

## Transcript

# THE ARTFUL TRADER

## Episode 8: Can AI outperform the raw art of trading with Graham O'Brien

Michael McCarthy: What does the future look like? Will robots replace the trader? Can artificial intelligence outperform the raw art form of trading?

Graham O'Brien: I'm not concerned machines will push humans out of the market, because the market is still a personal thing. It's not a computer that's running a company listed on the ASX, it's directors running that company.

Michael McCarthy: Today we talk to Graham O'Brien, an equity derivatives and training education expert, who witnessed the technical revolution from the trading floor to the high tech landscape of today. He's excited about new technology, but doubts robots will replace actual human traders just yet.

Hi, and welcome to The Artful Trader. I'm Michael McCarthy, the Chief Market Strategist at CMC Markets Asia Pacific. In each episode we'll hear the highs and lows from the trading expertise and discover their journey to mastering the art of the financial markets. Today we welcome Graham O'Brien, Senior Manager Equity Derivatives at the Australian Stock Exchange in Sydney. Graham and I worked together on the trading floor 20 years ago. He was putting the orders in on behalf of the clients, and I was making the prices. Then Graham moved to the ASX where he has been for 17 years. Now he's an education expert holding some of the best attended seminars for investors. Graham started work when there was still a trading floor in Sydney. He has witnessed the transition to computer screens, and now algorithmic and high frequency trading. Joining me in Sydney, Graham O'Brien.

Welcome to The Artful Trader Graham.

Graham O'Brien: Cheers. Thank you.

Michael McCarthy: Trading has changed a lot over the past few years. You started out on the floor just as computers were first being introduced. Can you describe the change?

Graham O'Brien: Yeah. So the old trading floor, we still had paper on the floor. People used to come in with their paper order pads, and get the phone call from the office up in Bridge Street, or wherever else it might have been in Sydney, and take the order down to the trading floor with paper. We used to then on the floor have a computer sitting in front of us that we'd punch it into a computer system to then make

it into the electronic world. So how far we've come. Now you don't even need paper. When you've got an order coming through someone enters the order via the internet, it comes straight to market. So markets have changed. But we used to have a bit of fun back then too didn't we?

Michael McCarthy: I deny it all Graham, I was never there. But that is a huge change. I mean there's not even a huge trading floor anymore is there?

Graham O'Brien: No, that's correct. Everything is done electronic now in the Australian marketplace. So now an order is taken from one person, spoken to another person on the trading floor to see who could get the best price. A computer system determines who was in first, and who should get priority on orders in the marketplace.

Michael McCarthy: What does that mean for you? How has the world changed for you because of that?

Graham O'Brien: Over the years I've had to adapt myself. So the old trading floor was much more personable. You had to understand the people from other trading firms, understand their idiosyncrasies, get to know them. Because if you were friends then they might actually give you a better price on the order as well. Where today it's a computer screen. There's no face to the name. It's a number on a screen. It's whoever has the best price gets the deal first. There's none of those friendships that we used to have on the floor, it's now just a price on a screen.

Michael McCarthy: It's true isn't it, the trading community generally is much more fractured now, isn't it?

Graham O'Brien: Definitely. You used to find that if there were Christmas drinks, for instance, at the end of a year, we all used to get together as a trading community. Now it's held within our trading firm, and we're competitors against each other now, as opposed to one trading community often.

Michael McCarthy: I always call to mind that old Warner Brothers cartoon with the sheepdog and the wolf. Ralph and his...

Graham O'Brien: I can't remember. I think I was the Ralph, and you were the sheepdog.

Michael McCarthy: I was the wolf trying to steal the sheep, yeah, and you were the shepard keeping them safe. But at the end of the day they both clocked off. Night Ralph, night Sam. It was like that. On the floor we were against each other's interests, we often were in conflict. But as soon as that bell rang it was all over, it was time to duck off, and have a chat, and possibly a beer or two.

Graham O'Brien: You're exactly right. You were often finding that people were changing between firms as well. So for one day I'm a competitor, and the next day

I'm working with you. So it was definitely something, you needed to keep everyone in mind when you were on the old trading floor.

