FICO

A "New Normal" Is Emerging—But Not Where Most Banks Expect

The trailblazers are building a new normal capacity for adapting and innovating into their operations

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Over the past year, there has been plenty of writing about the prospect of stability—the so-called "new normal"—in post-crisis financial services markets. And during this year, we've continued to see plenty of destabilizing forces rock the industry.

Everywhere, creditors are wary of future regulatory impacts on their business and of technologies unleashing new types of competitors. And, of course, some markets are still struggling to emerge from recession, notably the US and Europe.

Hear the stories of FICO clients who have stopped waiting for the dust to settle and are using analytics to meet the challenges of dynamic markets.

I'm inclined to share the view of those who say there may be no new normal coming—that is, if we're looking for it in market conditions and customer behavior. Instead of waiting for it to appear out there, banks must build it into their own operations by using analytics to increase their capacity to learn, adapt and innovate.

The real "new normal" is a way of running your business so that success no longer requires stability. It's a new competitive dimension in which the prizes go to those who excel at seizing opportunities created by instability.

In this paper, I take a look at several financial services companies—in Europe, Asia, the US and South America—who are taking the first steps to attain this heightened level of competitiveness. I'll also discuss how these initial efforts lay down vectors for future developments, showing some key directions we see top-performers moving.

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» **Movers and Shakers**

"Even bankers who have been around forever seem to think that that turbulence is temporary and normal times are just around the corner. These bankers position their companies accordingly, and if something resembling stability arrives, they expect it to last."

—David Weidner, ***"Writing on the Wall,"*** The Wall Street Journal, March 10, 2011

"Granted, we're often asked to make decisions, particularly financial ones, based on a degree of uncertainty. To counter this uncertainty, we commit one of the classic behavioral mistakes by looking to the recent past, identifying a pattern and projecting it into the future. The danger of this behavior is that we're making decisions based on the new normal and often fail to include the potential for surprise."

—"***There's No Such Thing as the New Normal***" Published in the Bucks blog, The New York Times, May 20, 2011

These two recent comments in the business media capture the challenge for the banking industry. There's a whole lot of change going on out there and not much in the way of stability. So it seems like a good time to talk about companies that have stopped waiting for the dust to settle and started moving ahead. Here are the stories of FICO clients who are expanding their use of analytics to meet the challenges of dynamic markets.

Economically calibrating risk predictions

A leading European banking group was experiencing a problem common to many banks in markets affected by the global financial crisis: It couldn't recalibrate its models fast enough to keep up with the increasing risk—despite monthly updates.

Decisions were being made based on relationships between risk score bands and default rates that were no longer reliable for predicting current and future customer behavior. Delinquencies were soaring. In addition, the situation was creating a regulatory issue, since the company was having difficulty achieving stability in the overall capital requirements for its retail group.

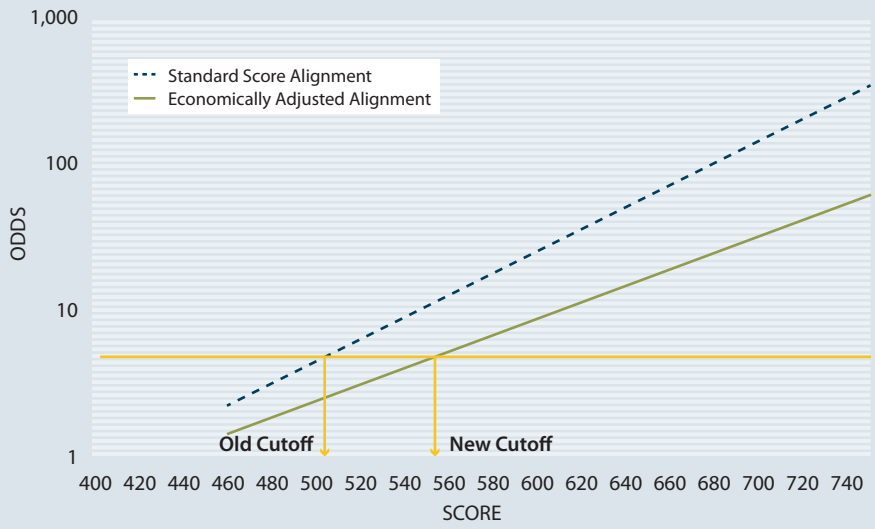
This dilemma makes clear the inadequacies of traditional methods of recalibrating models that rely on backward-looking, point-in-time techniques. In markets undergoing very rapid economic or consumer behavioral change, creditors need methods that are forward-looking. By "forward-looking" I mean having the ability to simulate a future set of economic conditions and adapt what you're doing in advance of them.

