

## TECHNOLOGY

BRIAN SENTANCE OF XENOMORPH



### Xenomorph: "So the pricing model's finished...?"

London-based Xenomorph's business line and enterprise solutions unite data management, connectivity and analysis, delivering a single view through time of all asset classes. The firm was founded in 1995 to meet the industry need for high performance data management and analysis software. Key aspects of the data management architecture developed to address this market requirement include high speed data retrieval, the ability to handle large volumes of data without performance degradation, plus the ability to cope with the ever changing complexity of the data required when bringing new financial products to market.

Across the enterprise the company offers the Xenomorph TimeScape range of enterprise solutions to enable data management, financial data connectivity and scaleable pricing

of derivative and fixed income portfolios.

For individual trading desks Xenomorph business line solutions cater for the specific vertical requirements of each business line, from equities through to fixed income derivatives and beyond.

"Quants are very often asked by the trading desk to achieve what seems to be the unachievable. No sooner has the need for a new financial product been identified than the race and pressure is on to be the first to market," observes CEO Brian Sentance. "Being first to market means greater market share, higher margins and enhanced business reputation. What is often overlooked is the fact that the ability to price a new derivative in a spreadsheet is only the start of the process of bringing a new product to market." Key areas that are often under resourced are testing, derivatives data manage-

ment and integration with trading and risk systems.

### Choose your employer carefully

"A quant I know had just joined a derivatives trading desk at a global investment bank and had worked some very long hours during his first couple of weeks to get a new pricing model implemented," Sentance relates." He then went to tell the head of desk that the model coding was finished and a spreadsheet add-in had been released for testing. 'So the pricing model is finished?' replied the head of desk, 'Great, we are just about to trade on it, so the model had better not have any problems or you will be working somewhere else soon...'.

Whilst this kind of approach is not typical (regulators and psychologists please note!), it does happen and it does reflect a big issue in that coding a new pricing model is by no means the end of the story.

Sentance highlights that one point worth remembering is that great mathematicians are not always great programmers, and in fairness to both disciplines, translating from the language of mathematics into one of the many languages of computing is not always as straightforward as it intuitively might seem. Testing of a new model to ensure that model risk is minimized is vital and should ideally encompass both price and sensitivity verification against:

- Simpler or approximate spreadsheet valuations
- Boundary equivalence cases produced by existing (tested!) models
- Monte Carlo valuations
- Current market prices
- Historic market prices, events and scenarios

Certainly a key aspect of testing for the desk, and also more formally for product control, is independent model verification. Even for those desks that pride themselves on their own quantitative skills this is an area where external third-party models can prove to be extremely valuable.

### Model seeks data. Aim: system

"Models have inputs, and inputs mean getting data from somewhere. Data management in derivatives is a very neglected topic in my view," says Sentance. "It is this area where the use of the spreadsheet as database, calculator and GUI dominates. Why? Mainly because many trading and risk management systems are not flexible enough to support new data attributes, complex data (arrays/matrices/curves), new instrument types and new pricing models." An additional problem is who owns the data? "Quants are interested in math, software developers in the technology they use and the traders in making money," Sentance continues. "The easy answer is that the traders do in most situations, but they are often not the best people to put good structure/process around managing high volumes of potentially complex, multi-sourced data."

The Xenomorph view is that the creation of a pricing model is not the end, but rather it should be the start of a wider business process for the smooth introduction of a new and potentially market-leading financial product. Sentance concludes that "those institutions, both sell-side and buy-side, that acknowledge this and put good process in place, will not only gain competitive advantage but should also allow their quant staff to sleep a little easier at night." 