Michael McCarthy: Absolutely. All right. Moving back to the technology that underpins the market now. The idea appears to be that algorithms do a lot of the grunt work in the market now. Could you tell us some of the ways that our firms, and hedge funds, market makers employ algorithms in their daily trading?

Graham O'Brien: Certainly. So if I make a comparison to the old trading floor to what's occurring now. So you had maybe five people for your trading firm that could execute all of the orders for your entire firm over the trading day. So you didn't have as many hands that could get orders onto the marketplace into a pit on the old trading floor. These days with computers I can have thousands and thousands of orders coming in each minute to the marketplace. So algorithms are actually speeding up that process of clients orders being able to come to the market. So I might have a very large order to say do 100,000 BHP over the day. I want to ensure that my client gets a fair price throughout the day, which is something around a volume weighted average price, or an average price on the day itself. An algorithm can help me by placing it into that algorithm, and ensuring that the client is dealing that order throughout the day, at periodic periods during the day without someone having to physically look at that order all day long. So an algorithm in the simplest form actually allows for large orders to be executed much more cleanly for the client in the marketplace.

Michael McCarthy: So algorithms can be used to [? 06:04] client orders, but of course there are other groups that use algorithms. Market makers are a group that you've had a fair bit to do with.

Graham O'Brien: Market makers these days, programmers almost telling a computer what algorithm they want to be trading in a marketplace. So especially in options markets for instance, it can be quite a complicated algorithm to determine the price at which they want to be trading in a marketplace. So they're the ones inputting into a computer system the rules that they want to be following when they're trading in a marketplace. The algorithm just follows those rules. So effectively you've still got a human sitting behind the program who might be programming into it. However the computer system itself is the one that's then driving the orders into the marketplace. With that in mind it actually makes it much faster for a market maker to have orders come to market as a result of that algorithm. I haven't got my clock in my brain ticking over, and determining at what price I want to be trading at. The system will automatically perform those calculations for them.

Michael McCarthy: So the robots haven't actually taken over, they're working for the traders.

Graham O'Brien: Yeah. Definitely. A lot of the times the algorithms are only as good as the person that has actually programmed the algorithm itself. The person sitting behind it is the one that is still ultimately determining the direction of which way that algorithm goes.

Michael McCarthy: So what happens when an algorithm goes wrong?

Graham O'Brien: We've seen a few instances, especially in the Australian market, of some algorithms going wrong. I can recall a time when someone was actually testing. So they weren't even supposed to be putting orders into the live physical marketplace, they were just testing a new algorithm. But they actually linked through to the live market as opposed to the test market, and they sent a stock from \$70 all the way down to five cents in a matter of 30 seconds. So when algorithms go wrong, they can go extremely wrong. These days it's actually a very hefty financial penalty for the person who makes things go wrong. So the amount of times it happens these days is much more remote than when we might have been testing these systems four, five, six years ago.

Michael McCarthy: So the increase in speed helps with profitability, but can also hurt.

Graham O'Brien: Definitely. We can go back to the flash crash we heard about in the United States, and algorithms jumping over each other to push the market further down. It all comes down to that programming of the algorithm. If it's not programmed correctly it can have implications on the marketplace.

Michael McCarthy: Graham, could you lay out for us the difference between algorithmic trading and some of the other terms we've been throwing around, like high frequency trading

Graham O'Brien: When I look at it from my perspective I see algorithmic trading as a way that can take a large order, split it up, and make it easier to be dealt in the marketplace itself. So it could be as simple as an algorithm is a stop-loss order. So I have got a stop-loss in the marketplace. The algorithm is triggering my stop loss when the market gets down to a certain level. So that's one of the simplest forms of algorithms that we see in the market. When we start getting across to the high frequency trading, we're starting to look at systems that are trying to make profits out of anomalies that might be occurring in the marketplace. So inefficiencies where a stop might be priced at a different price on one exchange to another. Or high frequency trading to try and beat the guy alongside me to the first price on the screen in an auctions market. So algorithms I see as helping us. High frequency traders as making money for the people who have developed them.

