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## listeningin

# Swinging The Pendulum

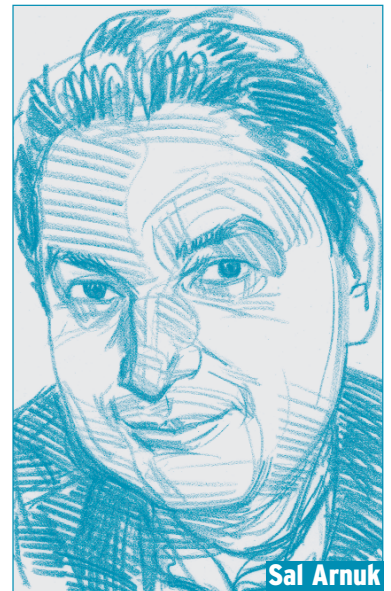
*Themis Trading Detects Shifting Institutional, Regulatory Attitudes On HFT*

The fellows sketched nearby are **Joe Saluzzi** and **Sal Arnuk**, who run institutional trading boutique, **Themis Trading**, in Chatham, NJ., to pay the bills but whose passion is trying to right an equity market microstructure that they say has tipped precariously against institutional investors and corporate issuers in the last half decade. The implementation of Reg NMS, combined with rapid technological and quantitative innovation in high frequency trading systems, the pair have been contending for several years, on their blog and in hearings in Washington, have been destroying the trust necessary for the market, and capitalism, to function.

We first interviewed Sal and Joe last June, in the immediate aftermath of the May 6 Flash Crash. At that juncture, they were among the very few on the Street who had the license plate of the runaway semi that had just crushed the market, however briefly – and were willing to talk about it. Even if, frankly, they weren't terribly confident it would ever be brought under control. With the recent release of a report from a star-studded Flash Crash advisory panel to the CFTC and SEC, not to mention announcement of the NYSE's plan to learn German, the time



Joe Saluzzi



Sal Arnuk

was ripe to check back with them, and we found them in decidedly better spirits. Listen in.

KMW

**I take it you guys aren't big fans of NYSE Euronext's (NYSE) plan to merge with Deutsche Börse AG? (DB1:GR)**

**Sal Arnuk:** Early on the morning that was announced, I was supposed to go on TV to talk about it, but I got bumped by **Sen. Charles Schumer**, which is no fun. Worse, he didn't really say anything; just came out and basically said, "I want to make sure the name, "New York" comes first." It evidently doesn't matter how many people are fired or what else the proposed merger does. Look at New Jersey, where we both live. We really cater to the exchange

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**Victor Juhasz**  
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data centers in this state, to *all* the data centers. What is that doing for the taxpayer?

**I only know that the reported \$350,000 annual property tax bill the NYSE pays on its 400,000 square foot Mahway facility is one sweet deal. I pay \$20,000 on an old house in New Jersey with a footprint that isn't even 1/100th that size.**

**Sal:** Well, we've been told that Homeland Security considers Mahwah critical infrastructure, but we haven't been able to ferret out any information on specific outlays from government budgets – you need to be a special breed of attorney to read those documents.

**Joe Saluzzi:** They keep a lot of that stuff secret. We did confirm that it's classified as critical infrastructure, though.

**Sal:** Which is why people who have toured Mahwah report seeing armed guards.

**So they must have had to hire at least a few people to babysit the computers.**

**Joe:** Fifty, in total, when the place is at full staff.

**Sal:** But it could be the first- or second-largest user of electricity in the state; it's set up for something like 28 megawatts.

**Joe:** Financial data centers, as a group, have become the state's largest users of electricity, bigger than Newark Airport, there are so many of them. And they just keep building more and more. I saw recently that **Equinix** (EQIX) is planning a new one here.

**I would think they'd all be considered critical infrastructure, after 9/11, although anonymous data crunching sites scattered around New Jersey – and practically everywhere else on the globe – hardly pack the symbolic punch that 30 Broad**

**Street at least used to.**

**Joe:** Absolutely. But how do you take down an economy? You mess with the markets. Throw a few flash crashes in there and people are going to be nervous. It could happen. What's concerning lately is all the computer glitches that we've been seeing at the exchanges. In Milan, there was one recently. There was one on the **London Stock Exchange** (LSE) again. We had one on **Nasdaq OMX** (NDAQ) not long ago. More and more, it's happening and it almost appears people are probing, kind of sniffing. Maybe it's not a security threat of the sort where they are going bomb an exchange, but they are trying to

get in through some hack. The way everything is intertwined, if you see any sort of blip, traders take flight. That's what probably is going to cause the next flash crash. It's not going to be a news event, it's going to be a technical problem in the market. Maybe there's going to be an index that goes wrong, causing all of the HFT guys' books to get out of whack. Making them unhedged.

**And unhinged?**

**Joe:** Exactly. Go back to January 28th; everybody thought the markets sold off because of the unrest in Egypt. But no. On January 28th, Nasdaq was not distributing their **Nasdaq 100 index**

(NDX) for the first 40 minutes of trading. So people were unhedged. If you look at the volumes, there was a large spike on the Q's [**PowerShares Global Market ETF** (QQQQ)] on the opening and then all of a sudden at 9:40 am, when the Nasdaq told everybody they weren't distributing the NDX index on which the Q's are based, the Q's dumped out; they ultimately cancelled all the trades in the NDX and MNX [mini-NDX] options that went on in that first hour.

**Sal:** Because when there's uncertainty in the

**Joe: "The way everything is intertwined, if you see any sort of blip, traders take flight. That's what probably is going to cause the next flash crash. It's not going to be a news event, it's going to be a technical problem in the market."**

correlation game and in the quality of the data, the HFTs shut down; just clear out of positions.

### **But there's always uncertainty in the markets –**

**Sal:** But not uncertainty in the data feeds. That, they can't tolerate.

**Joe:** They'll even match the two kinds of feeds. They watch the consolidated feed next to their direct data feeds, and anytime there's a data discrepancy –

**Sal:** They drop out. In both of the CFTC/SEC reports on the May 6 flash crash, they talk about it. But the second report, which just came out, is much more detailed. The HFTs definitely focus on data uncertainty; that's what the regulators are afraid of. What they've said now is that we have to make sure that the data is robust because when the data is not robust, the HFTs are going to drop out. Some people have contended that the market is *more* robust now because you don't have one exchange, you have many exchanges. You can trade in many places. But *no, no, no, no*.

