

Risk Management for Capital Markets

New products & regulations spotlight on Risk Management

Uncertainty presents both risk and opportunity, eroding or enhancing value. Enterprise risk management lets financial firms deal effectively with uncertainty and associate risk with opportunity. The ability to price risk appropriately differentiates a successful player from the rest of the crowd.

Firms spend a considerable amount of time and money building risk management systems to measure, monitor, mitigate and report risk. Risk management becomes more complex with financial innovation and increasing regulatory and compliance constraints. Performance measurement, attribution and maximization of risk-

adjusted returns also compel firms to spend more on enterprise risk applications.

As financial markets become more open and deregulated, it is imperative for firms to update their enterprise risk systems in order to remain competitive. The boom in complex structured products has had an overwhelming impact on risk management departments, as proper calculations for VaR, Potential Future Exposure and



Specific Risk increasingly need a wealth of security information and processing power. Additionally, compliance, surveillance, and reporting requirements have increasingly burdened risk departments with activities which require specific process workflows.

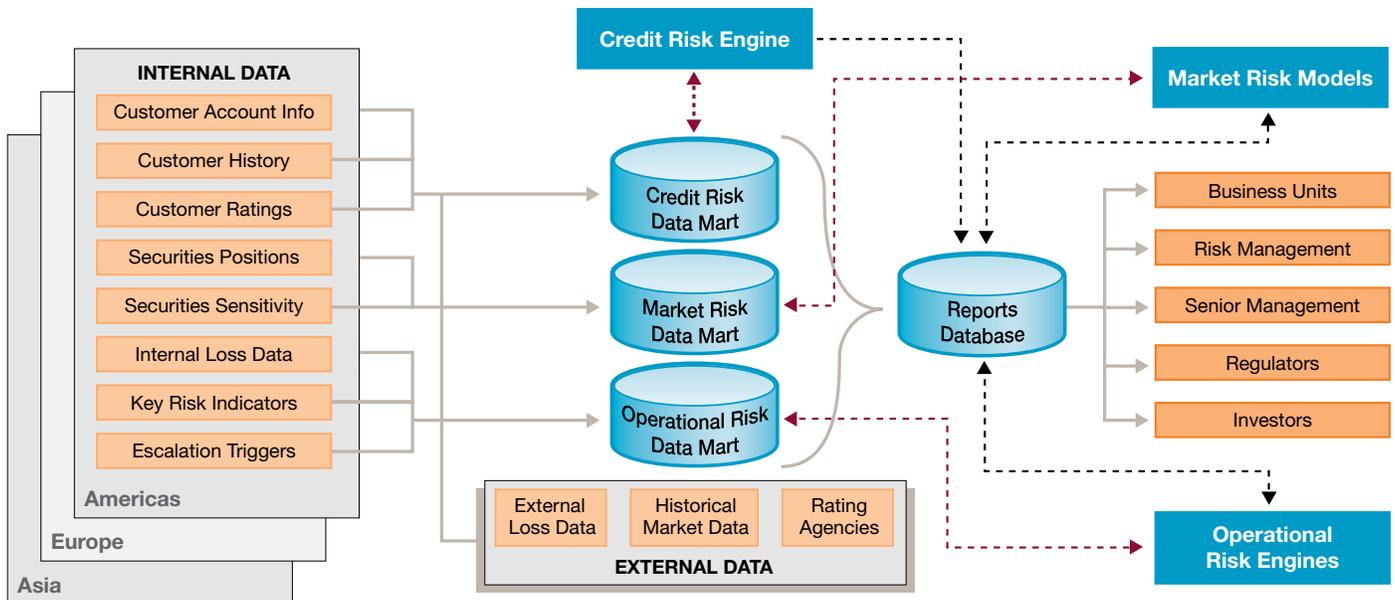
Capgemini has deep domain knowledge and technical expertise in these areas. We have worked with some of the largest firms on Wall Street to provide solutions for risk data warehouses; firm-wide risk reporting across asset classes; model validations; integration with internal valuation engines and calculation grids; and data feed management including integration with security master and market data across market, credit and operational risk areas.

