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AI: Turning Buy-Side Donkeys Into Thoroughbreds?

Asset managers

exist for one reason and one reason only: to manage assets. Those buy-side firms that do it well attract more assets than those that do not. And those that are particularly poor at it tend not to last for very long at all in an increasingly competitive marketplace. Key to managing those assets successfully—success in this context is measured by a manager's capacity to consistently outperform one or more benchmarks, and by so doing produce positive returns commensurate with its clients' expectations—is the ability to make the best possible investment decisions. The premise is a piece of cake, but like many things in life, it's the execution part that is inordinately challenging.

Of course, compliance is crucial and so too is risk management and the efficiency with which a buy-side firm manages its various back-office functions, but as important as they are, they pale into insignificance when compared to performance. Essentially, those activities need to be managed effectively in order to guarantee entry to the game—they are contingent on the rules of the game and constitute something of a protocol in terms of how it is played, but whether the outcome of the game is successful or not depends on how well the asset manager performs.

I've said it before but it's worth reiterating that buy-side firms have never been better served in terms of the tools they have at their disposal to help in this regard. And, over the course of the last 12 months, one new class of technology has risen to prominence above all others: artificial intelligence (AI). But scratch a little under AI's surface and you won't find a lot of new, whizz-bang technology—its specialness is predicated largely on its ability to carry out staggeringly large numbers of calculations in literally the blink of an eye, and not its innate "intelligence."

It is no secret that the Brits are obsessed with the weather, which means they fixate on forecasts. In order to improve the accuracy of its predictions, the country's Met Office embarked on a lengthy implementation of a Cray XC40 supercomputer, the final phase of which went live in December last year, allowing its meteorologists to run 14,000 trillion calculations per second thanks to its 460,000 compute cores. And while asset managers currently don't have access to that kind of firepower, AI does hold the key to providing them with the ability to make far more accurate calculations based on a sea of variables within their four walls that just a few years ago was unimaginable. But will AI be able to turn a buy-side donkey into a thoroughbred? No, almost certainly not at this point, but it will provide them with the means to systematize and enhance their decision-making, which is the next best thing. **W**

Victor Anderson
Editor-in-Chief

Inside Market Data Inside Reference Data



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DevOps techniques are only now finding their way onto the buy side as firms are looking at ways of expanding upon what they've already established using the Agile methodology. As Anthony Malakian explains, while firms are excited by the idea of DevOps, they are still a long way from implementing these strategies on a wide scale.

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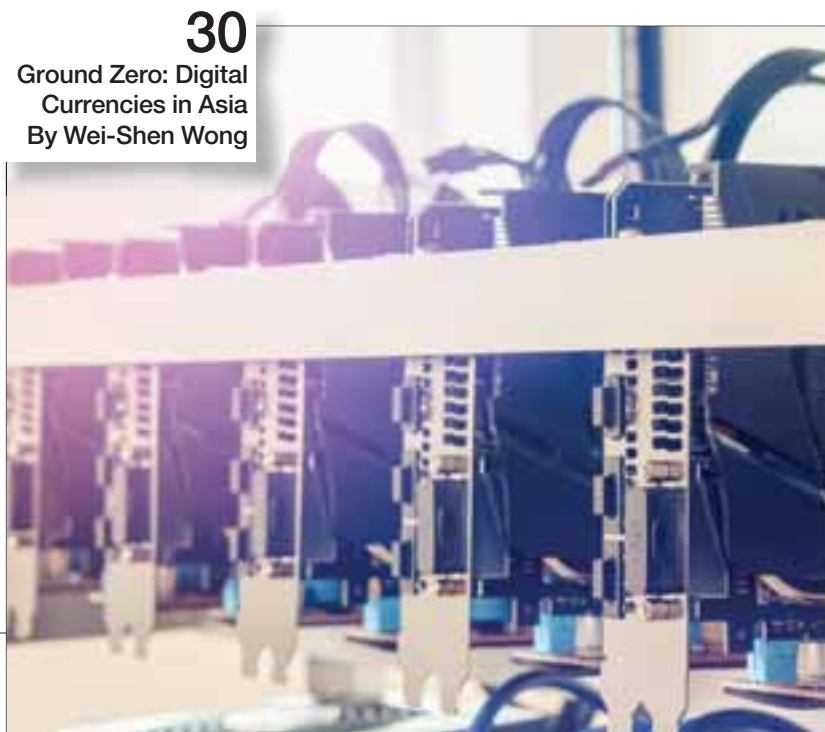
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Demanding Regulators Drive Surveillance Tech Requirements

Emboldened and increasingly sophisticated investigators at regulatory agencies are pushing firms to significantly upgrade their surveillance technologies, according to a number of buy-side compliance heads speaking at this year's North American Buy-Side Technology Summit in New York. [By James Rundle](#)

Having long had a reputation for being lawyers who are soft on technology, regulatory agencies such as the US Securities and Exchange Commission (SEC) have invested heavily in both systems and personnel relating to advanced market oversight in recent years.

Other agencies, including the Office of the Comptroller of the Currency (OCC) and the Commodity Futures Trading Commission (CFTC), have also become interested in technology developments through fintech programs and reviews of emerging technologies. Likewise, the SEC's Office of Compliance Inspections and Examinations (OCIE) now employs dozens of quants and data scientists.

"I think they've really upped the ante," said Adam Reback, chief compliance officer at J Goldman & Co., a New York-based long-short equity fund. "They come in asking questions about what kinds of systems you use for your surveillance, for your monitoring, for everything—things that they never even realized that we did before. I think there are very few exam teams that don't expect to find trade surveillance software or at least the prospect of having trade surveillance software in place, and then automated processes for all of the different compliance functions."

This, said Joseph Lodato, global head of compliance technology and surveillance at Guggenheim Partners, means that firms are risking their necks by not engaging with more sophisticated means of surveillance.

"Someone once said to me: 'Do you think the SEC will really know more about my firm than I do?'" he said. "I



Joseph Lodato
Guggenheim
Securities

asked them how many data scientists they'd hired in the past year, and they replied with 'none.' So I said, 'well, they have 80.' I think what we're saying is that if you don't embrace technology, then it may be a problem."

Emerging Technologies

Lodato and others quoted in this article were speaking on a panel at the North American Buy-Side Technology Summit, held in New York on October 5. Surveillance has emerged as one of the areas where third-party vendors—and compliance officers—have been looking to emerging technologies such as artificial intelligence (AI) and machine learning to assist with the

increasing demands of regulators. On October 10, Trading Technologies announced that it had acquired Neurensics, an AI firm that specializes in surveillance, mirroring a similar acquisition of UK firm Sybenetix by Nasdaq, in July. Machine learning has also been deployed in some market surveillance departments, in part to provide more intelligent alerting for surveillance officers, but also granular audit trails in the event that regulators ask for them.

This hasn't escaped the notice of regulators. As an illustration of the extent to which investigators are now increasingly tech-savvy, others said that their inspections were heavily focused on the minutiae of technological operations, including those provided by third parties. "When the SEC came to me, the first questions they asked were about what systems we had, how we were capturing data, what we were doing, who we were using," said Craig Peretz, chief financial, operating and compliance officer at Sierra Global Management. "They wanted a list of every single vendor I used."

Reback said expectations from the regulator, too, had "really gone up." Several years ago, it might have been possible to negotiate over how much data was given to the SEC or a similar agency, he said, but now they "don't back down."

"They come in and already know what they can do, what they expect you to be able to provide, and what they expect you to be able to do surveillance-wise," he continued. "The minimum is what they're able to do." **W**

THE BOTTOM LINE

- Regulatory agencies are becoming sophisticated in their use of technology, far in advance of where they were even five years ago. This, in turn, means trading firms are being forced to upgrade their

own surveillance technology in order to provide the information they are asking for. Those that do not embrace technology may run into serious problems, compliance chiefs warn.

Arrival of Mifid II Will Be ‘Like Christmas’

Esma conference panelists discuss how the trading and market infrastructure will be affected by incoming regulatory changes. *By John Brazier*

New levels of market transparency under Mifid II will be like a late Christmas present for the industry, according to panelists at Esma’s The State of the European Financial Markets conference in Paris in October.

Discussion around the trading and market infrastructure was unsurprisingly dominated by the upcoming regulatory regime, which was confirmed for implementation on January 3 next year by European Commission vice president Valdis Dombrovskis.

“Although it might not feel like it today, January 3 will be Christmas for our customers, given the opportunities for greater competition and increased transparency across a range of asset classes that, up until now, have not been touched by competition,” said Xavier Rolet, CEO of the London Stock Exchange Group, who has confirmed that he will step down from the role by the end of next year.

However, Rolet did acknowledge that not all industry participants are finding preparations for the upcoming rule changes to be smooth sailing, particularly among the asset management community. “The buy side today is still going through adjustments in terms of ensuring that all their systems are ready,” he said. “We test with many of our participants; the level of preparation on the sell side is, in general, very high and we’re quite confident that January 3, 2018, will deliver continued and systemically safe performance in keeping with the new regulation, but there is still quite a bit of testing to be done.”

Rolet’s positivity was echoed by fellow panelist Thomas Book, CEO

“Although it might not feel like it today, January 3 will be Christmas for our customers, given the opportunities for greater competition and increased transparency across a range of asset classes that, up until now, have not been touched by competition.” **Xavier Rolet, London Stock Exchange Group**

of Deutsche Börse’s trading venues, Eurex Frankfurt and Eurex Zurich, who outlined the work the group had been doing over the past three years in preparation. “Our core strategic topics that we are focusing on are centered around changing our trading models, responding to best-execution requirements, which are a great topic for many market participants,” Book said. “We have launched a request-for-quote (RFQ) segment, which will help the voice broker business with electronic execution and help electrify their business.”



Valdis Dombrovskis
European Commission

Future Issues

It fell to Markus Ferber, a German member of the European Parliament and the vice chair of the Economic and Monetary Affairs Committee, to deliver a more cautious verdict during the course of the discussion, stating that “Mifid II was never foreseen to make the financial world

happy—it was foreseen to make the financial world safer and that has to be taken into account,” he said.

Noting that January 3 would not be “100 percent my Christmas gift,” Ferber outlined ongoing issues surrounding derivatives trading obligations and Legal Entity Identifiers (LEIs) as areas still requiring regulatory clarification or further preparatory work by the industry. “I have not yet got the feeling that we are ready with everything,” he said. “My main concern is the revival of broker crossing networks (BCNs) through systematic internalizers (SIs), which we have tried to fix as much as possible by adjusting regulatory takes on that.”

The role of SIs has been a contentious one for both regulatory bodies and industry participants. They are designed to handle the execution of client orders against a bank’s own capital and inventory, and replace BCNs under the new rules, and by so doing impose a trading obligation on equities and equity-like instruments with any firm that accounts for more than 0.4 percent of trading in a stock, effectively forcing them to register as an SI. As previously reported by *Waters*, while a number of bulge-bracket banks have registered as SIs and have officially announced that they plan to operate as SIs under the Mifid II dispensation, the quantity of such entities is expected to balloon to around 100 come January.

Eurex’s Book echoed Ferber’s concerns regarding SIs, stating that the industry should not create a “race to the bottom” through the emergence of new liquidity providers competing on elements such as transparency. **W**

THE BOTTOM LINE

- The arrival of Mifid II will be “like Christmas” because it will create greater competition and transparency, although

niggling problems persist in undermining preparations ahead of its January 3, 2018, deadline.

Wisconsin's Pension Fund Completes Architecture Overhaul

The pension fund for the state of Wisconsin has completed a radical transformation of the technology it uses—and has laid the foundation for future growth in the process, according to one of its top executives.

By Anthony Malakian

The State of Wisconsin Investment Board (SWIB), the government-owned pension fund that oversees about \$110 billion in assets, has spent the last four years overhauling its operations and technology processes.

Launched in September 2013, the project has been completed, inasmuch as “completed” might be a strong word considering the entire point of the program has been to allow the fund to scale and grow into new areas. Something like that is never truly finished. But it is fair to say that the foundation is now set for the fund to move forward.

“Completing this transformation project allows us to compete in a more diverse and complex investment environment,” Michael Williamson, SWIB’s executive director, tells *Waters*. “By using top industry solutions for risk, analytics, and attribution, in addition to a new finance and administration platform, new data management systems, a new data integration architecture, and new reporting and business-intelligence capabilities, we have achieved an integrated platform serving portfolio and order management.”

The transformation project, which cost about \$48 million, included the introduction of eight new technology platforms, including the rollout of BNY Mellon’s Investment Book of Record (Ibor) product and IHS Markit’s Enterprise Data Management (EDM) platform.

“The bottom line is that we can streamline operational processes through automation, scale our

investment model, and focus on data quality,” says Williamson, who will retire at the end of 2017. “The platform supports the complex investment strategy required by SWIB to continue to meet the investment return requirements for the Wisconsin public pension fund. We delivered reasonable returns, implemented tactical projects, replaced a siloed mindset with cross-organizational collaboration, and retained exceptionally high employee engagement results during implementation. Over the last five years, our investment strategies added \$1.1 billion above what the market generated.”

As of December 31, 2012, before the project began, SWIB managed \$90 billion in assets. It has added about \$20 billion since then.