### **Fragmentation of market centers doesn't make trading more robust?**

**Sal:** Not with the markets so interconnected as well as fragmented. It's like chipping a vase that then shatters into tiny pieces. When one piece is gone, the structural integrity of the vase is gone. If one piece of the market goes, everything shuts down. It's a *fragile* infrastructure.

**Joe:** Right. And like we've talked about before, the HFT guys generate the majority of the volume. When that majority of the volume shuts down, and then the poor schmoe – the long-onlys or whatever – look to sell, there isn't anybody there. That happened on May 6th, when the **Waddell & Reed** (WDR) algo was out, there was no volume left because the HFTs were all shutting down. And the internalizers, who are 20% of the volume now, also walk away when



things get hairy, because they don't need to be in there. We've been noticing that in times of market stress, you see a whole lot fewer .999 prints than you see during a very flat day.

### **Fewer .999 prints?**

**Joe:** Yes. Those are the internalization prints. It's the internalizers who give you those sub-penny trades.

**Sal:** Or the .001 prints.

**Joe:** In this latest CFTC-SEC Advisory Committee report [“*Recommendations Regarding Regulatory Responses To The Market Events of May 6, 2010*,”] <http://welling.weedenco.com/html/021811-SEC-CFTC-report.pdf>, they talk about how the internalizers have no obligation to be in the markets, much less to make markets, yet we're now relying on them for 20% of market volume. So you've got a disconnect right now. Either you slap some market making obligations on these guys or you've got to think about requiring them to price improve internalized orders by a half of a penny, which is what they recommended in the new report, and which we think are good ideas.

**Let's talk about the advisory panel's recommendations. Though they haven't been able to compete with Col. Gadhafi in the headlines, they did actually recommend**

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**that the SEC and CFTC get their acts together and *do* a few things. Which is pretty surprising. After all, here we are nearly 10 months after May 6th and coming on four years after the credit bubble started to deflate, and very little has changed, in practice.**

**Joe:** Well, we have circuit breakers, wow, in 1,000 stocks.

**Sal:** And the SEC proposed banning flash orders – what, 19 months ago. But it still hasn't followed through and banned them.

**What's the hold-up? There was a near-universal outcry when the practice was exposed.**

**Sal:** Here's the thing. Joe and I have bookmarked the portion of the SEC website where they make all of their Sunshine Act disclosures. That's where it lists who is meeting with SEC officials and staff, and we've done the same with the CFTC website. When you watch those lists, you can see the reason that the regulators haven't banned flash orders is because there is a war going on over them, with derivatives and swaps dealers fighting for the status quo. Why? Because the exchange model for options is very reliant on flash orders.

**Joe:** Or "step-ups," as they tend to call them.

**Sal:** We even see that our alma mater, where we used to work [*Instinet*], appears to be lobbying pretty heavily for using step-ups in their dark pool for options; there is a certain amount of flashing going on there.

**Joe:** So resistance from the options market is what has been holding up the SEC's flash order ban. The SEC doesn't want to say. "We're just going to ban it in equities." They want to ban the practice across all markets; that's what the proposal was. The upshot is that they've done nothing. The answer to why is the lobbying on the other side. It's a huge industry making a ton of dough. I mean, go down to D.C. Who are you going to see running around? Guys like us? No, because we don't have the funding and we are a little bit too busy doing our own business here. It's guys on the other side who have hired the lobbyists. There's the **Futures Industry Association's** HFT lobby run by that former top economist for the SEC and CFTC – what's his name – **James Overdahl**.

**Sal:** The extent of the regulatory capture, of people leaving the regulatory agencies and going to work, in one way or another, for the HFT industry, has been unreal.

**Joe:** It's also all the retail brokerage firms that

internalize or get paid for order flow who have been lobbying. It's all these guys, all with conflicted interests, but all with an interest in seeing that the status quo isn't changed. "We want it just the way it is, we don't want regulation because we're making a ton of money. There's nothing wrong here, guys." They're like the traffic cops at the scene of an accident who tell you, "Move along, there's nothing to see here." We talked about that the last time [*ww* 6/11/10].

**Sal:** Going back to flash orders, you can also point to a specific roadblock that was erected late last summer: A letter that a couple of Republican Congressmen who were up for re-election, **Spencer Bachus** of Alabama and **Jeb Hensarling** of Texas sent to the SEC on the letterhead of House Committee on Financial Services – which was **Barney Frank's** letterhead. He was still committee chairman, when the Democrats controlled the House. Anyway, those two sent a letter to SEC Chairman **Mary Schapiro**, saying, basically, that they didn't see any evidence of anything going wrong; the markets are wonderful. Basically, "We want to make sure you don't jeopardize flash orders and we're concerned that you're labeling the events of May 6 'the flash crash' because it presumes that flash orders were the culprit, which they were not." When Joe and I read that letter, we said, "these idiots don't even understand what 'flash order' means or where it's coming from."

**Joe:** *Uninformed* politicians. I love it when they – or the lobbyists – so predictably quote their favorite academics, all the ones who've been paid, in one way or another, by the HFT industry. Everything is quite above-board, though, I'm sure.

**Sal:** Sure. Just ask Georgetown University Professor **James Angel**. He's on the board of **DirectEdge**.

**Joe:** Look, the game is, get your academic studies, have your HFT lobbies run to D.C., and fight for the status quo, and when guys like us pop up, just pooh-pooh them and say they are only worried about their own self-interest. But it's not about us. If we stimulate debate and a few people listen to us, great. If they don't want to listen, we don't really care. Research isn't our business. We're not research guys. We're just telling people what we see.

