Empowering your risk management strategy
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Introduction

Today’s risk management professionals know that their work has a direct impact on financial and operational performance. To perform that work effectively, they need to be empowered by solutions that not only automate and streamline risk management processes, but also make advanced risk analytics available to new audiences across the business.

IBM® Watson® Financial Services offers a comprehensive portfolio of services and solutions designed to help you embed best-practice risk management strategies into the DNA of your business. In this eBook, we take a deeper dive into five of the key areas where IBM Watson Financial Services has helped risk management professionals transform the way their organizations understand and manage risk. We provide real-world examples to show how IBM solutions can help you deliver demonstrable business value and achieve your full potential.

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Credit and market risk

As financial markets continue to increase in complexity, financial institutions need to find new ways to protect themselves, their customers and their investors from both credit and market risk.

Credit risk

In any scenario where lending is taking place, it is critical for the lender to be as certain as possible that the borrower will be able to repay the loan.

Since it is almost impossible to be completely certain that any given counterparty will be able to honor its debts, credit risk management tends to focus on managing a lender’s exposure to each counterparty, with the aim of ensuring that even if one counterparty does default, the impact on the lender will not be disproportionate, or lead to catastrophic losses.

Financial Risk solutions from IBM Watson help to automate credit assessments, provide detailed analytics to help middle- and front-office teams understand exposure, set appropriate credit limits, and avoid breaches of those limits, across both the banking and trading books.

As well as helping to avoid direct exposure, these solutions can also help to support regulatory reporting efforts and potentially optimize capital requirements.

Market risk

Market risk analytics focuses on assessing the value of the financial instruments within an institution’s book of business, and how that value may fluctuate depending on market conditions.

IBM Financial Risk solutions provide sophisticated Monte Carlo simulations of mark-to-market valuations, enabling financial institutions to stress-test their portfolios and understand the potential impact of different types of market events.

Again, a robust methodology for calculating market risk can help to reduce regulatory capital requirements and help to increase return on capital.

Read on to learn how ABSA Bank uses IBM Algo® Credit Manager.
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ABSA Bank

About the company

ABSA Bank’s Corporate & Investment Banking (CIB) division has a diverse footprint that extends from Cape Town to Cairo, supporting clients both in developing their businesses in Africa, and in generating operational efficiencies.

Business challenge

With the continued growth of its corporate and investment banking services, ABSA Bank’s CIB division required an integrated platform that could present a single, accurate view of counterparty credit risk, and meet the needs of the business, its clients, and its regulators in South Africa.

Transformation

The CIB team used IBM Algo Credit Manager to aggregate all limits and exposures and provide a single trusted view of risk for its South African operations across industry segments, banking products and trade products.

Results

- **85%** reduction in time taken to produce a single view of risk
- **Two FTEs** moved from manual data capture to more valuable duties
- **USD2.3 million** in net present value at an internal rate of return of 51 percent

“With spreadsheet-based analysis, it took seven days to calculate our total exposure to one of our large financial counterparties. With IBM Algo Credit Manager, we got to the same answer in two minutes.”

– Dale Vice, Head of CIB Credit Change, ABSA CIB

Read the full story
Cloud risk services

Running hundreds of millions of complex simulations to assess risk is a computationally demanding task, often requiring large clusters of high-powered servers to deliver results at the speed the business needs them.

For financial institutions that do not want to build and manage this kind of infrastructure in-house, cloud-based risk analytics solutions such as IBM Algo® Risk Service on Cloud provide the answer.

Algo Risk Service on Cloud enables clients to upload data on their assets and positions to a security-rich cloud repository. The solution can then integrate this information with external data sources (such as current market pricing data), and perform sophisticated simulation and aggregation analyses as required.

Once these analyses are complete, the solution returns customizable reports and metrics to the client, as well as providing the enriched dataset itself, which can then be integrated into the client’s own internal analytics systems if necessary.

**Flexible scenario development**

The cloud service also gives clients access to a wide range of pre-built scenarios that can be used instantly to stress-test their portfolios. IBM’s development team provides these thoroughly tested scenarios to all clients as part of the service, and the IBM team can also develop custom scenarios to meet individual clients’ needs.

**Managed data services**

Algo Risk Service on Cloud can work with market data from major providers such as Thomson Reuters, S&P, Fitch, Axioma, and ICE Data Services/BondEdge.

Alternatively, IBM can also provide its own managed data service, which can simplify implementation and integration, and reduce the risk of errors.

By sourcing both cloud analytics and data from a single supplier, clients can also potentially reduce operational costs and simplify supplier management and technical support.