Michael McCarthy: So there are firms too of course that are in the business for profit and profit alone. You've worked with these groups as well. Is it an arms race in technology?

Graham O'Brien: So we're kind of getting into the high frequency traders when we're starting to think about these guys that are arms race that are purely there to make profits out of activities in the marketplace. Often that comes about from when you have more than one exchange that's offering pricing on an equities market. There can often be areas where one exchange is priced at a better point than another exchange, and those high frequency traders are trying to take advantage of those anomalies that are occurring in the market. So a simple example would be I've got a stock on one exchange being \$20 bid, and a stock on another exchange being \$21 bid, so one cent higher. I might be able to very quickly sell that \$20.01, buy back at \$20 on the other exchange, and make a one cent profit out of that trade. That's what I'm trying to do as a high frequency trader. So speed is the ultimate tool that I need to try and jump everyone else to get to that order.

Michael McCarthy: So clearly electronic signals take time. It's measured in milliseconds or microseconds rather than seconds, but nonetheless it takes time. How can the playing field be leveled?

Graham O'Brien: One of the things that the exchanges have done, and it's one thing that the regulator in Australia has really had time to be able to look at. Through seeing what happened in other markets, they've been able to see that if we've got an arms race, and one person having faster access to another person, it's not necessarily a fair playing field. So I know at the Australian Stock Exchange for instance, there's wires that run through the roof of the liquidity center, which is where all of the exchange's computer systems sit. So even if I might have the computer rack, or systems sitting right next door to the exchange's engine, the line that runs in from my computers to the exchange runs through the roof. So we ensure that every single line in that liquidity center is exactly the same length. So you might have 150 different computers sitting in the one center, but everyone has exactly the same length line, because the length of the line means that I can actually have a microsecond advantage of someone else.

Michael McCarthy: Wow.

Graham O'Brien: It's down to micromillimeters to ensure they're the same length.

Michael McCarthy: So these stories about there being cable running around and around the building to even things up are true?

Graham O'Brien: That is correct. There are cables running around and around on the roof. I don't know how some of the technology guys will deal with cables. I have trouble at home when I'm looking at extension cords, not to mention the roof of the exchange.

Michael McCarthy: So where are we at? How sophisticated is the technology now?

Graham O'Brien: It's sophisticated. From algorithms all the way through to the high frequency systems, we've moved from six, seven years ago where a trading desk in Australia still might have had five or six people still entering orders on behalf of clients on a regular institutional trading desk. We're down in some firms to only two people entering orders on behalf of clients now, and the computers have taken over the role of the four other people. The reason that has occurred is the algorithms have gotten smarter over time, that they're no longer making errors when the market moves against someone in the marketplace. So they're getting much smarter in understanding movements in marketplaces. They'll continue to evolve over time as well. We'll see what we've seen five years ago. We thought we would never get to the stage where we are today. I'm sure in five years time algorithms will be even more important to traders in the market.

Michael McCarthy: Ultimately though will it lead to such efficiency that there's no longer a profit in it for these firms?

Graham O'Brien: Whenever there is difference in pricing, there is always going to be an opportunity for profits. I don't think we're going to get to a stage in a marketplace where every single exchange that's offering a product over HP for instance will be all exactly the same price. Whenever there's a difference between prices between exchanges, there's an opportunity to make profit, and there will still be systems that will take advantage of that profit.

Michael McCarthy: What do we have to fear from technology?

Graham O'Brien: I don't think there's too much to fear from technology. I think what we need to fear is what's being programmed into that technology. We're selecting brokers, and especially we look at fund managers, people who are managing all of our superannuation money in Australia here anyway. They are managing a whole bunch of money. They select a broker off the back of who's programming often into those algorithms, and they pick the algorithm that works the best for them. So what we need to fear is someone not getting that algorithm right into the future.

Michael McCarthy: It's the errors.

Graham O'Brien: It's the errors that I would be worried about. Yes.

Michael McCarthy: There is a lot of fear around technology. Why do you think that is?

