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Exploring the infinite ways in which technology is shaping investment management

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1.1 INTERVIEW

How technology can solve complexity in the foreign exchange (FX) market

Interviewer

David Grana,
Head of North American Media, Clear Path Analysis

Interviewee

Ron Klipstein,
Head, FX E-Commerce, Northern Trust

SUMMARY

- *The FX market trades $5 trillion per day*
- *Algorithms give traders a concise rules-driven approach to FX trading*
- *Most large banks started getting into the algorithm market in 2011*
- *Large banks with access to credit have an edge in the algorithm market*
- *Speed to market, sophistication and customization are keys to being competitive in this market*

David Grana: How big is the FX market?

Ron Klipstein: The FX market is around $5 trillion. The spot and outright forwards portion of the market is between $1.7 trillion and $2 trillion. The rest is a combination of swaps and options.

David: What part of that $5 trillion do you focus on and how do you help your clients?

Ron: We focus on the $1.7 trillion to $2 trillion that is traded via spot and forwards. I would say that 15%-20% of that $1.7 trillion traded daily is transacted via execution algorithms, and our focus is on this roughly $300 billion of daily transactions executed via algorithms. I am referring to client execution algorithms, as opposed to alpha generating algorithms used by high frequency trading or hedge fund firms. This volume is spread out among the 10 or so banks who offer client execution algorithms. These execution algorithms are used by buy-side participants, such as investment managers, corporate clients, pension funds and hedge funds.

Our clients enjoy the benefits from our execution algos, such as: the ability to transact with the best price in our deep liquidity panel, a systematic method of entering the market, and reduced market impact.

David: What advantage do these algorithms give currency buyers in the market?

Ron: Algorithms give buyers a clear and concise rules-driven approach to execution in most cases. We ensure that the transactions are transparent to the client. The trades are executed with minimal market impact. This rules-based approach tends to be done more effectively by an algorithm versus a human trader. There is definitely still a need for human traders in the market, in regards to timing of trades and judging liquidity and direction of the market. The algos become a tool for the traders, almost an extension of their process and capabilities.

David: Is this algorithm a type of artificial intelligence (AI)?

Ron: I would say no, not yet. Some algorithms in the marketplace do incorporate elements of artificial intelligence, though the majority of them are still very rules driven. Some algo providers are experimenting with neural nets or decision/logic trees, which fall under the AI umbrella. But by and large, the market is not there yet.

David: How long have algorithms existed in this market?

Ron: I was trading alpha-generating algorithms in the spot market in 2004-05 for an electronic market maker. I believe that Deutsche Bank was the first to come out with an FX algorithm for clients around

2006, followed by Credit Suisse around 2007, and then Citibank in 2010. It was by 2011 when the majority of the larger banks started getting into the algorithms space.

David: What is the minimum trade size that you would suggest an organization have in order to require an algorithm?

Ron: For G10 currencies, $10 million and above is a good number for an algorithm, although you could probably get away with $5 million and still see some utility out of it. With some emerging markets you may be able to get some edge at $2.5 million to $5 million. Anything below these figures would be counterproductive.

David: What differentiates one company's algorithm from another?

Ron: There are companies who offer algorithms but don't have any credit backing or relationship. They have to go through a prime broker to get credit. Essentially, their whole business becomes dependent on that prime broker, which involves a lot of work for the client as well. Large banks, on the other hand, have the credit and technology. On this front, technology, relationships, standing in the market, and credit are the differentiators.

David: What puts Northern Trust in a unique position in this market?

Ron: For starters, we've been around for over 100 years. We originally offered foreign exchange out of necessity for our clients and have grown from there. We have a great reputation in the market, and long standing relationships with our counterparties. We have evolved to a place where we can trade with all of the larger flow banks, even though they don't necessarily trade with each other. Northern Trust and these larger banks see each other as true partners. We provide services to them and vice versa. For example, they may have equity clearing that they do with us, and we provide back office services for some of their clients, so it is very entwined.

David: What is the key to staying competitive in this space?

Ron: One of the things that has helped us come from relative obscurity in the FX space to having such a sophisticated offering involves a partnership with a fintech company in Chicago called BEx, which is short for best execution. They are a former high frequency market maker in the FX space. Northern Trust has made an investment in BEx and is their exclusive client, by design. BEx offers increased efficiency and enhanced transparency analytics through customized trade execution.

The other piece is speed to market, as well as diversification and customization. Northern Trust's FX Services group has the ability to quickly customize algos according to our clients' needs. We have even created bespoke algos to fit the specific needs and design of a client. We have been able come up with some pretty novel solutions in a short amount of time.