Read on to learn how eSecLending, KLP and Jefferies use Algo Risk Service on Cloud.
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eSecLending

About the company
eSecLending is an independently owned financial services company providing securities financing, collateral and liquidity services, and default management solutions to institutional investors and clearing organizations worldwide. With a consultative, flexible approach, it works with clients to deliver tailored solutions which are aligned to each client’s individual requirements, goals and objectives.

Business challenge
eSecLending uses market data to analyze risk for clients’ loan portfolios. Its existing data provider’s fees were rising and data was often incomplete, so eSecLending began looking for better options.

Transformation
eSecLending switched to a managed data service from IBM that integrates with IBM Algo Risk Service on Cloud to provide daily risk metrics and stress tests for each client’s portfolio.

Results
- 20% cost savings on market data by moving to a single supplier for data and analytics
- 42% increase in number of instruments analyzed per day, from 7,000 to 10,000
- 4 times as many scenarios simulated daily, making risk assessments even more robust

“We’re saving around 20 percent per month on our data costs, compared to our previous data provider, and we no longer find holes in our reports, because the pricing data is higher-quality and more complete.”

– Bill Locke, Chief Risk Officer, eSecLending

Read the full story
KLP Kapitalforvaltning

About the company

KLP is Norway’s largest mutual life insurance company. It is dominant in the public-sector pensions space, with more than 700,000 members from municipal and county authorities, health trusts and other publicly owned companies. Its subsidiary KLP Kapitalforvaltning is responsible for managing NOK 278 billion of the group’s total assets, which in 2013 totaled NOK 375 billion.

Business challenge

KLP knew that accurate modeling could help its portfolio managers and risk analysts make better decisions – but without an easy way to access the results, users were not seeing the benefits.

Transformation

By adopting IBM Algo Risk Service on Cloud to model risk across all asset classes, KLP can now provide each user with instant web access to key risk measures and timely, personalized reports.

Results

- Easier risk modeling makes insight more accessible and useful for portfolio managers and operations teams
- 200% rise in active users, as decision-makers gain confidence in using risk analytics to manage portfolios and risk
- Cloud-based solution simplifies IT support

“We were able to work with IBM to calibrate the models, risk measures and reports to the exact specifications of our portfolio managers and risk analytics team.”

– Harald Harlem, Head of Investment Management Services, KLP Kapitalforvaltning

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“IBM enables us to provide our clients with rich daily insight into the changing risk position of their portfolios as the market moves.”

– Ehab Sorial, Senior Vice President, Prime Brokerage Technology, Jefferies

**Jefferies**

**About the company**

Jefferies offers a broad range of products and services spanning investment banking, equities, fixed income and wealth management to clients in the Americas, Europe, the Middle East and Asia. Headquartered in New York, the company has offices in over 30 cities worldwide, employs 3,300 people, and holds USD 11.4 billion in long-term capital.

**Business challenge**

To sharpen its competitive edge, Jefferies set out to enhance its offering by providing hedge-fund clients with deeper, more accurate insights into risk across their portfolios at lower cost.

**Transformation**

To source market data for risk reports, Jefferies switched to a managed data service from IBM that integrates with IBM Algo Risk Service on Cloud to offer daily risk metrics and stress tests.

**Results**

- **90%** reduction in reliance on previous data vendor generates major cost savings
- **20%** shorter cycle times reduces risk of delays to critical reports
- Enables expansion of special margin rules to a broader range of clients at no extra cost

“IBM enables us to provide our clients with rich daily insight into the changing risk position of their portfolios as the market moves.”

– Ehab Sorial, Senior Vice President, Prime Brokerage Technology, Jefferies
Real-time risk analytics

For many financial institutions, daily insight into credit risk is no longer enough. For the front-office to make the right decisions, trading desks need to know how a given trade will affect their credit limits before they make the deal.

Pre-trade counterparty credit risk analysis requires a powerful real-time credit engine that is capable of calculating counterparty exposure in seconds.

**Limitations of simple add-on risk models**

Although it is possible to use more simplistic risk models to accelerate the calculation process, this does not always produce good results. For example, simple “add-on” risk models may be quick to process, but they don’t take into account netting effects and other important factors.

In consequence, the results of these add-on models does not match the results of the more sophisticated models used by risk management teams.

In extreme cases, this can either allow limit breaching trades to slip through the safety net, or produce false positives that prevent traders from going ahead with deals that would not actually breach limits.

