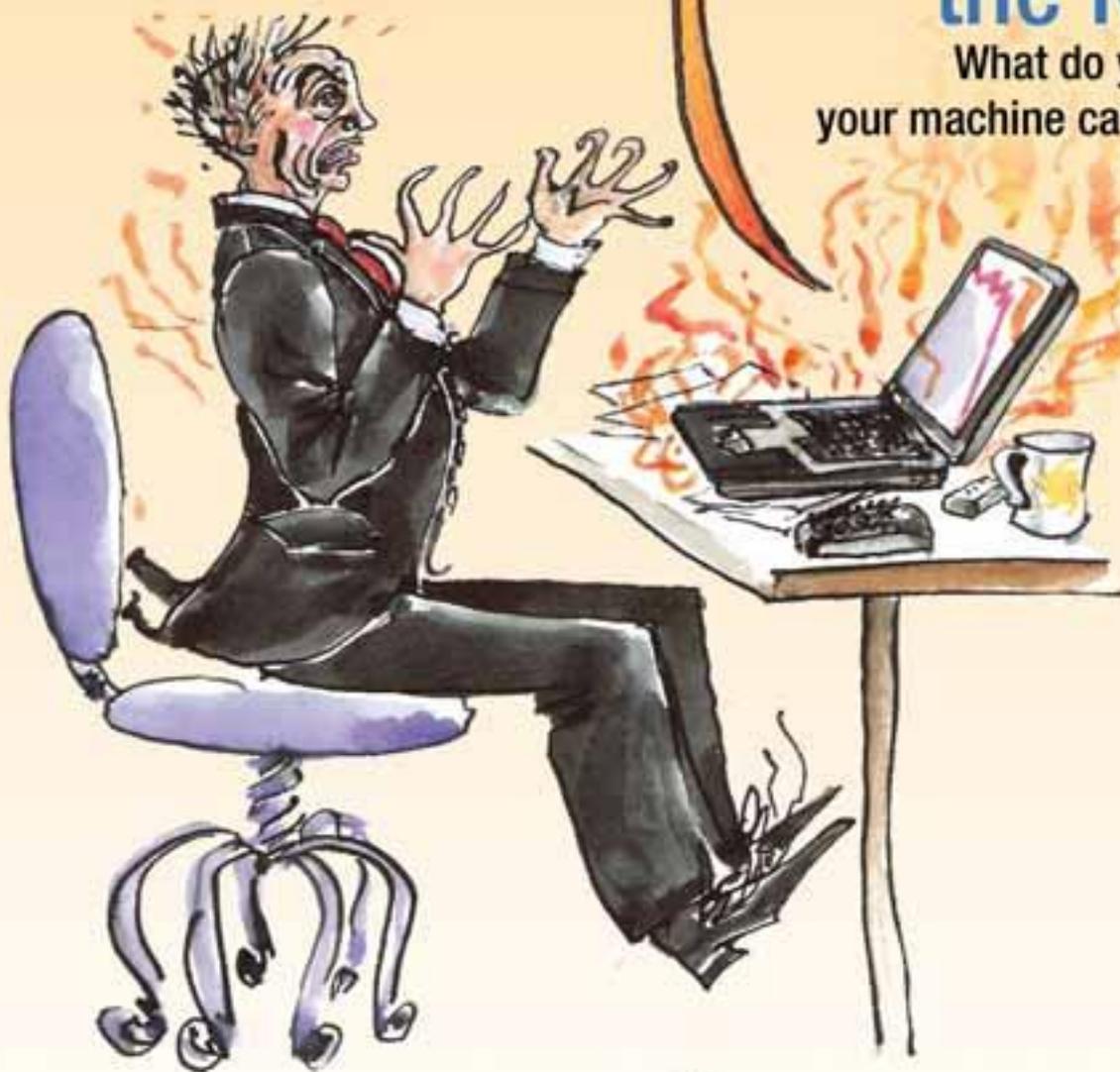


Automated Trader

THE GATEWAY TO AUTOMATED AND ALGORITHMIC TRADING

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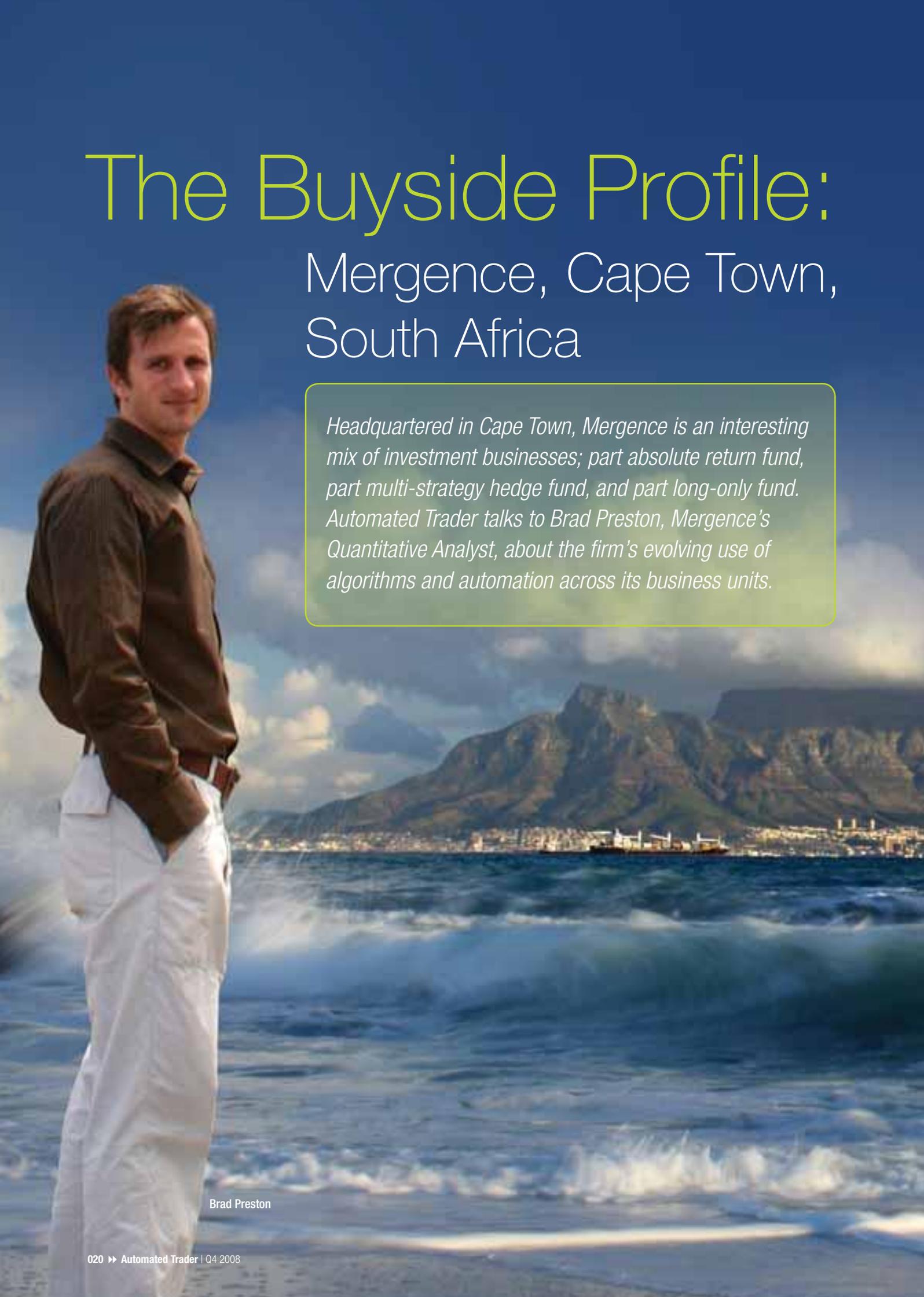
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A man in a brown shirt and white pants stands on a beach, looking towards the camera. The background features a blue sky, white waves, and a mountain range under a cloudy sky.

The Buyside Profile:

Mergence, Cape Town, South Africa

Headquartered in Cape Town, Mergence is an interesting mix of investment businesses; part absolute return fund, part multi-strategy hedge fund, and part long-only fund. Automated Trader talks to Brad Preston, Mergence's Quantitative Analyst, about the firm's evolving use of algorithms and automation across its business units.

Brad Preston

How are Mergence's various businesses arranged?

Our absolute return fund is offered and regulated locally and has some ZAR2.3bn under management. This does not use gearing and makes use of option strategies and tactical asset allocation to create its return profile. We also have a long-only fund that has about ZAR600mn under management and a multi-strategy hedge fund of similar size.

I suppose in the local market we would be regarded as a small or boutique player. Our team consists of seven investment professionals who share duties across trade execution and investment decisions.

As regards order execution, we split the business into two sides - long only and alternative investments (which includes the hedge and absolute return funds). I generally look after execution on the alternative investment side, but nobody really has a dedicated role in this respect.

What markets do you trade? And how do you decide which stocks you will trade manually or with execution algorithms?

We mainly focus on domestic equities. As regards algorithms, at present we only use these for trading the most liquid stocks in our investment universe.

Do you use multiple providers for execution algorithms?

Yes, we use several brokers for execution of cash equities, but two in particular. There is a reasonable choice, as all the large banks/broker dealers have operations here and some have joint ventures with local broking firms.