**It strikes me that there's nothing too new about Wall Street's stalling tactics, or resistance to regulatory change. Congress tasked the SEC, in the Securities Acts Amendments of 1975, with figuring out how to**

implement a “National Market System,” with a consolidated tape and consolidated quotes as well as industrywide protection of public orders. It even told the SEC to set up a National Market advisory board – on which Weeden’s own Don Weeden served as one of the 15 original members. But nothing changed for fully 30 years – until the SEC came up with Reg NMS, which brought us extreme market fragmentation and HFT. As Don recalled in his 2002 book, [Weeden & Co., *The NYSE and the Struggle Over A National Securities Market*], the advisory board “was another brilliant ploy by the NYSE to delay, and eventually prevent, the creation of a National Market System. Their instincts were correct.”

Let me quote a little more, if I can find it – “While Congress clearly endorsed the concept of a NMS after extensive studies, hearings and debates, and was firm in its intent to see one evolve, their vision did not extend to the details. That should be left to the SEC and the industry...As the NYSE surmised, the SEC itself did not want to impose a design on an industry where there wasn’t broad support, and the advisory board slowly would become the template for inaction.”

How familiar does that sound? The Street’s *modus operandi* hasn’t changed a bit. And Reg NMS, however well-intentioned, produced a devil’s spawn of unintended consequences.

Joe: I don’t think anybody fully realized the unintended consequences that would flow from that thing. Obviously, people recognized that it would change the world – but not like it did. The reality is that now we’re fighting a battle against a fragmented and fragile market dominated by HFT – and when you lose a guy like Sen. Ted Kaufman, who was the only voice of reason in D.C., in our opinion, you don’t have much left.

**There hasn’t exactly been a rush to pick up his mantle, has there?**

Sal: We were told Sen. Carl Levin would.

Joe: He did hold that one hearing –

Sal: His Chief of Staff spent a great deal of time with us on the phone.

Joe: Levin, when he held the hearing, seemed to be getting it right. But the problem is that they are all so busy, and have so many different issues to deal with. So when you talk about high frequency trading – against a background of a

market that has been going up – the reaction is, “Don’t bother me.” It’s going to take another flash crash to wake the politicians back up. Then all of a sudden our phone will probably be ringing with 18 different congressmen saying, “I want to talk.” Sorry, you should have listened earlier.

**It does seem that it takes an enormous crisis to change anything.**

Sal: If nothing’s changed after May 6th, imagine what it will take – maybe, if the next one happens late in the day, so that the market closes down, and so you get a global feed from it – if the contagion were to spread overseas – you’d get a real mess. Then all the other problems in the economy could cycle in. I don’t see what’s going to stop it, sooner or later. Why wouldn’t you have another flash crash?

**The new CFTC/SEC advisory group report certainly treats that as a clear and present danger. But what do think of the solutions they proffer?**

Sal: They’re a step in the right direction. They specified 14 points they want to see addressed. But, mind you, those are 14 things they’re going to focus on for the next 9 months, not 14 things they’re going to do.

**Precisely. Did I mention the tendency to study things to death?**

Sal: True enough. But we’re encouraged, a bit, because as we said in an email to our customers, the panel actually made three recommendations, Nos. 10-12, that we couldn’t believe actually made it into this latest report.

Joe: The cancellation fee, first of all.

Sal: The fact they were even talking about implementing one. Of course, when you get down to studying the details, you find that they’re not talking about charging you for *all* cancellations, they’ll only charge you for those exceeding your, “normal pattern”.

**So if a guy does two billion trades a day and routinely cancels 75% of them, he wouldn’t pay – except on a day he cancels 80%?**

Sal: On those extra 5% cancels, he’ll incur some fee.

Joe: I don’t know about that actually. It’s not specific as written. Maybe they’ll use like a 90% threshold and say that, if you cancel on average more than 90% of your orders you’re going to be assessed a fee or something to that effect.

Like we've said, any implementation is still very far away. Still, the good news is that this document now exists. It makes 14 recommendations. If you're the SEC and CFTC and you choose to do nothing over the next year – even though you've been tasked by a blue ribbon panel of some of the best, smartest minds in the world, Nobel prize winners – what happens when another flash crash or something worse happens? If you've done nothing, ignored this panel's nine months of work, how are you going to explain that? So, the regulatory agencies have got a situation.

**That sounds so Jersey Shore. But the agencies also have Congress threatening budget cuts – immediately after dumping a huge regulation-writing assignment on them – Dodd-Frank left enormous blanks to be filled in.**

**Joe:** But, I'd argue, what's more important? The stability of the financial markets or pushing some paper? What is their core responsibility? How do you have a flash crash of 1,000 points and not feel that you need to address it? Is there anything more important than this? Maybe in our little world there isn't, but in other people's there is. Still, now there's a document prescribing steps to address "pressing" issues. So you had better do something now because if you don't and something happens, it'll be like you handed a gun to somebody who then goes out and shoots somebody. You should have known; you should have taken that gun away. So I am actually hopeful now. Maybe I'm stupid, but I think they will do something this time.

**Really? But don't you think they're ignoring the elephants in the room with their proposals to tweak here, add fees there?**

**Sal:** Yes, there are elephants in the room. One that I can't believe they're not even touching is the whole concept of conflict of interest in the ownership of trading venues. I have seen one document in which someone tried to dissect and diagram who owns whom.

**It must look like a plate of spaghetti after a two-year-old has had at it –**

**Sal:** Pretty much. But you can see all the brokerage firms that own a stake in **Bass Trading (BTIG)** along with **Tradebot** in Kansas City. You have a major exchange owned by brokerage firms and high frequency trading firms. And then **GETCO** has stakes various exchanges

around the globe, as well as being a DMM [designated market maker] on the NYSE. Now, the proposed merger of the Deutsche Börse and NYSE Euronext would bring together the ownership not just of those venues, but also of the **ISE [International Securities Exchange]**, the leading U.S. options exchange]. The ISE is owned by **Eurex**, a leading global derivatives exchange, which itself is jointly owned by Deutsche Börse Group and **SIX Swiss Exchange AG**. And the ISE also owns 31% of DirectEdge – in fact, when you start following its ownership around, you find that DirectEdge is owned by consortium of brokers. To quote its website: "DirectEdge is an independent exchange owned by a consortium that includes the International Securities Exchange (ISE), **Knight Capital Group, Inc.**, **Citadel Derivatives Group**, **The Goldman Sachs Group**, and **J.P. Morgan**. Knight Capital Group was originally the sole owner until a 2007 spin-off brought in Citadel and Goldman as investors. Following a deal in 2008 ... the ISE is currently the largest shareholder of Direct Edge with a 31.54% stake. Knight, Citadel, and Goldman, each retained 19.9%."

