Me and My Machine: The Automated Trader Interview

You go live with your own FX fund in January 2009, and by the year end in January 2010, you're up 33%. If you've got a track record that also includes starting out in model development while still at school, then running an IT company before selling it to go into electronic trading and then high-speed algorithmic FX arbitrage, that makes you interesting.

Larry Levy, our Global Head of Photography and no mean trader himself even after he discovered cameras, went to meet Duncan MacInnes, CEO and head of trading at Xenfin Capital.

Duncan MacInnes

Larry Levy: Perhaps we could start with your personal history.

Duncan MacInnes: I grew up in Kent. I went to school at Chatham Grammar School for boys and I actually met a couple of the people I'm now working with there. I met our developer and a couple of the guys on the FX execution side. I lived with my parents in Kent until I was about 20 and then moved to London where I have been ever since.

Larry Levy: How did you get to where you are now?

Duncan MacInnes: I started using Trade Station when I was at school at 17/18 and traded my own money. I spread betted a lot as well. I've always had an interest in the markets ever since I was a young boy. I had a computer company after I left school, which is where the automation interest came from, but I didn't know whether it would help or not on the trading side because back then all that was really in its infancy.

I took a position as a proprietary trader at First Continental after selling my computer company trading fixed-income curves. At the time, technology was not being used to its potential on the trading floor, a lot of people didn't believe it could help us! At First Continental we started to introduce auto spreaders from TradingTechnologies to help us trade.

From there, I helped set up a retail operation which ranged from CFD's and spread betting to foreign exchange and futures. I also managed an S&P 500 program for clients. A group of us then set up an ultra high frequency FX operation concentrating on FX arbitrage. We were one of the first co-location environments set up in Chicago trading between 2-5% of the CME volume in Euro FX contracts every day. Back then it was a very low latency network, but not so much compared to now. We had one of the lowest latency networks from London to Chicago to New York. We then started to develop our directional models, which is where we are now. We started the motions to getXenfin Capital running last January, and it went into full force around about July/August.

Larry Levy: How long have you been developing your models?

Duncan MacInnes: A lot of it came from when we first started trading at First Continental. It has been a long development curve. A lot of our ideas came from back then. The models that we're running now have been running since January '09, but before that we probably spent about 18 months in model development.

Larry Levy: Please talk us through your performance. What worked and why, what didn't work and why?

Duncan MacInnes: Ever since we first started trading, I've always believed in a shorter term, the intraday micro-trend. Most of our systems run on timeframes from one minute up to the maximum timeframe of 240 minutes. All of our models are price-action based, so we don't use any stochastics, no moving averages and no moving average crossover, divergence, et cetera.

Larry Levy: No indicators at all?

Duncan MacInnes: No it's purely price-action based. We have two models that use a pattern based entry but I would say that's not so much technical analysis. We either use a volatility-based stop or our systems exit based on decreasing volatility.

Xenfin Capital

Xenfin Capital was founded in 2009 by Duncan MacInnes. The company is based in London and uses a systematic model to manage the Cayman-domiciled Xenfin Capital Managed Currency Fund. This offers 'growth' and 'aggressive' [doubled leverage] options – the latter is only available via managed account. The fund actively trades the G5 currency pairs "for their deep liquidity and 24 hour cover". These are: EUR/USD,USD/JPY,EUR/JPY,GBP/USD,USD/CHF. In its first year since going live, the fund delivered a 33% [66% aggressive] return.

Xenfin uses bespoke technology and software from signal generation right through to optimum-price discovery. The web-based back-office and risk system allows the monitoring of trades from anywhere with internet access. Each trade has an inbuilt stop loss that is either volatility-based or range-defined. This is run in the market as soon as a fill confirmation is received for the initial entry. Stop losses can adjust based on volatility and range once a trade has been placed; stops can trail behind market price to lock in positive alpha.

The fund's portfolio is analysed per trade for re-balancing to limit over-exposure to a particular currency pair. Multiple execution venues are streamed into the pricing engine to ensure deep liquidity at all times from multiple counterparties.

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We really play ourselves on our technology edge. All of our systems are 100% automated and we only trade in the FX SPOT markets. The time periods for holding positions are mainly intraday and the average hold period for our trades is 22 hours. We have the occasional trade that can last for just a few minutes or, on the extreme end, a few days at the maximum. We are running between 6-10 trades a day depending on how busy the day is, so it works out at about 110-120 trades per month.

