

Shaping the Future: Predictive Analytics Deliver the Promise of CRM

What if your managers and employees could easily understand key performance drivers to help guide business decisions?

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Customer relationship management promises to improve business effectiveness, profitability, market share, growth, and attainment of other business goals. While many CRM projects have created more efficient processes for customer collaboration, the ultimate goal of lowering costs, increasing revenue, and profitability is yet to be fully realized.

What if you, your managers, and employees could easily understand key performance drivers to help guide business decisions? What if you could reliably predict which customer would buy what, when? What if you knew which customers would be most profitable, what offers to give to each prospect, how to optimize pricing and packaging, how to retain profitable customers and how to turn low-value customers into high-value customers? With the ability to act on this extracted knowledge from your corporate data in daily business practice, the promise of CRM can become reality.

All of this is possible today with a new class of software based upon recently developed mathematics called structured risk minimization (SRM). This software automates the analysis of corporate information and reliably describes key influencers and future behavior. Predictions based on classical statistics have long been possible, but involve manual intervention by highly skilled experts. Only new software based on SRM can sufficiently automate CRM analysis for use by business managers. When analytics are embedded, managers can make reliable predictions about their business every day.

Making Accurate Business Predictions Is Possible, Practical, and Affordable

Predictive analytics have been automated by combining breakthrough mathematics with cutting-edge software technology, making understanding and prediction fast and accessible. By integrating this SRM-based software into conventional CRM systems, companies can now understand data and predict critical business information. Employees will know which offer will be accepted during every direct or indirect customer interaction. Predictive analytics can be integrated at every customer touch point, including in person, phone, mail, email, or the Web.

SRM solutions connect operational CRM systems to strategic business predictions. Together they deliver on the promise of profitability. Managers using these predictive analytics can ask questions about their customers in business terms and get answers in a matter of minutes. On an operational level they can implement informed decisions based upon quantified risks, and dramatically improve the quality of customer interactions. A small incremental

investment in SRM analytics leads to finally realizing the expected returns on CRM investments.

What Are the Issues?

In today's competitive business environment cycle times are rapidly shrinking from months to weeks. Today's executives cannot afford to wait for information. Questions need immediate, reliable, and forward-looking answers. Strategic questions such as these often remain unanswered:

- Who will be our most profitable customers tomorrow?
- What will be the impact of the new product on our market share in this segment?
- What are the key factors driving our customers to the competition?
- What will be the impact of a 7 percent price change?

On the operational side, managers are concerned with even more time-critical questions as part of their daily business:

- How much can she be expected to spend when she arrives?
- Is he more likely to buy the SUV or the minivan?
- What kind of promotions will keep her coming back?
- Is this a fraudulent transaction?
- How should we expect this customer to contact us next (phone, store, Web)?

What Is a Predictive Model?

A predictive model is a mathematical description of future behavior based on historical data patterns. To build a model, we must start with data that includes examples of the future behavior you are trying to predict. For marketing campaigns this means, for example, running a test mailing for a small subset of the target population. Generally, the more examples that can be obtained, the better the resulting predictive model. Mathematical modeling is used in many industries for a wide variety of situations such as detecting fraud, estimating campaign response rates, or predicting machine part failures.

Predicting Reality

For any predictive model, the key question is how well it predicts the future.

Two performance indicators are important when evaluating a model:

- Accuracy: How well does the model describe the available historical data?
- Reliability: Will the model still be accurate on new data in the future?

Structured Risk Minimization (SRM)

The primary challenge for statisticians has been to build highly accurate models that are also reliable. This has been particularly difficult given the large number of variables in computer-generated data. Traditional statistics can only produce an accurate model with a few variables, so an expert is needed to reduce the number of variables before building a model.

SRM, developed by Vladimir Vapnik, is a breakthrough in mathematics and statistics that for the first time makes it possible to automatically build reliable and accurate models. In contrast to traditional statistical models, SRM models become more accurate and are still reliable as the number of variables is increased. Model accuracy and reliability are determined by the data, not by the expert.

Reports Are Not Enough

Over the past few years, companies have made substantial investments in new operational systems, such as CRM, ERP, e-commerce, and other Web technologies. In today's competitive environment these are the prerequisites for doing business. Operational systems have improved business processes and resulted in bottom-line savings, but they have failed to generate expected ROI.

These systems capture large amounts of valuable data containing all the information necessary to understand how to increase sales, improve operations, lower costs, and take advantage of new market opportunities (Figure 1).