Focused Attack

David Bates, managing partner at Citisoft, which was brought in to formulate an overall technology and operations strategy for the project, says that where firms often go wrong with these ambitious restructurings is that they diverge from the core architecture, then go off and build custom solutions to purpose-fit gaps.

“In the end, what they get is a diverged environment that is more difficult to manage and operate, and more difficult to implement continual improvement processes over the top,”

he says. He explains that for this project, a key component for establishing the architecture, design and implementation was to create a single source of data where SWIB could cleanse and source data consistently for the entire organization, with proper data governance and data management controls put in place.

“A lot of times, organizations will bring in bespoke technologies that aren’t fed through an integrated architecture and that can lead to increased future operating costs, lack of flexibility and lack of traceability of data issues,” Bates says. “Part of the challenges of a major transformation, where you’re replacing multiple platforms or services, is ensuring that that integration architecture is well thought out. Also, implementing that requires a strong plan that prioritizes and sequences dependencies and interdependencies properly.”

Williamson says that by transitioning to an Ibor, SWIB has been able to lay the foundation to ensure that its technology, data management, investment operations and fund accounting teams can resolve issues at the source. “We knew this was a huge undertaking, but it really allowed us to take a step back and look at how we operate as an organization from top to bottom and what we needed to do to continue to be at the forefront of investment management technology and operations innovation,” he says. “It also gives us the ability to remain an agile organization by providing us the opportunity to improve our infrastructure as systems and technology evolve.” **W**

THE BOTTOM LINE

- SWIB has invested almost \$50 million to transform its entire infrastructure, with the key components being

an IBOR from BNY Mellon and an EDM platform from IHS Markit.

Personal Details Compromised in SEC Hack

The top US markets regulator has revealed that a 2016 breach of its company filings system resulted in the loss of personal information, as it seeks to deal with political pressure stemming from the incident.

By James Rundle

The US Securities and Exchange Commission (SEC) revealed on September 20 this year that its online system for company filings, the Electronic Data Gathering, Analysis and Retrieval System, or Edgar, had been compromised during 2016. The agency said that illicit trading may have taken place thanks to intruders accessing the confidential information contained within the platform.

Things have gotten worse from there. On October 2, the SEC provided an update, saying that it had determined that a test filing accessed by intruders had resulted in the loss of names, dates of birth and social security numbers of at least two people being accessed. The discovery came to light on September 29, the agency said, and it has been in touch with the individuals concerned.

"The 2016 intrusion and its ramifications concern me deeply," said SEC chairman Jay Clayton, in a statement. "I am focused on getting to the bottom of the matter and, importantly, lifting our cybersecurity efforts moving forward."

Clayton, who took over as chairman of the regulator in May 2017, was grilled by Senators in a public session on September 26, who pressed him on the Commission's standards relating to cybersecurity at a time when the SEC is making rules for the industry around the same topics, and in light of a serious cybersecurity breach at credit ratings company Equifax weeks before.

Senators also pointed to the fact that the SEC is seeking to collect



Jay Clayton
SEC

vast amounts of data on stock-market activity through the Consolidated Audit Trail (CAT) program, and expressed skepticism that it was properly equipped to handle that information.

"It is critical that the SEC safeguards the data it collects and maintains—especially as the CAT becomes operational," said Mike Crapo, a Republican senator from Idaho, and the chairman of the banking committee. "The recent Equifax breach has highlighted the need to protect this sensitive and valuable information."

Other senators were more direct in their criticism, with Sherrod Brown, the ranking Democrat senator from Ohio, asking what else the public had not been told, in reference to the long gap between when the incident occurred and when it was disclosed.

"How can you expect companies to do the right thing when your agency has not?" he asked.

Vulnerabilities

The SEC responded to outrage over the incident by announcing plans to expand its capabilities in cybersecurity. On September 25, the agency announced the creation of a new

cyber unit, which would not only police hacking attempts but also the dissemination of false information in order to support market-manipulation schemes. Robert Cohen, the co-chief of the agency's market abuse unit, will become the chief of the new division, the SEC announced. Such a scheme also occurred on Edgar in 2015, when fake information about a takeover of Avon Products was posted to the database, driving the stock price up before it was removed. Other such filing systems have also been subject to fraudulent postings, such as Companies House in the UK, where it was revealed that fraudsters had created fake companies using the names of US exchange groups, although no market manipulation was detected as a result.

However, the Edgar intrusion appears to be the most serious cyber-attack suffered by US regulators to date. It is doubly embarrassing for the agency after not only releasing a series of rules in 2014 to govern cybersecurity practices at financial firms, known as Regulation Systems Compliance and Integrity (Reg SCI), but also after state regulators such as the New York State Department of Financial Services have moved to implement increasingly stringent guidelines around best practice for cyber defenses.

"This incident clearly exposes how vulnerable our global financial ecosystem is and how unprepared we are to fight skyrocketing cyber-crime," says Iliia Kolochenko, CEO of web-security firm High-Tech Bridge. **W**

THE BOTTOM LINE

- Personal information, including social security numbers, may have been exposed as a result of the 2016 breach, the SEC disclosed on October 2, leading to its chairman,

Jay Clayton, facing questions from a Senate committee pertaining to the Commission's ability to safeguard information it collects.

BNP Paribas Readies Live Blockchain Implementation, Experiments with AI

BNP Paribas Securities Services' Patrick Colle talks with *Waters* about how it is working with blockchain and artificial intelligence technologies. [By Anthony Malakian](#)

In a heightened regulatory environment, it is vital to automate as many manual processes as possible in order to cut costs and better manage the workforce. Patrick Colle, CEO of BNP Paribas Securities Services, says this push toward automation—and, specifically, digitization—has led the company to experiment with distributed-ledger technologies on several levels.

Earlier this year, BNP Paribas Securities Services announced that it was partnering with fund manager AXA Global Investors to develop a digital fund distribution platform, named Fund Link. The solution uses blockchain technology to streamline the fund onboarding and subscription/redemption process, starting with know-your-customer (KYC) demands, Colle says. Fund buyers, he says, must go through multiple KYC steps. But if you put that on a blockchain, then you only have one KYC that is used by all the participants on that chain, from the buyer, to the fund manager, to the transfer agent, and so on.

The firms have launched a proof-of-concept for this chain, although it is not live yet. Also this year, BNP launched fintech venture Liquidshare, a partnership between BNP Paribas, Euronext, Euroclear, CACEIS, Caisse des Dépôts and Societe Generale. Liquidshare is looking to develop a post-trade blockchain infrastructure for small-cap, unlisted stocks. Colle says that they hope to have a live blockchain offering for Liquidshare sometime during 2018, although there is no exact timeframe.

Colle says BNP Paribas is close to going live with an internal blockchain for processing corporate actions. “We



Patrick Colle
BNP Paribas
Securities
Services

are working as we speak on creating a corporate actions processing layer built on top of the blockchain—purely internal,” he says. “This will be live internally within weeks.”

He says these projects point to the custodian’s overall framework for blockchain-related projects. “The way we approach blockchain is three-fold. We have initiatives that are totally internal—internal processes that we put on blockchain. Then we have blockchain initiatives that are for the outside world. Fund Link is one example; another example is Liquidshare. Then the third component of our blockchain strategy is marketplace initiatives where we get together with peers in the market,” which includes projects like R3, of which it is a member. It is also involved in other industry projects that Colle says, “might get a life of their own, or not,” but it’s still too early to tell.

AI Investment

The firm is also growing its artificial intelligence (AI) and machine-learning portfolio. Earlier this year, BNP Paribas Securities Services took a minority stake in fintech startup Fortia Financial Solutions—which has an AI-powered investment compliance platform called Innova—with an eye toward Innova becoming the core platform supporting

its depository bank. It will be used to actively monitor whether the investment of funds, for which BNP Paribas Securities Services acts as a depository, comply with the fund’s prospectus.

Colle says BNP administers around 10,000 funds worldwide, and each fund has a prospectus where, every day, there are 100 control points to perform, in order to ensure that rules and investment guidelines are being followed.

“The manual task of going through the prospectus and checking the maximum amount of investment and this and that is a humongous amount of work,” Colle says. “That Fortia platform, with the embedded algorithms, allows us to understand automatically what’s in the prospectus, apply it to all the control processes of the fund, and this happens in seconds instead of days. It revolutionizes the process.”

Colle says Innova has been partly integrated, but they hope to have it fully integrated “sometime next year.”

Finally, on October 9, the firm announced that it was implementing a trade matching tool, Smart Chaser. Using AI, it is aimed at middle-office trade processing where, according to Colle, 30 percent of transactions fail, creating “a lot of waste.” Smart Chaser is a predictive engine that goes through “humongous amounts of historical data and allows us to predict—based on a number of parameters—which trades are likely not to match. This way there’s still time before the deadline to act on it and work on it more. Then you can super optimize your settlement trades,” he says.

This platform was internally built but connects to various third-party, middle-office and big-data tools. **W**

THE BOTTOM LINE

- Colle spoke to *Waters* in mid-October, explaining that the bank was on the verge of a big acquisition that would help it to enter the 40 Act fund administration business,

which it currently is not part of. At press time, an announcement had yet to be made, but Colle said that he expects the deal to occur this year.

The Talent Trap: How to Attract and Retain Young Technologists

Senior technologists talk about the difficulties of retaining talent and the programs they're implementing to stem the outflow of technologists from their firms. *By Anthony Malakian*

While speaking on the C-level panel at this year's Buy-Side Technology North America Summit, Colleen Coda, managing director at Blackstone, lamented the fact that it's difficult to keep millennials at the firm for longer than three years, leading Paul Zajac, head of technology at Credit Suisse Asset Management, to remark: "I'm surprised they're lasting three years."

In finance, it's a challenge finding and attracting young technologists when buy-side shops are having to compete with the likes of Facebook, Amazon, and Google. But once they land that talent, how do asset managers go about retaining them?

"We have a pretty strong intern program and we're hiring associates from college and we rotate them, but we've been losing them at about the two-year mark," Zajac said. "And it's not just for any one, specific thing that you can put your finger on—it's resulting from all different things."

Rama Ramachandran, CTO at Black Diamond Capital Management, said it's tough enough to get to 12 months. "Colleen said three years; in my case, I had a couple of millennials leave after just a year," he said. "According to them, the applications that they were working on were not sexy enough. That's what we're facing."

According to Zajac, a key to retaining millennials is to think past technology—teach them the business and you can show them an interesting career path that they might not have considered previously, as the business is becoming increasingly reliant on technology and, specifically, programmers and engineers, he said.

"By teaching them the business, maybe at some point down the road they'll want to move into a front-office role," he said. "If it's purely the technology, I can't compete on that."

Phillip Dundas, head of IT for the Americas at Schroders, said even if firms can't retain talent, they can keep them invested to get the most out of them. "If people feel like they're truly contributing to the bottom line and making a difference for the organization, even if they only stay for two, three or four years, we'll get the most out of them while they're there," he said.

Changing Cultures

The hunt for talent begins at college level. But Coda said it's important to target the firm's recruiting practices, which requires marketing and branding, and build out the pipeline by looking beyond graduates. "We focus on underclassmen because it builds the brand on the campus where we can find the right talent," she said. "We've also seen a high conversion rate of interns to full-time hires. At that level, we can help mold them and bring them into our culture." Coda said that Blackstone hosts monthly "Tech Talks" where it brings in senior management to explain how technology is driving the business.

"This cuts down on that, 'Oh, I'm just a tech guy sitting in the back coding

something and no one appreciates what I've built,'" she said. Zajac said Credit Suisse has a similar program where people across the firm are involved so business leaders can teach young technologists about how they're utilizing technology.

It's important to consider millennials' changing work expectations. "One thing I found is that if you don't have micromanagement and leave them to do their own work in a creative way, that's what they want," said Ramachandran. "And as long as they're in our guidelines, they get pleasure out of working on the team, but also increasing collaboration and giving them a sense of ownership of the product they're building. They feel proud of what they did and that helps with retention."

Coda said Blackstone had to physically restructure the IT team's environment in order to retain talent. Across the street from where the business units sit, the technology team completely reconfigured its workspace, creating an open environment with standing desks, along with many of the devices one might find at a technology company like Google. "Having the environment that's conducive to not only millennials but technologists has really helped," she said.

While Blackstone is known as a suit-and-tie private equity firm, the technology team is casual. But if a technologist needs to go across the street to the business side, there's a "suit room" where they can change into something more formal for meetings with either clients or other parts of the business. "That was a hard one to get passed," she said. **W**

THE BOTTOM LINE

- Capital markets firms are struggling to attract and retain talented technologists out of college in the face of stiff competition from firms like Google, Amazon, and Facebook.

The key, say panelists, is to teach millennials about the business and how technology can serve it, as opposed to getting them to focus on purely technology issues.

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Casting a Wider Net

Tightened balance sheets and pressure to manage costs are driving change in the corporate bond market, and Tradeweb's new electronic tools are set to revolutionize credit trading with optimized workflows that improve efficiencies

Credit inventory has shifted significantly towards buy-side participants, highlighting new challenges for investors in accessing liquidity while delivering best execution.

Focused on better ways to find the other side of their trade, the industry has seen the rise of all-to-all trading solutions to help broaden trading networks on electronic venues and grow electronic market share in US high-grade credit to more than 20 percent, for example.

