

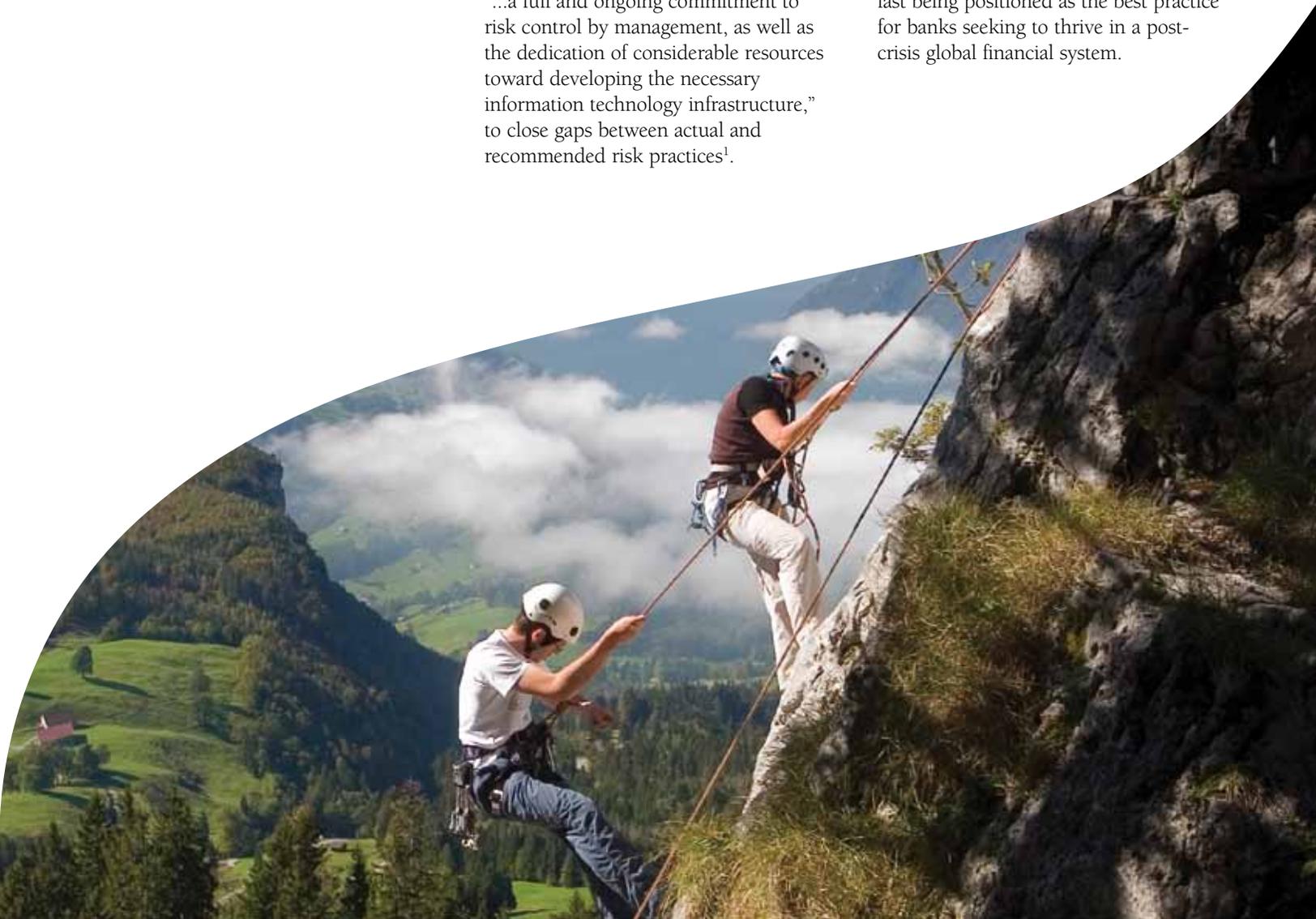
Enterprise Risk Management

Responsible risk-taking that maximizes corporate performance

The financial crisis proved extreme complexity is the new normal. Now, banks must recalibrate how they monitor and manage risks accordingly.