**Joe:** The incest is pervasive. That's one elephant, but there's even a bigger elephant: the data feeds. We've talked about it time and again. That's the core issue here. There's nothing else, in our opinion, that fuels what's going on like the proprietary data feeds that the exchanges sell. The data feeds house tons of information that's not accessible to the public. The CFTC-SEC advisory panel even talks around it a little bit in their report, when they mention that the public sees the top of the book and maybe a little depth of some quotes here and there, if they have access to Level 2 machines, but that's nothing. The data feeds are everything. That's where you see the order cancellations, that's where you see the revisions. That's where you see what time the cancel was; what day it was. Everything is in there and that's what allows the HFTs to back test and model and figure out and *predict* the future price movements of the stocks.

**One of the great things about the CFTC's quant study of HFT's impact on the flash crash <http://welling.weedenco.com/html/Kirilenko-CFTC-SSRN.pdf>, the one by Andrei Kirilenko, is the way it blandly observes that HFTs demonstrated a knack for predicting what prices would do. It's amazing how even a few microseconds of time advantage helps predict the future.**

**Sal:** Sure. There's one thing that we haven't seen in any of the dissections of the events of May 6th, and that's the data feeds, which we just can't help but think had something to do with May 6th, as well.

**Joe:** The data feeds are how the HFTs see the market. And when they decide that information is corrupted information, that is when they pull out – as they did on May 6. The data feeds – the advisory committee only sort of touched on them when it talked about advantaging one class of investor over another and that there's usually a payment involved. While a few exchanges use their data feeds as a freebie to attract business, most charge for them and are making a ton of dough from selling access.

**I thought the committee report pretty much skirted the issue –**

**Joe:** They referenced it – albeit only obliquely – a couple of times. Like when they talked about firms getting this excess information without any obligations to make markets or even to stay in the market. Here's one example: "While most active traders access full book information from each market, many firms and investors depend solely on the top of book of consolidated information." This differs substantially from the old model of a specialist who had negative and affirmative obligations. Sure, they also had more information. When you went to the floor, the specialist knew that Fidelity, say, was the buyer and that so and so was the seller. But the specialist was first of all standing in the middle committing capital, and he had negative and affirmative obligations to make a market. It was a different model. The HFTs of the world simply can't be compared with market makers.

**Sal:** We'll also say this. We're tired of this whole blessing by analogy.

**You mean, HFTs act as market makers, so they've got to be good – just like a kid named Smucker?**

**Sal:** Sort of. If you go back and take the worst (and limited) part of yesteryear's market microstructure – the specialist taking the vig – and you amplify it a billion times as HFT, that doesn't make it *better* now. You're amplifying the worst part of the old regime with HFT.

**But now it's done antiseptically, via computers, and faster than the eye can see.**

**Sal:** Hello. Now, if you listen to **Dave Cummings**, the chairman of **Tradebot**, HFT has

democratized the market because now market making isn't the exclusive preserve of a boy's club on the floor of the New York; now anyone can do this. But if you believe that anyone can do this, then explain to me why you have these smaller HFTs, like **Tradeworx** and **Hudson River Trading**, hiring their own lobbying firms to go and fight for *their* interests against the firms lobbying for the interests of the big HFT guys like GETCO in Washington. Those guys are duking it out, big HFT versus small HFT.

**Joe:** There have been articles in *Advanced Trading*, complaining that getting rid of naked sponsored access is an anti-small business regulation. So now some HFTs are calling themselves small businessmen! Complaining they can't compete with the big boys if they can't piggyback on, say, **Wedbush's** rates, because they're really small fry. That's what they do. They get the highest levels of rebates because they all go in together under one umbrella, such as my **Wedbush** example. The upshot is that they get 32-mill rebates and they only deserve 20.

**Okay, if preferential access to proprietary data feeds is still an unacknowledged elephant in the room, take that one step further. None of the regulators is taking on the for-profit exchange model they spawned, via Reg NMS.**

**Joe:** That's what blew it all up, in our opinion, has permitted all of the conflicts of interest, as I mentioned. If the markets were controlled by member-driven non-profit organizations, you wouldn't have as many conflicts as you have now. When you serve the bottom line and when you serve your shareholders above all else, the first thing you're going to do is cut corners to plump the bottom line. If that requires you giving an excess rebate to get the business of a guy you don't think is necessarily a legitimate market maker, you're going to do it. Because if you

**Sal: "If you go back and take the worst (and limited) part of yesteryear's market microstructure – the specialist taking the vig – and you amplify it a billion times as HFT, that doesn't make it better now. You're amplifying the worst part of the old regime with HFT."**



don't, the guy down the block who runs a rival ECN or market center will do it. You have to compete and it is a cutthroat business. The stock exchanges just kill each other.

**Sal:** The NYSE went for-profit in '05 and they went public in '06.

**Joe:** And Reg NMS was proposed in '04, finalized in '05 and implemented in New York in '07.

**Sal:** We don't mean to just pick on the NYSE, because they're all for-profit. But in just four or five years, the whole model was up-ended. And all the while they've been crushing the cash equities business in the U.S., driving out the researchers, driving out smaller broker/dealer firms. The "market" has become too big to fail, just the big banks, big HFT. In other words, the all the biggest banks have their own desks, own the exchanges, own the ECNs, own the HFTs. Their hands are in everything, while they're crushing the business. Meanwhile, they're championing HFT to everyone. "Oh, look, we're bringing down spreads, we're increasing liquidity."

**Except when you need it. The advisory panel report makes it quite clear that the HFTs and internalizers disappeared in the flash crash. Still, they continue to score points by demonstrating how spreads have narrowed –**

**Sal:** We've heard those same talking points so often they're mind-numbing. We can't believe people still are talking about spread as a measure of market quality – a flickering spread 100 shares wide, in an environment in which capital isn't committed. This is an order-driven market, where the orders are coming in from everywhere and flickering 100 shares wide. How is spread a measure of quality when as soon as you hit the first bid, the one behind it cancels out? They justify it and they tout it, "Oh, we're managing risk. If we don't manage risk, we can't keep our costs down and if we don't keep our costs down by managing our risk, we can't give you a nice narrow spread like this." It is mind-numbing because it makes you ask, what is the definition of a bid if you can't hit it?