Instead of continuing the race to try to catch up with its markets, the company is now implementing methods that anticipate where it's headed. The key is economically calibrated models that predict shifts in default rates at specific score bands under various future economic scenarios.

If the company is forecasting deteriorating economic conditions, it now has a scientific method of determining how much to raise score cutoffs in its strategies to keep default rates steady. If the forecast is for improving conditions, the company can lower its cutoffs in a timely way to avoid depressing revenue by being overly conservative.

The new approach, which was tested on credit cards, personal loans and mortgages across the group, was first implemented in one pilot country. In that successful debut, calibrations took into account not only statistically valid macroeconomic time-series characteristics such as household savings and debt, unemployment rate/growth in employment, average monthly oil price and changes in home prices, but also currency relationships affecting mortgage payment behavior.

Figure 1: Keeping default rates steady by proactively increasing score cutoff in anticipation of a deteriorating economy



Economic adjustment evaluations were made on originations scores. The result of these evaluations was an increase in profit per decision.

The project has now expanded to 15 markets across Europe, with models being calibrated to the different economic prospects of each. By adjusting its policies flexibly to economic developments in these specific markets, the company expects to be able to "grow in good and bad economic periods."

At the same time, FICO is working with the banking group to improve availability of capital to fuel growth by applying economic impact analysis at the portfolio level. In stress tests, the lender's portfolio-level projections of the impacts of future economic scenarios are now firmly rooted in account-level, economically calibrated risk scores and decision strategies. The company is able to more accurately project its loss reserve requirements, facilitating regulatory compliance (including with the Basel III counter-cyclical capital buffer requirement), without tying up capital unnecessarily.

Finding the levers to change customer behavior

Forward-looking economic calibrations of risk, such as those I've just described, are being folded into a wide range of customer decision strategies. Samsung Card, one of Korea's largest credit card companies, is at the forefront of this trend.

The primary aim of the project is to improve portfolio profitability by encouraging cardholders to make greater use of an installment loan product attached to their credit card account. This product has a high margin, but currently low usage. To understand how to change this behavior in order to boost balances in the most profitable part of its portfolio *while carefully controlling risk and meeting regulatory requirements under changing economic conditions*, the lender is using action-effect modeling.

Samsung Card wants to know, for example, which customers are likely to increase their utilization of the loan product if offered a 30% temporary pricing discount—and which customers would be sufficiently incented with a just a 20% or even 10% offer. It wants to better understand the subtle relationships between line increase, utilization and delinquency in a market where consumers have traditionally been reluctant to take on debt.

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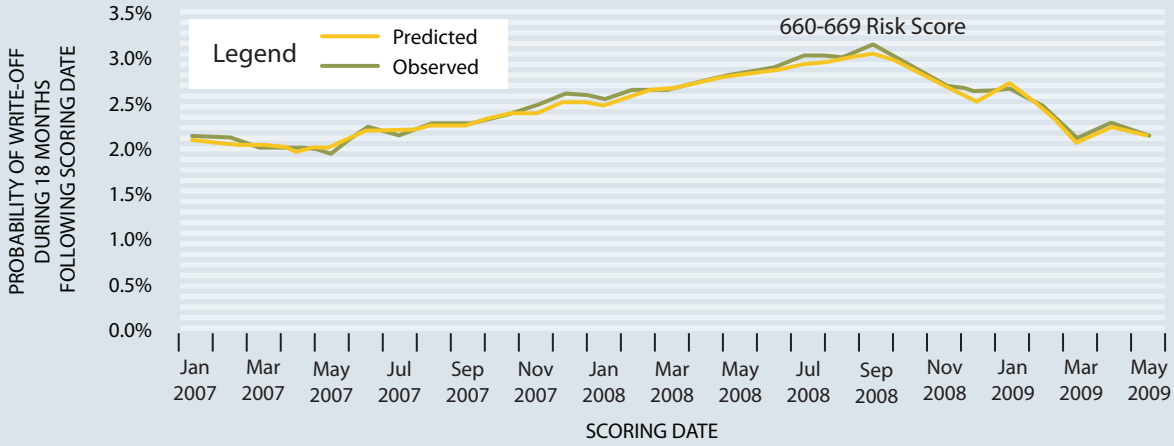
Action-effect models help solve such complex problems by predicting how customers will respond (offer take-up, activation, utilization, attrition, delinquencies, etc.) to various actions the issuer might take. But understanding customer response, while essential, is not an end in itself. Lenders need to be able to understand response in the context of outcome metrics (profit, loss, exposure, cost, etc.) and have a way to translate that understanding into action—which, for this project, is making offers with the most profitable combination of loan limits and pricing for each targeted customer.