In October 2009, a group of senior financial supervisors from five major nations reported that, despite progress on risk management, banks still need "...a full and ongoing commitment to risk control by management, as well as the dedication of considerable resources toward developing the necessary information technology infrastructure," to close gaps between actual and recommended risk practices¹.

In an earlier report², the same group had already identified various firm-wide risk management practices as key differentiators leading to better performance among banks in the financial crisis, so the latest conclusion only added to the attention being paid by regulators to the need for enterprise risk management (ERM). In fact, ERM is fast being positioned as the best practice for banks seeking to thrive in a post-crisis global financial system.



ERM Practitioners Had an Edge in the Crisis

Enterprise risk management practices were cited as a key differentiator by the Senior Supervisors Group* in its 2008 report *Observations on Risk Management Practices during the Recent Market Turbulence*.

Firms that “demonstrated a comprehensive approach to viewing firm-wide exposures and risk, sharing quantitative and qualitative information more effectively across the firm and engaging in more effective dialogue across the management team” tended to deal more successfully with the ongoing market turmoil (at least up to that point), said the group.

More specifically, the Senior Supervisors Group said four firm-wide risk management practices differentiated better performance from worse among banks in the financial crisis.

Those four practices are:

- Effective firm-wide risk identification and analysis,
- Consistent application of independent and rigorous valuation practices across the firm,
- Effective management of funding liquidity, capital, and the balance sheet,
- Informative and responsive risk measurement and management reporting.

In the past, credit and market risk were certainly less interrelated, with a crisis in one sector at times spilling over into another but rarely undermining multiple segments simultaneously. The most recent financial crisis changed all that. Instead, the recent crisis was marked by the contagion effect among interdependent markets and players. Simple risk-diversification strategies often did little to mitigate losses, and certain products—such as derivatives like credit default swaps—relied on such a complex and interrelated web of counterparties that all parties suffered when conditions changed for underlying products.

Given the changing shape of global finance, it is perhaps not surprising that day-to-day risk-management practices have failed to keep pace. Unless your bank takes to heart the lessons learned from this financial crisis, it will be ill-prepared for the next.

ERM can provide your bank with the capabilities needed to:

- Accurately map and monitor the different dimensions of risk and returns across your entire organization
- Establish accountability for those risks/returns; and
- Institutionalize a risk appetite that provides your firm with a consistent prism through which to pursue profitable and ‘opportunistic’ risks and avert hidden threats.

* The Senior Supervisors Group consists of 10 agencies representing 7 countries.

U.S. Federal Reserve Board Chairman Ben S. Bernanke has publicly stated that “...policymakers must insist that the large financial firms they supervise be capable of monitoring and managing their risks in a timely manner and on an enterprise-wide basis.”³

ERM is a Must Given the Evolution of Financial Markets and Risk

The financial crisis demonstrated exactly how complex and interrelated risks had become—and how ill-prepared many banks were to monitor their own exposures, especially across the firm.

¹ *Risk Management Lessons from the Global Banking Crisis of 2008*, Senior Supervisors Group (SSG), October 21, 2009

² *Observations on Risk Management Practices during the Recent Market Turbulence*, Senior Supervisors Group, March 6, 2008

³ *Financial Reform to Address Systemic Risk*, Ben S. Bernanke, Speech to the Council on Foreign Relations, March 10, 2009

Your bank needs a degree of risk insight that can only be achieved via ERM to operate profitably in today’s complex global markets. In fact, without ERM, it will be increasingly difficult for your bank to retain a competitive edge, return value to shareholders, or adapt to shifting demands around high-profile issues like compensation practices.

- Achieve greater transparency, which requires a foundation of enterprise risk information;
- Elevate risk-data governance to a strategic business objective;
- Institutionalize integrated, reliable risk applications at all levels of management.

Addressing Today’s Risk Imperatives

In the face of the market and regulatory realities, the case for ERM seems overwhelming, but the evolving risk landscape has clearly created enormous challenges for Chief Financial Officers (CFOs) and Chief Risk Officers (CROs) who must manage the actual implementation of new risk systems or recalibrate existing ones.