**Harnessing a real-time credit engine**

Financial Risk solutions from IBM Watson Financial Services can provide a powerful real-time credit engine that is capable of running the same sophisticated simulations that risk managers use for daily risk reporting: full, multi-step Monte Carlo simulation, the gold standard of credit exposure and XVA measurement.

This can give the front office near-instant, accurate insight into the impact of any trade they wish to make, helping them identify risk-reducing trades and potentially do a larger volume of business without exceeding their credit limits.

Read on to learn how BBVA and Intesa Sanpaolo use IBM Algorithmics solutions for real-time risk analytics.
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BBVA

About the company
Headquartered in Spain, BBVA is a multinational banking group that operates in Europe, North, Central and South America, and the Asia-Pacific region. The group employs over 114,000 people, owns assets of EUR 689 billion, and reports annual net income of approximately EUR 7.5 billion.

Business challenge
To help its trading desks make better, more risk-aware decisions, BBVA wanted to give them accurate insight into counterparty credit risk (CCR) and check the limits for each trade in real time.

Transformation
A real-time, pre-trade limit checking workflow built on IBM Algorithmics Integrated Market and Credit Risk helps traders avoid breaches and seize opportunities while keeping exposure to risk under control.

Results
- **Helps** traders avoid high-risk trades and make smarter choices about counterparties
- **Reveals** trends and patterns in trading while reducing manual analysis work
- **Increases** consistency of decision-making with one methodology to model trades

“Pre-trade limit checking helps us manage our CCR exposure more proactively than ever before.”

– Óscar Gil Flores, Executive Director, Quant and Process Support, BBVA

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Intesa Sanpaolo

About the company

Intesa Sanpaolo is an Italian banking group with a market capitalization of EUR 48.7 billion (July 2017) and a leading position in retail banking, corporate banking and wealth management. Its investment banking division, Banca IMI, employs more than 800 people at its headquarters in Milan, offices in Rome and Italy, and a subsidiary in New York, and trades in equities, bonds and derivatives with 350 clients in more than 70 markets.

Business challenge

Trading decisions on over-the-counter (OTC) derivatives were based on multiple modeling techniques. Traders could either run overly conservative add-ons, or call risk teams for internal model results.

Transformation

Intesa and IBM built a solution that lets traders run what-if analysis on counterparty risk in real time, providing more accurate exposure measures that are consistent with the risk team’s models.

Results

– Reveals real-time risk via a single internal model for both traders and risk managers
– Strengthens trading and risk management operations towards regulatory compliance (CCR)
– Leverages a technology environment for future regulatory developments (FRTB)

“With access to a more accurate internal model approach for measuring counterparty risk, traders can achieve a more efficient utilization of credit lines.”

– Rita Gnutti, Head of Internal Model Market & Counterparty Risk, Intesa Sanpaolo

Read the full story
Asset liability management

Most large financial institutions need to manage a complex book of assets and liabilities in order to ensure that they always maintain a sufficient level of liquidity to meet their obligations.

For this reason, it is vital to have the right tools in place to assess each asset and liability on the balance sheet, understand their sensitivities to risk factors such as interest rate fluctuations and changes in market value, and make the right hedges to protect the institution and its customers and trading partners.

At the same time, by finding smarter ways to manage assets and liabilities, institutions can unlock the potential for increased profits, by building a more stable and higher-yield asset base, and helping to reduce the share of high-risk liabilities within their portfolio.

A framework for smarter management

IBM Algo ALM and Liquidity Risk on Big Data is an asset and liability management framework that helps banks and financial institutions identify opportunities for profit and concentrations of risk across the balance sheet.

It offers an integrated view of market and liquidity risk across multiple risk factors and asset classes to help support shareholder value creation and significantly reduce financial uncertainty in constructing hedging strategies. Its scenario-based optimizer helps to construct optimal hedges by simulating and testing portfolios using historical stress-test and Monte Carlo scenarios across different time-steps.

It also provides a comprehensive set of analytics and reporting tools that help manage shareholder value creation, identify concentrations of risk and opportunities for profit. Analytics include dynamic balance sheet income simulation, deterministic and stochastic scenarios, EaR, CFaR, VaR and market value sensitivity analysis. Over 100 predefined reports include: static and dynamic interest rate reports, liquidity and beta gap reports and duration and convexity reports.

Read on to learn how NIBC benefits from IBM Algo Asset Liability Management.
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NIBC

About the company

NIBC is a bank that offers both corporate and consumer banking services. Based in the Hague in the Netherlands, it has offices in London, Frankfurt, Brussels and Singapore. In 2011, the bank employed 664 people, achieved revenues of EUR 282 million and profits of EUR 68 million, and was managing loans worth EUR 9.1 billion and mortgages worth EUR 8.7 billion.