Larry Levy: On the sampling periods for your back testing … can you tell us about that?

Duncan MacInnes: Our development process for models works on a 4-year in-sample period. We then work on a 2-year out-of-sample if it performs in the 4-year. Then we run for 6 months in our live exchange simulator before we actually put any money forward onto it.

Larry Levy: Approximately how many models are you running at any one time?

Duncan MacInnes: We have a basket of about 40 that we can use and we are always developing new models. We have lots sitting in our simulator at the moment. But at the minute we are running 9 across G5.

From left to right: Nick Hocart, Duncan MacInnes, Ian langton and Kieran Martin

Larry Levy: What if a model starts to go wrong?

Duncan MacInnes: That's another key point. Don't panic! You have to believe in a model. We know from our back-test process and the simulated results that we've got a good basket. The tests are there for a reason. They allow us to benchmark our live performance. So as long as the model is performing within its KPIs and within our benchmark parameters there is no reason to change anything. I think that this is a problem a lot of traders have. As soon as they see a model not working for a week or a month, they try and tweak it to fit that specific month's trading, which then obviously doesn't work for the next month.

Larry Levy: Can you give us an example?

Duncan MacInnes: January 2010 wasn't a particularly good month for us or for a lot of systematic funds. They all found it pretty hard, I think. There is always a temptation to sit there and tweak things to make it work in that subset of time. We knew our models were good, our basket was good, and everything was performing in line with expectations. So we just had to sit on our hands, which is what we did, and we are now out of the drawdown.

Key people

Duncan MacInnes

Duncan MacInnes, CEO and Head of Trading, has traded products ranging from index futures to fixed-income arbitrage. After starting in model development while still at school, Duncan started his career as a director of UK-based educational IT provider Insen Group. He moved to a proprietary trading role at First Continental where he was responsible for running a bond arbitrage book.

Having developed custom models for the execution and trading, Duncan made the move into asset management. He joined Twowaymarkets Ltd (TMS Capital Ltd) as a director and also as a manager of a programme trading the S&P 500 for their clients. As part of this role, Duncan designed infrastructure to enable high-speed electronic trading of models. From this, Kineta Trading LLP was born. This was an algorithm-based high frequency FX arbitrage company.

As well as designing and implementing both the key model and infrastructure at Kineta, Duncan also spent time developing models, acting as a partner advising on risk, structuring and general business development. Duncan recruited a long-time friend and trader, Ian Langton, whom he had met at First Continental to help design and implement a directional based FX strategy which would eventually become the Xenfin Managed Currency Fund.

Ian Langton

Ian Langton, Lead Trader, started trading as a hobby while at university. In 2005, he started at First Continental as a proprietary trader on their fixed-income trading floor. Ian became Head Trader for First Continental in their satellite office in Shanghai where he worked for most of 2007. He then left First Continental to return to London and diversify his trading into a new asset class.

Ian joined Kineta Trading LLP, where he was involved with all aspects of FX trading, model development and risk management. Kineta's core methodology was mechanical black box trading in the spot FX market.

It was at Kineta that Ian helped develop and build many algo models for directional trading in spot FX markets. He worked with Duncan MacInnes to design and implement the strategy that became Xenfin.

Kieran Martin

Kieran Martin, Lead Developer, began his research into programming while studying at grammar school. He was employed at a website development company where he worked on complex database and website integration projects for several major London-based financial institutions. During this time Kieran was commissioned by Kineta Trading LLP to implement a high-frequency FOREX model. After later joining Kineta, Kieran went on to spearhead the design of the complex event processing system that would form the base of Xenfin's systems. Kieran has designed Xenfin's signal generation, order management and aggregation systems from the ground up.

Larry Levy: So you stuck with it. Are you sufficiently undergeared?

Duncan MacInnes: I think we use very low gearing. We use a maximum leverage of 5 but as an average of about 2 to 3.

Larry Levy: Do you have maximum drawdown targets?

Duncan MacInnes: Yes we have a company-wide target. A maximum drawdown of 10% on our client funds – we are currently running that at about 7.15%. Compared to the average return over the six-year period of 33% - that includes both live and back-test performances - it is a pretty good risk-to-reward ratio. We also have a hard stop of 5% in the month. So, if we lose more than 5%, we stop trading for that month.

