Predictive analytics: the next big thing in BI?

Predictive analytics goes beyond traditional business intelligence, enabling users to churn through large volumes of both historical and real-time data in an effort to build predictive models. In this E-Guide, learn about predictive analytics technology and why it’s getting increased attention from prospective users.

IT, business intelligence, analytics and business professionals will get:

- Examples of predictive analytics in action at leading-edge companies, plus insight on the potential benefits and challenges of using predictive analytics software.
- An overview of predictive analytics technology and market trends as well as issues for prospective users to consider when weighing predictive analytics deployments.

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Predictive analytics early adopters focus on individual customer analysis

By Jeff Kelly, SearchBusinessAnalytics.com News Editor

Target isn’t just a name for the Minneapolis-based retail chain. The company applies that term to business operations on a daily basis, using predictive analytics technology to target its marketing programs to individual “guests,” as Target calls its customers.

“We are able to derive guest expectations through mining our data,” said Andrew Pole, head of media and database marketing at Target.

Target isn’t the only company that uses predictive analytics to zero in on customer behavior and expectations on a micro level. In fact, rather than identifying and predicting larger market or economic trends, most early adopters of the technology are using predictive analytics software to tailor marketing campaigns and identify upsell opportunities down to the individual customer level, according to speakers at the 2010 Predictive Analytics World conference in Alexandria, Va. The goal, they said, is to better understand what specific customers are likely to spend their money on.

Take Paychex Inc. The Rochester, N.Y.-based company’s core business is processing payrolls for its corporate clients. Paychex also offers 401(k) services, a business it is eager to expand. Until recently, however, Paychex sales reps were cold calling payroll clients to see if they might be interested in adding the 401(k) services, according to Jason Fox, an information system and portfolio manager in Paychex’s enterprise risk management division.

The cold calling proved to be an inefficient way to sign up new 401(k) customers: Nearly half of Paychex’s clients use the company’s payroll services but not its 401(k) offerings. “That’s a lot of revenue to leave on the table,” Fox said.
Predictive analytics tools point the way to prospective customers

The company decided to invest in predictive analytics technology to help identify which of its payroll-only clients were the most likely to be interested in the 401(k) business. The analytics routines take into account whether a client uses a competitor’s 401(k) services or none at all, as well as its credit rating and payment history at Paychex.

With the most likely 401(k) clients identified, Paychex can then allocate its available marketing budget to the various prospects based on their perceived value and likelihood of signing on, Fox said.

At Monster Worldwide Inc., Jean Paul Isson and his team are using predictive analytics technology to help differentiate the New York-based company from other online careers sites.

In addition to its flagship job posting services, Monster offers services such as resume mining and careers website hosting to corporate clients. Predictive analytics helps Monster identify which services to market to which clients, said Isson, who is vice president of the company’s global business intelligence and predictive analytics division.

Isson added that the predictive analytics software has become a crucial tool for the company as it takes on new, and free, job listing sites in the careers services market. “It’s the only way we can optimize ourselves,” he said.

Using predictive analytics to keep the cash registers ringing

At Target, predictive analytics technology helps the retailer maximize the amount of revenue it gets from each customer, whether people shop online or in stores, while also enabling the company to allocate its marketing resources more efficiently, Pole said.

With data mined from online transactions, loyalty card use and demographics databases, for example, Target creates a profile of each customer and determines the amount of money that he or she is likely to spend with the company in a given year.
So if, with the help of the predictive analytics software, Target determines that customer X can afford to spend $5,000 annually, the company tailors its marketing efforts accordingly. And when the customer reaches the $5,000 mark, Target can stop spending money marketing to him if it decides that any additional efforts aren’t likely to induce him to make more purchases, Pole said.

Target also uses predictive analytics to determine how much of a marketing investment is required to get a particular customer to buy a certain product. For some customers, a $1 coupon might be enough to get them to buy dishwasher soap, while others might need only half of that to induce a sale. With that kind of information in hand, Pole said, Target’s marketing department can decide which customers are worth marketing to in given situations.
Data mining, predictive analytics: trends, benefits and challenges

By Craig Stedman, SearchBusinessAnalytics.com Site Editor

Predictive analytics software is getting increasing amounts of attention from technology users, vendors and analysts. The advanced analytics technology is designed to enable organizations to mine data and build predictive models that can help them analyze future business scenarios, such as customer buying behavior or the financial risks of proposed corporate investments.

Until now, data mining, predictive analytics and advanced business modeling technology has been used almost exclusively by highly skilled – and highly paid – statisticians, mathematicians and quantitative analysts. But that’s changing as business intelligence (BI) and analytics vendors offer more user-friendly predictive analytics tools – or is it? In this interview, conducted via email, Forrester Research Inc. analyst James Kobielus assesses the current state of predictive analytics software and provides an overview of predictive analytics trends and the potential benefits and challenges of using the technology.