David: Thank you for sharing your views on this topic.

> “SOME ALGORITHMS IN THE MARKETPLACE DO INCORPORATE ELEMENTS OF ARTIFICIAL INTELLIGENCE, THOUGH THE MAJORITY OF THEM ARE STILL VERY RULES-DRIVEN”

3.1 INTERVIEW

What does Artificial Intelligence (AI) bring to the table for asset management?

Interviewer

David Grana,
Head of North American Media, Clear Path Analysis

Interviewee

Paul Fahey,
Head of Insurance Solutions, Americas, Northern Trust

SUMMARY

- *AI and humans can work together for better results*
- *Robotics are already a part of the asset management industry*
- *Using AI can reduce the number of errors that exist in a human environment*
- *Implementing AI allows asset managers to focus more on value-add activities*

David Grana: What is artificial intelligence (AI)?

Paul Fahey: The commonly accepted understanding of AI covers 3 areas and they increase in both complexity and value as you go through them. The first is robotics process automation (RPA). RPA takes a repetitive task that humans do today and does it better and faster. The next is machine learning which advances on RPA by spotting trends in the activity and processes and begins to suggest potential next steps based on historical activity and decisions. The more complex and more evolved AI is where computers and robotics understand and behave like humans. At this stage, machines start to understand data flow and make decisions based on historical learning or education. IBM claims that Watson's capabilities derive from how well the machine is "taught" on a particular subject and its decision making and insights improve with every experience it learns.

David: Can AI displace the existing workforce?

Paul: There is no shortage of "Man versus Machine" stories doing the rounds. I instead view AI as "augmented intelligence". We are going to see humans and machines working side by side more effectively. This will create a more efficient work environment and will allow our human workforce to focus on more value-added output. Assuming we can get there, we are still some time away from AI effectively replicating what people do today from a more holistic knowledge perspective. But people and AI working together can deliver better results. I do feel that there are activities and jobs that people do today that they will not be doing in the future, just like there are jobs that people used to do which are now done by machines. What we do we see is greater productivity coming out of the broad workforce that is both human and machine. There is a Kevin Kelly (futurist) quote that I like and gives hope to the future where machines play a bigger role: "...humans everywhere are extremely adaptable and ready to improve their lot."

David: How does AI fit into the asset management industry?

Paul: We are already experiencing a broad application of robotics in the asset management industry. It is still in the early stages, but we are seeing more common usage of robotics across a number of firms. Roboadvisors seems to be the obvious example and it will be interesting to see how this evolves within the industry from a client impact and regulatory oversight perspective.

More broadly, we are seeing robotics impact the end-to-end process. Reconciliations was an activity primed for automation, particularly the reconciliations between asset managers and their brokers and custodians. Previously, certain reconciliation processes had been automated with technology, but supported by manual effort and some offline spreadsheets. We are seeing robotics filling the gaps, rather than having humans do all of the manual work improving both accuracy and timeliness of these reconciliations. The business result is that there is better, more timely information for the asset managers to work with.

It was recently commented that when we automate bad processes, we don't make ourselves smarter, but just dumber faster. To avoid

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this, people are looking at improving the processes, rather than just automating them and having a robot do an inefficient process 100 times faster.

David: Can operational errors occur with AI, and can it be controlled or prevented?

Paul: Anyone who has used technology would answer that with an emphatic yes, there can be errors. There could be the proverbial computer glitch or something else, but what we have seen on the robotics side is that each robot has an identity within the infrastructure, so you actually see the audit trail around the activity. Even though it is a robotic process, each activity is tagged with a user ID, so the error is more quickly identified. The control environment is different, but you are reducing the number of errors that occur when a human is involved.

David: Why is AI important for the future of the asset management industry?

Paul: A workforce that combines AI and human activity will deliver greater value to the clients. It will do this from simple robotics, where you can be more efficient in how you do some of those "mundane" tasks. This will allow asset management and asset servicers to focus their people on value-add activities that require real industry acumen. Ultimately, the beneficiaries will be a more efficient cost model delivering value to the end client.

David: What does the future hold for AI?

Paul: Given the conversation that we are having with clients today, and that you see in some of the literature that is being produced, we as an industry are certainly in the early stages of this technology. People are interacting with AI on a daily basis. Often times, this is unbeknownst to them. Just think about when people speak to SIRI on their iPhones or Alexa on the Amazon Echo. These are both forms of AI. And even though we are still in the early stages, the part that is fascinating to me is the speed with which it is changing. It is going to be interesting how it evolves and the only thing that I know for sure is that it is going to continue to evolve rapidly with every passing day.

David: Thank you for sharing your thoughts on this topic.

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