

Risk Management in Capital Markets

Risk Transparency through Better Design and Technology. Real Value in Bottom-line Results.

Enterprise Risk Management (ERM) has come to the forefront of modern investment banking. Commensurate with and critical to meeting the challenge of accurate risk and pricing analysis is effective risk information management. To maintain their reputations and competitive edge, modern financial institutions must optimize their policies and methodologies for ERM with truly *fit for purpose* risk information management platforms.

While the need for accurate, complete, and timely data for on-demand risk, pricing, and executive decision making is well

understood, many firms still struggle with building an authoritative, comprehensive and cost-effective risk data environment.

Through our information management expertise and purpose-built technology platform, Teradata Corporation can help firms achieve just such an environment. Our data management solution is centered around pragmatic risk data integration focused on business user needs.

Teradata has proved that with effective data integration, firms can achieve breakthrough capabilities in analysis, insight,



speed and accuracy of decision making – all facets of an optimal risk management function. Compare the typical federated data infrastructure (See Figure 1.) with the Teradata Risk Information Management solution (See Figure 2.).

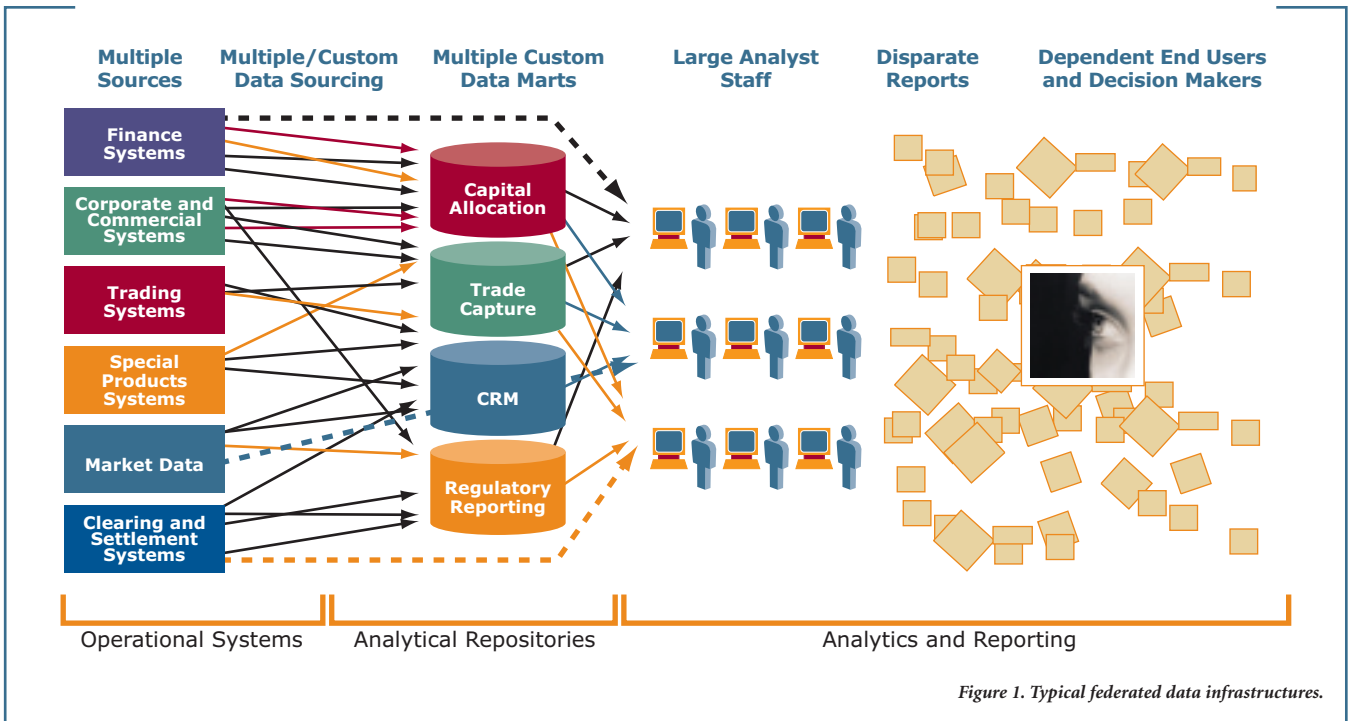


Figure 1. Typical federated data infrastructures.