Graham O'Brien: I think there's a fear around technology because people feel as though they don't have control. I think that's what it comes down to. If I'm a regular investor coming into the Australian market, or a regular trader, how do I know I have control of that system that's handling my order in the marketplace? What we need to be given some surety about anyway is investors is well how safe is that system? Can anyone actually get into that system from a security point of view, and get my details

out of that system? That's something people are always concerned about. Second to that, can someone inadvertently amend my order, and take it away from where I was wanting to trade? Can these algorithms all of a sudden trigger a stop-loss, which I've now been triggered, and I have to exit out of a position. I think that's what people are mainly concerned about. However there are balances and checks made not only at the exchanges, but at the regulators, to ensure that the systems are acting fairly for their clients. So there is always a policeman checking on even the algorithms that the clients are exposed to when they're entering orders with their brokers.

Michael McCarthy: So Graham, we've been asking all of our guests about the best and the worst. So is there a best algorithm, or a best trading system that you've seen?

Graham O'Brien: If I was to look at the best trading system that I've seen in the marketplace, I'm almost going back to the old trading floor days, and looking at when we first moved onto screen trading. The best system I saw was developed by Credit Suisse way back then, or I think it was PG into capital even back then as well. So Credit Suisse brought their person who was programming their system. So we're moving from a floor traded market to a screen traded market. They actually brought the programmer down onto the trading floor, and made him actually market make. Similar to what you were doing back then. An actual programmer who had no idea about how to make markets. But he was the one programming their system, so they brought him down for a few weeks. Automatically when we moved from a floor to a screen traded market they had the edge over everyone else, because the actual programmer understood what the market makers were doing. So it was almost back to not the best system, but the best adoption of the technology way back then.

Michael McCarthy: Good process.

Graham O'Brien: Yeah it was. I think that will continue going forward. When you see university students coming through, we see market makers, or high frequency traders looking for the brightest and the smartest university students with the greatest grades. Might be engineers, might be computer analysts within those firms. The ones that understand the business are the ones that are always going to perform the best.

Michael McCarthy: I know what your view on this is Graham, but a study last year found that high frequency traders who are more in tune with their own bodies, who could hear their own heartbeats, had more profitable trades, and lasted longer in the industry. Have you noticed that yourself?

Graham O'Brien: Yeah, definitely. It's something where if they understand the business they're involved in rather than just programming a computer to try and take advantage of buy at this price, and sell at that price. Understanding the anomalies that are occurring in the Australian market versus other markets, have definitely

been more profitable. I've seen market makers, for instance, in an options market come to the Australian market. Traditionally Australia is a low volatile environment in our equities markets where I'll come from the United States, which is a much higher volatile market from time to time. I'll see our volatility levels and think, it's so light, we just have to buy volatility all day long. They're the first ones that are back trading in America again, because you need to understand the intricacies of each individual market, as opposed to just what you're used to elsewhere around the world. The majority of new entrants we're seeing into this market haven't been created as new in Australia, they're coming from overseas. So we're seeing new entrants from Israel of all places. Very smart, high frequency trading firms in Israel looking to Australia to try and provide their systems to our market. We have enough liquidity, and want to try and make some money out of the Australian market as well.

Michael McCarthy: So the Australian market is becoming more international.

Graham O'Brien: It definitely is. Coupling with our equities market is our interest rate markets in Australia. Our government bond market has an interest rate yield, unlike many other countries around the world. So there's an interest rate market from a futures perspective that has a yield curve that people can try and trade off the back of. So a lot of these high frequency traders may not be dipping their toes into equities markets, they're dipping their toes into fixed income markets with very large liquidity, testing their systems out, and then rolling them across the equities markets as well.

Michael McCarthy: It's a bit of an anomaly, in that Australia is about one and a half percent of global GDP, but it's counted as the sixth most traded in the world. You've just highlighted liquidity we have in markets. Why is that?