Business challenge

In an economy where liquidity is less abundant and credit more expensive, NIBC realised that it needed to gain tighter control of asset liability management in order to protect its interest income and maintain its profits.

Transformation

NIBC implemented IBM Algo Asset Liability Management, which complements its existing suite of IBM Financial Risk software and provides detailed daily reports on various possible risk scenarios.

Results

- **Moving** from bi-weekly to daily reporting helps NIBC react faster to changing circumstances
- **Scenario analysis** improves contingency planning
- **Automation** reduces the reporting cycle from days to hours

“The system provides in-depth analysis of multiple scenarios within just a few hours. We can make decisions based on the latest information at a much more detailed level, and with much more confidence in its accuracy.”

– Marcel de Kler, Head of Market Risk Reporting, NIBC

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The quantification of financial risk is important, but it is not the whole story. Financial institutions and large enterprises in other sectors also need to guard against other types of risk, which often cannot be simulated or calculated in the same way as credit or market risk.

To manage these more qualitative types of risk, a different approach is needed: powerful governance and compliance frameworks must be built to identify, monitor, assess, control and mitigate risks in every area of the business.

Successful governance, risk and compliance management can result in the reduction of operational losses, lower compliance and auditing costs, earlier detection of unlawful activities, and reduced exposure to future risks.

With one repository for all risk documentation, and one place to track assessments, actions, incidents and near misses, IBM helps to reduce the chance that uncontrolled risks could slip through the gap.

IBM also provides sophisticated analytics and reporting to keep senior executives informed about loss events or areas of vulnerability, and give risk managers and risk and control owners an easy way to understand and take ownership of their responsibilities. IBM Enterprise Model Risk Governance can also help address the risk that arises from the inaccuracy or misuse of models.

Read on to learn how Hypovereinsbank and Continental are leveraging IBM OpenPages® GRC.
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HypoVereinsbank, Member of UniCredit

About the company

HypoVereinsbank is a member of UniCredit, a major financial services institution headquartered in Italy. One of the leading players in the German banking market, HypoVereinsbank employs more than 12,000 people across around 300 branches nationwide.

Business challenge

To reduce the risk of losses, improve processes and controls, and protect its reputation with customers and regulators, HypoVereinsbank set out to streamline its risk and control assessment processes.

Transformation

By using IBM OpenPages software to enhance its risk and control assessment workflows, HypoVereinsbank has been able to automate reporting processes and simplify tracking for over 3,000 internal controls.

Results

- **Boosts** efficiency through automating risk and control self-assessment processes
- **33% reduction** in personnel requirements thanks to better use of existing resources
- **New insight** into risks and controls helps to identify gaps and resolve glitches quickly

“With OpenPages, our processes are more efficient than our previous workflows.”

– Armin Konetschny, Head of Process Architecture and Control Management, HypoVereinsbank, Member of UniCredit

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Continental

About the company

Continental develops intelligent technologies for transporting people and their goods. As a reliable partner, the international automotive supplier, tire manufacturer, and industrial partner provides sustainable, safe, comfortable, individual, and affordable solutions. In 2016, the corporation generated sales of €40.5 billion. Continental currently employs more than 220,000 people in 56 countries.

Business challenge

To steer clear of business risk, Continental needed to gain insight into areas of exposure across its subsidiaries worldwide, and to come up with effective ways to mitigate the threats.

Transformation

Equipped with IBM OpenPages governance, risk and compliance software, Continental is performing efficient, broad-scale risk assessments across its worldwide operations, and take effective steps to reduce exposure.

Results

- **Drives** effective and efficient risk management across the global business
- **75%** fewer risks assessed at Corporate Level, as minor threats are addressed lower down
- **Consolidates** six risk management processes and four systems into a single solution

“IBM OpenPages is helping us to measure, monitor and reduce risk across our global enterprise effectively and efficiently.”

– Sebastian Witte, Head of Projects and Risk Management, Corporate Controlling, Continental

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About Watson Financial Services

IBM is working with organizations across the financial services industry to use IBM Cloud, cognitive, big data, RegTech and blockchain technology to address their business challenges. Watson Financial Services merges the cognitive capabilities of Watson and the expertise of Promontory Financial Group to help risk and compliance professionals make better informed decisions to manage risk and compliance processes. These processes range from regulatory change management to specific compliance processes, such as anti-money laundering, know your customer, conduct surveillance and stress testing.

To learn more about IBM financial risk and regulatory compliance solutions, visit ibm.com/RegTech and follow us on Twitter @IBMFintech.