Larry Levy: So there are circuit-breakers in place?

Duncan MacInnes: Yes exactly, but it's never happened in live trading or backtests so hopefully it won't happen!

Larry Levy: Could you tell us about the automated model portfolio process?

Duncan MacInnes: Once we get a model that works in our 4 year in-sample test, 2 year out-of-sample test and 6 month simulation environment, we then like to do our portfolio analysis to see how

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Nick Hocart, business development and CRM

that's going to affect our basket. It's not so much seeing how the model works but how it complements the other models we have running at any one time. We use a product called MSA (Market System Analyser) which allows us to benchmark a portfolio and play around with the curve and see how each sub-model affects the equity curve.

At the minute we have 9 models running but we complete lots of simulations. We run a Monte Carlo analysis of how the basket is going to perform with the subset that we are going to change it to. That's where the only discretionary overlay comes; we decide which models will run together. We have a process where at the end of every quarter we can switch out a model. The only reason we would switch a model is if it starts to underperform against its KPIs or benchmark. We also change it if, quite simply, we have a better model that is outperforming.

Larry Levy: Once you have decided what to do for that quarter, do you just stay with that until the next quarter?

Duncan MacInnes: Yes, it doesn't change for the quarter.

Larry Levy: Does the MSA also help with weightings of the models within the portfolio?

Duncan MacInnes: Yes that's correct.

Larry Levy: Tell us about your objectives. Do they change over time?

Duncan MacInnes: I think the whole market, for investment, has changed in the last couple of years. Certainly when we were running that S&P program all those years ago, it was all about returns. Clients wanted exceptional returns of 60-70% a year and they were quite happy with a 20% drawdown.

Now, with the credit crunch, everyone just wants their money back. It has got to be a play-off, with returns versus drawdown. Previously it was all about the return, but clients just don't want the drawdown risk at the moment. They want the steady 10-15% return with a controlled drawdown. Basically, these days, it's the risk before the return.

Larry Levy: So essentially you are trading the same models just watered down now?

Duncan MacInnes: Yes, that's right.

Larry Levy: What do you trade and why?

Duncan MacInnes: At the moment we trade the G5 Forex, which is spot cash FX only. The reasons are, 1, cash products are very easy to liquidate in all time frames, and 2, the market has got technical performance, and 3, post-Lehman, things need to be easy for the client to understand. I think cash FX has a lot of interest at the moment compared with other asset classes also.

Larry Levy: But are you thinking of branching out from G5 currencies?

Duncan MacInnes: At the minute we have a lot of interest in G10, so we are looking to move into more of the crosses. We hope to bring something online towards the end of this year where we will be trading the full G10. We are also developing a new Index and Fixed Income product with the help of a new addition to our team.

Larry Levy: Interesting. How do current market conditions suit you? What do you expect, and what would you like to see coming up?

Duncan MacInnes: At the minute the market's day-to-day volatility is very low: pre credit crunch figures at the moment. Our models really do survive on volatility, so we would like to see an up-tick there. I don't know when that is going to happen, but hopefully sometime in the next few months.

With regard to the credit crunch, I remember quite vividly some days in September and October '08; that time was our best learning curve. The intraday volatility was just unbelievable. We were seeing the market down 9 cents in a day, but then back up 6 cents by the end of the same day. That really goes back to what I was saying about sitting on our hands at times when what we are seeing is outside the norm, and not panicking. We were seeing our volatility-adjusted stops going to 300 points in a day as opposed to the usual 80-100.

Larry Levy: Tell us about your track record.

Duncan MacInnes: The fund we are running at the minute, we have been running in a proprietary form since January '09 forward. We were running some live trading back in '08 as well. For the results we show for '08 we always say they are a mix of live and back-tested performance. Obviously with our backtest process we have data going back to late 2003 and early '04. From going live in 2009, performance has been audited by Fitzgerald and Law. The fund we run out of Cayman will be audited by BDO Stoy Hayward. With regard to the actual performance of the fund, last year it was 33% on our Growth product.

Larry Levy: So you run two funds, is that correct?