**Joe:** Spreads – they really shouldn't even use that word. It's irrelevant. The for-profit exchanges – right before the flash crash last year – were pushing the SEC to let them trade at sub-penny prices. They want 100 price points in-between every penny because one penny is not good enough for the HFTs to arbitrage. They figured if they could offer 100, they could

do a heck of a lot more volume. Well, after the flash crash, they kind of shelved that plan. You haven't heard about it since. However, we have heard that in Europe they are trying to do it and that the NYSE actually recommended it again in Europe; they want to go to sub-penny pricing.

**Sal:** Because nine months have passed and everything has recovered. No one remembers.

**Joe:** Of course if you're a guy who's hung up on improving spreads, well, it's a wonderful idea. Look at the spread, it's a tenth – or a hundredth – of a penny. You've never had it so good. You could buy IBM at 135.777. Wow!

**But who's going to keep the change?**

**Joe:** It's just ridiculous. Who needs a sub-penny spread? You need wider spreads, especially in small- to mid-caps. You need the margin there because you need research. You need the analyst there. I remember when **Morgan Keegan** in Memphis, Tennessee, was an independent regional broker, and not part of a financial services behemoth, **Regions Financial** (RF), as it is today. They had the pulse of all the healthcare stocks and they were the ax, the firm to go to. There were so many of those firms scattered around the United States, and they raised tons of money for small, up and coming companies. But the \$10 million IPO is dead.

**Now you're getting to the heart of the matter. What's happened to the public capital raising function in this capitalist economy? Isn't that where Wall Street is supposed to come in?**

**Sal:** Now it's private.

**Joe:** So what's the point of a stock exchange? Isn't that one of the main reasons why a stock exchange existed? To help companies raise capital. To efficiently allocate capital?

**So the economic textbooks would tell you.**

**Joe:** It's gone. Now it's a casino where you can hyper-trade for a penny spread, back and forth, with 22-second holding periods – and go home flat. Oh, that's a good idea; let's all go home flat. That's all they do; 70% of all trading is by the HFTs, and they're all flat by the end of the day.

**Sal:** This is lost on so many people. We go to these conferences, where everyone is focused on trading and latency and etc., but they miss the big picture. Once upon a time, companies raised money and hired people and grew, generating broader economic growth, by taking



themselves public; doing an IPO. Now, why did they come public? Because that was the way to attract investment, from *public shareholders*. First of all, if a company is publicly listed and traded, there's a level of protection in the disclosure requirements. If more people feel comfortable investing, the company's ownership can be more broad-based. You had more folks in America who were able to share in the American dream and invest in the future. Going public was a very efficient platform to broaden out ownership and to channel investment into the future of the nation, the future of the world.

#### **Was?**

**Sal:** Well now, the "public" market is all about speculation. And for companies that are growing, there are angel investors, who are private. Venture capitalists. They seed this, and they seed that, **Facebook** and **Twitter**, etc. All these companies are raising money *privately*. No one cares about a lack of public disclosure, because these are big boys. It's up to them to figure out what to put their own money in. But we *should* be concerned that the capital going into these companies isn't broad-based; that their ownership is remaining quite concentrated. Ground floor or even subsequent rounds of investing in them is just not accessible to most people. But Goldman Sachs, to single out just one prominent example, *can* invest in them. So the stock exchanges are failing to fulfill this very critical capital raising function, which they were created to facilitate.

**Joe:** There were all of 170 IPOs last year – and how many of those were Chinese reverse mergers? How many were formerly public companies that had been taken private, merely coming public again?

#### **Creating another payday for their investment bankers, via one of the Street's favorite revolving doors –**

**Joe:** Look at the GM "IPO." Come on, these restructurings and erstwhile LBOs aren't real IPOs. The point that Sal is making is that IPOs used to be the avenue for allocating capital to deserving smaller companies that then could grow and create jobs. Can you take it one step further, and say we're *losing jobs* because we're not getting these companies to grow?

**Sal:** There *is* a big picture. Listen to the President, or any politician. They pay lip service to small business all day long. "It's the backbone of our economy." Meanwhile, they've

let the entire infrastructure that helped small businesses grow into large ones, with the participation of a broad investor base, just fall by the wayside.

#### **IPOs always waxed and waned in cycles–**

**Joe:** This is no mere cyclical decline. You cannot get that type of business back onto the exchanges that we have. It doesn't work. So we need an alternative. Maybe we need mandated spreads – again, we're not market makers so we have no ax to grind here. We're not going to make money off of this. But if you had a five- or ten-cent spread model, where you had minimum capital commitments and minimum quote sizes, and which maybe was not accessible by all of the data feed freaks out there, you might have an alternative model that could still work in a system like this. Why can't we run two separate models? Have a high-speed exchange, but also have a low-speed exchange more focused on small- to mid-caps, on growing capital?

**Sal:** So great, you want to trade **Citigroup** (C) a million times a day, or a minute? Trade Citigroup all day long on the high-speed exchange –

**Joe:** But let *the issuer* decide where its stock trades.

**Sal:** And the issuers need to be educated.

#### **Some of them are pretty attuned to these issues already, and even restive about the way the exchanges are treating them.**

**Joe:** They are. We've talked to guys who run some investor relations departments, and even some of the bigger companies get concerned when they see their stocks dropping 15% for no discernible reason. They're like, can anybody tell me what went on in my stock today? No. So they're very concerned, because their share prices represent the wealth of their companies. And because there's often employee stock ownership, their personal wealth is tied into it. So is the time right for an alternative to come into existence? Yes. Is anybody doing it? No.

#### **Doesn't that suggest to you that no one sees any profit potential in it?**

**Joe:** It's difficult. We've talked to a number of people about this; we are exploring it actually at the moment. We think that we understand the markets; teamed up with the appropriate people, this could be a very good situation. But a lot of people are afraid to fight the machine; they don't think it will work. They say, how could you have a ten-cent spread? Nobody will

go for it. But if you talk to real people, like institutional investors and corporate IR execs, they tell you this would work. We've made those calls. It *would* work. The question is, how do you get the regulators on board? That becomes your monster.