Business Intelligence tools such as data warehouses, reporting, and OLAP systems required another wave of investment and yielded further insight, but still lag in measurable ROI. These systems provide views of events in the past and do little to identify why something has happened and how to do something about it in the future. Knowledge is the result of manual exploration of the data.

For instance, a customer attrition report can show an executive that a company has an 8 percent defection rate. An OLAP tool may enable him to drill down into the data, e.g. by quarters, regions, or customer categories. This helps identify the problem but naturally leads to new questions: What is causing customer attrition and what can be done to reduce it? Due to the sheer amount of available data, Business Intelligence tools that rely on manual data exploration cannot provide answers to these questions. The human mind as the "engine" driving this analysis turns out to be overloaded.

Fine-Tuning CRM for Profitability: Automation Is Key

The key to profitability is automating data exploration and predicting future events through the use of predictive analytics or data mining. Predictive analytics provide answers to what will happen and why. For example: Why are customers leaving? Which customers will leave within the next month, and to keep them is it better to offer a discount or a free item?

If these questions can be answered, why aren't all companies using predictive analytics? The reason is that until recently, these predictions have been expensive, time consuming, and required the work of trained statisticians. The process was complex, often requiring weeks of work for a team to deliver reliable results.

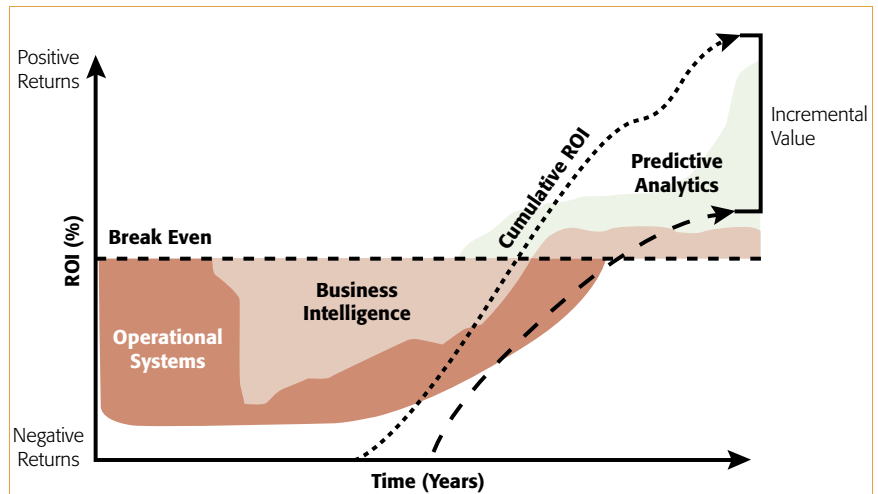


Figure 1 Predictive Analytics Provide the Highest ROI

Source: Presentation by Jack Noonan, SPSS User Conference, 2002

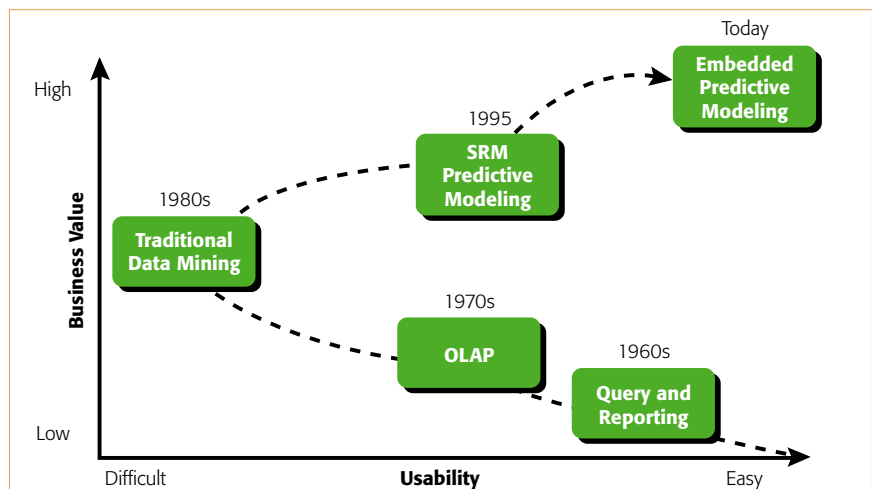


Figure 2 The Business Value of Embedded Predictive Analytics

Solutions that attempted to automate the process did so at the expense of quality and reliability of the obtained results. When traditional data mining solutions are automated, a statistician may not be needed to create a model, but an expert is still required to assess whether or not the model is providing reliable answers and is safe to deploy.