That's where we see the full power of this analytic technique. In action-effect modeling, we find mathematical relationships between lender actions, predicted customer responses and outcomes.

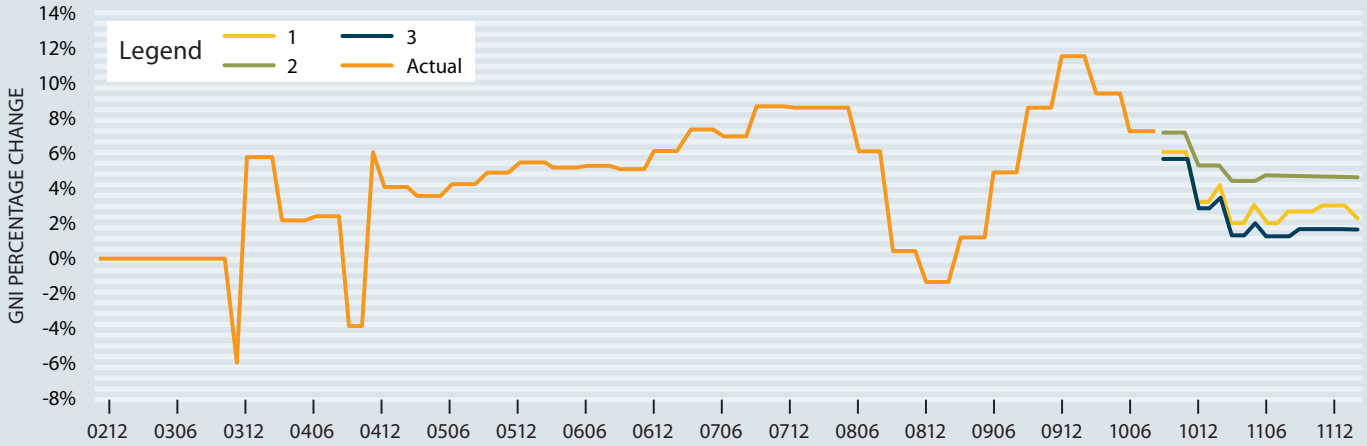
Figure 2: Tracking and projecting economic impacts

2007–2009 comparison of predicted and actual default rates at the 660–669 risk score band



A lender that used the historical (predicted) default rate of 2% for accounts with risk scores of 660 to 670 at the scoring date would have severely underestimated the losses for these accounts. At its peak, the actual default rate was 3%—1.5 times higher.

Historical and projected Korean Gross National Income (GNI)



The Korean GNI is one of hundreds of macroeconomic indicators that can be tracked against variances in predicted and actual default rates, and used to project future scenarios for forward-looking economic impact modeling.