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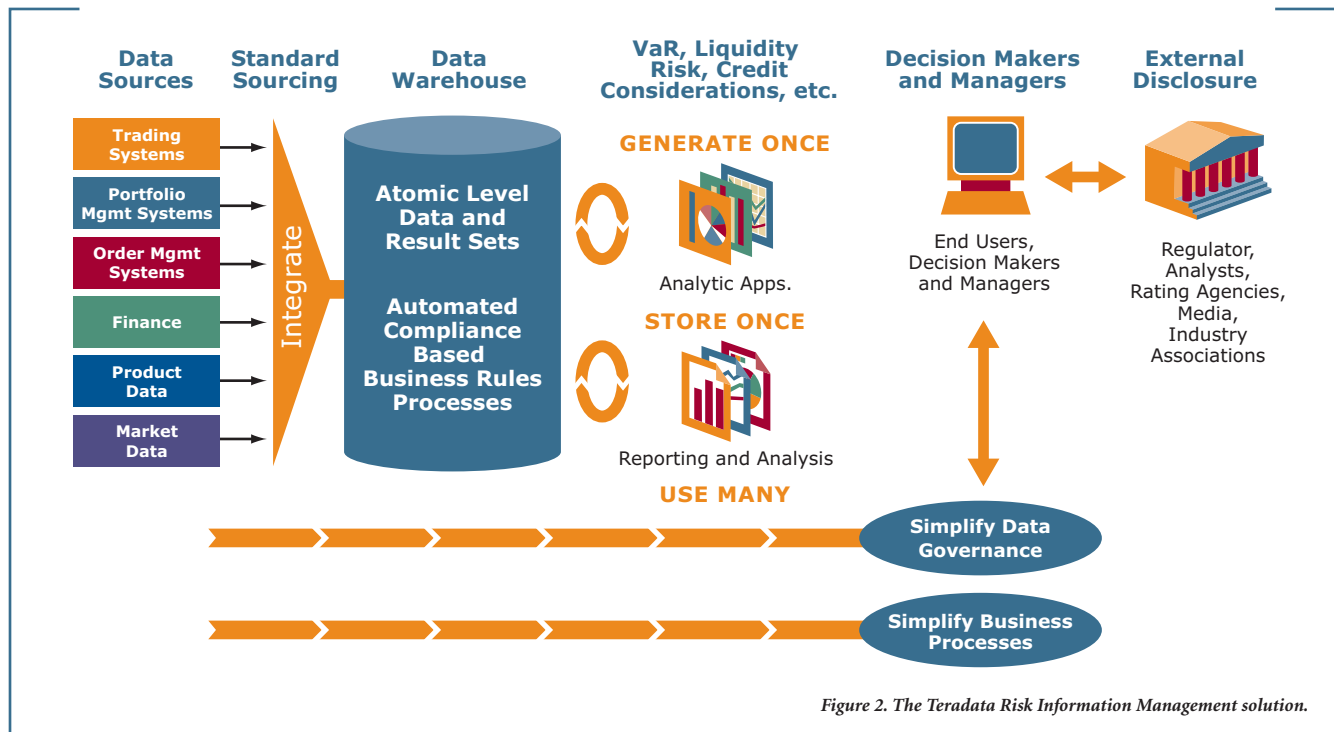


Figure 2. The Teradata Risk Information Management solution.

Teradata's risk solution provides financial organizations with unprecedented insight into counterparties, positions, and trades. Our solution enables an end-user computing environment where business users can perform ad hoc analysis, as well as produce periodic reports. The Teradata solution effectively aligns people, processes, data, and technology in all its facets.

The Challenges

Data spread across organizational silos need to be *integrated* quickly to create a unified view of the firm's positions so that risks can be calculated with confidence.

Relevant risk measurements must then be *distributed* in a timely manner to all constituents including senior management,

risk managers, and traders on the desk. Adequate *security* must be maintained so that individuals can only see positions and risks for which they're responsible and ensure that information can't be inadvertently or maliciously modified. And all this must be done as *efficiently and cost effectively* as possible.

Deep Financial Industry Understanding

In many implementations at some of the world's largest companies, Teradata has combined insights with innovation to develop five principles upon which we've built our solution:

Significant, relevant, timely – Data about your firm's and customers' positions and trades from across the organization can

be aggregated quickly and efficiently to ensure timely risk measurement. Relevant measures can then be conveyed in real time to traders, risk managers, and senior management.

Single view – We've built our reputation on creating a single, in-depth, and up-to-date view of all your relevant information.

Modular – Because all large companies already have a risk management infrastructure, our customizable solution is designed to integrate into and enhance existing systems and processes.

High-quality information – Teradata's technology ensures that data quality is a prime focus of the organization.

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Scalable – The Teradata solution grows easily and cost effectively as your organization and its needs grow.

How it Works

The cornerstones of our solution are the Teradata® Platform and Teradata Database, which house all the information risk management needs from across the organization, including positions, trades, market data, securities master, and customer information. The Teradata Financial Services Logical Data Model organizes that information using best practices for risk management – including credit, market, and funding liquidity risk.

Teradata provides an end-to-end consultative solution to develop a process for data management across the organization, so that your risk measurement engines of choice can draw from consistent underlying data sets. Teradata technology also allows you to distribute the resulting risk measures as required to users across the organization with the appropriate amount of detail.

Analytics

Teradata enables you to apply analytical power to risk measurement and enables a sophisticated understanding of risks, capital needs, and attribution. Teradata Warehouse Miner, our in-database data mining tool, offers sophisticated data statistical analysis capabilities, as well as a means to link other statistical software (such as SAS®) and perform analyses including stress tests, back tests, and strategic analysis for pricing and performance measurement.