Market participants are beginning to approach corporate bond trading differently, however, and have begun leveraging technology to streamline their workflows for the bulk of their block institutional business. Relationships are being digitized with greater operational efficiency, and investors are benefitting from automated trade processing and risk netting to reap significant cost savings.

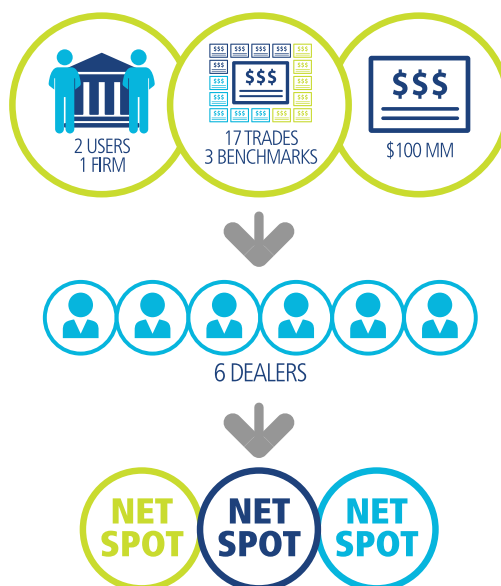
A Move to Seamless Spotting

Long advocates of flexibility in the ways investors can trade electronically; Tradeweb appears to have accelerated the adoption of electronic execution with automated price spotting for high-grade credit trades with direct connectivity to its US Treasury marketplace.

Chris Bruner, head of US credit at Tradeweb, says firms leveraging this new technology can free up resources to focus on trade ideas and value-adding activities instead of trade processing. "When a credit trader buys a corporate bond on spread, for example, they need to spot that trade against the corresponding Treasury benchmark to finalize the price," says Bruner, a process that can take up to 15 minutes to confirm with a bank Treasury desk by phone.

"Traders don't want to wait a long time to spot their trade with a Treasury desk, or risk manual errors in processing trades, when they have more orders to focus on," he says, explaining how traders can put down the phone and benefit from a complete audit trail in a streamlined spotting workflow.

Liquidity providers also benefit from automated price spotting for credit trades, allowing them to immediately offset their interest rate risk of the credit liquidity they're providing with a correspond-



ing Treasury trade, Bruner says. "Both buy- and sell-side parties reduced their execution risk by decreasing the time to quote, whereas historically, movements in the Treasury market while waiting to spot a trade could have a significant impact".

Tradeweb has since become one of the fastest-growing credit platforms in the US, demonstrating that electronifying relationship-based trading can meaningfully enhance investors' operational efficiency and cost savings. However, with the introduction of new technology to net the spots for all high-grade corporate bond trades across a trading desk, Tradeweb may be on the cusp of drastically reducing operational risk for credit market participants.

Introducing Multi-Dealer Netting

Multi-dealer netting adds another layer of efficiency to automated spotting, accord-

ing to Bruner, allowing investors to condense the number of spots they need to request from a Treasury desk and the corresponding bid or offer paid on each of those trades.

"Net spotting is one of the most exciting innovations in the high-grade market, it's something that didn't exist in the marketplace before," he says. The new functionality allows firms to collectively spot their combined voice and electronic trades, enabling traders to price and execute baskets of exposure in a list for larger parts or the entirety of their funds, calculate the net hedge, and offset the interest rate risk in as little as one trade.

For example, Tradeweb completed the first multi-dealer net spot in September, where two users on one trading desk executed 17 different trades with six different dealers and three different Treasury benchmarks to spot against.

By leveraging multi-dealer netting, the firm netted the risk for 14 of 17 trades, and was able to reduce their execution risk by spotting those trades immediately. "That's the equivalent of compressing 17 conversations into a few clicks, while delivering scalable savings in execution costs for all participants", says Bruner. "This is the next level of value innovative platforms like Tradeweb are bringing to the market, enhancing relationship-based trading with real operational efficiency for the trading desk". **W**



SIBOS 2017: Disrupting the Disruptors

Emerging technologies took center stage at this year's annual Sibos bonanza, while fintech lost some of its bravado. By [James Rundle](#), reporting from Toronto, and [Anthony Malakian](#) in New York. Photos courtesy of Sibos

Robotics, artificial intelligence, cybersecurity and blockchain—from a capital markets perspective, these were the big four topics of the annual Sibos conference this year, hosted for the second time in Toronto. The use-cases for these technologies stretched across the middle and back offices, where some larger banks debated the benefits of robotic process automation (RPA) when it came to legacy architecture, through to the applications of machine learning and cognitive technology in fraud detection, know-your-customer (KYC) processes and anti-money laundering (AML). These technologies, while remaining on the

cutting-edge, appear to be increasingly critical for banks, which means that those without the financial and technical resources to invest in them are increasingly at risk when it comes to detecting fraud.

“If you’re a financial institution, unless you’ve got the software, you’re not going to be able to do it,” says Chris Mathers, a former undercover officer with the Royal Canadian Mounted Police (RCMP), who spent his career infiltrating money-laundering gangs. “There’s too much going on, and you need to have it. The problem is that a lot of these banks are almost big enough to get it, but not yet, and those, I believe, are the most vulnerable.”

On the cybersecurity front, the tenor was somewhat different from previous years, as the proliferation of cyber incidents in recent months seemed to have finally spurred the industry into action. But far from easing the problem, it only seemed to get worse—experts warned of nation-states attacking US banks, while law enforcement and military officials spoke about persistent and advanced threats from a fusion of state and criminal enterprises, all with access to intelligence tools that were once developed by Western intelligence, and are now freely available. The dark side of open source was an idea mentioned by more than one executive.

Conspicuous Absence

One theme that seemed conspicuous by its absence this year was disruption—far from the heady heights of four to five years ago, when payments providers, capital markets tech firms and anyone else who wanted to start a company and call themselves “fintech” were threatening to destroy the banks, the tone was far different at this year’s event. Instead, the disruptors have themselves been disrupted, a theme which will be explored in more depth in a future issue of *Waters*.

Far from launching coups d’état, many fintech firms are now willing partners in alliances that help to strengthen the position of the industry’s incumbents. The language is one of collaboration, rather than confrontation. “Some of the hot air has left the room, and we’re now talking about working together,” says Michael McGovern, head of investor services fintech at Brown Brothers Harriman. Others, like Mathieu Maurier, a managing director at Societe Generale Securities Services, say this phenomenon isn’t specific to finance. “I liken it to biotech,” Maurier says. “You haven’t seen a biotech firm replace a single big pharmaceutical company—they work together now. It’s the same with us and the fintechs.”

From the perspective of Sibos, at least, the short-lived phase of “dis-

ruption” is clearly over. But the new challenges that it helped introduce and popularize—emerging technology, cybersecurity, distributed-ledger technology—are all very much still active. They just have a new—or perhaps, an old—home, now.

Building Blocks: Blockchain Creeps Forward

Of the aforementioned four technologies, blockchain was the one that dominated discussions at Sibos this year. If you’re a believer in blockchain and distributed-ledger technologies (DLT) as a whole, then while 2016 might have been the year of blockchain discussion, 2017 has been a year of progression, edging into live implementations. Most banks have taken a two-path approach toward blockchain experimentation: internal blockchains to automate largely manual middle- and back-office processes; and working with consortia and industry groups for industry-driven projects. For all the talk of the revolutionary powers of DLT, there’s little evidence of fully live implementations that are disrupting finance—as yet, anyway. Yes, there are large numbers of test projects currently on the go, the vast majority of which have produced impressive results (based on participants’ claims), but none so far as *Waters* can ascertain has made it into a live, production environment.

What has become clear is that blockchain is not right for all. While speaking on a panel at the event, Dirk Bullman, an advisor to the director general, payment systems and market infrastructure at the European Central Bank (ECB), said that while the ECB is exploring the technology, it’s “not an option” currently for the institution. “What we offer, as a service in Europe, is the backbone of the financial sector, and the implementation of monetary policy,” Bullman said. “It has to meet high security standards, high efficiency standards, and we quickly came to conclude that blockchain technology is not as mature as we had maybe hoped.”

Alexis Thompson, head of global securities services at BBVA, noted that the industry has dumped “billions” of dollars into large-scale projects like Target2-Securities. “And now they’ve got to dump more money into this? If I go back now to my firm and say, ‘we’ve spent millions and now we’re going to throw it all away because we’re moving to blockchain,’ I think they’re going to look at me as if I’m a bit of a madman,” he said. “We’ve made an investment—it was a huge investment—and now we have to make that work.”

He also noted that while instant settlement is hypothetically possible with blockchain, “as an industry, we’re not ready for instant settlement.”

Waters’ Take: Distributed ledgers will eventually find their way throughout the industry, but the technology is still in a hammer-looking-for-a-nail phase, and one has to wonder if that’s truly how revolutionary innovation should be born. But it’s not all doom and gloom. While speaking with *Waters* at Sibos, the Depository Trust and Clearing Corp. (DTCC) confirmed that its Trade Information Warehouse project—a blockchain-based platform for reporting credit derivatives trades—will be fully live by the end of 2018, with a caveat that the deadline might stretch to the beginning of 2019 in a worst-case scenario.

Additionally, Swift’s DLT pilot for trade finance now has more than 30 participants and it has released a report of lessons learned during the process. The findings make for sober reading among DLT trade-finance enthusiasts. “One thing that was important is that the value you get depends on what type of institution you are,” Damien Vanderveken, head of research and development at SwiftLab, tells *Waters*. “So, if you are a very large bank and you’ve done a lot of investment already in liquidity management, then the benefits of moving to a DLT solution are not as big as they would be

if you had not made those investments. So we clearly need to take that into account in the next steps—to cater for all types of banks, we need to segment our approach.”

The interest and investment in DLT is there. That is plain to see. But just how revolutionary the technology will turn out to be will depend largely on whether there’s some evidence of real-world implementations before Sibos 2018.

AI: Machine Learning Grows Up

As the hype for blockchain has simmered down just a bit, machine learning’s ascent has skyrocketed. The reason for this is that when used effectively, machine-learning-based algorithms can significantly reduce processing times, allowing traders, risk officers and back-office workers to more effectively do their jobs. The technology has become more viable through increased storage and processing power, and the ability for capital markets firms to consume and digest more varied and complex datasets. Additionally, while DLT projects are largely geared toward industry problems, machine-learning tools can be used in a more targeted fashion internally.

Take, for example, what Finastra is building when it comes to removing the risk of—and fallout from—“fat-finger” mistakes. Finastra, formed this year through the merger of Misys and D+H, is preparing to sign its first deal for its FusionCapital Detect platform, an algorithm-based offering that uses machine learning to track clearly erroneous trades before they can go through the entire post-trade process, and halt them before they wreak havoc on the broader market.

While speaking with *Waters* at Sibos, Nadeem Syed, Finastra’s CEO, said the company deployed this algo for an equity derivatives desk as a proof-of-concept at a tier-one bank and that “out of the box ... the algorithm was accurate to 90 percent.”



Expect to see many more examples of machine learning’s effectiveness for the capital markets over the next 12 months.

Waters’ Take: The caveat with machine learning is that—as with any truly revolutionary technology—everyone wants to jump onto that bandwagon (think cloud in the mid-2000s). There’s a distinct difference between true machine learning and simply using automated technologies to replace manual processes. But give a marketer a chance, and they’re likely going to sprinkle in a few ML and AI references when talking about their product. Much like how regulators are grappling with how to oversee digital currencies (*see page 30*), regulators are also going to have to get their heads around the benefits and potential illegalities of true black-box, machine-learning tools.

The other thing that needs to be understood is that while AI will remove numerous low-level jobs at financial institutions, it will also create a large number of high-level jobs. But

that’s also more of a long-term issue. In the near term, these tools will prove to be effective augmenters, rather than replacers. The reason that banks are throwing money at engineers with machine-learning expertise is because the technology offers the potential to increase a talented portfolio manager’s or trader’s ability by orders of magnitude. It can also help expand a risk or compliance officer’s understanding of the firm’s various exposures and it can help reduce the likelihood of a massive fine due to a KYC/AML-related infraction.

For now, the machines are our friends. That said, firms must invest intelligently rather than enter into a boondoggle with no clear goal or oversight.

Unplugged: Robots Not Ready to Take Over

That brings us to robotic process automation (RPA), arguably the one area for some where AI has taken a backward step. The events of 2008 are still being felt today. Banks are still trying

to figure out how to adhere to onerous regulatory reporting requirements, while reducing headcount, all while investing in innovative technologies in order to remain competitive. This three-pronged problem has led to significant investment on the sell side into robotics in recent years.

As firms are taking a step back to examine the ROI of these projects, though, some are finding that they've not been worth the expense. While speaking on a panel, Matthew Davey, head of business solutions at Societe Generale Securities Services, said that while machine learning has proven useful, robotics have been a disappointment. "When we talk about AI, most of what we mean is machine learning, but we've also done a lot of work with robotics, with RPA recently," Davey said. "I have to say that we've been a bit disillusioned with that experience. When I talk to people internally, there's been a lot of negative comment about RPA."