These three initiatives form critical building blocks in a sound ERM approach. Without them any ERM approach would be hard-pressed to either mitigate risk or maximize opportunity in today’s complex operating environment.

There are numerous strategic issues keeping bank CFOs and CROs awake at night, but underlying almost all of those concerns lies fundamental challenges in addressing issues of information transparency and data strategy.

With a robust, integrated data strategy, your bank will be better positioned to establish an enterprise view of risks so you can view, and actively monitor, exposures across businesses, counterparties and risk dimensions. This picture lets your bank extract maximum value from each of the risks you take on, identify the degree to which any risk exposure needs to be actively managed, and spot concentrations and other high-risk exposures that exist or could emerge as circumstances change.

Regardless of whether your bank has an enterprise risk system in place, you still need to:

6 Key Data-Related Risk Challenges

Among the top data-related challenges for many banks:

1.	Data is trapped in silos, e.g., after M&A, hiding firm-wide risk accumulations (and potential portfolio off-sets).
2.	Inconsistent valuations and reference data exist across different parts of the firm.
3.	Few standards have been established for data (e.g., Are there clearly defined definitions/standards for risks/risk types?)
4.	Data-governance models are often inadequate (e.g., Who owns data and updates? Who verifies data? What policies ensure adherence to protocols?)
5.	Risk systems do not allow for proper analysis of firm-wide exposure across risk dimensions, counterparties, etc.
6.	Models generate incorrect forecasting of potential outcomes (e.g., models are too backward-looking and not dynamic enough).

Capgemini's Solutions to Address Risk & Market Challenges

Capgemini offers solutions for Enterprise Risk Management that give your bank the tools and frameworks you need to optimize your risk management capabilities and integrate risk management framework into strategic decision-making processes.

Our risk management offerings focus on developing a more integrated, transparent and predictable risk framework. Capgemini's [Enterprise Risk Framework](#) is highly flexible and outlines a set of risk management practices that can be fully adopted or adapted to your existing risk framework. Capgemini's solutions can be implemented as individual modules or an end-to-end package to:

- Assess and analyze your firm's existing [Enterprise Risk Model](#);
- Develop your [Enterprise Risk Management Strategy](#) covering key areas such as loss forecasting, credit risk scoring models and reference data & semantics;

- Identify and support [Information Strategy & Architecture, Governance & Metadata, Customer Data Integration and Master Data Management](#);
- Build custom-tailored [ERM Dashboards and Reporting](#) solutions for a holistic and comprehensive view of risk exposures, including market risk models and methodologies and integrated forecasting;
- Perform software selection, implementation and application support for [Enterprise Risk Management package solutions](#) featuring vendor partnerships with IBM, SAS, Oracle, Fermat, SunGard, Oracle and FinArch.

Capgemini also understands that especially during tough times, financial services organizations need quick returns with minimal investment. Based on our experience with large global banks, Capgemini developed two highly focused solutions for enterprise risk management that bring quick benefits while also helping banks establish a roadmap for a longer-term ERM program.



Enterprise Risk Maturity Assessment: Learn Where You Stand

With our proprietary Maturity Assessment model, Capgemini can help you assess and analyze your bank's current risk frameworks, including those for credit and operational risk. The assessment provides your firm with an understanding of where you stand compared with industry best practices, regulatory standards and recommendations, and gauges the degree to which your existing data infrastructures are adequate and scalable enough for future ERM needs.

At the end of our assessment, Capgemini will deliver:

- An assessment of models for credit, market and operational risk;
- An evaluation of your Basel II preparedness, IT architecture and organizational structure as it relates to risk;
- A future-state roadmap for enterprise risk management.

Enterprise Risk Dashboard: See the Whole Picture

For effective enterprise risk management, your bank needs a clear understanding of the complete risk exposure and the impact of your exposure on stock price valuations. Capgemini's proprietary Sigma Map™ framework lets your bank capture an enterprise-wide view of risk positions across critical business dimensions so you can proactively manage and control the entire risk profile. Through Sigma Map™, we can help you map the balance sheet to risk types and measure the combined impact on stock price.