Graham O'Brien: So we have liquidity in markets from an equities perspective really because of our superannuation saving scheme. We have a fantastic constant pool of money coming to our equities market as a result of our nine percent from every Australian, their wages being taken off into superannuation. So there's a wall of money coming into superannuation all the time. Often the first place that goes to is the Australian market. We're starting to see diversification elsewhere around the world. But our equities markets are ranked much higher from turnover and activity just because of that rule. From a currency perspective, it's definitely around interest rates. We have so many international sovereign entities, even into international fund manager, looking to our interest rate markets, buying government bonds in Australia, because they're getting a better return at the government bond rate here in Australia than they are elsewhere around the world. How do they buy government bonds? Well the government isn't going to accept US dollar, or others at times, they're going to have to have Australian dollars to buy those government bonds. So we have a currency where they have to convert their local currency into Australian currency to be able to trade in that particular market.



Michael McCarthy: Thinking about the components of that technology. For example, at the moment behavioral finance is a hot topic. Are you seeing that turning up in the algorithmic approaches?

Graham O'Brien: We're probably a little bit behind at this stage in Australia. I think if you looked in the overseas markets, behavioral finance would definitely be starting to be employed within those algorithms. I'm not seeing it as much within the Australian market. If we're thinking from a behavioral science perspective, we still have a couple of, we call them designated trading representatives in our market. We still have a couple of them in each and every trading firm. They're the ones that can see little anomalies that might be occurring in different stocks. So they'll take the order out of the algorithm, and then they'll operate that order themselves. So we still have some human intervention in Australia that's often trying to take advantage, or trying to accommodate for that behavioral science. But I can see that changing over time definitely.

Michael McCarthy: So Graham, we learn a lot from international markets. How does that apply in Australia?

Graham O'Brien: So we've learned a lot. We've been able to be second [21:19] in this space from learning what has happened overseas. I know in the United States for instance, they would have an area, and it would be just a warehouse building where the exchanges in the United States house their computer systems. What you'll find is that there will be all of these high rise buildings all the way around the exchange's liquidity center, or their center where they host those computers. Then there will be microwaves, or microwave singles sitting on top of towers surrounding the exchange's building. Whoever has the most direct signal from a microwave perspective to the exchange's center, has the fastest speed of getting their order into the exchange's system. So it's just crazy.

So people are actually selling roof space in the United States. A building that they knew was a direct angle to the exchange for a high frequency trading firm to have the fastest possible speed into the exchange. In Australia we don't allow any microwave signals coming into the exchange's centers. So we've learned from those mistakes of we don't want to have all of a sudden around Gore Hill, which is where the Australian, where we house systems at the ASX anyway. We don't want all these high rise buildings going around, Royal North Shore Hospital and the like having microwave signals sitting on top.

Michael McCarthy: Absolutely not.

Graham O'Brien: Then hence also, exchanges would sell the rack sitting right alongside the exchange's system for a premium. So all of a sudden you've got competition, and people actually auctioning off actual positioning of their computer system within the exchange's center. You don't want that from a [fanners]

perspective anyway, so whoever pays the most gets the fastest speed. You want a level playing field. That's what we've learned for Australia.

Michael McCarthy: These are the second move advantages.

Graham O'Brien: Correct.

Michael McCarthy: Could the flash crash happen here?

Graham O'Brien: So the flash crash to this extent can't happen here. We have limits within our system now that doesn't allow orders to be coming into our market beyond a certain limit of the marketplace itself. So we always look to the last trade, and something can't jump significantly away from where the last trade was anymore in the Australian market. We call them this, we love our little acronyms in Australia anyway. We call them AOTs, or anomalous order thresholds. Effectively no one can put an order significantly away from the last sale in the Australian market anymore. So we can see a market slowly move down from one price jumping over another as the market is falling, but we can't see a flash crash where it jumps from an index level of 5,700 points to the next second moving to 4,700 points. So once again, regulators looked at what has happened overseas, and implemented these fixes for the Australian market to ensure it can't happen here.

Michael McCarthy: One of our previous guests, Linda Raschke, says there's a lot more noise in the markets now with high speed algos firing off every second. How do the humans and the robots coexist? How can traders ignore this noise, and not get distracted by it?