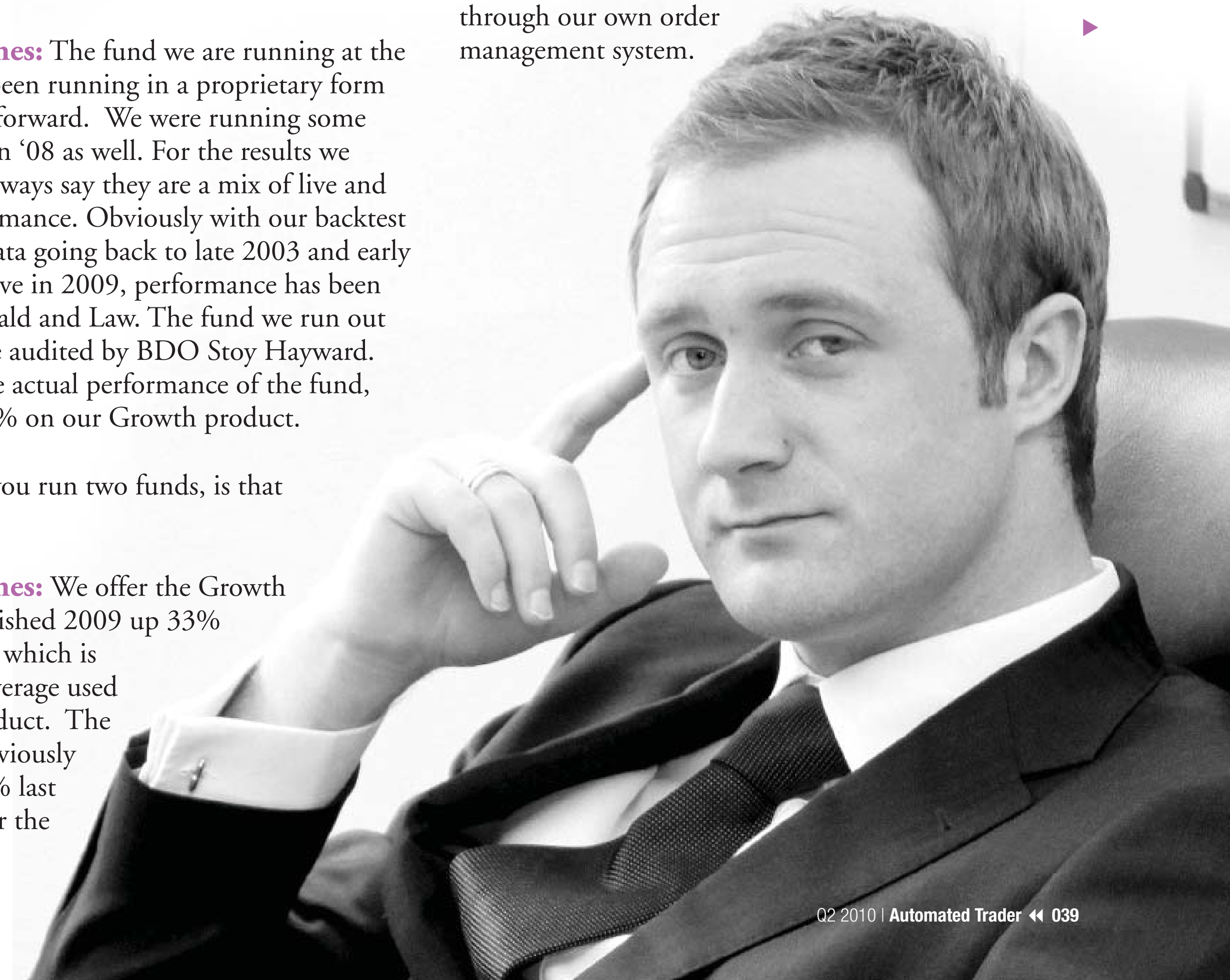
Duncan MacInnes: We offer the Growth product which finished 2009 up 33% and the aggressive which is just double the leverage used in the growth product. The return on that, obviously therefore, was 66% last year. We only offer the aggressive product through a managed account at Cantor Fitzgerald or Rabo Bank, our Cayman fund currently only offers the growth product.

Larry Levy: Tell us about the technology, the "machine" itself, and also about research, development and deployment.

Duncan MacInnes: From the research side, when we develop a new model we always go for a top-down approach and we look at the pair and study the chart. We study the core ideas and try to find a decent entry system first. Then the stop-loss and volatility exit strategies come later.

