



# Transforming Options Market Making at a Leading Global Investment Bank

One of the world's leading full-service investment banking and securities firms in the options market making business needed to ensure continued state-of-the-art, high-performance operations while options data volumes escalated and volatility increased. To maintain market leadership amidst continually evolving requirements, the options market maker set out to transform its trading infrastructure.

Initial efforts represented a major attack on the debilitating deficiencies of legacy message-oriented middleware and its increasing unsuitability for high-volume, latency-sensitive financial data distribution and transactions. The organization, well-versed in messaging technology, experienced diminishing benefit from adding more application and middleware servers to help overcome rising data volumes. Adding more hardware not only exacerbated operational issues, but also exhausted important data center real estate.

Furthermore, as message volumes increased, its legacy systems either fell behind or failed, resulting in critical lost ticks and taking the firm out of the market—sometimes

for as long as a day. This resulted in estimated profit losses of approximately \$10 million per incident, with events occurring more frequently as a result of message volume growth. As such, the investment bank was concerned with both long-term revenue opportunity and reputational brand impact.

Simply replacing the messaging infrastructure was not a viable option. Because integrating points of legacy systems with feed handlers, market adapters, algorithms, FIX engines and other critical financial services applications is a non-trivial endeavor, the organization selected Tervela® to:

- Maintain options market making leadership and preserve trading reputation
- Seamlessly process escalating volumes of time-sensitive market data from OPRA and 6 options exchanges
- Ensure message processing continuity—even during frequent periods of volatility
- Overcome loss of critical ticks that disrupt options business
- Replace legacy software-based message-oriented middleware

## CUSTOMER

*A leading global investment banking and securities firm*

## CHALLENGES

- *Maintain options market making leadership*
- *Process escalating volumes of time-sensitive data*
- *Ensure message processing continuity during periods of volatility*
- *Replace legacy high-latency, software-based systems*

## SOLUTION

- *Fault-tolerant pair of Tervela TMX Message Switches™*
- *Tervela TPM Provisioning & Management System™*

## RESULTS

- *Gained a competitive edge in the financial services sector*
- *Improved performance and efficiency with sub-100 microsecond latency*
- *Increased revenue through assured business continuity*
- *Reduced data center footprint and complexity*



## Message Network for Options Data

Integrating the Tervela Message Network™ with existing messaging systems and applications proved seamless for the options market maker. By deploying a fault-tolerant pair of Tervela TMX Message Switches™ with a Tervela TPM Provisioning & Management System™, the organization was able to use Tervela's next-generation messaging platform to:

- Overcome ever-increasing amounts of time sensitive market data and trades while maintaining business continuity
- Replace legacy software-based message-oriented middleware
- Reduce the number of servers that were outpacing data center rack space
- Accurately model traffic flow and latency to enable full algorithmic analysis
- Stop messaging systems from failing during frequent periods of market volatility

As an easily-integrated mezzanine layer that sits between the underlying transport network and applications, the Tervela Message Network centralized message resources and intelligence to provide the investment bank with:

- Speed that is superior to peer-to-peer software solutions—especially during volatile market conditions
- Enterprise scalability to support the ever-increasing demands on messaging infrastructure
- Unprecedented stability to enable high-performance enterprise messaging

Tervela's introduction of unparalleled performance, latency, scalability and resilience not only solves existing challenges for the options market maker, but also lays the foundation for future, more demanding requirements.

## Infrastructure Transformation

Sustaining competitive advantage in the options market making business required a fundamental change in how this blue-chip financial services firm addressed the inherent architectural deficiencies and limitation of its legacy, software-based messaging infrastructure. With Tervela, the investment bank was able to transform its trading infrastructure by successfully migrating its options market making business from legacy, message-oriented middleware to the Message Network. The end result enabled the organization to gain significant competitive advantage in the financial services sector by:

- Improving performance with sub-100 microsecond latency to ensure trade efficiency and accuracy
- Increasing capacity to easily handle increasing option data volumes and trades
- Reducing data center footprint and complexity to address power, environmental and operational concerns
- Driving revenue opportunities and business continuity through fault-tolerant message switches
- Decoupling publishers from subscribers to further eliminate business disruptions from fast producers and slow consumers

Because of its inherent compatibility and flexibility, the Tervela architecture provided a straightforward mechanism for having both the Message Network and legacy infrastructure running side-by-side, each processing a portion of the options data flow. This ability was a critical success factor for ensuring overall operational continuity during the transition.

## Contact Tervela

Tervela offers comprehensive solutions and a wide range of service and support programs to ensure customers exceed business performance objectives. Bring a new level of service and performance to your organization. Call +1 (646) 586-4200, visit [www.tervela.com](http://www.tervela.com) or email [info@tervela.com](mailto:info@tervela.com) today.