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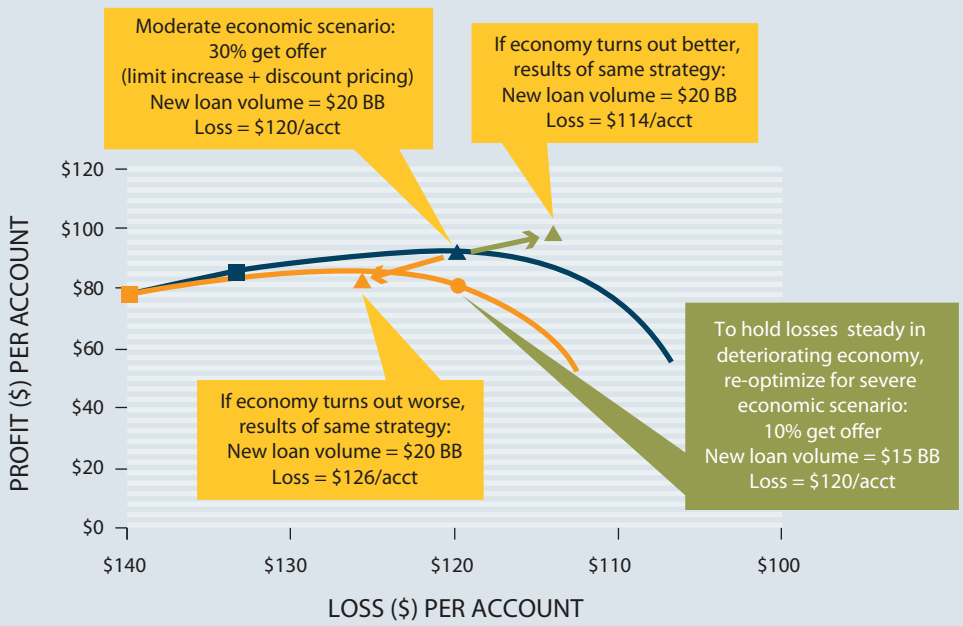
Moreover, in this case, since the risk prediction component is economically calibrated, the decision strategies we build from the model are also forward-looking. They reflect the economic conditions the lender expects in the coming year, rather than for the conditions of past years (i.e., the last time they refreshed their risk models).

Decision strategies are optimized for maximum profit against portfolio-level constraints (losses, balance loss ratio, marketing spend, volume targets, etc.). As I said in a ***previous Insights paper***, this approach essentially provides an "interactive map" of the problem being solved. Using simulation, Samsung Card can move the decision levers—adjusting limits, prices and constraints—and the optimal decision strategy will move accordingly to a new coordinate position on the "map." Trying out a variety of "what if?" scenarios, the company can explore the trade-offs between risk and reward, and generate a range of potential optimal operating points for consideration and discussion.

In addition, the use of economic impact analysis with these techniques enables Samsung Card to expand its explorations in directions that are critical for sustaining compliance and profitability under changing conditions.

Figure 3: Incorporating economic calibration into decision strategies



As shown in Figure 3, the card issuer can:

- Investigate how optimal strategies would perform if the economy is better or worse than expected
- Develop strategies for alternative economic scenarios so as to be prepared to "change horses" quickly at the first warning signs

The way this approach reveals the most powerful profit drivers and makes the trade-offs explicit is providing Samsung Card with business value over and above the expected profit lift. For the first time, the company's risk and marketing groups are coming together to make decisions jointly, instead of separately and sequentially, and to choose the strategies that make the most sense for their business at this time.

As the optimized strategies are deployed and production results are collected, these groups will be able to efficiently evaluate what is working and what could be improved. Together they can drive rapid test-and-learn cycles that deliver performance improvements in the midst of economic change.