Teradata Financial Services Logical Data Model

The Teradata Financial Services Logical Data Model, enhanced with credit and market risk management extensions and business line functional views, offers firms a blueprint to structure their organizational data.

Master Data Management

Reference data – the management of security masters, a common-customer file, or a consistent organizational and legal entity hierarchy for risk rollups – is a major problem for risk management. The Teradata Master Data Management solution has helped address these and other reference data problems holistically for many customers.

Financial Reconciliation

There is increasing need to ensure that risk measurements are reconciled to the firm's

financial records. Teradata's data and application technology has been used to develop best-in-class reconciliation solutions to ensure that not only are firm-wide risk measurements calculated consistently, but can also be verified with the firm's financial statements on an ongoing basis.

Risk Information Consulting Services

Most firms already have risk information management infrastructure in place which must be transformed through a series of careful, calculated steps. Teradata's experienced, data-focused consultants are armed with patented consulting tools developed during hundreds of engagements with customers across many industries. Our consultants enable you to not only achieve quick and measurable successes, but also lay the foundation for long-lasting and robust risk management data infrastructure.

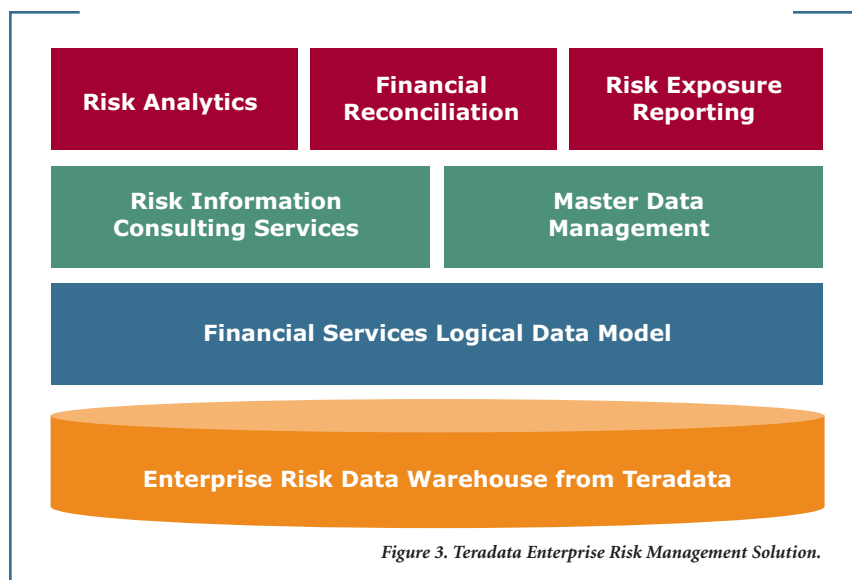


Figure 3. Teradata Enterprise Risk Management Solution.

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Teradata consultants can offer end-to-end support in a risk information management program, from designing the information management architecture, modeling the firm's data within the risk management environment, mapping and loading data from source systems, and giving executives across the organization access to the data.

Technology Integrated with Application Software

Risk management software application vendors typically focus on a specific aspect of the firm's risks, such as credit, market, or asset-liability related risks. Teradata enables these applications by providing them with high-quality, relevant, and timely data. We've developed relationships and integrated Teradata technology with many prominent risk management software vendors, including Algorithmics,[™] SunGard,[®] and SAS.

Teradata has also developed special technology interconnects with leading providers of business intelligence software, such as MicroStrategy,[®] Oracle, and Microsoft[®], allowing you to continue using familiar enterprise software.

Why Teradata?

Why choose Teradata for your capital markets industry challenges? Because Teradata is the technology leader in high availability systems with a proven track record of delivering maximum availability

Writing in the *Financial Times*, the former U.S. Fed chief, Alan Greenspan, said much of the financial system's risk-valuation models failed, not because they were too complex, but because they were "too simple to capture the full array of variables governing that drive global economic reality."

Dramatically Improve Risk Transparency

A North American bank used Teradata's risk information solution to identify and understand single name exposure of more than 99% of their credits on an economic capital basis.

Leverage Risk Data for Performance Management and Pricing

A major European bank has used Teradata's risk information solution to enable risk-based pricing for corporate and retail accounts. The credit decision-making process has also been refined to use risk adjusted performance management (RAPM). RAPM underpins employee performance monitoring and compensation and is combined with channel, distribution, and product management to create synchronized Customer Relationship Management.

Reduce Compliance Costs

An Australian bank saved \$1.5M annually in compliance costs by using Teradata's automation tools to produce quarterly government APRA reports.

to some of the world's largest data warehouses. That's why organizations around the globe rely on the power of Teradata's award-winning solutions to get a single, integrated view of their business to enhance decision making, customer relationships, and profitability. Teradata Corporation, the global leader in data warehousing and analytic technologies,

provides solutions that help make smart companies smarter.

For more information

To learn more about the benefits of Teradata's risk information management solution for the securities industry, contact your Teradata representative or visit Teradata.com.

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