Graham O'Brien: So it all depends as a trader, or as an investor, what am I wanting to get out of this marketplace? So if I look at investors first, I'm buying and selling shares over a long term period of time. The noise around a price changing every millisecond on the screen, from one cent to two cents, back to one cent, back to two cents, I'm not concerned about that noise. My philosophy is I'm looking at the long term proposition of that particular company, or that particular commodity that I'm buying in the marketplace. So I shouldn't be concerned about that noise whatsoever. The price I want to get set at is the price I want to get set at, and I'll trade out of it later on. For those of us that are more frequent traders in the marketplace, costs are starting to come down for individual investors in the marketplace.

So we're starting to see where you're buying and selling start to tighten up. I still don't think the noise that we're seeing, someone moving from one cent to two cents, I shouldn't be listening to that noise. Because even the costs I have now, I still want a stock, or an index, or a commodity to be moving three, four, and five cents before I'm going to be able to take my profits from the marketplace. What I need to be mindful of though is when I have a stop loss level within my systems. Because any trade that occurs as a result of these very noisy markets of one and two cent movements may trigger my stop-loss. So I need to probably have a little bit more

thought around my stop-losses than maybe my order entry. You're not going to beat an algorithm into a marketplace by me sitting at home, and pressing a button to try and get an order into the marketplace. But remember, I'm taking a view of where I think a stock will move. An algorithm isn't taking a view of where a stock will move, it's taking a view of, well I want to try and buy at this price, and sell immediately this price on another exchange. So it's not taking a view of where the stock will move often.

Michael McCarthy: Right. So it's quite possible both parties to a trade could profit from it.

Graham O'Brien: That's exactly right. You're spot on.

Michael McCarthy: What does the future look like Graham?

Graham O'Brien: I think the future will continue to evolve. We'll start seeing algorithms being developed further from where they are today. There are still some anomalies we see within algorithms in the marketplace. We'll see a stock on an open one day significantly rally up on the open, and then fall away the next day. Some algorithms will think, all of a sudden I need to start following that trend, and it has only been a one day trend. I think the algorithms will start looking at more of a historical view of what's occurring in the market, and they'll become a lot smoother in their performance against what in the market is occurring. That's where the evolution, I can't see a host of new algorithms. It will be tweaks to the new ones in the short term. Then, as you mentioned before, maybe the behavioral science activity that we're starting to see off shore will start coming into algorithms on shore.

Michael McCarthy: Graham, we're using a lot of technology. The markets are a lot faster than they used to be. Are we any smarter than we were 20 years ago?

Graham O'Brien: We're definitely more efficient. The amount of orders and trades that are occurring on the exchanges markets today are 100 times what we saw 10 and 15 years ago. So we're much more efficient with the orders that are occurring in the marketplace. But the smartness still sits at predicting where the market will be moving in the future. The same way we were predicting markets back 10, 15 years ago hasn't changed today. We still have analysts that get markets wrong. I think the stocks will buy, and fall significantly. So I think that part won't change. But the efficiency of the way a marketplace has definitely changed, and will continue to improve in the future.

Michael McCarthy: Are we near the limits of the improvements technology can bring to markets?

Graham O'Brien: I don't think so. I think if we look at where we were five and ten years ago, we never would have thought we would be at that space today. I think if we look five and ten years into the future, we'll be even more advanced into the

future itself. I think there's no limits as to how far technology can take a marketplace, and take the efficiency of a market as well.

Michael McCarthy: But you're not concerned the machines will push humans out of the market?

Graham O'Brien: I'm not concerned machines will push humans out of the market, because the market is still a personal thing. It's not a computer that's running a company listed on the ASX, it's directors running that company. We still need to have some personal connection with that company to determine whether we want to buy or sell that company itself. In the long term people aren't trading in and out of stocks to make profits everywhere around the world. In the majority of people's trading it's about long term capital appreciation they're looking for. So it's still a human that needs to understand what another human is doing. From a trading perspective, obviously trading will continue to evolve, and computers will take over more of the trading of the marketplace itself. A human will still make the decision of whether to buy or sell.

Michael McCarthy: Right. Somebody still has to write the algorithm.