We have a good feel for what timeframes and what time of day works for each currency pair, so that's where we start. Once we have found our core idea we then ensure we have a fairly decent entry. We have our own proprietary volatility-adjusted stop which we use across most of our models. The reason we use it is that it works very well across all currency pairs and the majority of timeframes.

With regard to the actual development, and for the research side, once we have the core idea, we use Trade Station, as they have a good historical database. That is where we actually strategise our ideas. Once we are happy with that, the new model is then pulled to our own bespoke platform, which runs in Pascal; that runs through our own order management system.



With deployment we run everything from our main data centre, which is located over in London EC1. We've got four Sun x4600s which run everything on there. They are running a flavour of Red Hat Enterprise 5 which is quite heavily customised by us, and that is also running our own Pascal based software. That's doing price aggregation, order management, and the execution algos.

We then have a back-up data centre over at Aldgate which backs up everything, every hour, off site. We also have servers that we can run from our office here in Savile Row. These are running on Sun V60xs. So we have three sites we can run from, in the event of anything falling over, but our main data centre is fully redundant with multiple power supplies and everything replicated. That means double firewalls, double switches, double servers, double internet connections, et cetera.

Larry Levy: Can you discuss the trading approaches and strategies used by the funds? Have these evolved and changed?

Duncan MacInnes: At the minute, everything is intraday micro trend. We do have a couple of mean-reversion models that are in the mix as well. The majority of it is intraday micro trend using pivot points mainly; also using the break out or reaction around those pivot points. We have one description for it and that is: if the market moves in a day then we are going to be on it.

Jerry Miller, head of risk and compliance

Larry Levy: What are your experiences with latency?

Duncan MacInnes: We had a lot of experience with latency back in 2007 when we were working at a high frequency FX arbitrage operation. We were one of the first co-located clients of BT in Chicago. We built a lot of that infrastructure ourselves so we were trading between London, Chicago and New York. For example, we had all of our servers in the East Cermak data centre, Chicago, and we were 1ms into the CME and at the time, 25ms to New York. For 2007, that was pretty good, even though now it's not particularly fast. I think the average now is about 15-16ms to New York. With regards to our transatlantic latency we were running at about 75ms. I'm not so sure of the latency between Chicago and here at the minute as we don't trade that route anymore, but our latency into New York from London is running at about 65ms. We have a direct connection into the main pools.

Larry Levy: You are obviously running a lot of Sun kit. Was that a deliberate decision?

Duncan MacInnes: When we originally started out, we were running a lot of it on off-the-shelf Dell and HP kit. We moved to Sun at the back end of last year. It's not particularly cheap kit and there is a reason for that. It's purely for reliability. I have a lot of experience of Sun kit from a family point of view. My father is an IT director and uses a lot of Sun kit and has always talked about its reliability, so that's why we moved to it. We have been very happy with its performance and reliability.

Larry Levy: What would you say gives you an edge over other firms?

Duncan MacInnes: The main people within the company have all been friends for many years. I've worked with Ian for the last 6-7 years. Kieran I've known since school. We've tried to stay away from a corporate structure and we don't really have a hierarchy. We have 4 people that are on the main business side of it, 2 on the trading (Ian and myself) and we have a full time developer.

The developer basically develops all of our bespoke software such as price aggregation, order management, order execution algorithms and post trade analysis on the performance of the models. We also have Nick who looks after our investor relations. We have another 2 people looking after our risk and compliance but they aren't full time.

I think having no hierarchy has really helped us. We have a lot of discussions about what we are doing and how we are moving forward, but we all have a common goal in that we know where we want to be in a few years' time. We are all pulling in the same direction and everyone is going to get rewarded from the success of the company

Larry Levy: And who owns Xenfin?

Duncan MacInnes: I am the 100% shareholder myself.

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

Duncan MacInnes: [Laughs] I would say we always have a lot of … well, I wouldn't say heated debates, but everyone has their own take on ideas and everyone has their own viewpoints. I think we arrive roughly at the same conclusion and yes, I do think it's creative. Sometimes the developer will come up with some idea that the traders would never have thought of just because he has a completely different take on the environment. I think that is very creative.

Larry Levy: f you were starting out now....what, if anything, would you do differently?