Davey pointed to cost as RPA requires a bank to "parameterize all aspects of a process," but once new costs are factored in, the sheen fades. The French bank is now pursuing a fusion of RPA with other AI technologies, the results of which, he told *Waters* on the Sibos sidelines, are more promising.

Waters' Take: This one was a bit of a surprise to us. Over the last several years we've heard increasingly about firms turning to RPA to help improve middle- and back-office functions as an answer to increased reporting demands. Our guess is that there isn't a sea change underfoot; rather, capital markets firms are reexamining the technology and their options. As Kirsty Roth, global head of operations at HSBC, noted on a panel, a hybrid approach is probably most beneficial. "We've had mixed experiences with RPA. Fundamentally, we still prefer to be mobile-first, proper, good old-fashioned straight-through processing," she said. "What we've learned as an organization is that it's useful to have both tracks—anyone

waiting for a gold-plated solution, given our size and scale, will be waiting for a really long time."

The key problem here, as with DLT, and other new technologies, is that implementing them on legacy architecture is a no-win situation. Banks still have spaghetti-like technology estates, and implementing RPA technology on top of that is an end-point, rather than a starting block—they have parameterized the processes to fit the existing technology restrictions, and therefore any changes become difficult to implement. As with most things, as the shine comes off emerging technologies, the real guts of the issues are exposed.

No Shelter: Cyber Concerns Threaten Everyone

The evolution of innovations such as blockchain, AI, robotics and numerous other technologies will see twists and turns along the way. Investment will ebb and flow. Newer, more revolutionary products—quantum computing, which is a truly disruptive technology in the real sense of the word—will continue to evolve. The one thing that will remain constant is the worry over cyber threats.

The recent data leaks at Equifax and the US Securities and Exchange Commission (SEC) have forced large numbers of capital markets firms to reexamine their cybersecurity protocols. Perhaps most worrisome is that nation-states are becoming increasingly sophisticated at targeting financial institutions through cyber-attacks as better hacking tools proliferate. While speaking at Sibos, William Carter, deputy director of the technology policy program at the Center for Strategic International Strategies, said that from 2011 to 2013 the Iranian government started launching distributed denial-of-service (DDoS) attacks on banks and exchanges across the US. That marks the point that cyber-attacks metastasized for financial institutions. "If you're talking about a change that should make every finan-

cial institution absolutely terrified, that should be it," he said.

And now North Korea can be added to that list. "North Korea is really the only one we've seen doing it at scale for financial gain thus far, but one interesting thing is that there are about 150 countries with less GDP than North Korea, and more connectivity. If any of them are inspired by North Korea and think, 'Hey, I could use some government revenue, this seems relatively easy,' it actually can be done," Carter explained.

Waters' Take: It's easy to throw one's hands up and say, "What can you do?" but that's simply not an option. Banks will always be playing a game of technological catch-up with hackers, but to combat that, the industry needs to come together and open up lines for dialogue. And, as always, educating internal employees is vital. But perhaps more important is stripping out the ego from the organization and understanding that you're never 100 percent secure and there's always room to learn. After all, the hackers are learning new tricks every day. More than that, they're evolving, too. Criminal gangs and states, in certain parts of the world, are more or less indistinguishable from one another, says Mathers, the former RCMP officer. The tools that were previously only available to intelligence agencies are now, in this new era, widely available.

Much of the attention is, of course, focused on commercial banks. But that doesn't mean your friendly neighborhood stock exchange is safe. "Financial market infrastructures are certainly being targeted, and one of the things that really scares major stock exchanges is DDoS, because denial of access to your data is a real problem for them. Actually, the biggest threat they're grappling with is data integrity. So, if you're thinking about something like a stock market, you need to be able to trust the price that you're being quoted, and trust the order flow, so they're really concerned about that," Carter said, in response to a question from *Waters*. **W**



Brexit Looms Over Future of European Financial Markets

The UK's impending departure from the European Union has cast a shadow of doubt over Europe, with time for negotiations moving swiftly past with little sign of progress. **John Brazier** finds that while the lack of clarity over how the divorce will play out is stalling capital markets institutions' plans and causing concern over investor protection and transitions, the industry and financial technology space has a pivotal role to play.

The impact of the UK's decision to split from the European Union (EU) sent shockwaves across the continent when the decision was announced on June 24 last year, swallowing political, social and economic issues whole. The enormity of Brexit and what it means for the future of the capital markets, both in the UK and the Eurozone, cannot be underestimated and financial firms have already begun making contingency plans for whatever outcome is reached when the two year period for negotiations under Article 50 expires on March 29, 2019.

As part of his keynote speech at the European Securities and Markets Authority's (Esma's) conference last month in Paris, Valdis Dombrovskis vice president for financial stability, financial services and the capital markets union at the European Commission, said that until further progress was made on initial negotiating factors, ambiguity could not be lifted from the industry. "The fact that the largest financial center is leaving the union is a serious concern for many businesses," he said. "Pending the outcome of negotiations, it creates legal uncertainty and requires businesses to



“There needs to come a time either to accommodate an existing platform from a provider that is already present in Continental Europe or build a new one, and you need to take some time to deal with that. In the long-term, the more operations it takes the more difficult it will be.” **Sylvie Matherat, Deutsche Bank**

reassess their strategies. My main priority during the process will be to reduce this uncertainty as much as possible, and preserve the stability and resilience of our financial markets.”

Pierre-Henri Conac, professor of commercial and company law at the University of Luxembourg, who was speaking as part of a dedicated Brexit panel during the one-day event, was far blunter in his assessment of the situation, describing Brexit as a “political disaster.”

“Now it is also turning into a technical disaster if it is not fixed,” he said, referencing the possibility that a “hard Brexit” scenario was becoming more likely.

Confusion Reigns

The ongoing lack of clarity as to how Brexit will unfold is severely hampering the ability of capital markets participants on both sides of the Street to adequately prepare for life both before and after the UK’s withdrawal from the EU, and crucially, the European single market. While negotiations continue to stall between the UK government and European Union officials over how the divorce will play out, with details over trade deals and “passporting”—the ability to export services throughout the EU—yet to be hashed out, financial institutions may have to take the lead

and execute their strategies, regardless of political outcomes to safeguard both their businesses and investor interests. “You cannot, as an industry, keep all optionality open for very long, so that means if there is no decision or clarity at some point, we will have to make a decision,” said Sylvie Matherat, chief regulatory officer at Deutsche Bank, who was also part of the Brexit panel. “Maybe we will need to move before any political decision will be made, which is a pity from a political perspective because that means that the decision will be made by the industry.”

At what point financial institutions will decide that plans must be put into motion also remains unclear, but there seems to be little doubt that once one organization begins the process, others will follow. And, if Brexit naysayers need any convincing that capital markets firms are serious about their threats to up sticks and move to the Continent, Goldman Sachs’ CEO Lloyd Blankfein’s October 19 tweet would have made sobering reading: “Just left Frankfurt. Great meetings, great weather, really enjoyed it. Good, because I’ll be spending a lot more time there. #Brexit.”

London’s position as Europe’s prime financial and technology hub is under serious threat, as other major banks, including JPMorgan, Citi and

Morgan Stanley have outlined plans to move operations from the UK to Frankfurt, while others are assessing Dublin, Paris and Amsterdam as possible relocation sites post-Brexit.

Fintech Future

It is not just the banks that are seeking new homes in the wake of the split. As previously reported by *Waters*, technology vendors and service providers are also beginning to follow in the footsteps of the sell side and plan for life outside of London. The UK capital has long been in pole position as the go-to center for European fintech startups, with the Continent’s largest financial players on the doorstep and huge investment poured into fintech accelerators and innovations hubs such as the Level 39 complex. Despite the ongoing uncertainty caused by Brexit since June last year, investments in UK-based fintech topped the \$1 billion mark in 2017, according to figures from research and data firm Pitchbook and published by London & Partners on behalf of the London Lord Mayor. Of that investment, London accounted for \$980 million. “Clearly, Brexit poses major challenges but London’s position as a global financial center and world-class technology hub is built on strong foundations, which cannot be replicated anywhere else: access to more software developers than Stockholm, Berlin and Dublin combined; Europe’s largest fintech accelerator Level 39; and the Continent’s only truly global financial market,” said Rajesh Agrawal, London’s deputy Mayor for business, in a statement accompanying the figures.

Whether that level of capital will continue to flow into London-based fintech firms in 2018 and beyond is, for now, a matter of speculation, but that hasn’t stopped those banking institutions that are rooted in the UK, such as Barclays, which launched its



Elizabeth Corley
Allianz Global
Investors



London Rise accelerator hub in May this year, from forging ahead with their own programs.

On the flip side, countries around the Eurozone will be looking to exploit the situation to attract new or existing fintech startups from the UK. Panelist Hans-Ole Jochumsen, vice-chair of Nasdaq, said European authorities need to focus on the formation and development of the capital markets union to ensure that Europe is able to compete on a global level when it comes to fostering financial technology. “We have a big problem already today that we are not very good at creating jobs,” he said. “My concern, having lived in the UK, the US and Sweden, three countries where fintech is hot, is how to keep these new European companies in Europe.”

Transitions

Any transition to a new location will be a major undertaking for any institution that decides to do so and the technology problems associated with such a move will only be exacerbated for larger players, such as Deutsche Bank. Matherat said the organization’s ultimate objective is to minimize disruption to clients, despite planned relocation, which will inevitably involve a number of unavoidable transition costs, including the implementation of new technology platforms and infrastructures, projects that once again touch on the eternal “build versus buy” debate. “There needs to come a time either to accommodate an existing platform from a provider that is already present in Continental Europe or build a new

one, and you need to take some time to deal with that,” Matherat said. “In the long-term, the more operations it takes the more difficult it will be. We will reach a point where, decision or no decision, we will need to make a choice, and if you create those platforms in order to move to a position in Continental Europe, we will not come back.”

While banks have historically struggled with problems associated with legacy technologies and infrastructures, hybrid models of legacy and cloud technologies presents a viable way to establish a new, or at least greater, presence in a new location without having to begin completely from scratch. Both hybrid models and cloud can help preserve the embedded functionality that legacy technologies



Hans-Ole Jochumsen
Nasdaq

provide, while also improving agility and responsiveness required to adapt to new environments. As such, flexibility will be one of the most important facets for banking institutions around Europe post-Brexit. Whatever the short- and long-term ramifications, there will be costs to bear.

Allianz Global Investors, which is headquartered in Frankfurt but maintains a sizeable presence in London, has yet to make a formal announcement on its post-Brexit location plans, but Elizabeth Corley, vice chair of Allianz Global Investors, said any transition will inevitably be a “very expensive and complex process.”

“There will come a point where transition will start to happen anyway and the larger, more well-resourced organizations will be responsible, and will do it as well as they can,” she said. “But there are mid-tier organizations for whom this is a very significant investment with no payback, so they will naturally delay to the point at which they have to do that. For small and mid-tier organizations this is not a risk-free delay; execution risk, at the weakest link in the chain, will start to go up significantly, definitely beyond the end of this year.”

Nasdaq’s Jochumsen said he expects most financial firms to enact their Brexit plans next year following the introduction of the revised Markets in Financial Instruments Directive (Mifid II) on January 3, 2018. “What we hear is that people need to act soon and in reality they would like to have certainty within a few months, but my fear is that it is not going to happen,” he said. “What we will see next year when Mifid II is implemented is that people will start to implement their Plan B.”

However, Jochumsen did explain that around 70 percent of the exchange’s trading participants had divulged their post-Brexit organizational plans, a level that he is “pretty comfortable” with.



Pierre-Henri Conac
University of Luxembourg

Investor Protection

In terms of investor protection, one of Mifid II’s central tenets, Allianz Global Investors’ Corley said that the high level of uncertainty over the future of UK and European relations meant that increased market fragmentation could lead to higher costs, reduced liquidity and more challenges toward sustaining a compliant market. “The biggest impact in the near-term is to make sure that there is a sense of protecting customer rights, whether that is wholesale or individual, and that we do not sacrifice that at the altar of political ambitions,” she said. “Our concerns are all about the fact that come April 2019 we want to be able to look after our clients’ money in a seamless way.”

Any impact on financial institutions’ ability to protect investor interests as a result of Brexit would directly contradict much of the work the industry and regulators have done to implement new operations and technologies since the global financial crisis a decade ago.

A prime example of this would be the incoming revisions on the back of Mifid II coming into force, which places greater transparency and investor protection at the heart of the new regime. While the exact impact of how Mifid II will be enforced in the UK once the transition has been completed is another unknown, Esma and the European Commission have both acknowledged that there will be issues to address on this subject going

forward. German member of the European Parliament, Markus Ferber, who spoke as part of an earlier panel at the Esma event, went so far as to suggest that there should be a review of Mifid II—in effect, a review of the review: “When we negotiated Mifid II and Mifir, no one knew the UK was going to leave the EU,” he said.

Silver Linings

While the shadow of Brexit continues to loom over the capital markets, there are many challenges for the industry to overcome. However, there will also be opportunities to take advantage of, in a similar fashion to the introduction of Mifid II. Corley said there were “substantial areas to win” but that the industry must “keep our eyes on the much bigger game of what happens beyond Brexit.”

Pierre-Henri Conac said the industry, particularly the rest of the European Union nations, should make the most of a bad situation and focus efforts on creating a harmonized capital markets union that could operate on an international level.