**Sal:** Yes, to get exemptions from Reg NMS so that you don't have to open up to HFT; how do you set up the access rules so that you are fair; so that you don't disadvantage *HAL 9000*?

**Right. You've got to protect 2001: A Space Odyssey, at any cost.**

**Joe:** Don't forget *The Terminator*. Still, if we get another flash crash and more shenanigans in this market, people are going to *demand* an alternative market. Just like they are protesting in Wisconsin – and everywhere else – people will demand change. If you've built the model and you have it ready, you will succeed. We plan on being there.

**Clearly, your business plans are evolving –**

**Sal:** I will tell you this, if you asked us a year ago, there were days when we wanted to give up. When we asked ourselves, "Why are we doing this? We're never going to make any headway. Today, even though you started this

interview by observing that almost nothing has changed, in terms of how the markets are run, since the flash crash, I'd argue that at least *perceptions have changed*. Perceptions in the institutional community, on the buy side, have definitely changed.

**Really? I have the impression a lot of them still don't realize how perfectly they've been played on the spreads issue. Lots of others shrug that HFT isn't an issue, because they don't day trade.**

**Sal:** Absolutely.

**Joe:** Still, more of them are asking the right questions.

**Sal:** Lots of people are awakening to the fact that the pendulum swung too far one way and it is starting to come back. You're starting to see new products come out of the exchanges to address those questions – not that we're prepared to endorse any of them. But it's gratifying to see the pendulum moving back. Here's an announcement (nearby) that DirectEdge just sent out about changing their feeds. The bold-face to emphasize the changes is their own. Nasdaq inexplicably came out several weeks ago, offering a new non-HFT routing option, dubbed CART.

**Joe:** It's definitely not for the HFT guys, who ride rockets. This makes like 15 pit stops before you get to the displayed market. They are trying to build their own model.

**Sal:** Trying to show that it's not interacting with HFT. But if they're advertising that, aren't they really saying that maybe the HFT was not so good all along?

**Joe:** Well, they didn't say it wouldn't *interact*. They said you wouldn't use this if you were a high frequency trader. But as Sal was saying, there have also been a lot of new anti-gaming algos introduced.

**Sal:** Like **RBC Capital Market's THOR**. In building these algorithms, firms are essentially telling people there are a lot of HFT games, which basically validates what we've been saying for almost three years. **Credit Suisse** is coming out with a product catering to the buy-side at the end of March, if things go as planned. This is the same Credit Suisse whose *AES* is one of the largest, most successful electronic trading platforms – and they're saying we're going to rank order flow coming in and if you are high alpha, if you are holding stocks for 22 seconds – or two seconds – if you are a rebate guy, you are not coming in. I guess they have to come up with rules that satisfy the SEC that they're not

Direct Edge Book Feed Message Behavior Comparison – Reserve Orders		
<p>The following example displays the breakdown for reserve orders using the current behavior, which consistently displays the original order ID, and the new optional behavior, which will randomly generate a new order ID for the replacement of the replenished amount.</p> <p>Assume a Member enters the following reserve order:</p> <p>Buy 200 ZXZZT @ 10.50, max floor = 100</p>		
DE Action	Current Behavior	New (Optional Behavior)
Direct Edge Acknowledges Order	Order Reference Number = 12345	Order Reference Number = 12345
Order is added to Multicast (Unicast) Feed	a. Message Type = Add Order (Short Form) b. OrderReferenceNumber = 12345 c. Side = B d. Quantity = 100 e. Security = ZXZZT f. Price = 1050	a. Message Type = Add Order (Short Form) b. OrderReferenceNumber = 12345 c. Side = B d. Quantity = 100 e. Security = ZXZZT f. Price = 1050
The order executes for 100 shares	a. Message Type = OrderExecuted b. OrderReferenceNumber = 12345 c. Execution Quantity = 100 d. Execution Price = 1050	a. Message Type = OrderExecuted b. OrderReferenceNumber = 12345 c. Execution Quantity = 100 d. Execution Price = 1050
System replenishes 100 shares	a. Message Type = Add Order, Short Form b. OrderReferenceNumber = 12345 c. Side = B d. Quantity = 100 e. Security = ZXZZT f. Price = 1050 g. Flags 0 x 05 (Display flag = 1, Replenish flag = 1)	a. Message Type = Add Order, Short Form b. OrderReferenceNumber = 98765 c. Side = B d. Quantity = 100 e. Security = ZXZZT f. Price = 1050 g. Flags 0 x 01 (Display flag = 1, Replenish flag = 0)

discriminating. So who is going to go into these new pools? It's going to be the likes of **Fidelity** and **Ohio State Teachers Retirement**. Institutional investors. So the pendulum, if you ask us, is swinging, even if things have barely changed in the rule books. Perceptions have started to change and private industry seems to be starting to respond.

**Joe:** We've actually had a lot of people – who aren't clients – calling us up and asking about what we've been writing. A number of institutions. I had a guy call last week who is starting a hedge fund in Canada. He said, "Listen, I met you at a couple of conferences. I'm writing questions I'm asking my brokers to respond to. Would you look at my questionnaire and tell me if I should be asking anything else? He was already asking, who you are routing to? What is your smart router? What are your methods? I was impressed, but added a few more questions for him. The point is, institutional investors are now asking the right questions to improve their executions. So we feel we've at least helped the debate along a little. The guys on the other end, who have been taking advantage of the institutions, will have to figure out a new game. Now, we know we're not going back to all-human trading, But trading doesn't have to be completely dominated by machines, either, with no human interaction.

**Sal:** We frequently watch the videos the **TABB Group** puts on their website. They have some very smart people. They'll talk about latency. They'll talk about this exchange. They'll talk about this new feature or that new product. Well, we saw one not long ago that was really amazing. They were speaking with the CEO of one of the smaller exchanges that had inverted pricing, originally on an issue-by-issue basis. His news was that, "Hey, for the next two months, if you trade these 25 names, we'll have inverted pricing. If you take liquidity from us, we'll rebate you." The CEO was describing how wonderful this was for his exchange, because "every single router on the Street is going to have us at the top of their destinations because of the rebate." He's actually on videotape saying that without even a hint of embarrassment. He wasn't saying his exchange would have the best price, or be best for anyone's clients, or the best execution. It was simply where your firm would get a rebate. It was amazing; it was so in your face. Yet it was matter-of-factly presented.