Graham O'Brien: That's exactly right.

Michael McCarthy: So do you have any concerns that machines will become self aware?

Graham O'Brien: Look, I think machines are already becoming self aware in being able to evolve their algorithm. So I can see what's occurring in the marketplace from day to day, the dynamics of the market are changing. So I need to evolve my algorithm to more meet what's occurring in the marketplace. Artificial intelligence as to this is the stock I must pick, as opposed to this other stock, I don't think we're there at this stage, and I think we'll be a long way off from that particular perspective. But deciding on whether to buy or sell at this particular time on a stock, I think we're starting to move along those lines.

Michael McCarthy: You've highlighted what is exactly the key conundrum for markets, and that is predicting the future. Clearly none of us can do that with accuracy. What's a good track record in predicting the future?

Graham O'Brien: More [? 30:08] than lasers.

Michael McCarthy: 51 percent is enough?

Graham O'Brien: It's one of those that 51 percent isn't enough. It's keeping the winners running, and shutting down the losers faster I think, which is more important when we're coming to the prediction. So I know I have an options background, for instance, and there's an options trading strategy, which is a sold straddle. 90 percent of the time that strategy is going to work for a client. So from a predictive penalty

perspective, that sounds fantastic. Five percent of the time you're going to lose a fair bit of money. Two percent of the time you're going to lose a whole bunch of money. Then one percent of the time you're not only going to lose your money, you're going to lose your house, your car, and probably your wife as well. So it's about letting the winners run, and ensuring the losers are stopping. A person that is able to get that right is the person I'd want to follow in a marketplace.

Michael McCarthy: So discipline remains a key part of this.

Graham O'Brien: Discipline is very important, yes. We've got a high frequency trading system. We've got systems that institutions are using. What we're seeing is the evolution of moving into the private client space. So we have traders, and obviously investors in that private clients space. It's systems that are helping them in making decisions. So it's all about improved charting tools, it's all about improved monitoring tools for my self managed super fund. That's where the evolution is really happening in Australia, is the improved tools. For the clients to be able to arm themselves with making decisions, rather than having to rely on someone else.

Michael McCarthy: So individual investor and traders are playing catch up with the institutions and the funds that used to dominate this area?

Graham O'Brien: You're spot on. So the amount of money that's flowing into those superannuation funds is starting to be held onto by the clients now. So they need the tools to be able to make those decisions. They're asking for that from their brokers, and the system paraders in the market.

Michael McCarthy: Clearly they make a contribution in terms of liquidity in return for that access to potential profit.

Graham O'Brien: You're 100 percent right. Without high frequency traders, we don't have an options market that operates, because we don't have prices that clients can buy or sell at. Without high frequency traders, we're not going to see as much liquidity in the equities market as well. There has been a host of studies done by the regulator in Australia that shows that markets are more efficient, and they're actually more liquid as a result of those high frequency traders coming to market. They're not the bad guys. Although if I've just been jumped over on an order I'll think they're the bad guy every time.

Michael McCarthy: Yes. Depending on how you [? 32:40] the day they're not the bad guys. But they do play a vital role in the market. That's often not well understood in the broader investing public, is it?

Graham O'Brien: No. You're exactly right. Especially in [? 32:55] markets without these high frequency traders or liquidity providers, I like to refer them to more than high frequency traders. We can't operate markets, and we don't get decent prices to be able to buy or sell in the marketplace.

Michael McCarthy: Graham, it has been fun. Thank you very much. Cheers.

Graham O'Brien: Thank you very much. Thanks for having me along today.

Michael McCarthy: That was Graham O'Brien. For a special blog post by Graham looking at the future of the industry, go to our website [theartfultraderpodcast.com](http://theartfultraderpodcast.com), where podcast listeners, as well as new and existing clients can also access some limited time offers. The Artful Trader is an original podcast series by CMC Markets, a global leader in online trading. To stay up to date with new episodes, subscribe now on your podcast app. Please be sure to share it with your friends, and leave us a rating. Thanks for listening. I'm Michael McCarthy, and this is The Artful Trader.