Whichever way the Brexit situation unfolds, it’s clear that the capital markets in the UK and Europe will play a pivotal role, either by shaping the course of negotiations in the short term or by their reactions once a deal has been made. For the financial institutions themselves, much of this will depend on how pro-active they choose to be. **W**

SALIENT POINTS

- A lack of clarity about the UK’s departure from the European Union is an ongoing source of concern for the financial services industry, leading to continuing questions around investor protection, transition costs and regulatory obligations.
- While most London-based sell-side institutions are planning to relocate to the Eurozone, technology vendors may follow suit, despite increasing investment in London’s fintech scene over the course of 2017.
- Despite the challenges, there are significant opportunities for firms that choose to relocate outside of the UK to refine their existing technology infrastructures or implement new systems that can enhance operations, such as cloud-based or hybrid models that incorporate legacy functions.

Coming from a family of entrepreneurs, Furio Pietribiasi, managing director of Mediolanum Asset Management in Ireland, still wonders why he never took the step to set up his own fintech startup. “I guess it’s because Mediolanum has given me the freedom to express my entrepreneurial spirit for more than 20 years,” he says. “The only difference is that it’s not my company.” *By Aggelos Andreou with photos by William Copico*

“When they told me nine

years ago that I was set to be the CEO for Ireland, my first reaction was ‘Oh my God,’” Furio Pietribiasi says. He was thrown into the abyss of the first financial crisis of the 21st century, taking on the reins of Mediolanum Asset Management at the same time that Lehman Brothers went belly-up. His task was to protect the Irish fortress of one of Italy’s most prominent financial institutions.

“Markets were in total despair,” he recalls. “They were crashing, and we didn’t really know how to protect our investors’ assets. Banks were not returning calls, most of their staff was laid off, and the rest were afraid to talk. Every day someone would get busted, so you were chasing the money for your clients and trying to keep their assets safe.”

The global financial crisis was a massive learning curve for everyone, but for Pietribiasi, it was also a dramatic self-learning process and a heavy weight on his shoulders. “I had just taken on a big job without knowing how the crisis was going to end, trying to resolve the situation without having a clue how to do that,” he says.

Pietribiasi survived because, he says, he used common sense. “In critical situations like these, you have to apply common sense to everything you do and avoid being carried away by your emotions,” he says.

This meant that he and his team had to work long hours—they spent many nights trying to deal with emergencies popping up again and again. “There was a lot of brainstorming and decisions had to be made quickly; I was lucky to have the support of my team and the trust of our shareholders,” he adds.

The financial crisis led to an evolution in the capital markets industry. Pietribiasi feels that the domino effect is still traceable today and that these apparently never-ending



A portrait of Furio Pietribiasi, a middle-aged man with short grey hair, wearing a blue suit, white shirt, and a striped tie. He is standing outdoors with a blurred background of trees and a body of water. The title 'The Entrepreneur' is overlaid on the bottom half of the image in a large, white, serif font.

The Entrepreneur

Furio Pietribiasi
Mediolanum Asset Management

changes are the new normal. “You have to live with this new reality where returns are not what they used to be, and you’re always preoccupied with fixing, rectifying and adjusting to new regulations and new market infrastructures,” he says. “Keeping, developing and growing the business is the new normal, so you have to work relentlessly to preserve and generate returns for your clients for the assets they want to invest. That’s why innovation and technology is a critical part of today’s financial world.”

Tech Journey

Pietribiasi says that one of the reasons he and Mediolanum survived the crisis is the entrepreneurial culture the firm has adopted since its founding in 1982. “The pressure has not diminished, even now, so we take a lot of new initiatives to cope with the changes in market conditions and to be in line with the rest of the group’s history and attitude throughout the years,” he says.

When Pietribiasi assumed control of Mediolanum, he embarked on a transformational technology journey in order to cope with the changing nature of the industry, taking some initiatives previously unknown to the buy-side community. He considers this journey to be the biggest and most ambitious project he has ever worked on. He says it was a necessary step in order to differentiate the firm’s business in Ireland and to satisfy Mediolanum’s innovation mindset. He decided that Mediolanum needed to start doing things differently from what many other asset management firms were doing at the time.

But Pietribiasi is the kind of entrepreneur who sees technology solely as a service to the financial industry. “Innovation is an overused and often misused term, and many people don’t understand why technology exists,” he says. “If an innovative tool is not helping to generate returns or fundamentally improve our services,



then it’s not worth labeling it as that. Technology exists not just for the sake of existing but because it can help us grow substantially.”

Mediolanum’s journey kicked off with the introduction of its big-data strategy. “We were trying to do what nobody else had tried. I am not sure if we did that out of ignorance or whether we were really innovative,” he jokes.

The team developed its data warehouse over a number of years, distributing and organizing data for all business functions, from investments and operations to marketing and sales. “We have developed a pretty unique system,” Pietribiasi explains. “From an investment perspective, 92 percent of our processes are automated.”

Once the data infrastructure was up and running, the firm’s focus turned to analytics. “We started from basic analytics, which enabled us to elaborate on a lot of data and to have a representation of the available information,” says Pietribiasi. “We then moved to data visualization where we managed to get some more

diagnostic analytics, and now we are working on the predictive side of data analytics.”

For this last part, Mediolanum developed proprietary machine-learning algorithms that now provide it with the ability to drill down into clients’ behavior. The technology was developed in partnership with the Irish Centre of High-End Computing (ICHEC), a research center in Dublin, specializing in machine learning. “This partnership was really important because now we are looking at the behavior of our investors to understand what kind of behaviors are more rewarding in terms of revenue and which are more penalizing,” says Pietribiasi. “With this technology, we are also trying to predict investors’ behavior within a fund or to trace any potential activity that could lead to losing or generating returns.”

Mediolanum also developed a feature where portfolio managers ignore the firm’s best performing funds, “because if the investor has the wrong investing attitude and sells when the market goes down and buys when it rises, then technology can’t do anything to save their returns,” Pietribiasi says.

The firm has also developed an “intelligent investor strategy program,” which increases investment instalments depending on the market’s volatility. “I think we can go beyond that and do something even smarter in the near future,” says Pietribiasi. “Artificial intelligence (AI), for example, is something we are currently working on and trying to develop some tools to boost our business.”

So far, this tech journey has proven to be a long process, which Pietribiasi describes as the “most exciting” part of his job. “It is a long journey and because of its uniqueness we had—and still have—pitfalls and a number of delays,” he says. “Between the conception and the designing and the actual implementation of this project, there have been many sleepless nights. But it’s all been worth it.”

“

“Keeping, developing and growing the business is the new normal, so you have to work relentlessly to preserve and generate returns for your clients for the assets they want to invest. That’s why innovation and technology is a critical part of today’s financial world.”

Education

Embarking on a firm-wide technology strategy is the easy part, according to Pietribiasi. The challenge is to maintain momentum and ensure that people do not retreat and go back to being just an office of portfolio managers. The key to ensuring success is technology, he says. “We started this journey because reality caught up with us—it’s not like I woke up one day and decided to do it,” he says. “Now, the real challenge is to maintain this technology culture, and to do that, every firm needs to educate senior managers on what the technology could bring to the business.”

Mediolanum holds regular training courses around technology, both on a team and an individual basis, using its all-pervasive tech culture as a way to raise the bar for everyone. “We are not just throwing money at technology just to say we’re cool—we do this because it’s good for business,” says Pietribiasi. “We have a group of data scientists working across the business bringing knowledge and experience while providing training to the senior management teams.”

He says millennials can offer insight into the scope of what new technologies can offer. “For example, we use AI, which provides us with faster and more accurate insights on investment strategies; so everyone needs to understand that this technology is not making a decision on your behalf and then you just

press a button and make money—it just reduces the fallibility in decision making,” Pietribiasi explains.

Falling Behind

According to Pietribiasi, the lack of senior management training has led to the asset management community falling behind in the technology race, where banks already have the upper hand. They have been at the forefront of innovation for many years, while the buy side still struggles to follow suit. “Banks have two good reasons—one external and one internal—to turn to technology earlier than us: consumer behavior and margins,” he says. “First, technology started to become part of everybody’s life; it provides real-time service, it’s everywhere, and it’s cheap, so banks being the first contact point with the financial world had to adapt to this new reality to keep their customers engaged.”

Pietribiasi adds that margins were the catalyst in changing fundamentally how banks operate. “In a technology-driven world, banks realized that their physical branches cost a lot,” he says, “They had to find ways to interact with the clients without their branches, as costs were heavy and margins were killed because for years interest rates were zero, flat or negative. It was merely an old-fashioned way for banks to make money and they had to find more efficient ways to operate.”

The problem is that everyone has a bank account, but few people have insurance and even fewer have



investments. “Asset managers, until recently, didn’t feel that pressure, either from their clients or by way of margins,” he says. “Only now are they trying to leverage technology because their own clients require the same level of transparency, the same real-time information, and the same user-friendly approach as the banks.”

The second technology driver for the buy side is that due to the global financial crisis and the escalation of regulations across the globe, it has become extremely difficult to generate returns. “The accounting standards are more efficient, making company prices available to everyone. They have practically eliminated the advantage of information,” he says. “That’s why asset managers now realize that they need to anticipate things in a smarter way and utilize their data, and the only way to do that is by using new technologies.”

Decisive Data

The utilization of data is for Pietribiasi the future of asset management, which will eventually change the face of the buy side. “Big data is certainly



something that will change the industry,” he says. “The application of predictive analytics is going to enable us to reorganize the processes within the organization because there is a tremendous need for scalability.”

He also believes that robotics will transform the industry if people are able to realize the technology’s full

potential and fully grasp its simplicity. “If you know Excel, you understand that macro in Excel is a very basic thing to master. Robotics is that macro across different applications, which will have a big impact on certain processes,” he says. “Robotics can have a profound effect not only on developed economies but also in emerging markets where lots of jobs have been relocated.”

Ultimately, he says, every new technology can make its own contribution to the financial services industry, as long as people know how and when to use it. “People are afraid of this new era of technology in finance, and I can understand that,” he says. “But that’s a path that we can’t avoid anymore because things are already changing.”

Entrepreneur

For a man who appears to be so much into innovation and who undoubtedly understands the value of technology,

one has to wonder why Pietribiasi hasn’t been more involved in the fintech scene. It turns out he is. Besides being a busy managing director, he is also involved in a number of different activities around fintech, as well as mentoring startups and is a member of a number of boards in Ireland. “According to my wife, I do a lot of different things,” he jokes. “But if I decide to leave Mediolanum, my alternative is to follow the family tradition, become an entrepreneur, and set up my own company.”

The only issue with that plan is time. “When you’re young, you need to gain more experience, and there is always time before you take the first step,” says Pietribiasi. “When you are 46, and you have been lucky enough to lead a business, time is scarce, and you think you might want to do it sooner rather than later, but that doesn’t mean I ever will. Who knows?” **W**

FURIO PIETRIBIASI

FUNDAMENTAL DATA

Name: Furio Pietribiasi

Title: Managing director at Mediolanum Asset Management

Age: 46

Hometown: Treviso, Italy

Education: Master’s degree in finance and economics

INTRODUCING



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THE AGILITY OF DEVOPS



DevOps techniques are only now finding their way onto the buy side as firms are looking at ways of expanding upon what they've already established using the Agile methodology. As [Anthony Malakian](#) explains, while firms are excited by the idea of DevOps, they are still a long way from implementing these strategies on a wide scale.

Paul Zajac likens DevOps to ordering a pizza from Domino's. In the past, you'd have to call a Domino's restaurant and tell someone at the other end of the line what you wanted and then hope that by the time the pizza arrived (in 30 minutes or less, guaranteed!) it would be edible. Now, you pick up your mobile and using the fast-food chain's app, you type in exactly what you want.

Now here's where the DevOps angle applies to this analogy. From the app, you can see exactly when the Domino's employee has started to make your pizza and it provides

information on how it's being made. It then alerts you when your pie is out of the oven and again when it is on its way to your doorstep.

The experience doesn't end there. You can provide feedback, such as, "too much sauce!" Then, the next time you order, Domino's will ask you: "How was the sauce distribution?" It's a siloed process—someone gets the order, someone makes the order, someone delivers the order, someone checks back in after you've order again—but there's continuous documentation and feedback.

That, Zajac believes, is DevOps in a nutshell. “That’s a true representation of what we’re getting at, and it’s hard,” said Zajac, head of technology for Credit Suisse Asset Management (CSAM), speaking on the C-level panel at this year’s Buy-Side Technology North American Summit.

When Two Become One

DevOps—a portmanteau of development and operations—is often confused with or used in place of the Agile development methodology, but in its truest sense, it’s different from Agile.

With Agile, everybody does everything and you have two- to three-week sprints; in some ways it’s a controlled free-for-all. DevOps is compartmentalized between development teams and operations teams. It features more formalized meetings and more stringent documentation than Agile.

A DevOps project can last for months, as opposed to the race that is Agile. And while Agile methods can be used as a part of an overall DevOps strategy, waterfall deployments can similarly feature as a part of a DevOps framework.

