ORX helps banks world-wide gain better insight into operational risk

Overview

The Need
To help its member financial institutions better assess risk, the Operational Riskdata eXchange Association (ORX) needed to provide a more sophisticated statistical analysis and modeling methodology as part of its operational loss data service.

The Solution
ORX worked with IBM to develop the new methodology, which draws on data collected from ORX member banks around the world.

What Makes it Smarter
Sophisticated analytics yield new insight that lets ORX member banks benchmark their performance relative to their peers, helping them understand their exposure to a variety of operational risks.

The Result
"This solution gives our members data in a more useful form. They're able to do their own analyses with greater confidence than before."

– Simon Wills, executive director, ORX

In today's interconnected, interdependent global economy, the need for coordination and cooperation between financial institutions around the world is all too evident. In order for the world economy itself to survive, these institutions need to make better use of information and operational practices to avoid collapse in a crisis. The challenge is to create a smarter solution – a way to work together effectively and intelligently for the benefit of all without abandoning competition or free markets.

A prime example of the need to collaborate is in the area of risk management – a topic of critical importance, given recent dramatic events in the financial sector. From both business and regulatory standpoints, banks need to ensure that they have enough reserves on hand to cover all obligations. However, there's always an element of uncertainty involved; specifically, the impact of losses due to a variety of events such as credit fraud or payment default.

Because of this uncertainty, banks need to estimate their exposure to the risk of such losses – in effect, model the future and keep enough contingency reserves available to cover potential losses. This is not only good business sense, it is also required by international initiatives – such as the Basel II accord, which provides institutional guidelines for risk coverage – to protect the integrity of the global financial system.

The difficulty facing individual financial institutions is that no single bank has enough actual loss incident information to perform the meaningful statistical analysis necessary to properly assess operational risk and forecast the need for reserves. At the same time, each bank needs to keep this loss information highly confidential to maintain both the public trust and competitive position. In addition, Basel II requires institutions to use both internal and external data when assessing risk.

Meeting the need for sophisticated analysis
The not-for-profit Operational Riskdata eXchange Association (ORX), based in Zurich, was created to address these specific challenges. ORX supports a database of risk data for the financial services industry.

Business Benefits

- Creates a large, statistically significant, shared database (more than 135,000 loss incidents of greater than €20,000) that enables analysis with a high degree of confidence

- Enables each member bank to scale the data to more closely model its own risk

- Provides sophisticated analysis of data and modeling of risk exposure

- Drives greater efficiency in the allocation of capital

- Positions ORX and IBM to help member banks further analyze their data and suggest risk mitigation methods

It provides a secure platform to collect anonymous risk loss data from member organizations, and perform statistical analysis on it – ultimately using this intelligence in a predictive way to make good business decisions. Today, the association has 51 members and over the years has developed a database of more than 135,000 operational risk losses, each over €20,000 in value, totaling some €42.6 billion.

ORX was founded several years ago, but due to the relatively small number of incidents in its databases, the intelligence that the association was formed to create was initially relatively basic. When it comes to creating valid statistical forecasts, a large quantity of high-quality data is essential. ORX collected loss data from its member banks for years before the database was deemed large enough to support advanced statistical analysis and modeling.

Once this milestone was reached, ORX sought to improve the collection, analysis, modeling and distribution of risk information among the member banks, in order to provide a new level of intelligence on which to base the assessment of risk. "What we wanted was to move beyond the basics and implement more sophisticated analysis and risk assessment techniques," says Simon Wills, executive director of ORX. "What we needed was higher quality to give our members more confidence in our product, which they require to use the intelligence in a predictive way to make good business decisions."

One of the goals was to make the intelligence not only more statistically significant, but more useful as well. Aside from compliance with Basel II guidelines regarding the use of external data, the value of ORX products to the member institutions is its specific relevance to their particular circumstances. Each bank is unique, in terms of factors such as size, business partner relationships, regulatory environment and the mix of obligations and exposures it has. For the intelligence that ORX provides to be truly meaningful, the data needs to be normalized and scaled so that it represents a more valid view of the risk exposure for that particular bank.

