

Lucy Simpson heads operations for Mark Maybaker (MM), a large retail securities broking firm. The firm does business for several thousands of it's clients, spread all over the world, trading in many markets and instruments, and settling in multiple currencies. MM also provided trading access through the web, and over 15% of it's trades came through the internet.

Lucy had a problem. A week ago, the head of retail sales, Joe, had complained to her that the trading policies of MM were too stiff when compared to the nearest competition, and that clients were being lured away to other broking houses due to lower margin requirements. In one particular case that the sales department had studied, the competition charged 25% lesser margin than did MM for the same position. Since both the firms had to collect end-of-day margins as stipulated by the clearing corporation, Lucy reasoned that there could be no difference in the margin collection at the day end all the differences were during order validation during trading hours.

The essential characteristic of the clearing corporation margining system was:

- ⊕ Margins were computed on trades, not on orders.
- ⊕ Hedge benefits were given at the underlying level across contracts.
- ⊕ No hedge benefits were given across underlyings.
- ⊕ Margins were collected end-of-day, with intra-day order limits monitored against collateral placed by the member.

In contrast to clearing corporations, broking firms, however collected margins at the time of order acceptance in order to control their risk. Different firms used different methods of computing margins for order validation.

Joe pointed out that the 25% lower margin collected by the competitor's system meant a 33% increase in trading space for the end client and for a trader whose profits often depended on how well he turned his portfolio, this made a large difference. As a result, the competitor not only had more traders, but also more turnover from each trader. Joe wanted to know if MM's policies could be amended to equal or better the competitor.

Lucy studied the problem for a while, and noted that the competition, in spite of lower intra-day margins, had only the same level of bad accounts as did MM. It was clear that the competition was not putting itself to higher risk, but was just collecting margins more efficiently. There were 2 issues involved, in which she could perform better:

- ⊕ Compute portfolio margins correctly on even a complex portfolio comprising underlyings and their derivatives.
- ⊕ Compute pre-trade margins efficiently by passing on hedge benefits even at the order level.

MM's current system used a margining scheme that attempted to give hedge benefits to correlated positions held by a trader, but she sensed that there was much scope for improvement. For instance, if a trader held a long position in a futures contract, and a short position in the same underlying for a different delivery month, her existing system detected this, and charged lesser margins than the sum of the two margins if they were charged independently. This logic, however, only worked in the simplest of cases, and when things got complicated, like for instance, when there were multiple options in the underlying, or derivative contracts in other closely correlated underlyings, the margin collection was not optimal. In fact, in the case of out-of-the-money options, which were in general more actively traded than other options, her firm was unable to include these contracts for purposes of hedging. This meant substantial over-margining.

Also, both firms charged margins at the order level, even before the order was executed. The requirement was for a margining system that margined positions comprising both trades and orders, on a portfolio basis.

Lucy realised that she could add further value and push ahead of the competition if her margining system could be customised to specific products. For instance, MM offered a trading product for intra-day traders that gave the traders large concessions in brokerage as long as the trader did not carry forward the position overnight. This was a popular product, and with the daily swings in most active securities being large, there was ample opportunity for a trader to get in and out of his position during the same day. Lower brokerages encouraged more active trading, and resulted in better revenues for MM. Since the trader was obliged to close his position during the same day, there was no margin payable to the exchange end of day. MM was therefore free to charge whatever safety margins it thought appropriate, and using any methodology, for the orders placed on this product. If she could provide hedge benefits across underlyings in this product, then her margins would be even lower than what the competition charged.

Lucy concluded that what she need was:

- ⊕ A margining system that could accurately provide hedge benefits to even very complex portfolios.
- ⊕ A pre-trade margining system that could take portfolio hedges into account even at the order stage.
- ⊕ Different margin methodologies to support the multiple products that her firm offered. For instance, she reasoned that using a Monte Carlo simulation for the intra-day product would provide hedge benefits across all underlyings, and reduce the margin requirement manifold. For those products that required carry-forward of positions overnight, she would follow the margining method as followed by the concerned clearing corporation, but modified to account for hedge benefits at the order stage.

She realised that this was a complex proposition the time taken to compute the margin could be very large, and render the idea useless in a real-time trading environment. Her solution needed to address her requirements in real-time.

Chella Software's ActiveMargin™ Risk Management System is the only software that comprehensively handles Lucy's requirements. By acting as a centralized Risk Management System flexible to support all products of the broking firm and computing margins on the worst case portfolio on a pre-trade real-time basis, ActiveMargin™ provides a perfect solution.

The salient features of ActiveMargin™ are

- Φ Compute Value-at-Risk of a portfolio over multiple entity levels.
- Φ Serve as a real-time rules engine to regulate trades.
- Φ Validate deal requests and orders before they are allowed to be executed, while providing the highest trading space.
- Φ Provide real-time reports on exposure to different types of risks.
- Φ Provide real-time risk analytics to traders and to risk managers including.
 - What-if analysis
 - Stress testing
 - Sensitivity analysis
 - Incremental VaR
- Φ Supports a wide variety of instruments covering equities, equity derivatives, commodities, commodity futures, interest rate swaps, forex spot, forex derivatives, fixed income and exotic options.

About Chella Software

Chella Software is a capital markets specialist. All of our business has come from this domain, since inception. The combined experience of the team in the areas of front, middle and back office operations is probably unmatched. Highly respected as consultants and solution providers, enterprises rely on our products to run their mission critical business processes.

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