Duncan MacInnes: I think from the business side of things, I would not trust everyone. Unfortunately there are a lot of greedy people in this business. I've certainly learnt over the past few years to believe in the people we have worked with for a long time and the people who believe in what we are doing.

From the perspective of the trading, I don't think we'd have changed too much. The one thing we have learned is really that the quality of the models is more important than the quantity. Sometimes there is this idea that if you create a massive basket of models it helps you. Well, yes it does, but the quality of those models has to be top notch as well.

Larry Levy: Which generic groups do your models fall into? Trend following, mean reversion … does the production set change over time?

Duncan MacInnes: Our main models fall into the trend following, mean reversion, and I guess you could say momentum and pattern recognition groups as well. I know that is quite a broad set but we are always ready to swap in a better model if one is for some reason underperforming, or we just have an improved one. That's really what our development process is every day. If it doesn't have a positive equity curve it's not going to run in the book…simple as that.

Larry Levy: Does any element of discretion ever enter the trading process? If so in what form?

Duncan MacInnes: The short answer is no, we do not have any discretion. The only real discretion we have is which models to run for the next quarter. As I said previously we only swap every quarter. The only reason we would swap at that point is if we have a model that is better performing, or one that is under performing its KPIs.

The only other part of discretion is on the execution side. If we have a weekend carry trade we have a little bit of gap risk on the Sunday night when the market opens. In the first hour between 10GMT and 11GMT liquidity can be a little bit thin in the market, so we sometimes have to intervene to manage the stop ourselves. It's only happened once in the last 18 months.

Larry Levy: Would you say your fund performance reflects the consistent application of a trading strategy or constant change in response to constantly changing market conditions?

Duncan MacInnes: I'm a firm believer in the consistent application of a trading strategy. We've completed our backtest and we have a fairly good conviction it's going to work going forward. So we are going to apply it going forward as long as it still performs to its benchmarks and KPIs. The only change we made to one of our models was last November. That was to a Sterling model which used to start trading quite early on in the Tokyo session on a Sunday night. We realised that, around that time, liquidity is thin in the market, so if we were going to raise more assets, we weren't going to be able to trade that model in its current guise. We actually found that moving the entry 4 hours later made no real difference to the model.

Larry Levy: How does your process work and what part does technology play in that?

Duncan MacInnes: For us, technology is everything. We use technology very heavily in the way our fund works. We have a target of 10% drawdown. Everything that we do, all of our benchmarks and all of the portfolio testing we run has to sit within that 10% drawdown for us to be happy.

Larry Levy: Is that maximum drawdown?

Duncan MacInnes: Yes that's maximum drawdown. We use volatility-based stops and they are constantly adjusted. They are adjusted just as the trade goes on. As soon as the signal is triggered it works out what the current volatility is. So we don't adjust that daily or weekly; it is actually per trade. With post trade we have our own STP post trade system which brings in all of the trade information. It's web based, bespoke and it allows us to match our KPIs in our real time performance with our tested performance and we can see if we are outperforming.

Larry Levy: How does your real time performance compare with your tested performance?

Duncan MacInnes: That's quite a big process in our backtesting. We always over egg our slippage and over egg our cost of trading to ensure we still have a positive curve and a positive system in that period. We actually out perform in our live performance which is obviously critical for us.