**Joe:** That proves to us that many routers are corrupted. The broker has every incentive to lower his costs, that's just the way it is. We

understand that. But that means that clients have to ask questions. Where is my algo going? Why is it going in that direction? What type of order is being sent out? Does it preference certain venues? Why? And at the end of the day, if not sooner, clients need to get a report, and if one destination was used more than others, ask why. Was it more liquid? Ask the questions. Because the squeaky wheel probably won't be taken advantage of as much as the guy who doesn't say anything.

### **What other recommendations in the CFTC/SEC advisory panel's report pleasantly surprised you, in addition to imposing some sort of cost on firms that cancel a lot of orders?**

**Joe:** Yes, that they would float the idea of requiring internalizers to improve prices by at least a half-penny from the quoted best bid or offer if they want to execute orders within their walls, or of imposing some sort of requirement on internalizers to execute a material portion of their order flow during volatile market periods, really took us by surprise. While we don't kid ourselves that any of these "affirmative obligation" rules is going to work wonders, it was nice to see the committee acknowledging how damaging the internalizer model has been. The Kirilenko study showed that the internalizers, who now control about 20% of volume, as well as the HFT guys, just pulled out of the market during the flash crash.

### **Aren't all the retail brokers already objecting loudly that forcing them to improve, instead of merely match, the best public quote will drive up costs for small investors?**

**Joe:** But it *should* be that the lit destination get filled first, before the internalizer gets his chance to scalp the trade –

**Sal:** Because you *should* reward price discovery. If I am Fidelity Investments, why would I publicly bid \$27 for 50,000 shares or 5,000 shares or whatever, if that doesn't put me in some type of democratic line for execution, based on who got there first, etc.? Why indeed, if someone can step in front of me and trade equivalently 5% of the time and the other 95% of the time by paying just 1/1000th of a penny. That's what the internalizers do.

**Joe:** And it's worthwhile because of payments for order flow. So of course, a "trade at" rule would raise costs for retail brokers; maybe they'd have to charge \$15 a trade, instead of

\$10. But what most retail investors don't understand is that a \$10 trade is not really a \$10 trade. First of all, your broker is making a heck of a lot more money off that trade if he's getting a 20 or 30 mil rebate from the internalizer.

**Sal:** It's not only the rebates. The internalizers are paying for that information not merely because they are, on average, going to make a little bit of money on each of these orders, but because they're modeling the orderflow. They are using you and every other person who does not realize that their personal information is valuable, and that it's theirs, not the internalizers'.

**Joe:** It's the **Google/Facebook (GOOG)** model.

**Sal:** The internalizers pay the retail brokers for their order flow information and then model it. You can bet that **Citadels** and **Knights** and the **UBS**s of the world – everybody who is internalizing – have very smart people who are constantly modeling and tweaking that flow and figuring out, for instance, if the Dow is down 40 points on one day, what will be the typical pattern of retail order flow in the next five minutes – and what that means for their in-house quant hedge fund strategy.

**Sal:** All the current rules are doing is sending all that valuable information to the internalizers; we're arming the 13-year-old video gamers to play in the market, instead of investors and traders who allocate capital. But it was pretty big, too, that in addition to trying to limit the amount of internalization, via a trade at rule, the advisory panel also recommended that the regulators look at extending the current "top of the book" protection protocol deeper into the book. Protecting limit orders off the current quote would be really big.

#### **What else do you wish they'd suggested?**

**Sal:** In the big picture, it would be really nice if someone bigger than us – and it's not awfully hard to find someone bigger – would just survey all of the issuers. Ask them how they feel about having various exchanges selling them data sets and tools showing them who is buying and selling their stock; which funds. Selling these tools to them for very high prices. And how do they feel about the exchanges then turning around and selling the same data, packaged as predictive tools for high frequency trading? Shouldn't the issuers be outraged that the same exchanges who are selling them tools to see who might be manipulating their stocks, are turning around and selling guys the very tools they need to do it?

**Joe:** Those are excellent questions. But before we get too far off the topic, I want to make something clear about the committee's proposed "trade at" routing regime. The internalizers we were talking about earlier were the ones we see every day where their markets are just uniformly toxic; where "price improvement" is meaningless. We get great, virtually real time transaction analysis from a firm called, QSG, **Quantitative Services Group**. I bring that up not to plug them, but to emphasize that we see pretty quickly where we're getting good fills and not so good fills. What we have observed is that there are dark pools where we *never* get good fills, for us or our clients. Which is troubling because dark prints are 33% of the market right now. Nonetheless, not all dark pools are toxic, and we want to take pains to point that out – just as – to its credit – the advisory committee did by specifying that internalizers should, at a minimum, price improve by half a penny.

#### **What's magic about half a cent?**

**Joe:** Nothing, but that's what the traditional crossing pools that tend to trade large blocks for institutions do when they trade sub-penny. They trade in the middle of the spreads, at half a penny. So suggesting that half penny as the minimum price improvement for internalizers was a way for the advisory panel to accommodate the good guys in the internalization world. The 13% of the dark prints that the traditional crossing pools do are fine. The institutions need them to do blocks. Firms like **Liquidnet**. We need more of those for institutions so that they can avoid all the noise that's out there. It's the other 20% of internalization that is just adding to the problem, taking away from the price discovery, causing real liquidity providers to exit the market, leaving us with the mess the market is in.

#### **They're also the ones now loudly complaining that the regulators shouldn't favor the institutional venues, at the expense of "mom and pop" investors.**

**Sal:** These are the very internalizers, as we just said, who are making big bucks by modeling the retail investors' personal information.