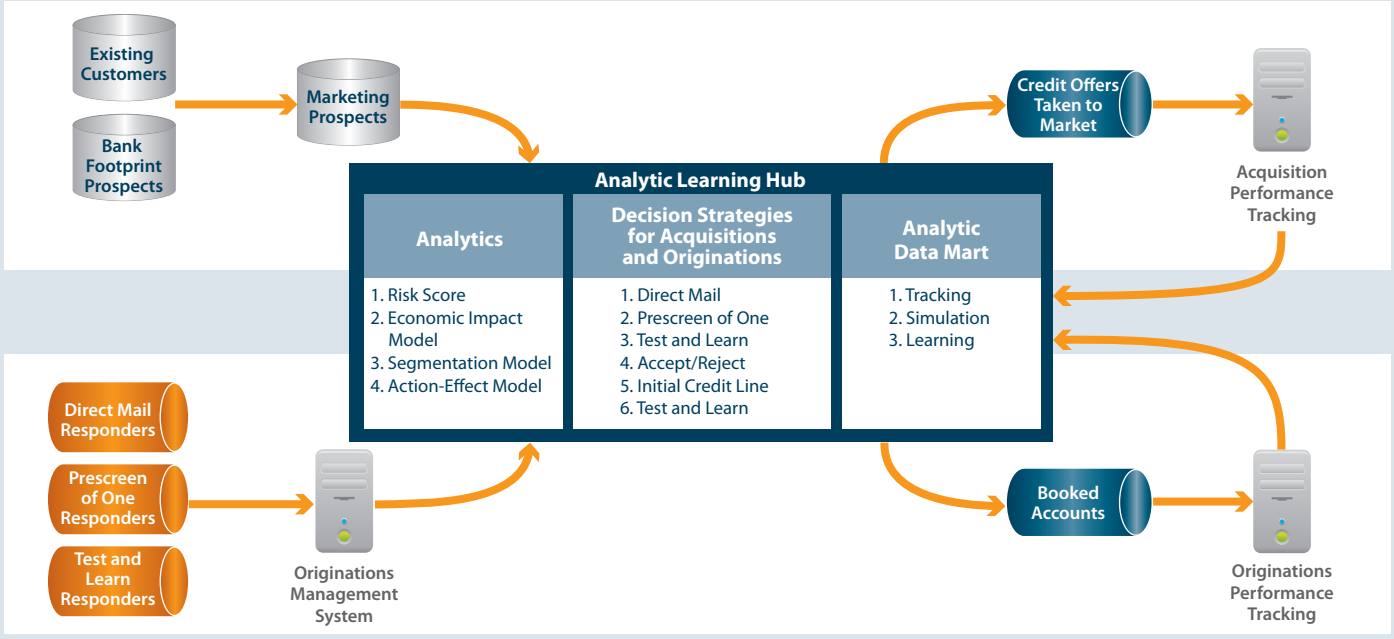
Making decisions based on current market behavior

Test-and-learn cycles have taken on new importance since the financial crisis. In many markets today, there's been so much change that historical data is no longer very useful for predicting customer behavior. The speed with which creditors can understand and adapt to how consumers are currently behaving in the market is becoming critical to success.

A US regional bank is one of the first to raise its learning capacity to a higher level by implementing an analytic learning loop. This is a way of accelerating and providing shared access to feedback about the market performance of models and decision strategies.

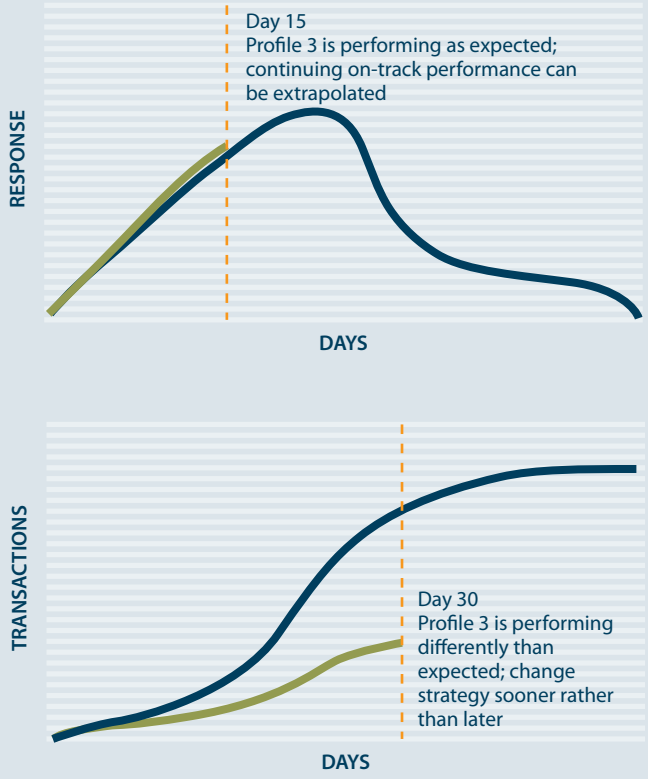
The initial project aims at driving growth by targeting the right card products to consumers most likely to respond and use the card in a manner that generates profits. It's part of a broader, more ambitious effort, however. In the aftermath of the CARD Act, executives from this bank were among the first to get over the shock of the new regulations and see the opportunity ahead. The company expects to be able to achieve pre-financial crisis return-on-asset levels through innovations that realign the business with today's consumer needs.