Solutions that Add Value to Your Business

Our work has helped Capgemini clients:

- Build risk dashboards
- Manage risk reference data
- Evaluate value at risk methodologies
- Calculate maximum potential exposure
- Monitor credit and trading limits
- Manage regulatory capital
- Ensure fast turnaround for critical reporting and regulatory needs using a global delivery model
- Perform stress testing

Capgemini's End-to-End Risk Management Architecture



Capgemini's Risk Management Offerings

Capgemini has proven expertise in market, credit and operational risk and provides advisory and technology services for:

- Risk analytics comprising integration with enterprise analytics and calculation engines like Summit, Algorithmics, SunGard or Comit and model validation and documentation
- Risk aggregation such as risk data modeling, enterprise hierarchy and security master integration along with integration with in-house calculation engines
- Risk reporting which provides custom reports using our proven global delivery model and industry standard reporting packages such as Business Objects, Cognos and Crystal Reports
- Risk data management such as development or migration of data feeds, market data integration, and managed services for data maintenance
- Risk technology assessment of alternative solutions including architecture reviews and recommendations

Advisory Services

Capgemini's capital markets industry consultants and subject matter experts focus on high level analysis and strategy to help uncover business drivers, identify risk systems and asset classes; and define the enterprise architecture required for more effective enterprise risk management systems.

Key offerings

- Build versus buy analysis and package selection
- Business analysis involving deep domain knowledge, requirements modeling and gap analysis
- Model validation and implementation assessment
- Credit risk systems assessment
- Data management assessment
- Value-At-Risk methodologies
- Collateral management needs assessment
- Regulatory compliance including CSE, Basel II and CAD
- Quantitative and analytic services
- Market and operational risk systems assessments Regulatory capital calculations

Technology Services

Capgemini brings proven development skills which span legacy to leading edge technologies. Our technology expertise has been honed on real-world projects such as: proprietary development of risk data warehouses; vendor product integration; and enhancements to existing risk frameworks. Components of an enterprise risk management system can require custom development, especially for designing computational components, web-based risk reporting and monitoring portals, and proprietary analytic engines. Our data warehouse implementation offering helps clients with the enterprise risk data

centralization process. We also offer crucial production and maintenance support around the clock by taking advantage of the time difference among our global facilities.

Key offerings

- Collateral management systems implementation
- Enterprise risk management portal which offers the flexibility to integrate several risk frameworks into a single portal
- Data management and integration development & implementation
- New asset classes integration into existing risk management frameworks
- Limits monitoring systems
- Market and operational risk systems development
- Migration of legacy applications to new proven technologies
- Risk reference data and source data feed management



Expertise Where It Counts

Proper implementation of risk management software requires thorough knowledge of how the business operates, implications of industry regulations and how to translate business requirements into a valid technical approach. Our consultants have deep domain expertise backed with a solid understanding of how to create specifications for a successful technical build out. With an average of 15 years of Wall Street experience, our Capital Markets consultants have helped many financial firms meet their goals for performing model validations; VaR methodologies; and Credit exposure calculations.

Our experience across asset classes includes:

- Equities and Equity Options/ Futures
- Fixed Income Securities
- Mortgage Backed/Asset Backed
- Interest Rate Derivatives
- Credit Derivatives
- Structured Products
- Custom Indices and Index Constituents

For more information, contact us at financialservices@capgemini.com.

In Practice	
End-to-End Risk Management Architecture	Risk Computational Framework for Structured Credit Products
<p>A major Wall Street firm wanted a proactive approach to risk management which called for a risk management platform capable of supporting intraday real-time risk management for a diverse set of financial products. The system needed to be scalable and extensible to handle new asset classes and interfaces to risk data and analytical engines.</p> <p>Results Capgemini created an architectural framework to consolidate internal and external data supporting risk-specific data marts which are processed by different analytic risk engines. The engines populate a risk reporting database which generates multilevel, multi-purpose risk reports. By using a globally diverse team, we provided substantial cost savings.</p>	<p>Faced with the challenge of reducing the regulatory capital required to be set aside for trading in structured credit products, a large US bank needed a computational infrastructure that would accurately compute the basis for determining this capital; i.e. the specific risk of its structured credit products portfolio.</p> <p>Results We created a unique set of computational methodologies to calculate risk measures for all relevant portfolios across all the relevant market scenarios within specified time constraints. By architecting and developing a Risk Data Warehouse, we facilitated the computation and automation of the entire set of processes and enabled our client to reduce regulatory capital allocation by over \$500 million.</p>



About Capgemini and the Collaborative Business Experience

Capgemini, one of the world's foremost providers of Consulting, Technology and Outsourcing services, has a unique way of working with its clients, called the Collaborative Business Experience.

Backed by over three decades of industry and service experience, the Collaborative Business Experience is designed to help our clients achieve better, faster, more sustainable results through seamless access to our network of world-leading technology partners and collaboration-

focused methods and tools. Capgemini utilizes a global delivery model called Rightshore® which aims to offer the right resources in the right location at competitive cost, helping businesses thrive through the power of collaboration.

Capgemini employs approximately 91,000 people worldwide and reported 2008 global revenues of 8.7 billion euros.

More information about our services, offices and research is available at www.capgemini.com.