**Joe:** Part of the problem is that the regulators try to make one-size-fits-all rules, when they really should carve out a distinction for the honest-to-goodness crossing pools, as they've tried to do in this report. But I am sure that (Liquidnet founder) **Seth Merrin** and the gang



are busy trying to help them make that that distinction! They really provide a necessary tool for the institutions. A *good* tool. Why should a retail investor participate in a 50,000-share print? It doesn't make any sense. Besides, in actuality, he probably already is participating, because the trade is being done by his pension fund, 401[k] manager, insurance company or whatever. So you can't say, "Oh, you're disadvantaging retail," if he's not allowed to interact with that block flow. Let me stress that we have no ax to grind in this, either. We're not part of Liquidnet, we don't trade with them or with International Technology Group's (ITG) Posit or Pipeline.

**Sal:** I'll clarify though, that Joe's been talking about the traditional crossing networks, the ones who have stayed true to their purpose. There are some that, while still talking the talk of catering to the buy side, are signing agreements with the exchanges which are where all the toxic flow is, all around the globe.

**Okay, but the rest of the advisory panel's suggestions seem pretty much to be just tweaks, yet you're encouraged?**

**Joe:** Because we're starting to see the pendulum swing. But that doesn't mean that we're not seeing the HFT industry and its lobbyists already trying to spin the other side. We're already hearing that this isn't an anti-HFT report, we're hearing them dispute the suggestion that order cancellation fees would be good and insist that a "trade at" rule would be bad. Clearly, they are going to go out there and lobby hard. I'm sure they'll say that some of the panel's recommendations are very good, mainly circuit breakers, limit up/down, maybe even the peak load rebates to "incentivize HFTs to stay in volatile markets" – though that's the dumbest thing I've ever heard.

**Sal:** Right, if four years in a row of exceedingly consistent profits were not enough to get them to stay in the market during the flash crash, a little extra rebate will definitely do it.

**Joe:** If the guy is not going to stand there for 30 mills, do you really think he's going to stand there for 50 mills when the market is cascading? It ain't gonna happen. So the HFTs and the exchanges etc. will most likely rally around about 10 of the advisory board's recommendations and then say, "However, you really need to be careful about some, like the cancellation fee, because of the unintended consequences. We just don't know; let's slow this thing down and really think about this before doing any-

thing. Let's put it out to comment." And inevitably, that will drag on and on. But you know what? We've got a document now. And when the next flash crash happens, we'll take it with us on the train down to Washington.

**Sal:** And do what we do best. Ask questions.

**Joe:** What have you done since **Joe Stiglitz**, **Brooksley Born** and **David Ruder** made these suggestions? Oh nothing. Why? Oh, because those guys were in your office virtually every day (we saw the Sunshine Act filings) telling you they'd be bad for everyone? Well, I don't think you did a good job. You listened to the wrong people.

**Just to circle back for a moment to where we began, with the NYSE's proposed merger into Deutsche Börse, aren't all these exchange mergers a tacit admission that the for-profit exchange model isn't working in the equities world?**

**Joe:** There's no doubt. The stock exchange model is a failure and the exchange mergers are a sign of it. The New York Stock Exchange is being bought at a time when most of its profit is coming from data feeds, co-location facilities and market-data related services. They can't make any money on equities transactions – or issuer fees.

**Sal:** And the only transactions that they are making money on are derivative-based.

**Joe:** That's where the model is. It's futures and options. That's where they make their money. So there's no doubt that the equities exchange model, 13 exchanges and 40 dark pools is a failure. Fragmentation doesn't work. These guys are hoping to survive by merging with each other, then maybe forge another payday by breaking them up again. It's the same old model.

**Sal:** That's always the investment bankers' dream.

**Joe:** Nothing new there. But the exchanges are now telling you that they don't have a good model. Look at the price of New York Stock Exchange stock. Straight down. The people getting the golden parachute are the executives; they'll cash out and do very well.

Meanwhile, long-term investors –

**Sal:** Just think how well the management will do for standing by as NYX stock went from \$100 to \$20 to \$30.

**Joe:** Yes, it's the hedge fund model. Let me be clear, I don't disparage **Duncan Neiderauer** for doing what was right for his shareholders, going forward, anyway. But he shouldn't have

been running it as a for-profit organization in the first place. You have to protect the investors. If it's not FINRA or the SEC, we look to the exchanges to protect investors, and that's not what's been happening. We have pointed out the myriads of things that they do to disadvantage investors while chasing profits. And what investors were they protecting by doing that? Their own? Not very well, on the record. But that's supposed to be your No. 1 goal as the CEO of a public corporation, increasing shareholder value.

**Sal:** Hopefully, more folks than just Joe and I believe that our financial highway should be like the transportation highways we have in our nation. Critical infrastructure that should *not* be run for profit. It should be run like a utility. Should technology be leveraged to make that highway the best that it can be? Yes, of course. But there is a difference between leveraging technology for efficiency for everybody, and leveraging technology to arm a very small subset of the population at the expense of everyone else.

### **Good grief! A public utility? What about competition and innovation?**

**Joe:** Right, we need competition producing innovations like inverted rebates for order flow.

**Sal:** If you say "public utility," the next thing you know, someone is going to call you a socialist; they'll say you're for unions.

### **Nobody wants a CLOB (centralized limit order book).**

**Joe:** No, but even **Thomas Peterffy**, the CEO of **Interactive Brokers**, last year said that we have too many exchanges. Thirteen is too many. He said, "I'm not arguing for one, but maybe five or six is the right number." That's a direct quote. Maybe that's the answer. A reasonable limit somewhere between a CLOB and 13 plus 40.

**Sal:** All the complexity in the system, the interconnections, the arbitrage for the sake of arbitrage, just create immense systemic risk. Talk about economics and the law of decreasing marginal benefit. Without a doubt, getting a 3-second DOT fill down to one second was good.

But you can argue that going from 50 milliseconds to 25 milliseconds to 1 millisecond to 500 microseconds to 100 microseconds, generated very little in the way of benefits. And there are disappearingly fewer left to be picked up as we keep driving towards nanosecond speed.

**Joe:** Even though, right now, there are guys digging through mountains in Pennsylvania to cut 3 milliseconds of latency off routing times to the midwest. It's nuts. But at the same time, as we said, people are listening to us. The pendulum is starting to swing. And we're going to stay engaged in the argument.

**Thanks, guys.**

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