Figure 4: Analytic learning loops make quick market feedback a shared resource



The analytic learning loop provides the means to drive this realignment through rapid test-and-learn cycles that compare what was expected with what actually happened. Because, as shown in Figure 4 that the loop can be "threaded" through existing systems, this quick market feedback becomes a shared resource across customer lifecycle decision areas. In this case, marketing is gaining early access to originations decisions and outcomes. It's soon clear whether campaigns are attracting the customers that the bank needs to be profitable, and if these customers are showing early signs of using the products in the way the bank intended.

Figure 5: Variances between expected and actual performance point to opportunities for learning and improvement



Variances between forecasts (based on simulations during development) and actual results are opportunities for learning. As shown in Figure 5, marketing can laser in on underperforming population segments and change its strategy for that segment. While a campaign is still underway, the company can adjust the offer (incentives, limits or penalties, etc.), the language and packaging of mailed and online promotions, and even call center and branch staff training to improve results.

Part of the power in this learning powerhouse comes from applying the analytic technique of behavioral segmentation to create the target population profiles. The profiles—which incorporate forward-looking economically calibrated risk predictions at the level of geographic regions—are also shaped by insights into a much broader range of customer behavior. Adopting methods similar to those used by leading retailers, the bank is developing value propositions for each customer profile. These profiles guide strategy development and are then tested and honed through the analytic learning loop.

Stealing some magic from retailers

The adoption of retail-inspired profiling and value proposition techniques, as described above, is not an anomaly. It is, in my view, the beginning of a trend within the financial services industry.

You can see another sign of it in a successful proof of concept project we recently completed for a large European bank. The objective was to demonstrate improved credit limit decisioning by finding the best allocation of preferred limits for each customer across four retail lending products: credit card, unsecured loan, mortgage and overdrafts on money transmission account (DDA).

"Banks in emerging markets face different and far more exciting challenges... Rapid growth and the spread of computing and communications technologies have turned these markets into huge laboratories of innovation."

—The Economist, May 12, 2011

To achieve this objective, we used customer-level, multi-product decision modeling and optimization. We built action-effect models that assessed the impact of different limits on a wide range of profit drivers (affordability, take-up, utilization, good/bad, time to bad, etc.), allowing us to understand the balance between revenue, credit risk and attrition/no take-up risk.

In fact, we built action-effect models for each product, which, in turn, became components of an overall decision model for the customer-level optimization. (This is smaller in scale but not unlike what we've done for top retailers, building models for each of hundreds of product categories.)

The optimization identified the best product credit limit offers to make to each customer that would maximize profit while meeting business constraints such as take-up levels, risk exposure and loss levels. It resulted in a "basket of offers" for each customer that the bank could potentially use to facilitate its cross-sell and up-sell efforts.

FICO is working on a similar project with a bank in Latin America. The lender plans to modernize its credit decisioning, moving from mostly manual processes to optimized decisioning in a single leap. For this project, action-effect modeling and optimization will be

