# Risk management and technology

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Risk: **What do you think has been the most significant challenge in risk management in 2008?**

**Robert Park:** The financial crisis of 2008 has led to the realisation that financial institutions had woefully underestimated liquidity risk and assumed that they would always be able to raise the funding required to satisfy contingent obligations. Many in the industry had not recognised that the supply of liabilities to a financial institution also depends on the default probability of the financial institution itself. Over the last 12 months, the industry has begun to focus on the processes and management as well as the models used to assess liquidity risk and other risks of a low-frequency, high-impact nature. With the publication of the revised *Principles for Sound Liquidity Risk Management and Supervision* in June 2008, the Basel Committee on Banking Supervision has shown that regulatory authorities have recognised the need to improve liquidity risk management practices. There is also an industry-wide recognition of the need for quantitative analysis tools and technology that can be used to bring liquidity into enterprise-wide risk frameworks. The challenge with liquidity risk is that, unlike credit and market risk that are well known and can be modelled using historical data, there is a shortage of suitable data for banks. The most challenging characteristic of liquidity risk is its low-frequency, high-impact nature. This has implications.

Risk: **What risk technology changes do you think we will see in 2009?**

**RP:** Another shortcoming that has been highlighted by the recent turmoil is the inability of models to capture all risk, particularly during periods of extreme market volatility. Robust, transparent and standardised models that provide risk measures for all model inputs at all times are needed to improve the stress-testing capabilities of banks and the modelling of extreme events. A greater emphasis on independent valuation and transparency will also be crucial if financial institutions are to meet the challenges posed by rapidly changing market conditions and greater regulatory scrutiny. Combining these requirements with the need to improve the management of liquidity risk will mean that current data management, cash-flow generation and scenario-simulation technologies will be stretched to the limit. Effective long-term liquidity risk management will involve full multi-period simulation, where numerous factors drive probability of defaults, spreads, values and liability supplies. Highly flexible, grid-enabled scenario-analysis and stress-testing tools will be needed to supplement existing technologies.

Risk: **How will risk technology be affected by the change in regulations involved with the mergers of the larger investment banks to the commercial banks?**

**RP:** Traditionally, investment banks have concentrated on risk that they can immediately manage and transfer. Changes in regulation involved with the merger of investment banks with commercial banks will lead to a longer-term 'big picture' view of risk management using standardised models to provide independent, transparent valuation and reporting. The increased need to model liquidity risk and other low-frequency, high-impact events management will require the adaptation of systems already in use for market and credit risk and asset-liability management to allow them to handle the data required and have the power and flexibility to perform the necessary cash-flow projections, scenario simulations and stress tests without restrictions.

Risk: **Are there any ways in which your system could be altered to cope with a similar problem in the future?**

**RP:** FINCAD Analytics Suite 2009 is the first product to utilise our new analytics framework. In order to help risk managers meet the challenges they will face in the coming years, FINCAD plans to deliver new products that will provide improved support for structured products and greater flexibility that will extend our "all risk, all the time" framework with comprehensive scenario analysis, as well as support for grid computing. In 2009, FINCAD will continue to extend its cross-asset class, market-tested analytics for valuation and risk management of financial securities and derivatives to further increase our already extensive coverage of market standard models.

Risk: **What differentiates your technology from that of competitors in the market? ?**

**RP:** As one of the most comprehensive valuation and risk assessment solutions, FINCAD analytics provides broad, cross-asset class coverage, addressing exotic and vanilla instruments. It offers extensive flexibility by allowing user-defined parameters and the ability to structure new or custom deals within days. All FINCAD products offer extensive documentation, which provides transparency through detailed explanations of models and calculation methodologies. This allows our clients to verify and validate each and every part of any valuation. Additionally, FINCAD provides support for "all risk, all the time" in our analytics framework. Real-time sensitivities to every input are calculated with every valuation of derivative and fixed-income instruments.