



"The best spread achievable"

Online CDO structuring service provider Codefarm is the subject of this week's Provider Profile

Codefarm, which started business in 2002, offers new efficient methods for CDO arrangers to structure their portfolios using technology called 'evolutionary computing'. Similar in some ways to artificial intelligence, evolutionary computing is nevertheless highly unusual as it is 'bio-inspired', meaning that it employs a learning process that mimics phenomena that occur in nature.

Borrowing heavily from Darwinian Theory, Codefarm applies evolutionary-type processes to CDO portfolio construction so the most efficient portfolios, offering the best possible spreads, are constructed. Or, to paraphrase Darwin: only the fittest CDOs survive.



Jeremy Mabbitt, Codefarm's founder and MD, explains further: "When the firm started up we knew there were optimisation problems in finance, and particularly in the structured credit market, where our technology could deliver real measurable value."

Jeremy Mabbitt

other banks of varying sizes.

'Galapagos Structurer' - named to underline the program's Darwinian roots - today serves five of the top ten CDO arranging banks, together with a host of

Galapagos Structurer is focussed on structured credit, explains Mabbitt. "CDO models are not readily optimisable; there are particular aspects of CDO structuring that make optimisation difficult. We have a compelling offering for this problem: that of guided search to find the optimal structure. Not only can Galapagos automate structuring, but it also produces enhanced spreads" he says.

Galapagos Structurer constructs underlying candidate portfolios to find optimal CDO tranches and capital structures based upon the parameters defined by the arranger and investor. Each candidate CDO is then evaluated, and the best structure and underlying portfolio are selected.

Next, it breeds and mutates the most promising candidates together, constantly testing new combinations, all the while learning from the outcome of the previous combinations to produce an even more efficient portfolio.

The vast computational horsepower needed to perform these trials comes from a powerful compute grid (available through Codefarm and provided by HP).



"The way the technology combines portfolios is key; it keeps improving the spread by learning from each previous generation of portfolios. We call this process 'intelligent search'," says John Mooren, the firm's new Director of Marketing.

This iterative learning process is the firm's unique proposition. "Head-to-head tests with banks have shown that the Galapagos Structurer portfolios are consistently superior to those generated by conventional methods. With Galapagos, the structurer's skill is deployed to translate what the investor wants, and, given the room for manoeuvre the structurer has within the mandate provided, use our technology to explore the search space to locate the CDO with the best possible spread," says Mabbitt.

John Mooren

Even at the cutting edge of the structured credit market, there was an opportunity to be seized. "Initially some of the banks didn't recognise they had an optimisation problem, but once we showed the potential spread improvement they became more enthusiastic," claims Mooren. "The product has quickly developed: for example we now offer a 'variable notional feature' which is increasingly popular: each entity in the portfolio can have a different exposure."

Codefarm claims that there is plenty of unlocked potential in the CDOs currently being arranged using conventional methods, even in today's tight spread environment. "We help choose the underlying credits better. The result is a higher spread; a 20-30bp improvement on even the most vanilla mezzanine single-tranche structure is possible, with no additional risk - it is simply a more efficient CDO," adds Mabbitt.

In fact, Mabbitt doesn't accept the claims that opaque pricing by banks has led to reduced spread for 'gullible' investors. "Savvy investors are not going in blind and realise they are free to place their own demands on arrangers," he argues.

Mabbitt continues: "Given the constraints that are increasingly demanded by investors, arrangers need tools like Galapagos Structurer to ensure they can keep up. Arrangers can, using a powerful trade specification language, detail the investor's requirements to the nth degree - setting precise limits on any number of sector, country, rating and spread concentrations, mutual exclusions, WAS, WARF, underlying notionals, buffers on attachment points, and much more - to create a portfolio that's perfectly tailored to the investor and offers them the best spread achievable."

As a result, Codefarm suggests, Galapagos Structurer is replacing conventional methods of structuring. "We offer a quick, low-entry cost online service, flexible enough to meet arrangers' individual needs," claims Mabbitt. "Banks can now focus on innovation and let Galapagos Structurer take out the grind."

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