There’s a lot of talk about predictive analytics being the next big battleground in the business intelligence market. Do you agree? And if so, why is that? Yes, I agree. The core BI market has become quite crowded with vendors providing solutions that do a great job of supporting rich analysis of historical data. It would be a gross oversimplification to claim that the traditional BI market has become commoditized. However, vendors all over the BI arena are looking to new types of advanced analytics applications as a way of avoiding the “me too” syndrome of look-alike offerings that blur into each other and fail to differentiate in a way that can justify a premium price.

Predictive analytics is a natural evolution path for BI offerings, and it’s something that many users want but have often needed to obtain separate from their current BI tools. Predictive analytics can play a pivotal role in day-to-day business operations. If they’re available to information workers – not just to Ph.D. statisticians and professional data miners – predictive modeling tools can help business people continually tweak their plans based on
what-if analyses and forecasts that leverage both deep historical data and fresh streams of current-event data.

From a general standpoint, is predictive analytics software ready for broader use? Or are there limitations that need to be addressed first? Yes and no. Yes, Forrester is seeing an impressive new generation of user-friendly predictive analytics tools that are geared to the needs of the mass market of information workers and other nontraditional users.

But no, traditional predictive analytics tools are still very much the province of a specialized cadre of statistically and mathematically savvy modelers with an academic background in multivariate statistical analysis and data mining – although most of the established predictive modeling vendors have made great progress in rolling out more user-friendly visual tooling. Still, I had to reflect the current state of the industry when I published my Forrester Wave report on predictive analytics and data mining tools in early 2010. I didn’t put a huge emphasis on features geared to business analysts, subject matter experts and other “nontechnical” information workers. The core problem with today’s offerings is that many of them remain power tools with a steep learning curve and a commensurately high price.

What’s happening with predictive analytics software? Can you give us an overview of the key technology trends that you’re tracking? The key trend is the move toward user-friendly, self-service, BI-integrated predictive analytics tools that encourage more pervasive adoption. Another trend is the move toward integrating more predictive analytics functionality into the enterprise data warehouse, through in-database analytics. That’s an approach under which data preparation, statistical analysis, model scoring and other advanced analytics functions can be parallelized and thereby accelerated across one or more data warehouse nodes. In-database analytics also enables flexible deployment of a wide range of resource-intensive functions – such as data mining and predictive modeling – to a cluster, grid or cloud of high-performance analytic databases.

We’re also seeing the growing adoption of open frameworks for building predictive analytics models for data mining, text mining and other applications. The principal ones are MapReduce and Hadoop, which have been adopted by a wide range of vendors of analytics
tools and data warehouse platforms. In the coming year, we’ll also see the beginning of an industry push toward an open development framework for inline predictive models that can be deployed to complex event processing (CEP) environments for real-time data streaming applications. Still another trend is the embedding of predictive analytics features in customer relationship management (CRM) applications to drive real-time “next best offer” recommendations in call centers and multichannel customer service environments.

**Why should prospective users be interested in predictive analytics? What are the potential benefits or competitive advantages that companies can get from it?**

Business is all about placing bets and knowing if the odds are in your favor. Business success depends on your company being able to predict future scenarios well enough to prepare plans and deploy resources so that you can seize opportunities, neutralize threats and mitigate risks. Clearly, predictive analytics can play a pivotal role in day-to-day business operations. It can help you focus strategy and continually tweak plans based on actual performance and likely scenarios. And, as I noted in a recent Forrester blog post, the technology can sit at the core of your service-oriented architecture strategy as you embed predictive logic deeply into data warehouses, business process management platforms, CEP streams and operational applications.

The grand promise of predictive analytics – still largely unrealized in most companies – is that it will become ubiquitous, guiding all decisions, transactions and applications. For the technology to rise to that challenge, organizations must move toward a comprehensive advanced analytics strategy that integrates data mining, content analytics and in-database analytics. We’ve sketched out a vision of “service-oriented analytics,” under which you break down silos among data mining and content analytics initiatives and leverage these pooled resources across all business processes.

You may agree that this is the right vision but have doubts about whether there is a practical, incremental roadmap for taking your company in that direction. In fact there is, and it starts with reassessing the core of most companies’ predictive analytics capability: your data mining tools. As you plan your predictive analytics initiatives, you should avoid the traditional approach of focusing on tactical, bottom-up, project-specific requirements. You should also try not to shoehorn your requirements into the limited feature set of whatever modeling tool you currently happen to use.
On the flip side, what kind of challenges or issues should people consider and be prepared for when they’re weighing a possible deployment of predictive analytics software? The learning curve, complexity and cost of predictive analytics tools are the principal challenges. Also, if you’re committed to deploying sophisticated predictive analytics, you’ll need to hire specialized, expensive talent to handle data preparation and cleansing, build and score predictive models, and integrate the models and their results into your BI, CRM and other application environments. And if you decide to integrate your predictive analytics initiatives with your data warehouse through in-database analytics, you’ll need to bring the groups who handle those functions together and get them speaking a common language.
Resources from IBM

The Customer Intimacy Imperative

Five Predictive Imperatives for Maximizing Customer Value

Predictive Customer Analytics Online Demo

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