Capgemini's Sigma Map™ lets you map risk types to the balance sheet

Balance Sheet		Credit Risk	Market Risk	Operational Risk	Contagion Risk	Liquidity Risk	Reputation Risk
Assets	Loans & Leases						
	Securities						
Liabilities	Deposits						
	Govt. Funds & Repos						
	Borrowings						
	Subordinate Notes						
Equity		Economic Capital Measures					

Capgemini can help your firm develop an enterprise risk dashboard that:

- Presents a holistic view of all risk types faced by your organization;
- Defines the risk/return trade-offs using best-in-class Key Risk Indicators;
- Integrates reference and market data benchmark performance;
- Lets you review changes in exposures and evaluate the potential impact on capital allocation;
- Provides a wealth of different reports;
- Supports loss forecasting and scenario & trend analysis.

Using our real-world experience implementing risk management dashboards for top 10 banks in the US and across the globe, Capgemini's ERD is built on a proprietary Portfolio Reporting Framework that leverages our extensive experience. We can help your bank implement dashboards using your own data in a Capgemini-hosted environment or entirely within your own infrastructure.

What Makes Capgemini Different?

Capgemini is a proven and trusted partner for providing enterprise risk management and compliance solutions and is currently assisting many of the world's large banking organizations in their ERM initiatives. Here are few of the reasons Capgemini is preferred by our clients.

Highly Qualified Risk Professionals

We have a highly experienced and certified network of over 400 risk professionals who have executed more than 100 Basel projects and 500 risk and compliance projects in the last two years.

Capgemini's risk professionals have years of experience developing credit risk models and profiles, implementing Basel II standards, estimating the risk parameters for capital calculations, and maintaining economic capital models, including Moody's, PM and RAROC tools.

Sigma Map™ and ERM Maturity Framework

Capgemini's expertise in risk management is substantiated through our proven ERM Maturity Framework and Sigma Map™ methodology which helps you match your risk

exposure to the balance sheet. We fully integrate different risk components into one enterprise view with our ERM Dashboard and have developed a proven risk-specific data mart which is based on risk management principles and critical factors most relevant for risk officers and Boards of Directors.

Quick Wins to Support Your Risk Initiatives

Our approach to ERM helps your bank gain substantial benefits with minimal investment. Projects like ERM Assessments and Dashboards result in measurable benefits in a very short timeframe and can help you build a business case for long-term ERM initiatives. Benefits include:

- **Financial benefits.** Our ERM insights help your whole organization better correlate corporate performance to risk exposure, improve decisions on investment and capital allocation, and identify risk opportunities that could be used for competitive advantage.
- **Operational benefits:** Since ERM provides an effective framework for linking strategic goals to operational plans, Capgemini can help optimize your operations around a consistent

Unparalleled risk knowledge & expertise

- Unmatched IP with over 74 risk and compliance assets including proprietary tools and methodologies spanning all critical risk dimensions
- Proprietary methodology and tools for stress testing, loss forecasting, economic capital, risk scorecards, RAROC proprietary algorithms and risk data marts
- Pre-fabricated ETL codes to pull data from key loan origination systems for accelerated implementations
- In-house economic capital simulation engine
- Reusable regulatory capital calculator and regulatory spreadsheets
- True enterprise risk view with integrated forecasting

view of risk appetite and exposures and offer a single vantage point through which risk appetite is discussed, communicated and integrated firm-wide into business lines and decisions.

- **Shareholder benefits.** As your finances and operations improve, shareholders and other stakeholders can gain confidence from increased visibility and transparency into your bank's risk, possibly improving your bank's ability to compete for investor capital.

Reduction in Compliance and Risk Management Costs

Capgemini's ERM solutions help your bank reduce the operational costs you would otherwise incur in maintaining redundant and disparate risk databases.

By consolidating enterprise risk data in a single information system, your bank can reduce overhead costs of data collection by different business units or divisions. We leverage risk projects for assessing compliance preparedness, thereby reducing the cost of compliance projects.

Comprehensive Risk Offerings

Capgemini is one of the only risk management consultancies offering full end-to-end risk management services. Implemented independently or as part of a Risk Management strategy, Capgemini's highly flexible ERM and ERD solutions help you achieve quick returns while supporting your bank's long-term ERM initiatives.

