

Me and My Machine: The Automated Trader Interview

Success at Bluecrest Capital is a team effort, says president Leda Braga. With the company's two funds, BlueTrend and BlueMatrix, up by 43.35% and 8.81% respectively over 2008, we think that says a lot about the quality of the teamwork there. Automated Trader's publisher, John Howard, went to meet three key members of the Bluecrest team.

Dirk Ormoneit is Head of Research for the Systematic Trading division of Bluecrest. As such, he is responsible for all algorithm related decisions relating to trend following and mean reverting, high frequency systematic trading and is also part of the unit's management team.

Mark Holt is Head of Technology for the Systematic Trading division, responsible for all systems deployed in production as well as some of the tools used by the Research Team to develop new strategies and carry out research.

Leda Braga is Head of the Systematic Trading unit as well as President of Bluecrest.

Looking at performance, both of your funds were up in 2008, BlueTrend by 43.35% and the Blue Matrix by 8.81%. Both funds have been nominated for awards and indeed won awards. I think all of us here, and probably all our readers as well, would like to know first – how did you do it?

Leda Braga: Without commenting on specific returns, Systematic Trading, more than any other investment management style, is about team work – a number of different skills working together to achieve something. Across all disciplines within BlueCrest Systematic – mathematics, technology, trading operations – there is a relentless desire to excel. This is what gets this team awards: a tireless desire to excel! BlueTrend has been nominated each and every year since its inception in 2004. BlueMatrix was nominated last year, its first full year of operation. We are very grateful for the recognition the industry has granted us and there is no arrogance about us as a team – just a desire to do it again next year.

What worked particularly well for you in 2008, and what kind of a “feel” do you have for 2009 so far? Is this year very different from last year, from your perspective?

Dirk Ormoneit: We benefitted substantially from the high volatility in 2008. One great quality of Systematic Trading is that computers do not get irritated in market conditions which most humans would classify as “irrational”. It is precisely because computers stay rational even during extremely volatile times that they tend to outperform discretionary traders during those difficult years. For 2009, we see market volatility gradually declining. The last time this happened was in 2003 after the beginning of the second Gulf war.

Please discuss the trading approaches and strategies used by the funds. Have these evolved, or changed, over 2008 and 2009 so far?

DO: We are constantly seeking to squeeze ever more performance out of every aspect of our trading methodology. In this sense, algorithmic trading is much like engineering for formula one race cars.

However, changing the fundamentals of your model to react to particular volatility or liquidity conditions during a specific quarter seems roughly as smart as starting the engineering process for a new type of engine when you arrive at the race track and it is raining. A good engine should work well in a wide variety of circumstances. ►



Bluecrest started life as a discretionary global macro fund. When did the fund diversify into systematic trading? What was the trigger to develop a systematic arm?

LB: The founding principals of the firm, Mike Platt and Bill Reeves, had Systematic Trading as part of their long term vision for the business from the outset. They sensed that Systematic Trading would provide a substantial diversifier to their own trading style and the proposition itself appealed to them, due to their quantitative backgrounds.

Bluecrest's first discretionary trading fund started trading on December 1st 2000 and trades cross asset class arbitrage, particularly in Fixed Income and FX. I came on board in 2001 with the dual mandate of strengthening the trade finding models available to the portfolio managers of Bluecrest International and of starting a venture into Systematic Trading. We launched our first systematic strategy in May 2002 on a small capital allocation from our flagship discretionary fund.

From taking the decision to offer a systematic based fund, how long did it take to put in place the infrastructure and develop the models that the fund would run before launch?

LB: If you are thinking about our trend following fund, then that strategy was actually trading significant assets by December 2003, four months ahead of the fund launch on April 1st 2004. The infrastructure was simple but robust and it probably took about eight months to put together. That was our first generation infrastructure and we are now on our third generation., designed using service orientation and supporting a multi-centre, multi-trader desk on a 21-hour trading cycle. You need to ask Mark about infrastructure and timeframes...we have great ambitions on that front.

Mark Holt: This is also an ongoing process. You need infrastructure that is suitable for the model to operate taking into consideration its target markets, AUM capacity and the level of technical capability within the team. This varies over the lifecycle of any particular model and fund. The infrastructure team here and the platform it delivers have evolved over a number of years, however, to get an individual model trading in its early stages requires significantly less than what we have in place. I think you need to be careful to deploy just enough infrastructure, just in time – otherwise you run the risk of expending a lot of unnecessary effort. Track record is all about how much you make, not how much idle infrastructure you employ!

In our discussions leading up to this interview, you've spoken about Bluecrest as very much a team effort. How does the team work together, and to what extent does that approach in itself give you an edge over other firms? Is there a key Bluecrest ethos that you feel has made a major contribution to the firm's success?

