop over time?

As it turns out such packages do exist. Analytics that learn from mistakes as they occur are called adaptive analytics. Adaptive analytics begin the same way as the typical predictive analytics programs: building models based on historical data. Currently the standard type of analytics use a static model continually applied as business progresses and new data comes in on which to base predictions. Adaptive analytics, though, continually adjust the model to correct error and improve the performance of the model. Numerous analytics
package possess adaptive capabilities. If more businesses sought out adaptive analytics, perhaps such a large proportion would not need to replace their analytics packages every two years as indicated in the Bloomberg survey.

Many analytics companies do not talk much about the adaptive analytics capabilities that they possess. This may be because their clients are not demanding adaptive analytics. It is time to change this. Companies looking to improve their analytics capabilities should demand adaptive capabilities. Adaptive analytics are too great an opportunity to pass up.


ABOUT THE AUTHOR

Dr. Matt Waller, Chief Data Scientist, creates breakthrough models that improve profitability, agility and performance of consumer goods companies. His focus is on algorithms that exploit available data such as POS and sentiment. He is the Garrison Endowed Chair in Supply Chain Management in the Sam M. Walton College of Business at the University of Arkansas.

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