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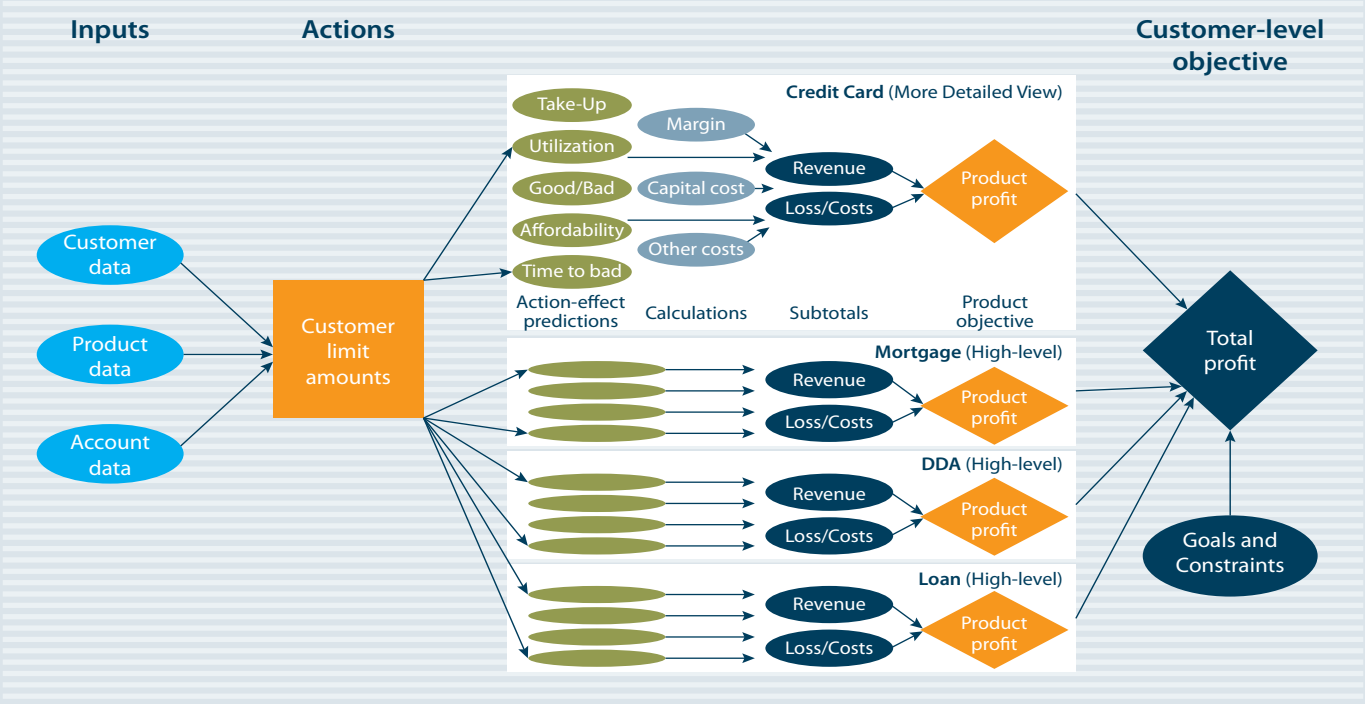
"There isn't a company on this planet that wouldn't appreciate 25 percent more market. The big opportunity is to enable a set of transactions that nobody else has enabled."

—David Hornik, Partner, August Capital, speaking to BusinessWeek, May 10, 2011

used to balance risk reward trade-offs between customer-level risk and profitability across a number of products (e.g., loans, bankcards, overdraft on checking). The objective will be to determine the most profitable level of exposure each customer should receive in total for the various banking products.

Some US lenders are also developing more complete packages of financial services to gain advantage in their current battle over low-risk/high-profit consumers. With expenditures on prospect database marketing rising but so far having little impact on growth, creditors need to make more compelling offers than "Do you want another credit card?" Many of the most desirable customers don't want another card. They want *the right card or set of services* for their financial situation, lifestyle and goals.

Figure 6: Example of customer-level decision model design



"The volume of data is growing inexorably as retailers not only record every customer transaction and operation but also keep track of emerging data sources such as radio-frequency identification (RFID) chips that track products, and online customer behavior and sentiment."

—Big Data: The Next Frontier for Innovation, Competition and Productivity McKinsey Global Institute, 2011

Banks will need to become more innovative if they're going to make inroads into the so-called "underbanked" population. Here traditional financial services face stiff and growing competition from services like PayPal and Google, as well as startups such as PayNearMe, Green Dot and Netspend Holdings, all of which, through acquisitions or close partnerships, have one foot in retail.

The danger isn't only that these competitors are coming up with a slew of fresh ideas for meeting the needs of today's consumers. It's also that through these services, they're collecting vast, rich data on how customers are spending their money.