LB: How does the team work together? Well... with great difficulty! I am kidding, of course. We are a group of highly trained, strong willed, opinionated people and discussion often turns to heated debate – that is a fact. It takes commitment to achieve good team spirit and to promote a flat hierarchy where

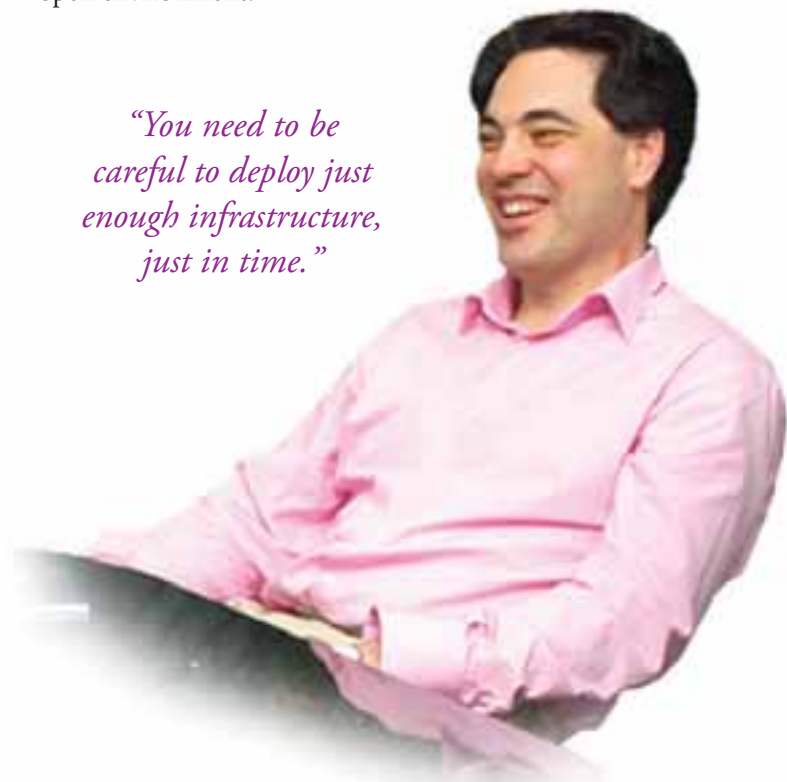




Left to right: Leda Braga, Dirk Ormonet, Mark Holt, John Howard.

DO: We foster an open and very academically oriented environment where disagreement is considered as intellectual challenge, not as a personal attack. Everybody in the research team comes from an academic research environment, so this works very well for us. I am proud to say that the members of the research team appear to take particular enjoyment out of disagreeing with me, which I think speaks for the open environment. ▶

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anyone can challenge and be challenged. It takes commitment to remind ourselves that we may disagree over a point or two, but we are all here on a common mission, which is to deliver solid returns to our investors. I personally enjoy the interaction we have and the certainty that I learn every day from those who are senior as well as from those who are junior to me.

Do the members of the team always agree? If not, is the tension itself recognised as creative?

How do you develop trading models? Please also discuss system development and testing. Which generic groups do your models fall into (for example, trend-following, mean-reversion, et cetera), and does the production set change over time? Does any element of discretion ever enter the trading process and in what form?

DO: We employ a variety of models including trend-following and mean-reversion components. One key element of getting any systematic trading system to work is to remove discretionary decisions as far as possible. The great benefit of having to implement your ideas on computers is that it forces you to determine the right course of action in an extreme situation while you are not in it yet. Otherwise, the answer will always be merely to reduce risk, typically at just the wrong time.

Would you say that the funds' performance reflects the consistent application of a trading strategy or constant change in response to constantly changing market conditions?

LB: A calculated mixture of both. The investment team is well aware that upgrades to the models can become too frequent and therefore end up costing money in lost opportunities or in transaction costs. The Modelling Committee (our version of an investment committee, in charge of signing off model changes) has that in mind when recommending the deployment of changes into the production environment.

How does your risk-management process work? And what part does technology play in it?

MH: The management of both trading and operational risks is a key component of the technology which we've built into our trading platform. Our infrastructure can support dynamic, risk based portfolio optimization if required. We also automatically feed trades into our middle office risk systems and those of our administrator and prime brokers. Our business could not operate without these links in place. We also recognize that given our type of operation technology and the technology

delivery process is itself a risk. To try to mitigate this we have made significant investments into building fault tolerance and resiliency into our systems and into systems monitoring. We also operate a more thorough and robust system testing regime than was the case in the early days of the fund.

Moving on to execution, on which equity trading venues are you most active? How do you identify liquidity, and how active are you in dark liquidity pools?

MH: Our current equity execution concentrates on primary and alternate lit venues. This is because our high frequency, mean reversion fund which operates in this area is more concerned with price rather than volume discovery. At the moment we're achieving the fill performance we require without the additional complexity of seeking additional liquidity. We would seek out dark venues for futures if these were available. As we incubate new trading initiatives, we will be looking to minimize market impact and will likely be targeting that at dark venues.

To what extent do you use execution algorithms? Do you build these in-house or use broker-provided algos? Do you consider the use of execution algorithms to now be an essential part of the trading process and what sort of impact do they have on the overall performance of the fund?

MH: For our trend following fund we make significant use of execution algorithms for both futures and FX, where we feel this is appropriate. Where this isn't the case, we use a combination of internally or externally managed care orders. The current generation of algos are in-house, developed largely because the broker offerings in this area have historically been either non-existent or unconvincing.

