Introduction

Scientists tell us that enough sunlight falls on the Earth's surface every hour to meet world energy demand for an entire year. But all that sunlight does little good from a power-producing standpoint if we can't harness it and convert it to usable energy.

The same is true of data. As new sources of data emerge and the costs of storing the data continue to decrease, the challenge is how to make that data useful; how to sift the most relevant information out of the daily tsunami of data streams, analyze it, and make it a tool for profitability.

When it comes to credit card programs, their level of success and profitability is often directly related to how well the bank or credit union takes advantage of the data available to them through their commitment to analytics. The combination of analytics and data-driven decisions is a proven success strategy. Analytics not only provide a roadmap to previously untapped markets, but they guide a financial institution's ongoing decisions regarding its credit card portfolio marketing, risk, and underwriting.

Analytics done correctly – with the right data, interpretive tools, highly accurate assessment, and effective application – make a world of difference to a credit card program. With guesswork removed, replaced by guidance based on proven empirical performance, a financial institution can maximize profitability and turn its card program into its highest-performing asset.

To better understand the function and purpose of the Big Data analytics that are involved in a successful credit card program, it helps to focus on the "product" that results from this analysis. For Capital Services, this product is the scorecard. It represents the actionable information that a financial institution needs to move forward on launching, expanding, or streamlining its credit card program.

What is a Scorecard?

In terms of Capital Services' analysis of credit-related Big Data, the end result is a scorecard, which is essentially a way to evaluate the likelihood of a future event, based on the past data that has been analyzed. It represents a mathematical and statistical model that has been developed from actual data, and serves as a tool that is used to optimize decision-making.

In the simplest form, a scorecard is used to separate desirable targets from undesirable ones by predicting rates of acceptance, return, and profitability for the desirable target population.

Scorecards are developed through data analysis that looks at a representative sample of the specific population of sufficient size to support the required accuracy and complexity of the intended use of the scorecard. This data contains characteristics and variables about individuals in the target population. With this information, one can predict an outcome or event, whether that is the rate of acceptance of a particular credit card solicitation, the effect of certain interest rate tiers, the short- or long-term profitability of a range of customers, or other events of interest.

The data is analyzed with a series of proprietary statistical and mathematical algorithms. In Capital Services' case, these algorithms mine a vast trove of performance data gleaned from years of working with similar target populations to create scorecards.

Creating Scorecards

Creating a scorecard for a financial institution's card program begins with the credit bureau. Once the target population has been determined – for example, underbanked adults in a given state or region – pre-designated credit bureau attributes for that population are obtained from the credit bureau.

Included in the elements analyzed is the credit score as determined by the credit bureau, along with the individual factors that contribute to that score. Among them are the individual's history of making on-time payments and how many and what kinds of loans or accounts they have had.

To create the optimal scorecard, the credit bureau attribute information needs to be paired with longterm performance data. This combination enables far more accurate assessments of the target population. That is what Capital Services, for example,has done by gathering and analyzing performance data from client financial institutions for nearly 15 years.

Scorecard Development

1. Target Population
2. Credit Bureau Elements and Performance
3. Application of Proprietary Algorithms
4. Product Scorecard

The scorecard modeling process continues by applying a number of proprietary statistical, mathematical algorithms and filters to refine the number of key attributes and further define the groupings of variables into ranges. Four to five candidate scorecards are created, which undergo rigorous testing and validation before the final scorecard is selected. The resulting scorecard is then used to refine the target population in such a way as to vastly increase the likelihood that the individuals will respond to a solicitation for a credit card, or increase their card use based on a credit line increase or other incentive.

The final scorecard takes into account how individuals with certain credit scores and certain other attributes have behaved as cardholders over time. That allows analysis that goes far deeper than the typical assessment – that is, that an individual is low-risk or high-risk depending on a simple credit score obtained from the credit bureau.

How Scorecards are Used

There are four main ways in which scorecards are used once these models have been developed from the Big Data pool. The primary one is in cardholder acquisition, or what is also known as asset origination. In this case, the scorecard indicates which of the individuals in the target population represent the best and most profitable opportunities for solicitation. The scorecards show not only who among the target population has the greatest revenue potential, but also indicates who will be most likely to respond positively to the solicitation, based on historical response data.

Scorecards are also used in account management, on an ongoing basis. The models created through the data analysis serve to guide a financial institution in what types of offers to extend to various customers and how to treat them from a service standpoint to generate the greatest loyalty and the highest use of the card to generate revenue and profitability. Whether to increase a credit line for a segment of the cardholder population, for instance, or what changes to make in the interest rate can be well predicted by the scorecards.

The third way scorecards can be used is in collections, in order to optimally allocate resources within a department and how best to work with and make offers to certain customers. Additionally, scorecards can be used in recovery in order to determine which debts to keep and continue to collect, or which to sell off.

Scorecards & Profitability

When properly applied, scorecards can lead to significant gains in profitability. From the beginning, by being able to analyze which individuals in the target population are most likely to want the card – and those who are least likely – a financial institution can focus on the best prospects. This reduces overall costs by increasing the response rate for a given promotion or marketing campaign.