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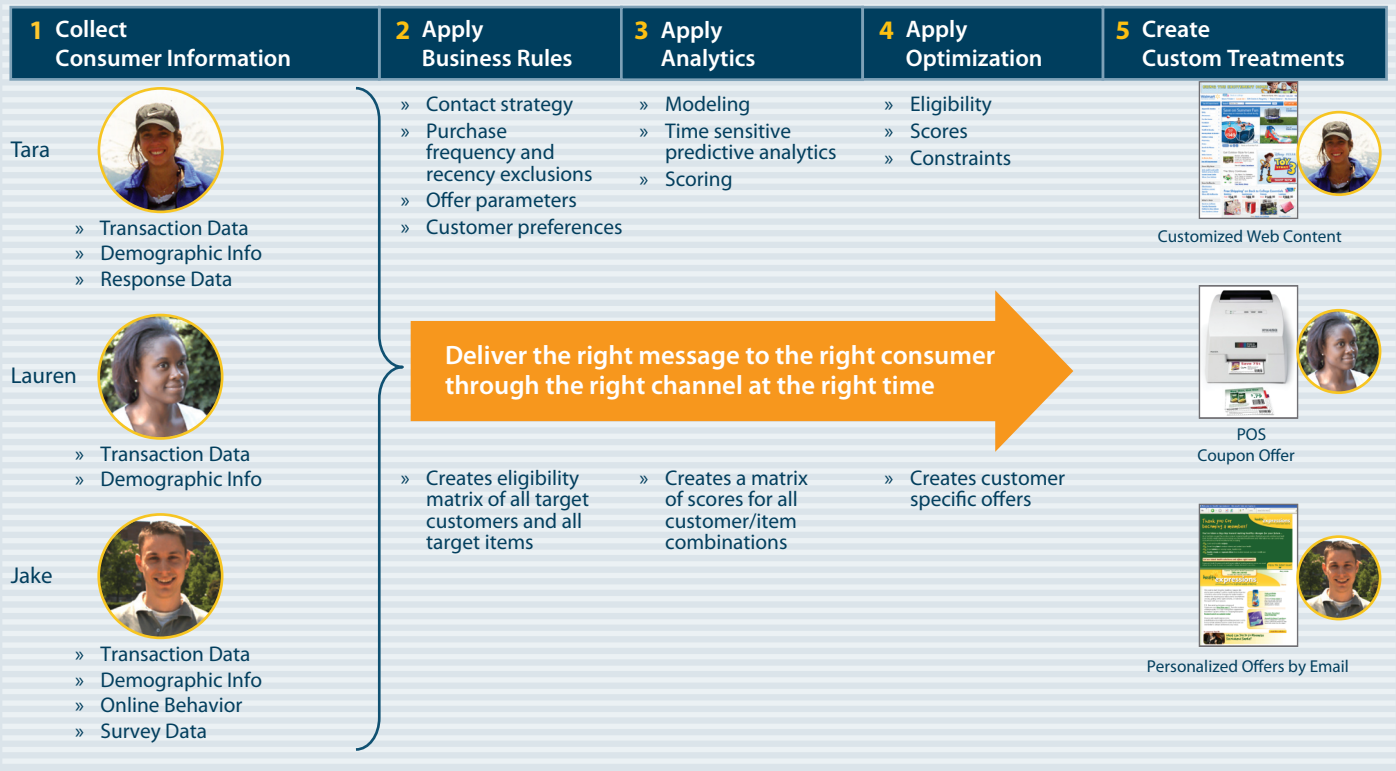
Banks, of course, have access to data on customer spending too. Credit card accounts and deposit accounts (especially in European markets where consumers use them to automatically pay a wide variety of bills) could provide substantial visibility. To fully leverage this advantage, banks ought to be thinking about implementing transactional analytics if they haven't already. And they should be thinking about using them not only, as in the past, for fresher, deeper insights into developing risk, but also for timely insights and event triggers that create opportunities to be of greater service to their customers.

Figure 7: What banks can learn from retailers



"Our industry's future involves combinations of fee-based bundled services, like subscriptions in the mobile telephone market. Sure we have had fee-based products for years, but we've never dealt with bundled enhancements around the core product, and we need to."

—Vice President of Bankcard Services
at a large regional US bank

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» Conclusion

It's not an easy time for some banks to think about innovation. Unstable markets continue to be buffeted by economic, regulatory and competitive change and reshaped by shifts in consumer attitudes and behaviors. Such business conditions can make it a struggle just to protect portfolios and assets under a business-as-usual scenario.

The difficulty of continuing business as usual is, of course, what makes this the right time to think about innovation. Banks that build into their operations a "new normal" capacity for learning, adapting and innovating are going to have a much easier time of it going forward than banks that don't. Those with the means to look beyond credit behavior and pay attention to a wider range of information about how consumers manage and spend their money, will see their way sooner to new heights of success.

Dr. Andrew Jennings is a Senior Vice President and Chief Analytics Officer at FICO. Since joining FICO in 1994, he has worked with many leading banks worldwide. Previously, he held senior risk positions at Barclays and Abbey. Jennings has a Ph.D. in economics from the University of Nottingham.

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