



Numerix is disrupting the FinTech industry taking next generation trading and risk solutions to the next level. CEO Steven O'Hanlon talks us through the techniques it has employed to bring it to its current, market leading success.

As the company that profoundly innovated and pioneered the space for multi-asset class derivatives pricing, Numerix has evolved from a dominate analytics player to a global, enterprise risk technology company providing next generation trading and risk solutions to financial services institutions. It was Numerix's experience in unwinding Lehman Brothers' derivatives book post-bankruptcy that propelled the company forward in terms of establishing a future vision for effective risk management solutions. Steven explains.

"Since its inception in 1996, Numerix technology has helped hundreds of financial institutions optimize trading and risk operations, provide visibility into total cost of trading derivative products operations, reduce risk exposures, reducing capital charges while improving return on equity – ultimately facilitating cost savings through the reduction of legacy and duplicative systems."

Numerix's dominance and leadership position as a front office pricing company in its early years enabled the firm to develop risk solutions consistently and holistically. As a result, in the aftermath of the financial crisis Numerix was first to market with Basel III's CVA requirement, recognized as the adjustment to the fair value price of derivative instruments to account for counterparty credit risk.

Having now pivoted to risk, the company once again anticipated which direction the market was moving so took steps to cohesively build out all of the front office XVA adjustments for pre-trade pricing, as well as counterparty credit risk exposures and market risk measures.

Many of the institutions Numerix is working with have found themselves at a critical inflection point toward transforming their trading operations with the goal of bringing front and middle offices together on same technology platform.

What is clear, the relationship between risk management, capital efficiency and liquidity is

crystallized by the new regulatory requirements, forging a direct link between the quality of risk management and the ability to manage capital and liquidity efficiently.

"Today's sell-side institutions are changing. New interacting regulations focused on the trading book are linking different elements of the market. Whether it be FRTB, SA-CCR or XVA we're witnessing a front office operating model transformation."

New business models pursued by the sell side also require substantial shift in analytics infrastructure. The impact of FRTB for example is not just about the capital that firms have to hold and their PnL attribution, but more fundamentally on the way they are organized and structured.

"Now a robust enterprise technology company our next generation risk technology platform, Numerix Oneview supports front office trading and middle office risk in a unified way acting as the single source of truth for trades, valuations and analytics."

Numerix CrossAsset is the firm's flagship brand. The Numerix CrossAsset library offers the industry's most comprehensive collection of models, allowing institutions to price any conceivable instrument using the most advanced calculations. Numerix offers the ability to model any type of OTC instrument using a comprehensive mathematical library and transparent pricing framework providing a unified platform for consistent valuations across all positions and asset classes – underpinning a powerful risk calculation process.

With the Numerix CrossAsset model library and robust calculation engine at its foundation, the Numerix Oneview Enterprise platform includes enabling component technologies that can be leveraged for addressing specific functions within banks and insurance companies.

Oneview pricing and risk applications can be extended to address structured products



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distribution, front office trade capture, desk and portfolio level market risk, counterparty credit risk, pre-trade pricing and XVA adjustments as well as calculations for Basel III related regulatory compliance for bank capital and margin requirements.

What sets both Numerix CrossAsset and Numerix Oneview platform apart from its competitors is the consistency of the analytics which underpin both solutions, according to Steven, who recognises the need for differentiation in such a competitive market.

"Our platform's flexibility, dynamic user interface and customizable user workflow gives users the ability to bridge silos between departments and holistically visualize risk for front office/pre-trade analysis as well as post-trade middle office. Working from a single platform, users can optimize capital, collateral, funding and other variables to maximize enterprise profitability."

Elements of enterprise model risk management, governance and validation ecosystem have also been accelerated by global regulators. As regulators bring standards even higher, financial institutions' revenue lines are at risk of regulatory curbs on trading.

"Increasing regulatory demands slow down the validation process, and validation backlogs develop. Firms fall victim to nimbler competitors if they cannot act quickly on opportunities."

Numerix's regulatory solution for validating models brings automation to this challenge, where speed is only a question of the amount of compute power that can be brought to bear. Numerix's mathematical approach and parallel computation framework allows more rigorous tests to be carried out over thousands of scenarios.

"Our approach gives our clients rigor and thoroughness that is head-and-shoulders above the market, ensuring business lines suffer no regulatory disruptions."

O'Hanlon adds that the firm's mission is firmly focused around its clients and their future success, highlighting the company's client focused approach which underpins every aspect of the services it provides.

"Our mission is to help global financial institutions transform their pricing and risk analytics strategy to achieve their goals – whether it be to increase revenue, acquire new clients, realize cost savings, achieve regulatory compliance or increase operational efficiency. With Numerix financial institutions can attain a holistic view into their risk exposure from a single platform driving risk-informed forecasting and decision making capabilities for optimized profitability."

"To achieve this we have always been keen to ensure that our relationship with our customers comes first – we listen, understand and address their challenges with optimized trading and risk analytics solutions."

Additionally, as Numerix continues down its path towards pioneering bank transformation the entrepreneurial spirit never ceases to inspire its thinking.

"Driven by big ideas and a unique vision I constantly endeavour to instil change, define new markets and disrupt the status quo. Being a FinTech disruptor means inventing and adopting new approaches that push the bounds of innovation and drive our technology forward."

Looking to the future, O'Hanlon was optimistic about the firm's continued success.

"Going forward we will continue to focus on selling solutions and remaining customer-centric. Numerix is now moving from a stage of organic growth to one that would be acquisitive. We will also focus on expanding the footprint of front office risk management platform"

Over the next three years, Numerix has the unique opportunity to be disruptive and capitalize on rapidly changing market dynamics. Its growth strategy also requires it to anticipate market needs and trends."


The latest available technology has also been driving change as Numerix continues to develop its pricing and risk solutions. Reduced memory costs and change in the nature of compute costs is challenging conventional computational approaches.

With regards to the wider market, O'Hanlon has high hopes specifically for its performance based technology. Leveraging computation techniques like GPU technology can significantly speed up performance, as well as new mathematical approaches like Adjoint Algorithmic Differentiation.

"As banks are undergoing various elements of transformation within their institutions we see two things happening – banks that refuse to challenge the status quo, and banks that are going to embrace change. While challenges will continue to take shape in terms of from a software, data management, IT infrastructure and architecture perspective those that successfully implement change will have a fundamental operating advantage in the market as they've opted to spend more today, to reduce cost in the future.

"Therefore, in the future we foresee the market adopting a more integrated and holistic approach for managing risk, assessing trade profitability and allocating capital to their businesses. This combines real-time performance and a robust IT infrastructure for risk and pre-trade pricing.

"Whether leveraged to drive growth or innovation the concept of agile analytics will also, we believe, become increasingly popular in the coming years. From our perspective, while real-time and predictive analytics are well defined, agile means consistent, flexible, scalable and responsive."

A man in a dark suit and tie stands on a wooden plank floor, holding a black umbrella. Above him, a large, glowing orange jagged arrow points upwards and to the right, with a bright light source at its base that creates a starburst effect and showers sparks. The background is a dark, cloudy sky.

Over 700 clients and 90 partners across more than 26 countries have come to rely on Numerix analytics for speed and accuracy in valuing and managing the most sophisticated financial instruments. With offices in New York, Boston, Chicago, Los Angeles, Mexico City, Miami, Vancouver, London, Paris, Milan, Helsinki, Frankfurt, Dubai, Beijing, Mumbai, Hong Kong, Seoul, Singapore, Sydney, Tokyo and Taipei, Numerix brings together unparalleled expertise across all asset classes and engineering disciplines.