Scorecards also enable an accurate assessment of the risk profile of prospective and current customers. By targeting the right customers within the relevant profile, it reduces loss rates and makes it easier to manage losses to desired levels, with appropriate pricing based on risk level.

In addition, with the proper data analysis a financial institution can determine on an ongoing basis the best candidates among its cardholder customers for credit line increases, special interest rates, balance consolidation offers, and other targeted promotions. When the right people get the right offers, they increase card usage and generate additional interest and fee income.

VIPR℠ and Scorecards

Integral to Capital Services' scorecard creation and refinement is ViPR, the Vintage Profitability Reporting system.

ViPR's power is in its ability to take massive volumes of disparate information - and turn it into actionable, valuable information.

ViPR maps all of these into account-level profitability information, to understand what is driving profitablity, and determine the most profitable approaches to the card portfolio.

Capital Services has learned over time that of all the ways that Big Data analysis can aid profitability, it is cardholder origination – the ability to turn a targeted, desirable prospect into a cardholder customer- that is the greatest contributor to profitability.

How Scorecards Evolve

When a financial institution decides to begin a credit card program, or revive one that it may have discontinued in the past, it uses a certain set of scorecards that are likely to be different from what it will use on an ongoing basis. The scorecards used to tailor the initial outreach to the targeted population are based on vast sets of in-house, customer performance data whose effectiveness has been proven over time.

For a client with an existing portfolio, vintage analysis paired with existing scorecards provide a good foundation to build upon. This is the stage at which acquisition and other strategies are fully developed and evaluated. As a new group of accounts is added to the financial institution's cardholder base, these accounts are tracked in a distinct grouping, or vintage, for performance against historical benchmarks and assigned its own scorecard. The vintage is also compared with scorecards from other vintages and the larger base of historic data. This process allows strategy changes on how the scorecards are used.

Scorecard Lifecycle

Development

Implementation

Validation & Monitoring
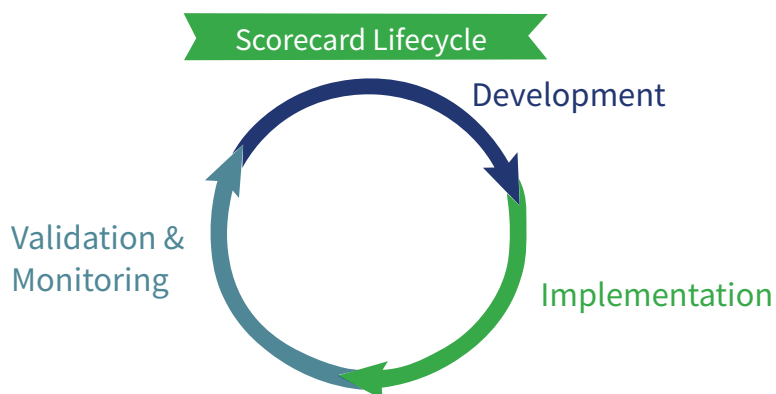
This requires a continual assessment of scorecards. For every new vintage, every new promotional offer, the accuracy of the scorecards must be recalculated and all new data incorporated. The performance of the scorecards, and their value as a predictive mechanism, have to be critically analyzed, and also set against a framework of changes in the economy or in governmental regulations that may affect cardholder behavior.

In order to manage the evolution of scorecard data and ensure its accuracy, it requires a significant amount of research and development efforts on the part of those building the scorecards. It would be very easy for scorecard effectiveness to degrade rapidly if the data is not closely assessed, tested, and analyzed on an ongoing basis.

Capital Services: Unmatched Scorecard Capabilities

Capital Services is unique among processors not only for the unmatched quality of its scorecards, but in its dedication to constant evaluation and re-evaluation of scorecards for each cardholder as well as for incorporating data from each cardholder into the aggregate, "macro" data pool. What also differentiates Capital Services is that our data scientists are all graduate level educated, with the highest levels of expertise in data analysis.

But it is Capital Services' ViPR system that stands out among data analysis tools in the industry. We bring everything into clarity for financial institution customers with ViPR ViPR provides unparalleled visibility into account-level profitability so that a financial institution can see what is working best in its portfolio and make informed decisions.

ViPR enables a financial institution to identify and flexibly segment its portfolio composition, determine when an account vintage will turn profitable, develop pro formas, drill down to the essential drivers of profitability, and view loss reserves

Understanding and driving analytics behind profitability allows Capital Services to guide its financial institution clients in expanding their financial universe, with a broader and more effective product suite, and in entering new markets with high confidence that their strategies will work.

With Capital Services, the bottom line is that our proprietary, market-proven scorecards drive payment profitability. They accurately identify who is most likely to utilize a financial institution's payment products and improve the portfolio's performance. Thanks to the years of work by our top Data Scientists, analyzing massive volumes of customer, payment, and portfolio performance data, Capital Services can offer some of the best scorecards in the industry. The technology and algorithms at the foundation of these scorecards ensure precise, consistent segmentation, modeling, and forecasting.

For more information about Capital Services and its scorecard methodology, please contact us at business@capitalsvcs.com or call 605-782-3300. Alfred Furth is the Executive Vice President at Capital Services. He received his Doctorate in Computational Science and Statistics from South Dakota State University.