

# Equities: SOR Optimisation Through Holistic Transparency

## Client Profile

**A global agency broker executing over two million orders daily across equities, options, and ETFs, routing to 40+ execution venues across North America and Europe. The firm serves institutional buy-side clients who demand transparency on execution quality and routing performance.**

## The Challenge

The broker's execution quality was declining, but the operations team could not pinpoint the root cause. Client complaints about fill quality were increasing, and best execution reports showed inconsistent results across venues. Legacy monitoring tools reported average latencies and error rates but provided no correlation between infrastructure behaviour and execution outcomes.

### Specific problems included:

#### Unexplained slippage

Unexplained slippage on time-sensitive orders, particularly around US market open and close

#### Routing decision opacity

No visibility into why certain venue selections underperformed on specific days

#### Slow investigation cycles

Slow investigation cycles, with each client complaint requiring hours of manual log analysis

#### Regulatory pressure

Regulatory pressure from an upcoming audit requiring demonstration of best execution alignment

## The xMetrics® Solution

The broker deployed xMetrics to instrument the entire order flow path — from the market data feed, through the client FIX gateway, OMS, and SOR, out to the execution venues. Critically, this included the market data infrastructure upstream of the SOR.

### Key capabilities deployed:

#### Multi-hop correlation tracking

Multi-hop correlation tracking every order from receipt to fill, with latency measured at each hop across eight internal infrastructure components

#### User-defined logic

User-defined logic at source to flag orders where internal processing exceeded thresholds, segmented by order type and destination

#### Technology-to-execution

Technology-to-execution mapping linking infrastructure latency directly to slippage outcomes at the individual order level

#### Client-level impact analysis

Client-level impact analysis showing which clients were affected by any anomaly in real time

## Key Findings

Within two weeks, xMetrics revealed that the declining execution quality was not caused by the SOR itself but by stale market data resulting from upstream feed microbursts. During high-throughput periods, periodic microbursts on the multicast market data feed delayed quote updates, causing the SOR to evaluate venue rankings against momentarily stale prices. This led to suboptimal routing decisions, higher reject rates, and worse fills.

## The Outcome

Armed with precise data, the execution operations and technology teams took targeted action, delivering the following improvements:

### Successful regulatory audit completion

Successful regulatory audit completion, with xMetrics providing a complete audit trail of routing decisions and execution outcomes

### Technology investment clarity

Identifying that a planned market data upgrade would resolve the upstream feed latency, while a proposed network expansion was unnecessary, avoiding significant capital expenditure

### Client retention

Client retention secured through proactive, transparent outreach to the three most affected clients

## Client Results

100%

Reduction

Clients at risk due to latency

91%

Reduction

Mean time to investigate

71%

Reduction

SOR decision latency (P99)

50%

Reduction

Slippage around market open

57%

Reduction

Venue reject rate

## Summary

By deploying xMetrics, the broker gained complete visibility across the entire order path, revealing that the root cause of poor execution quality was not the SOR itself, but stale market data being fed to it. With the true cause identified, the team took targeted action to fix the upstream market data infrastructure rather than unnecessarily replacing the SOR – delivering better fills for clients, faster investigations, reduced regulatory risk, and smarter technology investment decisions.