We mainly use algos developed by the larger international brokers. As you might expect, it makes a difference to us if the algos in question are also being used by a sellside trading desk where we have a good relationship. Since we are relatively new to algorithmic order execution, it is valuable for us to be able to discuss the use of an algo with a trader who already has first-hand experience of using it.

Is the local market well supplied as regards algorithms?

The local market is pretty active in terms of algorithm providers. Apart from the large banks/dealers, there is ►



a local software development company called Peresys. It has a lot of trading products in this space and is developing its own execution algorithms, as well as some in conjunction with a local bank. The objective is that they will be able to offer a suite of products to local brokers that cannot or do not wish to develop their own algorithms for end clients or in house use.

Is it your perception that there is a very wide performance difference between various algos?

I think the main difference we notice is the degree of customisation and flexibility. The vanilla algos seem to be much of a muchness, but beyond these - where you are for instance able to specify how you want the algo to trade given certain price/volume scenarios – there are certainly differentiating factors and benefits for us as end users. In addition, our focus has mostly been on using algorithms as a process improvement tool rather than for their relative ability to produce a few extra basis points in terms of order execution.

Having said that, we haven't as yet accumulated sufficient algo trade volume to be able to generate a robust statistical analysis of the performance of the various algorithms. Nevertheless, I've been surprised at how few people have come in and presented statistical justification for the claimed performance of their algorithms. Not many appear to offer you an algorithm and some serious post trade

analysis tools, which you would logically expect them to do if they thought their algorithms were better than everybody else's.

Do you find vanilla algorithms are sufficient for most of your trading needs?

Algorithmic trading is still a steadily growing part of our flow, so we are to a certain extent feeling our way. As a result we have mostly tended to stick to using fairly vanilla algorithms on liquid stocks. If we think there will be a liquidity issue, or a trade will be challenging for some other reason, then we will still FIX-route it through to a dealer desk. We tend to take the approach that if a dealer desk was going to put a trade of ours through a vanilla algo and charge us for the privilege, then we might as well put it through that algo ourselves!

Do you use algorithms for all your funds and how do you see your usage of them evolving?

Yes, the execution process is pretty similar across all our funds. One of the most interesting areas for us is how we might integrate algorithms into our workflow to increase efficiency. For instance, how we might FIX-route pre-defined orders through to algorithms and generate individual trades automatically. That could be a big advantage for us going forward if we needed to do a large number of relatively small trades as part of some model-based rebalancing. The ability



Fabian De Beer, Asset Allocation and Strategy (left),
Brad Preston, Quantitative Analyst (middle),
Luis Levy, Executive Director, Asset Management (right),
Dirk Steyn, Risk Manager (back)

to generate those orders and read them directly into an algorithm or set of algorithms would be very helpful.

Another area where this sort of capability would assist us significantly would be in the automated execution of profit targets and stop losses. As well as helping to enforce trading discipline, this would also be far more efficient than manually calculating and executing these orders. And obviously in these currently rather volatile times, the improved workflow and speed of handling these tasks in this way would reduce slippage substantially. Finally, the risk management process would be streamlined, as the risk manager would no longer have to waste time looking at individual position stop losses.

Would you therefore say that the cost, process and risk management opportunities inherent in using execution algorithms were more important than the possibility of improved execution?

I suppose you could summarise our approach by saying that while we would obviously value any price execution advantages from using algorithms, we would probably value the potential workflow and process improvements even more.



Chuma Mfeketho, Business Development Manager (back)
Masimo-a-badimo Magerman, Managing Director (front)

I think that attitude is to some extent driven by the type of investors we are. Although we have a strong quantitative element to our work, we still have a primarily long-term, fundamental and macro (in the style rather than geographic sense) bias. Therefore we are primarily interested in spending our time in developing our processes and business so that we can extract an extra 10 or 15% from our good trades. So our attitude to algorithms is mostly driven by operational considerations and how we might turn a traditional execution business into something more efficient.

How would you describe your general approach to trading?

We are probably pretty conservative and given our size we don't often end up in situations where we represent a large percentage of the volume traded. So we haven't really seen much performance difference with algorithms, because we haven't really had cause to push them to the limit.

It is easy to run into liquidity issues outside the top 50 or 60 stocks in the South African market. Under those circumstances algorithms become quite noticeable; if there are only one or two regular players in a stock and an algorithm starts trading it's usually pretty obvious. The extent to which they can take advantage of that is less clear, but from our perspective we would want to avoid that situation anyway. We certainly wouldn't be using an algorithm in a stock where we would be competing with a human trader on the other side.

You mentioned a quantitative element to your investment process earlier; how is that implemented?



We use quantitative models in conjunction with our fundamental analysis for filtering, validation and support. What we call quantitative is often very fundamentally driven in terms of reasoning and is primarily intended to remove some subjective elements or biases in the process. For instance, we run quite a few detailed evaluation models where we try to automate the process of performing company valuations.

