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High-Performance Data Analytics to the Resuce

By Ken King

For communications service providers (CSPs), success has always entailed straddling two paths to competitive advantage. One path requires understanding the limitations of your technology and finding creative ways to mitigate them. The other path requires recognizing when technology has advanced to such a point that previous constraints no longer apply. When this happens, competitive advantage comes to those who act quickly and decisively to shed the old ways of doing business.

Most CSPs are at this technological crossroads today. Until now, CSPs were forced to strictly conserve computing resources and ensure that processes could run within a limited window of time. Therefore your processes used analytics sparingly on just a sample set of available data, and your analytical infrastructure was not designed to meet needs from big data and complex analytical processing.

Recent dramatic improvements in computing power's price and performance have rendered such processes totally obsolete. But how do you transition to the new way of doing business so you can be one of the winners in today's competitive landscape?

Enter high-performance analytics.

High-performance analytics capture the value in all your data

Communications companies collect and store huge amounts of data, much of it mandated by regulators. Most CSPs regard this as a burden, but a necessary cost of doing business.

In reality there's never been a better time to acknowledge that customer information — from data to network performance, call centers and social-media sources like Twitter, Facebook and more — is actually your best source of competitive advantage. With high-performance analytics you can finally start putting all that data to good use.

The strength of analytics centers on its ability to accurately forecast the future. High-performance analytics enables you to do even more: it helps you minimize risk, operate more efficiently and make faster, better decisions based on a lot more information. It can also help CSPs:

- achieve sustainable competitive advantage by accurately matching price plans to individual customer preferences;
- significantly improve collections efforts to reduce accounts receivable and days sales outstanding (DSO);
- recognize their most influential customers and subsequently convert those customers' social influence into better marketing of company services;
- boost revenue through a better understanding of online and television audience behaviors;
- realize the potential for profitable location-based mobile services that enhance the customer experience.

Getting the price right for every customer

"I am the head of data analytics, and I do not understand all our price plans."

That quote comes from the person responsible for customer analytics at a large Latin American operator. If he finds the price plans confusing, imagine how frustrating it can be for a new contact-center agent or retail-store clerk, let alone a customer. Price dissatisfaction is the most common reason for customer defections.

Network operators are remarkably creative in launching price plans. A mixture of speed caps, data caps and usage caps is the preferred method to attract customers to broadband services and prevent a handful of gluttonous users from consuming so much bandwidth that service disruptions occur.

Operators seek to offer each customer the best price plan so they can maximize their company's profitability over time. Of course, the "best" plan varies by customer, and the best plan for an individual customer shifts over time as circumstances and usage patterns change.

Operators rely on contact-center agents, store clerks or self-service rate-plan calculators to make simplistic calculations based on a few parameters. But this hit-or-miss strategy is both imprecise and inefficient.

A better solution is to use an offer-optimization process that calculates the best possible plan prior to a customer interaction. A well-designed offer-optimization solution based on analytics considers all relevant data elements and many other complex factors, including constraints. It takes into account changing usage patterns, business objectives, competitive tactics, economic conditions, and the introduction of new devices and services.

The optimal offers should be continually revised as conditions change. Maintaining an analytically derived best plan for each customer is a proactive approach that significantly improves the odds of retaining profitable customers and selling new services.

An offer-optimization process should also revise the pre-calculated best-price plan during a customer interaction if the customer reveals new factors affecting his or her decision. For example, the pre-calculated best offer may have a low usage cap, but the customer may have revealed that he or she prefers to have a stable monthly bill. The offer-optimization system should consider this information and give preference to plans that have a fixed monthly fee rather than a usage cap.

A disciplined offer-optimization process that relies on analytically calculated price plans tailored for each customer will give your company the best possible strategy for aligning offers to business objectives. Plus, customers who receive the right offers the first time around are far more likely to remain loyal.

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Enhancing collections-scoring models improves the bottom line

At many CSPs, collections departments have plenty of past-due accounts. But time limitations and budget constraints force them to focus on just a small percentage of customers who are the best candidates for collections activities.

Consider one network operator whose collections team was responsible for maximizing collections on past-due accounts. The team had limited resources, so it needed a prioritized list to identify the best candidates for daily collection actions.

Each night the operator posted payments and new charges to customer accounts. Only after this was completed could the team run its collections-scoring model, which had to be executed within a three-hour window, so the model was run against the 1 percent of customers who had the highest outstanding balances (meaning 99 percent of customer records weren't even scored).

However, using in-database scoring, the model was run against all 40 million customer records in only 4 minutes, and the entire scoring process was completed in just 12 minutes. By including all customers, the model improved by 13 percent; likewise, the improvement in collections is projected to be more than $1 million per month.

Customer-link analytics helps marketers understand influence

One of the hottest trends in analytics for CSPs is social-network analysis. As we've all learned, it only takes one highly influential person to severely damage — or improve — your business reputation. And it can happen in the blink of an eye. Wouldn't you like to know who your biggest influencers are?

To understand this, CSPs need a very large matrix that scores the connectedness between subscribers. Consider that there are about 250 million subscribers in the U.S. alone; potentially, any two users could be connected. In practice, this matrix is sparsely populated, of course. That's because any one user is directly connected to only a tiny fraction of other users in a market.

It can take many hours to populate the matrix and score the relationships between users if you rely on traditional methods. Because of time constraints, most CSPs don't score communities very often.

Unfortunately, your business reputation could be scarred indefinitely within a matter of hours. On the other hand, if you could use that time to connect with your most influential customers, you might see a striking turn of events.

