Leveraging Risk Analytics to Drive Competitive Advantage

sas

GARP | Global Association of Risk Professionals

Leveraging Risk Analytics to Drive Competitive Advantage

The global financial crisis of 2008 has often been attributed to a failure of risk management. It may be more accurate, however, to call it the demise of siloed risk management, which has served as a wake-up call to many financial institutions around the world.

Where the warnings of senior risk managers once went unheeded, and risk management structures were organized around line of business functions, banks have made it a priority to look at risk in a more holistic manner and to integrate the risk function and risk analysis into the decision-making process. In fact, banks have found that by leveraging risk management analysis, they are a gaining a significant competitive advantage.

Evolution of Risk Management

The lack of strategic coordination between the different risk functions is one of the hallmarks of financial organizations before the global crisis. Given that risk management originally developed in stages, beginning with market risk, moving to credit risk and then encompassing operational risk, each risk function historically operated as an independent unit. However, with current financial and regulatory mandates, risks are highly dependent, and data silos don't provide an accurate representation of risk. In the wake of the crisis of 2008, more and more banks have taken that lesson to heart.

"If risk management inputs had been embedded within the credit process and throughout the decision-making process before 2008, maybe the outcome would have been different," says Boaz Galinson, Head of Credit Risk Modeling and Measurement in Bank Leumi's Risk Management Division.

Banks need to be able to answer questions about the risk embedded in its portfolios, and need an enterprise-wide view to be able to do so effectively. "In the global financial crisis, obviously some of the financial institutions didn't know how to answer these questions correctly," says Galinson.

The Value of Data

While data can be one of a bank's most valuable assets, it is considerably less useful in its raw form. Creating competitive value from risk analytics requires a holistic view of financial data. In order to determine whether data is going to provide long-term value to the business, risk, finance and other areas of the bank, it is necessary to look at the information's inherent worth.

Scoring data is a useful method of placing a value on it, and one of the ways in which this can be done is by considering how the data is used by the bank's various risk models. Determining how often key attributes—such as risk factors, asset types, or the characteristics of individual assets—are used in models allows a bank to assign a score to each. Those scores can then be aggregated, which lets the bank see how rich the information is and how widely it is used throughout the enterprise.

Building situational context for the data requires the application of various analytic techniques. That can include, for example, probability of default, exposure at default and loss-given

default, if you are speaking about a portfolio's expected or unexpected loss. "Looking at various exposures, looking at the credit quality underneath particular asset types—we want to see it from a more holistic perspective," says Tom Kimner, Head of the Americas Risk Practice and Global Risk Product Management at SAS. "We want to look at predictive analytics, we want to look at the forecasting, we want to look at regressions."

Creating situational context also requires a bank to consider the potential impact of macroeconomic forces on the data. If interest rates or home prices or a country's GDP shifts, for instance, how does that affect individual loans?

"Ultimately, what we want to do is take this data mining, these statistics and the forecasting, and push it towards an optimization strategy. We want to be able to make educated decisions around how to manage the business based on best choices," says Kimner.

A Holistic Perspective

Making intelligent choices, whether they're decisions about what investments to make or which borrowers to onboard, means taking a proactive approach, and ensuring that analytics are applied across the risk management spectrum, from risk infrastructure all the way through to governance, risk and compliance.

Several aspects of that spectrum include the requirements for in-memory analytics, in-database scoring and grid computing. "You see more and more companies starting to look at this because of the speed and volatility of information in the marketplace, and the potential impact of the market movements and that dynamic nature on their own portfolios," notes Kimner.

Credit assessment must also be considered, from the origination phase through the entire credit lifecycle, including collections and recovery. Portfolio management also offers opportunities for banks to leverage analysis in answering questions about portfolio performance, and whether the level of risk in a portfolio is acceptable within the context of the organization's risk appetite.

Analytics Maturity

How deeply has a bank embraced analytics? The five-stage analytics maturity model* offers a good indication of an organization's analytical capabilities, and to what degree analytics are a driver of overall strategy.

Stage 1 is reserved for the analytically impaired—organizations in which senior management has limited interest in leveraging analytics. Many financial firms are in stage 2 or stage 3, or "localized analytics" and "analytical aspirations," respectively. While banks with analytical aspirations see the value in analytics and have made some significant investments, their approach is still somewhat siloed.

"As you move into later stages, you're looking also at the incorporation of this at a much broader enterprise-wide level, and expanding on analytics is a key competency within the organization," explains Kimner. Stage 5 organizations, or analytical competitors, have embedded analytics at a very granular level, and they use it strategically.

"Once you've been able to prove the value of analytics in the organization, you take and plow that investment back in, and it becomes a model where the investment creates additional return, which can create additional investment," says Kimner.

continued on back page

**Davenport, Thomas and Harris, Jeanne. "Competing on Analytics: The New Science of Winning"*

Creating competitive value from risk analytics requires a holistic view of financial data.

"Bringing added value to the business is part of risk management's philosophy in our bank."

—Boaz Galinson, Bank Leumi

Effective Credit Risk Management

In an effort to answer the questions that senior credit officers were asking, Bank Leumi developed a vision for effective and holistic credit risk management. That vision called for quantitative tools to build models for internal credit ratings, which Galinson says are the foundation for moving away from defining limits using volumes, in favor of stating them in terms of loss.

"If you have credit ratings and a concentration model, you can define limits based on loss figures," he says. "Loss limits may give you a different picture than you see when you base your limits on volume. And as a result, different opportunities to improve risk-adjusted return on capital (RAROC)."

Bank Leumi uses ratings to price credit commensurate with risk. By calculating the minimum credit risk premium using the ratings as a benchmark, the bank guarantees that it achieves the required return on equity. Ratings serve as the basis for underwriting decisions, and they allow Leumi to set business targets and build and manage the credit portfolio.

None of that would have been possible without the right analytics systems in place, according to Galinson. As the bank considered its needs, it determined that a single system would be unable to answer the questions that its credit officers were posing. But if it were to rely on the flow of input and output from several systems, consistency and interconnectivity would be vital.

If the business wanted to look at the impact of sector risk on the portfolio, for example, the first stop would be the credit rating system, which would run the new ratings for borrowers in that sector. That output would then be plugged into the regulatory and economic capital system to calculate the expected loss, concentration rate and required capital.

Where some banks choose a best-of-breed strategy when no one system can meet all of its criteria, Bank Leumi opted for a best-fit approach, given its emphasis on consistency and interconnectivity. It built a single credit-risk database to support its credit risk management systems, deploying the SAS Detail Data Store.

Conclusion

The benefits that Bank Leumi sees from its new approach to credit risk management are applicable across other risk functions and at other financial institutions. The key is looking at analytics more holistically. Establishing a framework for the identification, assessment and mitigation of risks is critical to managing challenges across multiple business units. "Risk management analysis must be integrated into the business," says Galinson. "Bringing added value to the business is part of risk management's philosophy in our bank, which is focused on real-time risk management."

A bank's ability to leverage the value of its data and risk analytics will only become more important in today's dynamic environment. And if the crisis of 2008 has a lesson to impart, it is that the financial industry must make the risk management function and risk analytics a more integral part of its business. By managing risk better and more proactively, financial firms are certain to derive long-term competitive advantages.

Creating a culture of risk awareness®

Global Association of Risk Professionals
111 Town Square Place, 14th Floor • Jersey City, New Jersey 07310, U.S.A. • + 1 201.719.7210
2nd Floor • Bengal Wing • 9A Devonshire Square • London, EC2M 4YN, U.K. • + 44 (0) 20 7397 9630
www.garp.org