The introduction of SRM has completely changed the landscape by enabling fast, reliable, and automated predictive analytics (see sidebar). The advanced mathematics behind SRM provide an assessment of both quality and reliability to enable safe predictions. SRM predictive analytics provide the understanding and predictions business users need to make effective and quantifiable business decisions. They allow fine-tuning of CRM environments for greater profitability, ROI, and customer satisfaction.

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Case Study

A major communications company experienced a monthly defection (churn) rate of 2.2 percent. To maintain the customer base, new customers had to be acquired at an average cost of \$279 per customer. A retention campaign had been tested at a cost of \$5 per month per customer, resulting in a decrease of the defection rate to 1.7 percent per month. However, running this campaign for the entire customer base would result in a \$77.5 mil-

lion loss per month since the vast majority of the campaign would be wasted on the 97.8 percent of the customer base that is loyal.

By building a model to predict which customers are likely to churn, the cost of the retention campaign was greatly reduced. The predictive model indicated that targeting the top 20 percent of the customer base most likely to churn would maximize profits for this

campaign. This targeted retention campaign resulted in saving the company more than \$2.5 million per month.

Management found that further gains could be realized by using predictive analytics to optimize the retention campaign itself. Instead of a single one-size-fits-all campaign, a campaign recommendation model could be used to personalize the offer and increase the effectiveness of the retention program.

Predictive analytics can be applied to any number of business questions within the company to optimize both top and bottom line. Some other examples for further customer analysis are:

- Lifetime Value
- Lifestyle/Life stage
- Segmentation
- Risk Assessment
- Price Elasticity

How Will Embedded Predictive Analytics Make the Difference?

Embedded predictive analytics make it easy for business users to understand and predict information as part of the standard workflows of existing operational systems. Now, better decisions can be made and executed across almost every aspect of CRM, including customer contact, strategic product direction, pricing, service, and fraud detection. Additional areas of application are ERP, SCM, and other corporate systems that contain business critical information (Figure 2).

All of this is possible because the mathematics behind SRM allow the automation of processes like variable selection, data manipulation, and model selection, which previously required a deep statistical knowledge. SRM solutions remove the risk of assumptions and human judgment. Unlike traditional data mining tools, SRM software is fast, requires only business knowledge, and provides clear indicators for exactly how well it can predict the future so that managers can make reliable and quantifiable decisions.

KXEN is the first company to provide SRM-based analytic components that integrate into enterprise applications and business processes. Only this seamless integration makes understanding and prediction a part of the daily business practices for all corporate employees. Where traditionally it took weeks for statisticians to create a single reliable model, managers can now create models on a daily basis to predict every aspect of business. The process is fast, elegant, and it enhances business operations at every level. It provides reliable information and predictions for everyone to use.

Make Accurate Predictions a Part of Daily Business Operations

With predictive analytics embedded in corporate CRM systems, executives can set strategy, identify key business drivers, reduce risk, and understand the impact of strategic decisions on other parts of the enterprise. Managers can align their daily decisions with market development, customer behavior, and competitive environment. They can understand why the company is winning or losing business, and predict how their plans will change these business results. Customer-facing employees can identify the business value of individual customers. Specific information is available to increase the profitability and success rate of every customer interaction. Increased revenue per

customer, improved customer retention, and incremental referral revenue are some of the tangible impacts from predictive analytics. Companies can focus on profitable customers, lower customer acquisition costs, and save time by selling to the right target group.

Shaping the Future: Five Steps to Embed Predictive Analytics in Your CRM System

Experienced Customer Insight consultants typically generate ROIs of 200 percent to 500 percent by integrating SRM analytic components into existing CRM applications. Here are the steps:

1. Identify critical business questions. Identify the key strategic and operational questions that determine the future of your business.
2. Ensure data availability. Verify that you have the right data to build models that answer your questions. If you don't, you may consider adding data from external sources.
3. Integrate SRM predictive analytics. Embed KXEN components into CRM workflows to help managers build models and better understand customers and key influences on your business. Work with an integration partner experienced in predictive modeling.
4. Deploy predictive models. Integrate your models into operational systems and realize the return on your CRM investment. Identify profitable customers. Reduce time spent on sales calls. Plan strategies to preempt your competition at every touch point.
5. Shape the future of your company and build a sustainable competitive advantage. ■

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