But the benefit of DevOps is that when done correctly, it brings together the technology and business sides of the organization, while still adhering to continuous integration and deployment, according to Michael Radziemski, who was CIO at Lord Abbett for 13 years before leaving the asset manager at

“It’s the intersection of a few things: It’s the Agile methodology—attempting to deliver in smaller chunks faster and more integrated with the business. It’s continuous integration and continuous deployment—ultimately seeking real-time deployment. It demands speed of delivery but the need for control.”
Michael Radziemski, Fortium Partners

the end of last year and taking up a partner role at consultancy, Fortium Partners. “It’s the intersection of a few things: It’s the Agile methodology—attempting to deliver in smaller chunks faster and more integrated with the business,” he said. “It’s continuous integration and continuous deployment—ultimately seeking real-time deployment. It demands speed of delivery but the need for control.”

Zajac’s point about the Domino’s app is that a crucial piece of DevOps is having that dashboard—that documentation—to ensure that projects between technology and the business don’t run off course.

It’s not easy, Zajac explained. “We’re definitely in the ‘experimenting with DevOps’ crowd,” he said, referencing a poll question that was taken from the more than 100 attendees: What is the state of implementation of DevOps techniques in



your firm? Only 28 percent said that they at least had some “fully live” DevOps applications running, while all other respondents were either experimenting or didn’t know what DevOps even was. (See chart, below.)

“We see the value. We’ve been doing Agile for quite some time—pretty much all of my teams are working in an Agile fashion—but DevOps takes it to the next level,” Zajac said.

For Zajac, the experiment means that it has taken two non-mission-critical systems from different locations within CSAM—meaning they are not connected—and is attempting to deliver the full value chain of a DevOps environment, from development to continuous integration and deployments. “We’re going through that full cycle. The goal is to get that done by the end of this year [on those two systems] and then next year start rolling it out to all of our systems,” he said.

Phillip Dundas, head of technology, Americas, at London-based asset manager Schroders, put himself in the same boat as Zajac, saying that his firm is also in the “early stages” of releasing DevOps

What is the state of implementation of DevOps techniques in your firm?

- Fully implemented for all production applications: **2%**
- Fully implemented for some production systems: **26%**
- Experimenting with DevOps techniques: **49%**
- What is DevOps?: **23%**



into its technology and operational environment. Schroders, he said, has been undergoing an entire IT operating overhaul for the last 18 months, which saw the firm finally embrace Agile development. Being able to provide automated virtual machines and servers that the team can then deliver their applications on has been something that Schroders has only recently rolled out, he said. “Putting together all of that automation at the infrastructure layer, though—once you’ve got that in place, you’ve still got all of the issues of process automation around your release control, your access control, your permission, and then [you] go through the process of quality assurance (QA) and testing,” he said. “All that our move to Agile has done is highlight where our inefficiencies are, and as soon as you move one problem it highlights another one.”

Dundas described Schroders’ move to Agile as “valuable,” while the next step, he added, is DevOps.

We the People

While Zajac, Radziemski and Dundas represent large, global institutions, Rama Ramachandran, CTO of Black Diamond Capital Management, who also spoke on the panel, works for a comparatively modest buy-side firm, with about \$8 billion under management. Given its size, one might assume that a move to DevOps might prove easier for a small firm, but Ramachandran told the audience that it was proving to be quite the opposite. “The focus is on continuous delivery and we haven’t reached there in most of our production systems,” he said. “We tried it on a few small, non-mission-



Paul Zajac
Credit
Suisse Asset
Management

critical applications and that’s where we’re experimenting and finding out what to do next.”

Ramachandran explained that the move is a natural fit for the organization, because Black Diamond’s technology and operations teams already sit side-by-side. And at its core, this is a people problem as much as it is a development and delivery challenge, noted Colleen Coda, managing director at New York-based Blackstone, with just shy of \$390 billion under management. “DevOps has such ‘brand’ these days” with the firm’s top talent, that it’s presented a bit of a staffing issue, she said, adding that five years ago, if you asked someone on the engineering team to focus only on internal tools, they’d balk and say that they wanted to work on front-end, client-facing technolo-

gies. But that has changed, she said. “We’re having the opposite problem now where more people want to be focused on DevOps—the internal productivity—so it’s the new shiny thing,” Coda said. “So it’s a resourcing problem, in a good way.”

According to Coda, the firm traditionally does three-month releases, although mindsets need to change in order to achieve continuous deployment. Blackstone, therefore, took one team and ran it through a continuous-deployment process in order to see what could be gleaned from it. “Where we realized we needed to change as a team was how we do tech design properly so that we’re set up to release smaller increments but still have the big picture in mind,” she said.

There’s also the issue of how to present this strategy to Blackstone’s users. Coda said the firm doesn’t want to create an increase in demand that will sap the team’s long-term focus. “We’re still working through what to tell our users and what to promote outwardly to control the demand coming in, because we’re only focusing on the high-priority items and not just succumbing to [constant] requests,” she said.

Zajac took the issue of people in a slightly different direction. He said people are resistant to change, so the firm has had to undergo something of a retraining scheme to get them used to the idea of how DevOps works. “I think one of the biggest impediments other than the technology part is the culture,”

he said. “You have to really retrain your people. They’re used to saying, ‘I’m the QA person and this is what I really need to do.’ Now, we’re telling them that we’re going to automate a lot of what they do. So there are a lot of steps, but to me, the biggest piece is changing the people.”

(For more on how C-level managers are bridging the gap with millennials, see The Talent Trap on page 9.)

The Test of Automation

According to Zajac, a key component of DevOps is automation—DevOps allows automated deployment in order to ensure that everything runs efficiently. “Once the ticket is put in, then everything after that should be automated,” he said. “Right now [at CSAM] it’s still manual.”

Coda said that where automation is key is in the testing, so that the QA team doesn’t have to actually log in and go through verified screens, which slow everything down. “We’re pushing forward on that,” she said. “We’re trying to really push ahead on reducing all the manual testing it takes to have continuous development.”

She added that Blackstone is on the “first level” of automatically pushing out code because they don’t want to have “40 people regression-testing all the time; it won’t allow our team to scale.”

The reason why building automated processes into the system is so



Rama Ramachandran
Black Diamond
Capital
Management

important is that the whole point of DevOps is to introduce as minimal disruption into the process as possible, so that real-time, continuous integration and deployment can become a reality. Otherwise, release cycles can become bogged down and projects can lose focus.

Fad?

We’re only now starting to see firms across the industry truly implement DevOps, which has only existed as a term for about 10 years. Whether or not it is a fad—a catchy phrase for firms that can’t seem to leverage true Agile methodologies—will take time to hash out.

But it’s clear that there’s a major reason for firms embracing the idea of DevOps—talk to any CTO or CIO of a major buy- or sell-side firm and they’re likely to wax poetic about the importance of bringing together technology and business.

In some ways, Agile practices can move away from that endeavor—DevOps aims to bring them back together. And the reason why now might be the right time for this movement to catch hold is because the business is depending more and more on technology. Many traders are, themselves, programmers. Many hedge funds have their engineers sit at the trading desk. Firms are becoming more open to bringing together technology and the business, which might open the door for DevOps to become the development methodology of choice over the next decade. It’s unlikely to replace Agile—scrum, sprints, standups and retrospectives will always be necessary for nimble trading firms. But as firms continue to automate more and more processes—which will only increase with the advent of machine learning—software development and deployment will need to change too. Perhaps DevOps will serve as the first wave of this evolution. **W**

SALIENT POINTS

- While it is often confused with Agile, DevOps aims to bring together the software development and business operations teams.
- DevOps can use both Agile methodologies and waterfall releases. It is not tied into any one methodology.
- Automation is a key factor for a successful DevOps program as the need to have continuous integration and deployment is at the core of these techniques.
- Firms may need to retrain staff across the organization to make sure that projects stay on track using a DevOps methodology.

GROUND ZERO: Digital Currencies in Asia



As cryptocurrencies gain interest from investors around the globe, [Wei-Shen Wong](#) examines the splintered Asian marketplace to see how regulators are adopting different strategies when it comes to overseeing these complex instruments.

It could be said that 2017 has been the year of digital currencies. Distributed ledgers like blockchain have received a lot of hype, but it's been the digital currencies that have hit the markets, posing new opportunities and challenges to both investors and regulators.

Much like the currencies themselves, the focus on these instruments in Asia, specifically, has been volatile. Some regulators in the region have issued warnings to investors, particularly regarding the speculative nature of digital currencies and initial coin offerings (ICOs). Some countries, including China, have taken extreme measures and have banned ICOs altogether.

Despite China's stance, some regulators in the region have been seemingly more open and proactive

than their Western counterparts when it comes to digital currencies. Japan, for example, whose central bank, the Japan Financial Services Agency (JFSA), approved 11 digital currency exchanges on September 29 this year. This came after the regulator legalized digital currencies earlier in the year. The decision called for all companies trading fiat for digital currencies to register as a "virtual currency exchange" business.

Digital currency exchanges have had six months to complete their registration and have also had to go through rigorous vetting processes, with a focus on cybersecurity, anti-money-laundering/know-your-customer (AML/KYC), user protection, and data security.

According to Bitcoincharts, a data provider focused on bitcoin, about 50



“The Japanese financial markets are large and mature and it could provide a highly stable platform for virtual currencies worldwide. Japan has made a conscious decision to lead in fintech. Virtual currencies are one part of that strategy. I think you will see many other fintech-based industries getting a green light in Japan.” **David Case, Orrick, Herrington & Sutcliffe**

percent of all trading volume of bitcoin is in Japanese yen, while slightly more than 30 percent of volume is in US dollars. David Case, Tokyo-based partner of international law firm, Orrick, Herrington & Sutcliffe, adds that the dollar is widely used around the world so not all US dollar-denominated trades can be attributed to the US market.

For ‘Adults’ Only

Case says the JFSA requires market entrants to implement the same internal controls that banks and other financial institutions have for more traditional instruments.

“Regulators do not want the Wild West; it’s a financial market—adults only need apply,” he says.

According to Case, 11 applicants were recently granted licenses. “I understand that another 17 applications are under review and 12 other firms had to shut down their operations after being denied licenses, but there are no firm details,” he adds.

For those that “shut down,” this may just be temporary while waiting for approval after working on their offering. Case adds that Orrick knows of companies in this position, and is working with several on their application processes.

By putting it all down in the rulebook, the JFSA is being proactive in order to prevent possible currency manipulation or fraud. What the regu-

lators do not want is a repeat of the collapse of the Mt. Gox exchange in 2014, which at one point handled 70 percent of all bitcoin transactions globally. Mt. Gox filed for bankruptcy in 2014 after losing its customers’ bitcoins as well as some of its own, racking up losses close to \$500 million.

Jon Matonis, vice president of corporate strategy at bitcoin and blockchain research firm nChain, classifies the JFSA’s move as methodical and says this is its way of being cautious. “While it’s encouraging, those exchanges have to now adhere to capital requirements, operating security standards, annual audits, employee training programs, all in addition to KYC/AML requirements,” he says.

He adds that the development of bitcoin in Asia is more prevalent where fintech activity is strong—for example, in Japan, Hong Kong, Singapore and South Korea.

Japan is now the only major advanced economy to regulate crypto-token exchanges, which also makes it the largest domestic market globally for crypto-token trading activity, he says.

Thomas Glucksmann, head of marketing at Gatecoin, a bitcoin and ethereum token exchange based in Hong Kong, says the JFSA’s move has encouraged major Japanese financial institutions such as GMO Group, which made a \$3 million investment to

build out its bitcoin mining operations, and SBI Group—which has invested in bitcoin companies Kraken, bitFlyer and Wirex, among others—to enter the crypto space.

“Eventually, these firms may offer their new crypto exchange services in conjunction with their existing financial service product portfolios,” he says. “The big three—Mitsubishi UFJ Financial Group (MUFG), Sumitomo Mitsui Financial Group (SMFG) and Mizuho—are also experimenting heavily with cryptocurrencies by creating their own tokens, working with crypto-token exchanges and even investing in some of them.”

As part of its research into blockchain and distributed-ledger technology, MUFG developed its own digital currency—MUFG coin, which was distributed as a reward to employees. Other Japanese banks, such as Mizuho Financial Group and Japan Post Bank, have teamed up to introduce J-Coin—a new digital currency—ahead of the 2020 Tokyo Olympics. “Regulators from other advanced economies would be foolish to ignore the positive developments in Japan,” Glucksmann says.

Japan’s actions in this case might push other jurisdictions in the region to re-evaluate their own policies on digital currencies, adds Orrick’s Case. “It is rare that Japan leads in a new financial industry or technology. The Japanese financial markets are large and mature and it could provide a highly stable platform for virtual currencies worldwide. Japan has made a conscious decision to lead in fintech. Virtual currencies are one part of that strategy. I think you will see many other fintech-based industries getting a green light in Japan,” he adds.

On the Mainland

Benjamin Quinlan, CEO and managing partner at Quinlan & Associates, says that given the volatile



Thomas Glucksmann
Gatecoin

nature of bitcoin and digital currencies in general, cryptocurrency is mainly used as an investment or speculative tool. This is one of the reasons why, in September, China's central bank, the People's Bank of China (PBoC), banned all ICOs and digital currency platforms. "In China, regulators do not support speculation—for example, regulators opened up the derivatives market gradually in order to limit speculation from retail investors—and with little control or regulatory supervision, the Chinese government seems to be unsupportive of cryptocurrencies," he says.