In another fund the alpha generation and the execution models are combined into a single package. At present there is a healthy debate within the team about which way we go in terms of extending the asset classes our existing algos deal with, or going with brokers. I would expect that we will end up going with both, if only so we can benchmark our internal





performance. Our main use of algos is to prevent slippage and in this respect they are essential to AUM scalability of the funds we operate. I think that it is fair to say that their absolute effectiveness across all markets and trading conditions when judged against the performance of an internal execution trader is another of those areas of lively internal team debate which keeps everyone on their toes.

How would you describe the separation between the core systematic strategies and the execution strategies run within the systematic team(s)? In some environments they are essentially one in the same i.e. the alpha model itself is little more than a scalping tool, whereas in other environments algorithmic execution tools are a) an overlay to a set of core strategies, and b) for liquidity discovery purposes. Comment.

MH: As you will understand from my previous answer, we currently operate a combined model for one of our funds and an overlay model for the other. As we explore new trading initiatives, we are likely to also use algos for liquidity discovery. I think that the choice here is largely down to Dirk's team (i.e. the research team), but in general I think that the higher the level of market interaction the more likely that we will operate a combined model. For slower running models, where alpha is generated by looking at the macro market, it makes sense to split the handling of the micro market into a separate component in terms of both model and technology.

Have the challenges of dealing with increasingly fragmented markets been adequately compensated by the benefits brought about by competition for volume between venues (reduced transaction costs, price improvement, et cetera)?

MH: In the short term I think that the answer to that question from a buy side perspective has to be no. I think that's largely because the opportunities that are available from an investor perspective are yet to be realized. In the US and Europe these changes seem to be largely supply side driven. In the US existing sell side participants are trying to protect market share. In Europe the process is still immature and may still revert to the prior model of nationally based primary markets. Also the technology platform necessary to exploit the advantages of fragmentation is currently mainly sell side resident which adds additional routing complexity as first you need to pick a broker, then you need to navigate their internal routing policies and then you need to direct their external preferences. In our ideal world we'd make the investment decision in our models at a portfolio level and then interact directly with a small number of electronic liquidity venues to achieve our goals. At the moment there are a number of commercial as well as technical barriers to achieving this, but it is definitely something that we are looking to work towards.

On the topic of regulation, there's a lot of talk at the moment about the need for greater regulation, not just for the banking sector, but also to more closely control the activities of hedge funds. What's your opinion on this and is there a key message you'd like to deliver to the regulators?

DO: I am fully in favour of regulators coming down hard on any dubious or fraudulent activity so as to eliminate any black sheep in the industry. The tricky bit will be to do this while causing minimum negative effects on market efficiency which I see as a cornerstone of overall welfare in a market economy.

MH: Given the size of the current crisis I think that the regulators have their work cut out to identify root causes and provide appropriate safeguards, which is in everybody's interests. I hope that they concentrate on that and don't attempt to impose measures for the sake of political expediency. This approach to regulation tends to be poorly targeted and leads to increased operational complexity for no particular advantage and typically has unexpected side effects. Transparency to investors is one area where I'd see regulation as providing a benefit to all legitimate participants, and is something that we already practise.

LB: As the US Congressional hearing of last November evidenced, hedge funds were not a major contributor to the market disruptions experienced in the last 12 months. Hedge funds deploy a diverse set of strategies and their activity has, in general, increased liquidity and reduced volatility in markets. As such, Hedge Funds are unlikely to cause systemic risk. Hedge funds are by nature nimble, fast moving organisations with an agile clientele that will vote with their feet without very much tolerance for weak performance. In the wake of the crisis, if anything, there will be a requirement for more transparency by hedge funds and that is perfectly acceptable, particularly considering the investor groups demanding it. Here in Bluecrest we are being proactive in offering increased transparency and have a couple of initiatives already in progress that have been well received by our investors.

A couple of "team questions". What qualities do you value most highly in a member of the Bluecrest team, and how do you handle recruitment?

DO: We highly value creativity. This entails the right spirit of passion, openness and trust so as to provide a safe environment for each team member to challenge established solutions.



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MH: We are looking for a combination of technical excellence and experience of working in a front office trading environment. The majority of our technology team have worked either for major investment banks or for one of our significant competitors prior to joining. We typically recruit into the team through a combination of personal contacts and head hunters.

LB: Excellence in the skills they bring to the group, a willingness to challenge and be challenged even in their most set views and a good dose of humbleness – as the world of business has always got some new lesson to teach us!

To finish, if you were to give one piece of advice to an established discretionary fund looking to enter the systematic arena, what would it be?

DO: Don't do it. Discretionary managers invariably underestimate the communication gap between these two worlds. This makes it very hard for a discretionary manager to become fully confident with a systematic approach.

MH: Treat technology as part of your investment process and be prepared to evolve it and the team that supports it as part of your systematic operation.

LB: I often say half jokingly that the "capital sins of systematic trading are excessive assets and manual intervention" – so there: two things to avoid!