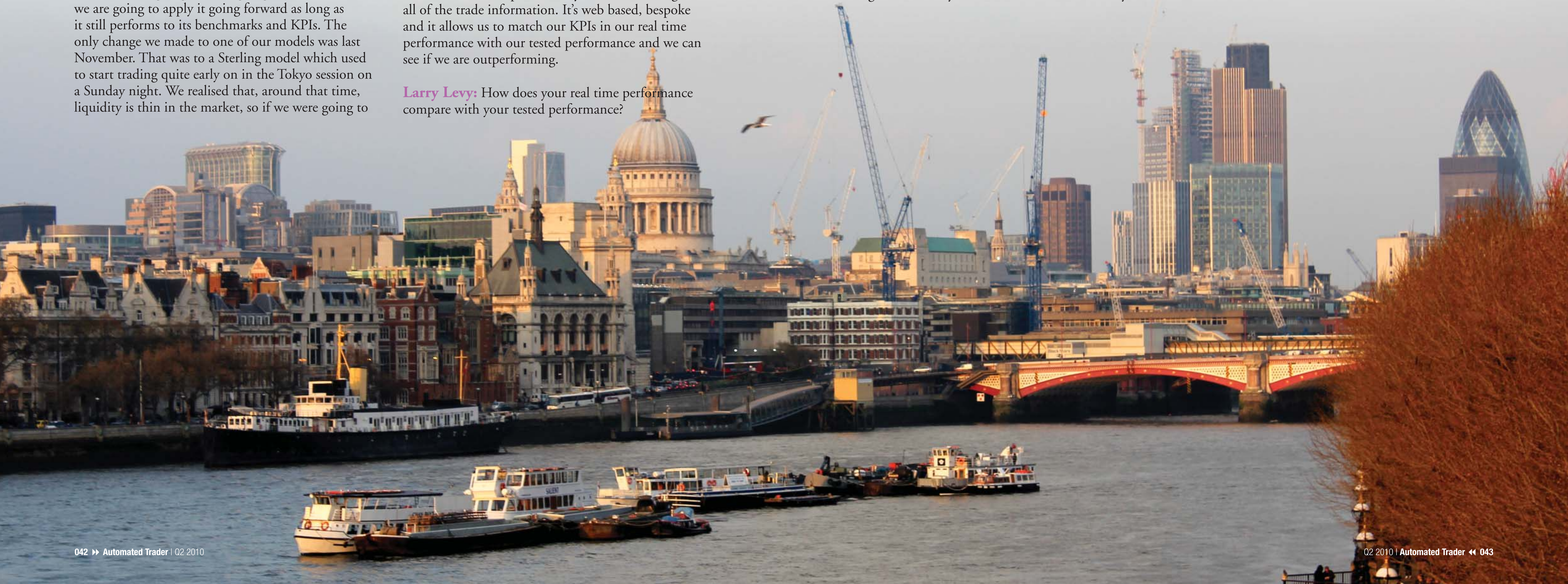
Larry Levy: On which trading platforms are you most active and how do you identify liquidity?

Duncan MacInnes: We are currently using our mark 1 aggregator which we have had going for just over 18 months. It's currently trading into Currenex, Lava and Hotspot, and it is all aggregated. With regard to identifying liquidity, we have our own XWAP which allows us to construct a price across multiple venues for the size we need to get done. It also allows us to haircut liquidity at certain venues based on our ongoing performance, et cetera. In development, we are now building our own super pool rather than going to a third party ECN to do it".

Larry Levy: To what extent are you using execution algorithms? Do you build these in house or do you use broker provider algos? Do you consider the use of execution algorithms to now be an essential part of the trading process? What sort of impact do they have on the overall impact on the fund?

Duncan MacInnes: We build everything in house. We feel that is better because then we have complete control over everything from endpoint to endpoint. It's becoming more and more important considering the assets under management we have. As we all know it's very different doing a 5 million Euro/Dollar trade from a $50 million trade. On EUR/USD, currently with our aggregated liquidity, we are seeing sub one pip for 5 million and with a 50 trade we can get it done in just over a pip depending on the time of day. Generally on execution for $50 million we can get it done in about 300ms.

Larry Levy: Do you think dealing with increasingly fragmented markets has been adequately compensated by the benefits brought about by competition for volume between venues?



Duncan MacInnes: I think with FX it's always been a fragmented market anyway. FX has gone from being fragmented to now there being only a few good venues to go to for the pricing. We've always believed in having the aggregated model, that's key for us. We have always had a fairly deep book. Although we take into account transaction cost, the main thing for us is the price improvement. We don't mind paying if one venue is an extra 6 dollars per million than another, but we are getting a price improvement of a pip. So yes, the price improvement is more critical to us, and getting the price improvement is all about getting more venues streaming into us. That's really where the technology adds the maximum value to our business, and that's on the execution side.

Larry Levy: You currently have $15 million under management. With around a 15 month live track record do you find this relatively short live period is a clear impediment to raising funds?

Duncan MacInnes: Yes and no. I think we knew it would be really hard at first. We had our own money that we were running and we knew we had to get our track record up. Most of our clients at the moment are private individuals and we are currently talking to a number of institutions as well. Generally their requirements are a minimum of 18 months to 2 years track record and $50 million assets under management, so that's really what we are working towards. The thing going for us at the moment is FX as an asset class. It has got a lot of press at the minute and it is an easy asset to understand. It's very simple. That's appealing in the current climate, and we have fairly low drawdowns, and are systematic.