China is adopting a much more conservative stance, as its market is so heavily retail-driven. Given the speculative tendencies of retail investors there, the regulator needs to ensure that it is in control of the situation, Quinlan adds.

Gatecoin's Glucksmann believes the ban was in response to a surge in illegal financing schemes in mainland China that were targeting vulnerable investors through grassroots marketing in fourth- and fifth-tier cities. "The organizers of those illegal schemes exploited the ICO trend and the government decided to put the lid on things while they worked to understand what was going on," Glucksmann says. "It is likely that this ban will be lifted soon, and legitimate token sales will be permitted to take place in China under specific guidelines."

However, there is another school of thought. Some, including nChain's Matonis, say China's move to ban ICOs is its way of shutting down those who are evading capital controls and taking their money out of China. "Officially they say it's for consumer protection or they don't encourage the use of high leverage, but their main concern is people evading capital controls," he says. "They are protective of the currency value of the yuan. They get upset when people in China who operate bitcoin exchanges say that bitcoin will hold its value while

the Chinese currency will not. Not all governments will think about that the way China does."

But Dominic Cho, managing consultant at GreySpark Partners, Asia, in Hong Kong, says the PBoC does not understand the purpose of ICOs. "I think the Chinese regulator is extremely sensitive to anything that has a market impact that they do not have a full grasp on. The PBoC didn't mention they would ban bitcoin mining or trading, so for miners, it's business as usual for now," he says.

Glucksmann adds that while bitcoin mining is not affected by the ICO ban, it is likely to be severely impacted by the shutdown of exchanges on the Mainland as miners still need a way to cash out their bitcoin for renminbi to pay their staff and electricity bills.

"Some of these mining firms will shut down in China and will set up in new jurisdictions or declare bankruptcy altogether," he says. "The result would be a more geographically distributed mining industry where the hashing power is not concentrated among a handful of Chinese firms."

Optimistically Cautious

Although Singapore has been touted as the fintech hub of Asia, it is taking a more cautious approach to digital currencies. The Monetary Authority of Singapore (MAS) recently said that while it does not recognize bitcoin as legal tender, it is looking to regulate companies providing bitcoin payment services.

A spokesperson from MAS says that similar to most other jurisdictions, the central bank does not regulate virtual currencies, but rather the activities surrounding them, especially if those activities are within its general ambit as a financial regulator.

"First, virtual currencies, due to the anonymous nature of the transactions, can be exploited for money laundering and terrorism financing. MAS is working on a new payment services regulatory framework that will



Dominic Cho
GreySpark
Partners

address these risks. We intend to initiate industry consultations on the proposed regulations for virtual-currency intermediaries soon," the spokesperson says.

The second activity the Singaporean regulator is keeping a close watch on is ICOs. To the startup community, ICOs can be seen as an alternative to venture capital and could represent ownership in assets, like a share or bond certificate. In June, Singapore-based TenX, which built a protocol that enables quick and secure transactions across different blockchains, raised \$80 million within seven minutes.

MAS has been paying close attention to activities relating to the offer or issuance of such "second-generation" tokens in Singapore, given the observed increase in ICOs in Singapore. Then, in August, MAS clarified that the existing securities regulatory regime will apply to offers of digital tokens where the tokens constitute securities, which would mean that issuers or intermediaries of such tokens would be subject to licensing requirements under the Securities and Futures Act and Financial Advisers Act. If subject to licensing requirements, the issuer or intermediary of such tokens would have to adhere to anti-money laundering and countering the financing of terrorism (AML/CFT) regulations, according to the regulator.

"MAS sees the risk that even legitimate ICO activities could potentially be abused for money laundering, terrorist financing, and fraud," says the spokesperson. "Companies that provide such services should have effective AML/CFT controls, including robust customer due diligence and transaction-monitoring processes that serve as preventative measures against illicit activities, to protect the integrity of our financial system."

That said, MAS has not introduced any new regulations specific to offers of digital tokens. The regulator believes that regulation must not front-run innovation, as introducing rules prematurely may stifle innova-

tion and potentially derail the adoption of useful technology. “We must also remain technology-neutral, allowing for innovation to choose the best path to success,” adds the spokesperson. “At the same time, MAS is closely monitoring the development and implications of digital tokens offerings in Singapore and other parts of the world, as well as taking note of the evolving regulatory approaches taken toward such offers across different jurisdictions.”

Adrian Przelozny, CEO at digital currency marketplace Independent Reserve, based in Australia, says that traditionally, jurisdictions such as Korea, Japan, and Singapore tend to be a bit more welcoming to innovation and helping nascent industries grow. Australia, on the other hand, tends to be more conservative and more risk-averse. Still, Australia recently closed its first ICO, issued by Perth-based energy trading startup Power Ledger, which uses a blockchain for households to trade surplus solar power, and which raised AUD34 million (\$26.7 million) for its POWR token.

Growing Pains

According to media reports, a number of banks in Singapore closed the accounts of several startups dealing with and in digital currencies. The Cryptocurrency and Blockchain Industry Association says more than 10 companies reported having issues with Singapore banks and that there were no reasons for the closing of accounts. One of the companies, Coinhako, a digital currency exchange and wallet service, announced that it had to stop processing Singapore dollar



Benjamin Quinlan
Quinlan & Associates

trades because its banking partner, DBS Group Holdings, closed the company's account. This issue presents a significant risk to digital currency businesses, says nChain's Matonis. “If you're an exchange and you are converting to fiat money, they will struggle,” he says. “They need more than one banking account as well. If there's a change in political atmosphere that is negative, no banks will even open an account for a bitcoin exchange.”

Independent Reserve's Przelozny says the exchange works closely with the banks it uses. “We use strict policies that go over and above the policies used by our own banks,” he says. “We try to work with the compliance and risk departments to make sure they are comfortable with what we're doing.”

The exchange behaves as if it were a regulated entity, he adds. “This is definitely a challenge for the industry, but with more regulations coming in, and once they are in, banks will see it as a smaller risk,” he says.

James Kyd, general manager of strategy and operations, architecture, and CTO, technology, innovation and strategy at Telstra, whose views are his own, says he is aware of one exchange in Australia that is caught up in a similar problem to the one in Singapore, and is having to change bank accounts because its existing ones keep getting closed. “I don't know if it's because the startup is not close enough to the bank for it to know and be comfortable with it. The activities on the account just throw up red flags due to the nature of the business, and when banks see those red flags, they will shut it down.

I suspect there's a path forward there, to understand what the company is doing and what needs to be put in place,” says Kyd, but that still needs to be worked out by the industry as a whole.

Another challenge that exists is for authorized and properly licensed market players to rise above the market noise of unlicensed players. Orrick's Case says that at this point, consumers are having a difficult time distinguishing which ICOs are legal and which aren't. While he says he believes this will change over time, there is a lot of market noise for authorized players to overcome. “They need to prosecute the truly bad players,” Case says, referring to how regulators can ensure investor protection. “That will dissuade poorly designed products and services being offered,” he says. “Some of the people offering virtual currencies have good intentions, but are woefully ill-informed about financial markets and compliance. Prosecuting bad players will force new entrants to engage with legal counsel to make sure the ICOs offered are legally compliant.”

GreySpark's Cho says he expects regulators to take an even greater interest in cryptocurrencies in the future, but right now the timing is tough because firms across the globe are grappling with an even greater regulatory regime—the revised Markets in Financial Instruments Directive, or Mifid II. “Overall motivation for regulators around the world to regulate trading in digital currencies is clear, but it is more of a timing issue. Given Mifid II's go-live on January 3, 2018, is imminent, regulators do not have a compelling reason to consider regulating digital currencies just yet,” he says.

Operators, exchanges, traders, and investors are waiting to see what actions regulators will take and how that will impact the digital currency market in the future. As more and more regulations are introduced, will they help secure and protect the true players, or will they stifle innovation? Perhaps 2018 will be the year that these questions are answered. **W**

SALIENT POINTS

- Regulators in Asia are more open to the use and trading of digital currencies in general, even though China is not yet on board.
- Japan's central bank is one of the few to recognize bitcoin as legal tender and recently approved 11 digital currency exchanges.
- China has banned initial coin offerings (ICOs), most likely to ensure capital controls are maintained.
- Closure of bank accounts remains one of the big challenges for digital currency exchanges in the region.

All Things Are Just Dandy in the Eurozone



Panelists and speakers at this year's European Securities and Markets Authority annual conference were generally enthusiastic about the incoming Mifid II rule changes, but John believes the saccharine veneer is wearing thin.

Despite having been a part of the *Waters* lineup for the best part of three years now, almost long enough to be considered part of the furniture by journalistic turnover standards, there is much about this industry that I'm still new to. One such example is the annual conference hosted by the European Securities and Markets Authority (Esma), an event that I attended during mid-October while the majority of my colleagues, counterparts and peers were getting into the stride of fintech hype extravaganza week, aka Sibos.

I wasn't quite sure what to expect from the day's panel discussions and speakers, but one thing that I would have bet on was that the dominant topic would be the arrival of Mifid II in just two months' time. What was surprising, however, was just how upbeat everyone seemed to be about the incoming rule changes. From the Esma top brass to representatives from exchanges, banks and central counterparties, almost everyone who spoke into a microphone at the day-long event was singing from the same hymn sheet: Mifid II is going to be a hugely positive change and presents the industry with a glut of opportunities to create an almost utopian financial market where nothing could possibly go wrong.

Opportunities Everywhere

If my tone makes me sound somewhat cynical, that's because I am. The word "opportunity" cropped up so many times throughout the day that

I began to get a touch of Stockholm Syndrome. What wouldn't be possible once trading flows are pushed toward lit venues in the interest of transparency? Best execution requirements will surely mean no investor ever misses out on the greatest possible return again, right?

We at *Waters* have heard time and again that Mifid II has been a monumental challenge to prepare for, mostly

left until Mifid II and the twisted, shadowy monster of Brexit lurking on the periphery. Indeed, Brexit was the other chief discussion topic of the day, with a sense of rueful acceptance pervading the conference, with attendees in agreement that it would be best for the whole thing to just be dealt with as quickly as possible, please.

Mentions of ongoing issues surrounding systematic internalizers, the double-volume caps on dark pools, and Legal Entity Identifiers (LEIs) were acknowledged, but not mined to any great depth. Data problems were also touched upon but largely glossed over in favor of returning to the seemingly endless number of opportunities that the sector would be presented with once a more transparent marketplace comes into view.

But let's hold off on the Mifid II back-slapping and self-congratulation for a while longer. While the Directive does need to be adopted, implemented and taken forward with an approach that prioritizes positive outcomes over the challenges, it's not going to fix everything overnight, or even in a matter of months. The industry won't be able to begin assessing the true impact of Mifid II until the data starts coming through for analysis some time toward the end of next year. Regulation is a reactionary force most of the time, and given the global events of the past 12 months alone, who knows what we'll be contending with once the new rules have had time to settle? **W**



Best execution requirements will surely mean no investor ever misses out on the greatest possible return again, right?

from those on the asset management side that don't have the resources that the larger banking institutions have at their disposal. Even now, with just two months left to go until the regulation comes into force, there have been those lobbying for further delays with arguments that the sheer scope of the rule changes mean that not all systems will be in place and ready to go once the deadline passes.

But the cry of the buy side was, perhaps not strangely, conspicuous by its absence throughout the day's discussions. When it came to anything Mifid II-related, an asset management representative was not to be found to offer that anguished voice of dissent we have been hearing on anything touching on regulation over the past 12 months.

It's understandable that Esma would want to put the best possible angle on regulatory matters with so little time

Mifid II praise premature?

For more information and readers' feedback please join the discussion at waterstechnology.com/buy-side-technology

The Profit in Playing the Villain

Survival of the biggest?

For more information and readers' feedback please join the discussion

waterstechnology.com/sell-side-technology

Fintech has proven to be a lucrative industry for both the buy and the sell sides, but for very different reasons, James argues.

Several years ago, the capital markets looked ripe for disruption—or so the fintechs wanted you to believe. Almost every day there was talk of a new fixed-income trading platform, a new network, a new piece of technology that would not only solve existing problems, but would go one step further and disrupt the entire process of trading itself.

This was most evident in blockchain, where various early-stage prophets proselytized to a captive audience about how we would no longer need depositories, exchanges, or even clearinghouses. The Godchain would take care of all that.

But it wasn't just blockchain, and this is important to remember—much of the hype around fintech was actually driven by people looking at various processes like price discovery, information slippage, latency and other areas, and saying they could do better than the banks, because it almost always was the banks that people spoke about. Nobody really wanted to disrupt the buy side, for two primary reasons—first, there isn't all that much to disrupt in investment management outside of capital-related areas, like fees and performance. Buy-side trading is largely predicated on that, and of course, it's influenced by technology and the way in which processes are performed, but the primary determinant of performance is often a portfolio manager's nous, rather than his or her order management system.

Second, the buy side has proved willing, time and time again, to disrupt itself. Years ago, when banks

were still debating the merits of moving anything to the cloud, asset managers were moving everything to the cloud. As banks—particularly futures commission merchants—have tentatively begun outsourcing back-office operations to vendors, buy-side firms have been fully on board with this for years now.