High-performance analytics allows you to run customer-link analyses faster, more often and with much larger data sets of information that are accurate and continuously updated. As a result you'll have a much clearer picture of the influence individuals have within their social groups, helping you turn their influence into a positive factor in how others view your company and services. The bottom line just might be higher retention rates and improved return from customer acquisition efforts.

Real-time analysis of online and TV consumer behaviors can boost revenue

In the past the measurement of television audiences was based on very small sample sizes. There was no way to deeply analyze or connect behaviors, and many questions were left unanswered.

With the new generation of video set-top boxes and digital video recorders (DVRs), the potential is here for CSPs to capture every click of the remote. Collecting and uploading this data creates a huge repository of actual viewing data from individual consumers. Effectively analyzing the data can address three business objectives for video service providers:

- predict a change in customer behavior that indicates potential churn or up-sell opportunities;
- improve program scheduling and pricing based on actual viewership;
- maximize advertising revenue through accurate, real-time targeting.

Clearly, these opportunities are attractive. So why haven't more video service providers taken advantage of them?

For one, it's extremely complex at a technical level to coordinate all of the data coming from multiple devices. Set-top boxes were designed to collect and send information to the provider indicating whether or not they're functioning properly, not to collect programming information. Plus, vendors have not fully standardized the formats they use to collect viewing data.

The strength of analytics centers on its ability to accurately forecast the future--high-performance analytics enables you to do even more.

All the same, some CSPs are likely to adopt high-performance analytical methods to evaluate consumer behavior data in the near future. That will allow them to cater advertising, programming and pricing to the unique needs of specific individuals.

For example, if you know enough details about your dad's viewing habits, you can probably determine if he's likely to leave the room during a commercial break. If he is, you have the chance to figure out if there are certain ads that actually strike his interest. Or you can wait and run those ads near the end of a show that he really loves — he's less likely to head to the kitchen for a snack at that point in the broadcast.

With this approach you potentially reduce the number of ads you run for specific viewers while at the same time raising the ads' relevance. You'll also know if a customer isn't watching much anymore — which signals potential churn and alerts you that it's time to make that customer a very good offer.

To get there you'll need a lot of data to build long-term profiles that are constantly updated by real-time behavior. High-performance analytics gives you the capabilities to effectively manage this complex process.

Time to enhance mobile-services delivery based on real-time context and location

Mobile devices open up the possibility of delivering services based on a user's location. But CSPs know that doing this the right way is not that easy.

Imagine it's lunchtime and mom is on her way to an appointment with a new doctor. She's running late, and she's desperately searching for the doctor's address and a map on her smartphone. Suddenly, an ad for a nearby restaurant pops up on her screen. How annoying!

As a CSP your goal is to deliver location-based services that are relevant, provide value and, hopefully, generate revenue too. But if you risk aggravating your customer, your plan could backfire and negatively impact his or her experience.

Unfortunately, most CSPs today have to rely solely on historical customer data. But billing history and other information from years past are not enough to make good, on-the-spot decisions.

To ensure that location-based services are effective, you need to be able to analyze information about the customer's most recent behavior and transactions in real time. Only then can you understand his or her current state of mind.

Real-time location analysis and behavior tracking provide important information about your targeted customer — not only where he or she is at a certain time but what type of activity the customer is likely to be engaged in. By using analytics technology that can sense what the customer's behavior means, you'll be able to send contextually based, appropriate information at a time when he or she will be interested.

The result could be the difference between having an annoyed customer who decides to start shopping for another provider or having a loyal customer who is happy you can provide a service he or she needs at exactly the right time and place.

The value of high-performance analytics lies in its ability to help you find countless ways to be more successful. With high-performance analytics you can ask multiple what-if questions, add new variables to reflect changing market states, test new ideas, and evaluate new scenarios, all in a fraction of the time previously required and without any infrastructure constraints.

Without the advantages of this leading-edge technology CSPs are forced into vicious price wars to win and keep customers. A better answer is to operate more efficiently and effectively by creating a sustainable cost structure and operational foundation.

Don't waste time searching for a one-time "fix" to all of your problems. Instead, turn to an analytic infrastructure that has built-in capabilities to adapt again and again.

SAS High-Performance Analytics allows you to make decisions with speed, and make them faster than your competitors. Designed to accommodate the unpredictable, ever-changing nature of our world, it can become a backbone for all your business analytics initiatives, today and tomorrow.

"You have to think of all your data as a strategic asset. Don't let that asset go to waste. Use it to model, predict and understand your business better," says Jim Goodnight, chief executive officer at SAS.

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High-performance analytics helps you make better-informed business decisions by providing highly accurate and timely insights in minutes, not hours. Its analytical capabilities span data exploration, model development and model deployment, enabling you to solve complex problems in a highly scalable, distributed environment that uses in-memory processing resources.

Maintaining an analytically derived best plan for each customer is a proactive approach that significantly improves the odds of retaining profitable customers and selling new services.

High-performance analytics can also enable marketers to:

- identify social communities based on customers' relationships;
- visualize previously unknown relationships between customers;
- uncover leaders, followers and other community members;
- improve customer retention, cross-sell and up-sell;
- target influencers more effectively.

"When analyzing big data with our high-performance analytics solutions, we're quoting time savings of up to 92 hours," says Jim Davis, senior vice president and chief marketing officer at SAS. "But what does that mean? Or, as I like to ask, 'So what?' Well, it's not just the time savings that matter. It's what you do with that time — and what you're getting within that time frame — that matters."

"If you don't analyze all of your data because it might choke your analytic environment, then your problem is not too much data — you have the wrong analytic environment," explains Oliver Schabenberger, research statistician at SAS. "We don't want the amount or kind of data to limit the analytics you can do."