Smarter Banking:　　Sharing loss data to manage risk
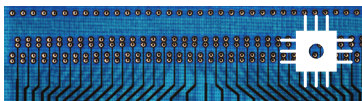
Instrumented　Member banks submit operational loss data to ORX's central database via a secure, Web-enabled platform.

Interconnected　ORX collects loss data from dozens of member institutions around the world, adding it to its database of over 100,000 loss events totaling more than €40 billion.

Intelligent　Members use the secure, anonymous ORX database and new, sophisticated analysis tools for statistical modeling to benchmark loss performance and validate internal data collection in order to more accurately quantify their risk exposure.

Solution Components

Software

- IBM Cognos® Reportnet®

- IBM Tivoli® Access Manager for eBusiness WebSEAL

- IBM Tivoli Identity Manager

- IBM WebSphere® Application Server, V6.1

- IBM WebSphere Portal Express

- OpenPages software

Servers

- IBM System x® 3650

- IBM System x 3850 M2

Services

- IBM Global Business Services

- IBM Global Technology Services

- IBM Research

- Data Analytics

- Statistical Modeling

IBM Business Partner

- OpenPages

"*Creating this new intelligence absolutely requires interconnection and collaboration on a global scale.*"

– Simon Wills

The original ORX methodology also limited agility to some extent. Loss data was collected quarterly by a third party, and the process was not automated. The association needed to find a way to make the data collection process more efficient and streamlined, while maintaining security, anonymity and confidentiality.

Drawing on research and solution design expertise

To meet its business need, ORX undertook two discrete projects. The first addressed the requirement for a more robust statistical analysis and modeling methodology, and the second, some 18 months later, deployed a high-performance IT infrastructure to derive maximum business benefit from the earlier work.

For the first project, ORX turned to IBM Research Zurich to help the association develop the new statistical methodologies and models it sought. IBM was chosen for the depth of its research expertise. "We liked the idea that the IBM researchers did not come from a finance and risk assessment background. We appreciated their fresh perspective," says Wills.

"When dealing with external data of this kind," Wills continues, "there are both advantages and disadvantages. The advantage is that you get a broader set of experiences, but balanced against that is that it's not your experience – so you need confidence that it's relevant to you. That's one reason why we asked IBM to develop a new analysis model that allows the data to be scaled, correlated and applied to different scenarios. Such a model gives our members greater confidence that the external data is a good fit for them."

To create the new model and ensure its validity, the IBM researchers examined the losses from diverse institutions to identify key drivers of the differences between them; this information was then used to build loss-scaling relationships into the model. Using this insight, the team could answer important questions such as: "What would a loss at bank A look like if it were to take place at bank B?" This was the key element to developing a model that would enable each member bank to make use of the losses reported by other banks in a meaningful way. "This solution gives our members data in a more useful form," says Wills. "They're able to do their own analyses with greater confidence than before."

For the deployment project, ORX again turned to IBM, this time engaging IBM Global Services experts to build a deployment solution. The hosted platform used to collect the data, analyze it and disseminate the resulting intelligence is based on a top-to-bottom hardware and software stack from IBM. IBM Business Partner OpenPages provided a software platform for operational risk management that allows member banks to submit data and retrieve intelligence based on the real operational loss data captured in the system. Essential security

for the members is ensured through verification by IBM Tivoli Identity Manager and IBM Tivoli Access Manager for eBusiness WebSEAL. IBM Cognos Reportnet is used on the back end for reporting and analytics.

The value of collaboration

Simon Wills sums up the ORX contribution to global financial stability succinctly, pointing out that the association's services enable its members to accomplish key goals that they could not achieve in any other way. "The fundamental point of ORX is that no individual bank can do this kind of thing on its own. Creating this new intelligence absolutely requires interconnection and collaboration on a global scale," he concludes.

For more information

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ODC03136-USEN-00