Larry Levy: There is a lot of talk at the minute about the need for greater regulation, not just for the banking sector but also to control more closely the activities of hedge funds. What is your opinion on this and is there a key message you would like to deliver to the regulators?

Duncan MacInnes: The FSA has always taken a hands-off approach. I think they should take a more hands-on approach to regulation. I think the larger institutions were left alone and trusted for too long. Obviously the resulting credit crunch has made the market more difficult for everyone. We've all been tarnished with the same brush even though we trade on simple products, but we still get asked the same questions that should be asked if you were trading a credit fund for example. It's really shaken global confidence. It would be nice to see the regulator become more active and understand the risk in the larger institutions and certainly in the more complex products.

Larry Levy: What qualities do you value most highly in a member of the team?

Duncan MacInnes: There is pretty much one quality we look for and that is being smart, having an ounce of common sense helps also. This clearly includes being trustworthy. We are a very close knit team and have known each other for a long time and I think that really helps. Being smart is our number one though.

Larry Levy: Where and how do you – or would you - find people?

Duncan MacInnes: We don't really recruit. We've always wanted to remain a small company and any people we would look to employ normally come through word of mouth. We are speaking to a couple of people at the minute that may be interested in coming to join us.

Larry Levy: How frequently do you get a trade idea and what happens when you do?

Duncan MacInnes: We literally get new ideas every day which are then fed into our development process. We never just trade from an idea ad lib.

Larry Levy: This can be a difficult business can't it?

Duncan MacInnes: Yes, exceptionally. Also it can be an incredibly expensive business to get into for sure. You are always trying to prove other people wrong and prove that you are worth doing business with.

Larry Levy: Any regrets?

Duncan MacInnes: No I don't think so. I may have done things differently over the years but I am immensely proud of what we have put together here. Obviously everyone learns from their mistakes and I think that is what helps you improve. Having a good number of mistakes under your belt is what helps you improve and build a stronger business.

Larry Levy: It must be difficult to put a value on your own work?

Duncan MacInnes: It is exceptionally hard to value the company. We've been asked it a few times and I don't know really. I guess like all companies the value is really in our potential earnings in the future and the implementation we are putting in. It is very hard to put a value on it.

Larry Levy: Do you have eureka moments and if so what was your last one?

Duncan MacInnes: I wouldn't say we have massive moments. It's more of a gradual process where we get an idea we like and we look at it a bit more. It may become a eureka moment after time. For example, our developer came up with something the other day which we hadn't thought about from a trading point of view. The idea may allow us to save or make an extra pip or two per trade which over the year could really help our performance.

Larry Levy: What trade algorithms do you use for trade execution?

Duncan MacInnes: At the minute we have our own price aggregation system that brings in Lava, Hotspot and Currenex. From the point that a signal is generated on our actual signal generation system, it hits our OMS first. It then pumps the order into our aggregator which will then decide the best venue or multiple venues to send the order to. It can split the trade across three venues, for example. That's all done in our data centre.

It then goes across high speed lines to the States where the actual venues are located. Once a trade has been executed there it is STP'd back to us in London and also on to our prime broker as well. That's Rabo Bank with the fund, and Cantor Fitzgerald for the proprietary and managed accounts. We also use Deutsche Bank. That's really the whole process from signal generation through to confirmation to us. It all gets displayed in a real-time back-office application we developed ourselves so we know the exact position of the company at any venue at any one time.

Larry Levy: Your fund is not regulated in the UK even though you are in the UK.

Duncan MacInnes: Yes. Basically we have a Cayman fund which was actually only set up this year, but 80% of the global hedge funds are located in Cayman. There is no reason for it not to be there. We are also putting together a UCITS III product. We are coming onshore with that, and that will be in Dublin. The benefit with that is that we can attract smaller units as low as 1,000 Euros compared to our Cayman fund which is a minimum of $50,000. Obviously MiFID allows EU marketing possibilities, and we hope that to come online at the end of Q2 or early Q3 this year.

Larry Levy: Duncan MacInnes, thank you very much.