CASE STUDY

American Stock Exchange

One of the nation's largest floor-based exchanges scales to unprecedented message throughput capacities with Talarian messaging infrastructure software.

The American Stock Exchange® (Amex®) handles heavy quote and order volumes from leading brokerage houses nationwide on a broad range of complex financial products and instruments. Due to regulatory- and industry-driven business growth, the exchange anticipates having to scale message throughput to potentially 70,000+ messages-per-second (MPS) by 2002. Amex sought a publish-subscribe messaging architecture that would enable it to scale to these volumes—with high system performance, reliability and flexibility.

"If the industry goes to 37,000 or 75,000 messages-per-second, having the Talarian messaging infrastructure in place will give us a huge competitive edge because we'll be able to handle the capacity without blinking."

Ravi Apte
American Stock Exchange
Executive Vice President and
Chief Information Officer

THROUGH-THE-ROOF VOLUME In recent years, Amex quote and order traffic has skyrocketed with the multiple listing of options, the federally mandated transition from fractional to decimal equity trading increments, increased market volatility and an expanding Amex product offering.

"With multiple options listings alone, we went from 1,000 to 7,000 messages-per-second in a matter of months," stated Ravi Apte, Amex Executive Vice President and Chief Information Officer.

BUSINESS-CRITICAL NEEDS Facing a future in which the options industry may shift from nickel to penny increments, proactively addressing escalating volumes and future capacity issues became a top business priority for Amex.

"In the past, we would react as capacity hit us by adding servers and updating the networks," said Apte. "But this approach was risky because if we cannot keep up with capacity and provide the level of service our customers demand, they will take their business elsewhere."

HIGH THROUGHPUT AND SCALABILITY Anticipating that Amex would need to accommodate up to 37,000 MPS by the end of 2001, and potentially 70,000+ MPS by 2002, the exchange sought a highly scalable, publish-subscribe messaging architecture that would enable it to evolve to those throughput levels—while providing unsurpassed system reliability and flexibility.

Having used another messaging architecture for years, Amex identified another critical consideration: the ability to seamlessly migrate its existing market data and order processing applications to the new architecture within a pre-determined timeframe.

TALARIAN DISPLACES TIBCO After thoroughly evaluating messaging architectures from virtually every commercial provider—including incumbent Tibco—Amex selected Talarian SmartSockets to meet its business-critical future needs after Talarian proved it could meet their needs

"Given the message traffic that we want to support, it became crystal clear that we could achieve our goals most easily with Talarian," stated Apte. "I would absolutely recommend SmartSockets to anyone seeking a publish-subscribe messaging infrastructure."

Talarian
Exchange Instantly. Distribute Globally.™

Boston
Chicago
Denver
London
Munich
New York
San Diego
Silicon Valley
Washington DC

Talarian Corporate Headquarters

333 Distel Circle

Los Altos, CA 94022-1404

telephone
(650) 965-8050

www.talarian.com

CSAMEX 1001.1101

NEXT-GENERATION ARCHITECTURE In short time, Talarian demonstrated that its seasoned consultants had the expertise to design a system to meet the exchange's stringent requirements. Talarian built a prototype demonstrating how a combination of Talarian products and technologies could help Amex build a next-generation messaging infrastructure—including adaptive multicast, guaranteed message delivery, multi-threaded RT servers, industry-standard transport protocols and Java.

ADAPTIVE MULTICAST Adaptive multicast— available only from Talarian—harmoniously combines unicast and multicast technologies, enabling Amex to efficiently transmit market data to multiple subscribers in a single operation, over both TCP/IP and reliable PGM multicast protocols.

Significantly increasing scalability while conserving bandwidth, adaptive multicast is the most intelligent, innovative and efficient way for financial exchanges to deliver increasing market data volumes to growing global audiences in real time.

SMARTSOCKETS: AT THE HEART OF AMEX
Amex is currently deploying Talarian SmartSockets behind-the-scenes at the exchange in a heteroge-neous hardware environment that includes HP, Sun, VAX, Stratus and other systems. "Ultimately, every display screen used by trading specialists on the Amex trading floor will subscribe to data being published by the Talarian SmartSockets application—which makes SmartSockets a very integral part of the exchange," noted Apte.

A COLLABORATIVE EFFORT Talarian is working very closely with Amex to make whatever changes are necessary to integrate the exchange's existing products and applications with the new Talarian infrastructure. "In our business, you can't afford so much as a hiccup when it comes to delivering market data and processing orders," stressed Apte. "With Talarian by our side, we have nothing to worry about." Full migration to the Talarian infrastructure is expected to take 9 to 12 months.

EXPERT CONSULTING AT EVERY STEP OF THE WAY Soon after Amex chose Talarian to build its new messaging architecture, Talarian also developed a custom interface so that both the new and previous systems could operate in parallel during the transition. Engaged from the very beginning of the project, Talarian consultants will continue to be a part of the team at AMEX through all stages of implementation and deployment. "This is a huge project, with huge stakes, and Talarian Consulting Services has been on-site since day one, making sure we get the most out of our investment and implement their products in the best way to meet our needs," said Apte. "We look forward to their help implementing more Talarian products in the future which we absolutely plan to do. They have been terrific."

"SmartSockets is a more mature product than many on the market, and that maturity is clearly reflected in its ease of use."

Ravi Apte
American Stock Exchange
Executive Vice President and
Chief Information Officer

Talarian
Exchange Instantly. Distribute Globally.™