So there is in effect a quantitative and qualitative crossover and blend; a qualitative fundamental strategy that is validated by a historical quantitative test to confirm whether or not the basic fundamental strategy is truly predictive and also how its performance changes over time.

With your multi-strategy fund is your quantitative work mainly focused on directional trading, or is there a relative value or statistical arbitrage element?

Much of our work is directional in the multi-strategy fund, but given the broad set of skills in the group, we will consider pretty much any strategy type and asset category for inclusion. Our approach has been quite opportunistic and dynamic in that we haven't set up the fund with a set number of specific strategies that we always use. In that respect it is very unconstrained and thus flexible.

For example, we do reasonable volume in equity derivatives. Much of that is for hedging purposes, but it means that we are in frequent contact with the market, so if we do see interesting volatility plays we will take advantage. (The portfolio manager of the fund has a background in volatility trading, which also helps.)

We are similarly flexible regarding the assets we trade in the fund; while we do a lot in equities, if a strategy flags up something in fixed income, we'll certainly take a look.

If you already have that quantitative element to your investment process - do you see this expanding? Is there the possibility that Mergence will offer a completely automated strategy in the future?

It is certainly a possibility that we may run a more automated/model driven strategy within our current multi strategy approach in the future. There is definitely the potential now that we have a suitable design and testing infrastructure in place, because we are able to conduct back-testing and refinement to the extent where we may feel comfortable running them as stand-alone strategies.

It is essentially a case of promoting models that are contributors to the investment process rather than making them the investment decision process in their own right. I think if we went down this route, our timeframe would probably be shorter than our existing trades, but I doubt it would become truly high frequency.

If we did implement an automated strategy then the use of execution algorithms would make a lot of sense. On the one hand, execution costs are such a major factor in any high turnover strategy. On the other, using algorithms would allow us to maximise the efficient use of existing resources.



Kim Hill, Office Manager (left)
Masimo-a-badimo Magerman (right)

You mentioned your design and testing infrastructure; what does that consist of?

Virtually all the tools and applications we use were developed in-house using C#. This includes a middle office portfolio system, as well as general administration and operations applications. The operations application has been designed to facilitate integration and STP with prime brokers and fund administrators.

Rather than using an off the shelf package on the modelling side, we have opted to write our own models and libraries. We have developed a robust back-testing environment and database which allows us to research new trading strategies or signals, as well as optimise our valuation and tactical asset allocation models. When we don't feel like reinventing the statistical wheel we are able to write C# wrappers around routines from the open source R project. We have built a lot of reusable libraries over the years and are keen exponents of object orientation. Among other things, this has allowed us to tightly integrate our portfolios and models – particularly as regards risk management.

What about your FIX engine?

We use the Perseys FIX engine, which is enabled for algorithms and several providers are able to accept algorithmic messages through the engine complete with parameters. We have developed our own FIX EMS front end that integrates into our middle office systems.

We are incorporating algorithms into our front end through FIXatdl. When a trade is added to the order management system we will be able to select whether to send it to a broker or straight to an algorithm. For that technology to function smoothly and be scalable requires FIXatdl and we are currently completing our implementation and testing of that.

Once this project is completed, I think it will make a very significant difference to the way we use algorithms as part of our trading process. The immediate operational advantage would be that we could conduct all our trading from within one order/execution management system rather than having to use a variety of different platforms from the various algo providers we use. Having to use multiple platforms makes things

that much harder for us in terms of booking trades, to say nothing of the operational risks of switching platforms and muddling up keystrokes. As far as we are concerned, anything that reduces human involvement in booking trades is beneficial; when you are trading, your mind is focused, but once the market closes and the admin has to be done...?

Your absolute return fund uses derivative protection; do you only use listed products for this?

We have used OTC products in the past but generally we try and stick with listed derivatives and are active users of index futures. South Africa has quite a well-developed listed derivatives market, but apart from indices it is not liquid on the screen. At the margins there is an OTC market that is booked on the Johannesburg Stock Exchange, which is putting a lot of work into developing that market. The exchange has just developed a new trading platform and released the API and protocols to the market so participants and vendors can develop interfaces and auto/algo execution will be possible. As yet, trades are not being matched on screen, but that is certainly the objective.

Finally, what is your view on the distinction between agency only brokers and broker-dealers in South Africa as regards trade confidentiality?

I think it is something that is always in the back of our minds, but we tend to take each case on its merits. We try to use a relatively small pool of brokers and to develop a quality of relationship where we don't have to worry about those sorts of issues. Incidentally, I don't think that is so much of an issue with regard to algorithms anyway. It can be much more of an issue if you are picking up the phone and revealing that you need to move a big line of illiquid stock.