Too Much Risk? Not Really

Problem: As a major global bank grew, their ability to trade equities became constrained by the inability to run risk reports in a timely fashion.

The Global Equity Division invested in a top flight sales force...but demand exceeded the firm's ability to process the numerous risk reports required both internally and for regulators. It took 27 hours to churn through the portfolio on a daily basis!

Cause: Global expansion, increased sales force, instrument complexity and increased regulatory reporting combined to cause a bottleneck that started draining profitability and market share.

When the business made expansion plans, they didn't really address the logistical challenges required to support this growth. The original equity system ran on a mainframe with batch processing. The derivatives system, while newer, was still old enough that it was designed pre-multi-threaded processing. They were sufficient for supporting old business levels, but not new business levels.

Solution: A combination of moving to grid computing with a carefully ordered software redesign to tackle each aspect of the software challenge led the bank to reduce daily processing time to 4 hours.

Immediate performance was found by upgrading hardware and software and taking several distinct portfolios and moving them to their own instances on the grid. These two steps, implemented over 4 months cut processing time by 40%. But this was a quick fix and more work was required.

The core software was rewritten to support threaded processing over multiple CPUs. Real time calculations were supported by calculating the effect of new trades to the existing portfolio instead of complete portfolio recalculations. Equity trades were sent to the core derivatives risk engine for intraday risk calculation instead of waiting for nightly batch uploads. This allowed the business to increase their trading limits intraday with a high degree of confidence.

Simultaneously, the core processing system in the risk system was rewritten to optimize feed handling, calculation time and feedback to the trading and sales managers.

Impact: Over the course of a year, the Equity Division was able to increase their volume by 250% while having better insight into intraday risk. This combined to lead to $450M in new revenue annually.

The bank invested heavily in the front office and customer interface, without really understanding the logistical impact of their decision. It wasn't surprising that they missed this important step; up until the expansion the systems just chugged along. But the bank risked their reputation and customer experience without thinking through the complete front-to-back experience, and lost some high priced recruits because they hadn't looked at the operational and technical side of the equation.

In order to find the best solution, the problem had to be taken in steps so that some capacity could immediately be given to the business while the longer term solution went into play. Equity market expertise, risk management expertise, and technical expertise were required to come up with a solution that allowed the bank to "change engines in the plane while it was flying."