The London Stock Exchange turns to Accretive to help prepare for growth .

The art is to design the system so that bursts of trades in small sets of securities can be executed fast enough to avoid a backlog of trades.

Challenge

As the exchange set record levels of trading activity month to month the question became: "Was there a limit to the LSE's systems?". Looking at a series of upgrades and system enhancements, the exchange wanted to know if these would result in a system able to comfortably handle the volumes predicted in the business plan.

Solution

Accretive was asked the specific question: How do we handle the largest trading peaks while still ensuring fairness? Fairness requires that trades on a security are executed in the sequence received. During peaks trade volume can be highly concentrated in small number of securities. Also, modern trading strategies depend upon managing positions across a portfolio of securities. If all trades are not executed immediately, the risk of the position increases.

Accretive built a series of models of the trading system. These showed that just building a larger system e.g. more processors, more memory would not be effective in raising the system ceiling (the maximum processing rate.) Instead the models identified issues in the design and core algorithms that were acting as constraints on throughput. (Interestingly, if the system were measured under a load that did not match the pattern of order arrivals in the peak, the measure of throughput and response time would be very misleading.) With Accretives' models it was possible to study the dynamic system behavior under loads that had not yet been seen in the market.

Results

The insights provided by the X-Act model provided the data needed to target tuning and enhancements to the current system and led to changes in the definition of requirements for the next generation system at the LSE.

Accretive
the science of systems

330 Madison Avenue
6th Floor
New York, NY 10017
United States of America
1 (917) 338-6234
www.acrtek.com