Capgemini provides end-to-end support for Enterprise Risk Management initiatives			
Risk Management	Regulatory Compliance	Data Management	Analytic Services
<p>Enterprise Risk Management (ERM)</p> <ul style="list-style-type: none"> ▪ ERM Assessment and Dashboard ▪ GRC Applications Support <p>Credit Risk (CR)</p> <ul style="list-style-type: none"> ▪ CR Framework and Assessment ▪ CR Scoring Models and Reporting ▪ Mortgage Loss Forecasting <p>Market Risk (MR)</p> <ul style="list-style-type: none"> ▪ Reference Data & Semantics ▪ Enterprise Models & Methodologies ▪ Analytics Models & Methods ▪ Information Strategy & Architecture ▪ Governance & Metadata ▪ Customer Data Integration & Master Data <p>Operational Risk (OR)</p> <ul style="list-style-type: none"> ▪ OR Assessment and Management ▪ Software Solutions 	<p>Basel II</p> <ul style="list-style-type: none"> ▪ Compliance Assessment ▪ Training ▪ Compliance Support ▪ Software Selection & Integration <p>Solvency II</p> <ul style="list-style-type: none"> ▪ Awareness/Training ▪ Impact Analyses ▪ Data Collection/Readiness ▪ Software Selection & Integration <p>SEPA</p> <ul style="list-style-type: none"> ▪ Impact Analyses ▪ Strategic Analysis ▪ Compliance Support <p>PSD Business Impact Analysis</p>	<p>Business Information Strategy, Architecture & Assessment</p> <p>Information Management & Data Integration</p> <ul style="list-style-type: none"> ▪ Warehousing ▪ Reporting <p>Metadata Management</p> <p>Master Data Management</p> <ul style="list-style-type: none"> ▪ Customer, Product ▪ Compliance, Risk ▪ Investment <p>Data Governance & Stewardship</p> <p>Compliance & Data Privacy</p> <ul style="list-style-type: none"> ▪ Data Classification ▪ Data Cleansing 	<p>Modeling Services</p> <ul style="list-style-type: none"> ▪ Predictive Modeling Model Validation ▪ Loss Forecasting ▪ Profitability Analysis <p>Stress Testing</p> <p>Competitor Benchmarking</p> <p>Fraud Detection</p> <p>Economic Capital (EC)</p> <ul style="list-style-type: none"> ▪ EC Framework ▪ Risk Adjusted Return On Capital

In Practice: Capgemini's has world class experience delivering ERM solutions for financial services firms

<p>Collections Reporting Solution for a large U.S. bank</p>	<p>The bank had disjointed Collections reporting and analysis capabilities populated using labor-intensive daily processes. Capgemini provided a solution that served as the foundation for trending and analytical reporting including the preservation of history for year-over-year comparisons and economic cycle forecasting.</p>
<p>Risk Management Solution for a global bank</p>	<p>One of the largest banking and financial services organizations in the world was experiencing difficulties with the risk reporting due to multiple sources of risk data which created problems in developing correct and on time credit information. Capgemini developed a risk management solution to further develop, leverage and exceed peer competencies and more fully develop Basel II relevant metrics, analysis and reports.</p>
<p>Credit Risk Data Mart for a large U.S. financial holding company</p>	<p>The financial holding company needed an integrated and centralized data management and reporting system to address redundant and conflicting loan information between reports, get consistent monthly snapshots of the state of business and integrate data between sources. Capgemini built a single repository to perform credit risk management analytics on the commercial and retail loan portfolios.</p>
<p>Credit Risk Monitoring for one of the world's largest financial firms</p>	<p>Our client needed to frequently monitor credit portfolios to provide pertinent information to senior management to include in the capital management process. Capgemini developed a Default Loss Data Repository (DLDR) of long term history of default/loss experience to report, refine, calibrate PD and LGD estimates and delivered to an efficient framework for ad-hoc queries and analysis reporting.</p>

For more information, visit www.capgemini.com/risk or email riskandcompliance.fsgbu@capgemini.com



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 92,000 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.