Fintech has been a huge boon for the buy side, but perhaps not in a way that startups initially thought it might be.

Real Value

The real value for the buy side in the fintech craze hasn't necessarily come from disruption—that already started to happen for them when trading moved to the screen, and the cost of commissions went right down when the sales traders began to be disintermediated. The real value has been generated in the fact that now that there has been a period of maturation and natural selection in fintech, the stronger firms are doing a lot of the work for them when it comes to emerging technologies.

It is, for example, no coincidence that one of the busiest sectors this year has been surveillance, and how artificial intelligence and machine learning have been applied there. Nasdaq acquired Sybetix in July, while Trading Technologies acquired selected assets of Neurensic in October. Both of these have applications to the buy side, and both of them

incorporate advanced technologies that go beyond the traditional cliché of rocket scientists working in finance.

Most importantly, both of them provide the buy side with access to these technologies without them having to spend a red cent on research and development, or expensive PhD salaries. For the sell side, of course, fintech has been a boon in that they can simply circle the survivors and pick off what they want. Fintech, inasmuch as it refers to a startup firm based in a garage, was never going to displace the incumbent tech providers, let alone the banks.

Indeed, the sell side was more than happy to play the villain for the most part, and allow the bluster and hyperbole to continue for as long as many startups wanted. It might be useful for attracting venture-capital dollars, but in capital markets, it's hard to attack such niche areas without the ability to scale, or to offer the protections that an incumbent bigtech or vendor can.

As they knew from the start, the funding eventually dries up, and aside from a few success stories, we're starting to see the disruptors being picked off by the sell side—and indeed, occasionally by some large asset managers with an appetite for technology. Any way you look at it, fintech has been a huge boon for the buy side, but perhaps not in a way that startups initially thought it might be. **W**



Millennials Ruin Many Things, but Not Cybersecurity



The younger generation may not have as much experience with formal cybersecurity and network protection schema, but millennials' close relationship with technology is actually an asset to cybersecurity education, Emilia says.

Millennials, they say, ruin everything. From the housing market to Applebee's, it seems the younger generation just has a knack for causing the downfall of one thing or another. And apparently, millennials are also ruining cybersecurity.

At this year's North American Buy-Side Technology Summit, held on October 5 in New York, Star Mountain Capital's CTO, John Polis, said the younger generation—that is, millennials—poses a danger to cybersecurity efforts. “The younger generation has a different sense of technology. They’ve grown up with technology, the internet, and they think once you click on something you should be able to get around easily and not really worry about anything,” Polis said. “They’re the ones who probably pose a bigger threat, so we really focus on educating them extensively.”

Polis noted that a work computer is often the first formal and secure access to the internet that millennials encounter, so most interactions they have with technology before that are unencumbered by firewalls.

The generation just now entering the workforce has an understanding of technology that is easy and free to use. When they open their office-issued computers they may be surprised—and even annoyed—that they can't access all the websites they want to. They may look for ways to bypass those firewalls and, as a result, invite in potential cyber threats. Then again, these assertions may represent a fundamental misunderstanding of how younger gen-

erations—many of whom are digitally native—interact with technology.

The younger generation has a more intimate relationship with technology than those born before 1981. It's ingrained into their brains that the answer to any question is almost always a Google search away. It's a constant companion in their daily lives, so their ability to use technology is intuitive. This becomes even truer for those born

disruption out of any, and has learned to be safer because of it.

Precautions

Most of the people I know who take the greatest precautions over their data are my age—my mother still thinks that if she erases something on her phone, then it's gone forever and not stored in the cloud. Taking care of personal data is akin to protecting data from workplaces, particularly in the financial services industry, and many people take great pains to ensure nothing leaks out that can be traced back to them. So again, that's part one of cybersecurity education taken care of.

This is a generation that understands how technology works and how it can be made better. A lot of innovation, even in cybersecurity, comes from people who see a roadblock and are determined to break that barrier.

That's not to downplay the trouble cybersecurity officers have faced teaching millennials. Of course, there will always be recalcitrant 20-somethings who think they know everything.

Polis points out that he's learned to personalize the issue of cybersecurity with the younger people in his firm. Millennials are also the generation that personalizes everything. And if you explain that keeping workplace data safe is keeping you safe, it drives home the point that every information security officer needs to make.

Millennials can listen and be safe. They know technology, so don't worry, they're probably not the ones who will bring the house tumbling down. **W**



They have seen what hackers can do, they have been hacked, and they innately understand the perils of the cloud.

in the 1990s—that difference of a few years saw those people grow up in an always-on environment.

Millennials' technological savvy, in many ways, actually makes them the easiest to teach how to be safe. They can easily spot when something isn't right with the programs they run, they regularly update their systems, and they know not to click on every link they see.

They have seen what hackers can do, they have been hacked, and they innately understand the perils of the cloud and the vulnerability of information. They learned early on to be wary of the messages sent to them, and are far less likely to fall for crude phishing schemes than their elders. It's not theoretical, nor is it something out of William Gibson's *Neuromancer* to them—this generation has seen the most technological

Are Millennials cyber savvy?
For more information and readers' feedback please join the discussion at waterstechnology.com/buy-side-technology

Will Europe's Unbundling Rules Expand to the US?

The unbundling of research and execution services in Europe is one of Mifid II's most ambiguous mandates. Aggelos says the precedent Europe is setting could trigger a domino effect in the US markets.

Unbundling coming to the US?

For more information and readers' feedback please join the discussion

waterstechnology.com/sell-side-technology

I was a rookie when I first got stuck into the murky world of unbundling while writing my first feature for *Waters* nearly two years ago. I was fascinated by the anticipated effect of the upcoming revised Markets in Financial Instruments Directive (Mifid II) on the capital markets and the notoriety it had already gained from a specific group of market participants.

Some players were determined to fight tooth and nail against its implementation, and that fight has been going on for a long time. Back in 2006, when the then UK's Financial Services Authority (now the Financial Conduct Authority) was planning to integrate a similar regulation into its national legislation, these players fought against the move and won. But this time, it seems, they've lost.

So, the world is round and unbundling is going to happen and, for the first time, everyone will know who paid for what research, how it was paid for, and how much was paid. In his *Waters* feature in the October issue, John Brazier looked into the apparent unpreparedness of the buy side to comply with the new unbundling requirements as part of Mifid II, despite the flourishing technology solutions that have come to market in the last few years.

Beggars Belief

This state of affairs beggars belief, given how close we are to the January 3, 2018, deadline and, frankly, at this point, if anyone in Europe is still scratching their heads trying to figure out how they are going to cope with the mandate, they urgently need a reality check.

There is, however, an interesting theory making the rounds on the other side of the Atlantic right now: US firms might be justified in dragging their heels with respect to unbundling since the US Securities and Exchange Commission (SEC) in August stated that for the time being at least, unbundling was not a priority. Just a few days ago, I attended a briefing in London for reasons unrelated to unbundling, organized by a US-based multinational company. And yet unbundling dominated the discussion. Both the chair and the rest of the panel concluded that the unbundling of research is definitely something that will affect the US capital markets, especially firms with global operations. Nevertheless, everybody agreed that the unbundling of research is the one mandate from this regulation that has the potential to expand to their territories and become part of the US regulators' official policy.

Coincidentally, the following day, while I was interviewing Pragma's chief business officer, Curtis Pfeiffer, on a Mifid II-related issue, he said more and more US asset managers are starting to believe that it is only a matter of time before they will be forced by the US regulators to start paying for research. "It is their primary concern," Pfeiffer said. "It does make sense since US firms with European activities need to comply, so in order to harmonize their operations, they will unbundle their research in the US as well."

He said the transparency this rule brings would generate a wave of demand from US end-investors. Hence, it will spread

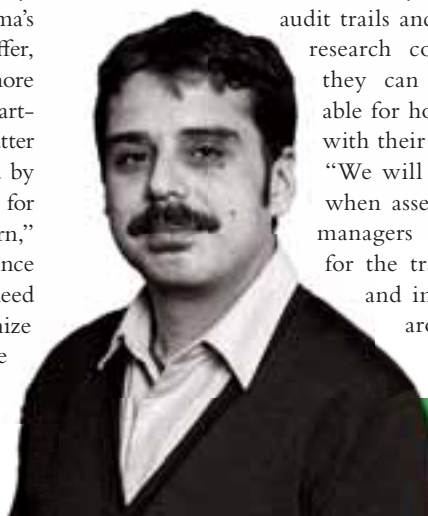
throughout the entire US financial services industry.

Expanding

Recently, research aggregator RSRCHXchange announced that it would be expanding its operations to North America as a result

The unbundling of research is the one mandate from this regulation that has the potential to expand.

of the increased demand from "non-Mifid" firms. To me, this is an indication that unbundling talk is now permeating the US market. Vicky Sanders, the firm's co-founder, says that while full implementation is not going to happen in the near future, asset managers are already adopting certain aspects of Mifid II. "What they are adopting are the audit trails and evaluation of their research consumption so that they can be more accountable for how much they spend with their providers," she said. "We will see full unbundling when asset owners push their managers more aggressively for the transparency on costs and improved governance around research spend that it brings." **W**



Human Capital



Wecker Returns to Goldman Sachs as CDO

Goldman Sachs has appointed veteran data and trading technology executive Jeff Wecker as a partner and the firm's chief data officer, responsible for data governance and architecture throughout the firm. Wecker was most recently head of front-office transformation at Bridgewater Associates, where he spent just over six years, prior to which he was chief executive of Lime Brokerage, chief executive of Townsend Analytics, and was a managing director at Lehman Brothers and Caspian Securities.

Before co-founding Caspian in 1995, Wecker spent 11 years at Goldman Sachs, including roles as head of Asian derivatives trading, and co-head of quantitative strategies. Based in



Naomi Bowman

New York, he reports to John Madsen, co-head of the firm's technology division, and partner Ezra Nahum.

BRG Brings Bowman on Board

Advisory and consulting firm Berkeley Research Group (BRG) has named Naomi Bowman managing director of its EMEA financial services practice in London, where she will work with senior management to lead and grow the division.

Bowman joins from HSBC, where she was chief operations officer of global legal. She has also worked at PwC and EY. At BRG, Bowman will focus on helping clients respond to regulatory change and building legal, governance, risk and compliance functions.

She is also an advocate for women in leadership and diversity, and in 2014 was named national winner of the Future Leaders Award by Women in the City.

JPMorgan Chief Data Scientist Departs for Cerberus AI Role

Afsheen Afshar has left his position as head of JPMorgan's data science team to join Cerberus Capital Management's operations arm in New York as senior managing director and chief artificial intelligence officer, effective November 20.

At Cerberus Operations and Advisory Co. (COAC), Afshar will be responsible for leading development of "a proprietary operations platform focused on artificial intelligence and machine learning" that will allow the firm and its portfolio companies to "identify opportunities to leverage data and analytics to drive operational improvement, enhance decision-making, and create automated business insights," officials say.

Afshar joined JPMorgan in 2016 as chief data science officer and managing director, responsible for building out the bank's data science efforts across all businesses, and for supporting functions of the corporate and investment bank division.

Prior to joining JPMorgan, he spent more than five years as a managing director at Goldman Sachs, where he was responsible for the team that centralized, analyzed, and presented insights from large financial datasets to reduce cost, mitigate risk, improve client service, and maximize profitability.

New Asia MD Adds Spark to Style

London-based equity portfolio risk and performance analytics provider Style Research has hired Jamie Spark as regional managing director for Asia-Pacific in Melbourne. Spark was most recently head of relationship management for the southern region at wealth management platform provider OneVue Group, prior to which he was director of buy-side service provider One Investment Group.

Before that, Spark was chief executive of share registry and transfer agency Share BPO, and chief operations officer of fund administration outsourcing provider Fund BPO. He previously held senior business development and sales roles at Republic Investment Management, RBC Dexia Investor Services, and ANZ Custodian Services, prior to which he spent almost 10 years at Citigroup in Australia, Singapore and London, having started his career as a fund administrator at State Street in Australia and New Zealand.

Style has also promoted CJ Zou to client relationship manager for the



Jeff Wecker

Ex-Bloomberg, NYSE Tech Exec Miller Gets Some Options



Jay Miller

region, based in Tokyo. Zou joined the vendor in January as a consultant, having previously spent just over eight years at Quant Shop, most recently as head of marketing and sales country head.

Blake Grossman Joins Axioma's Board of Directors

Blake Grossman, former vice chairman of BlackRock and ex-chief executive of Barclays Global Investors, has joined the board of investment risk and portfolio management solutions provider Axioma.

In a statement, Grossman compared Axioma's vision to Barclays Global Investors' development strategy, saying that he sees many similarities between the two companies.

Grossman served seven years in the position of chief executive at the investment management subsidiary of Barclays before it was sold to BlackRock in 2009. He was then promoted by BlackRock and held the position of vice chairman. He is currently chairman of the board of the investment consulting firm Financial Engines, as well as a managing member of CHJ Capital and Thirdstream Partners. Both are fund management firms based in San Francisco.

LCH Names Daniel Maguire as Chief Executive

London-based clearinghouse LCH Group has appointed Daniel Maguire as its new chief executive, replacing incumbent Suneel Bakhshi with immediate effect. Maguire was appointed LCH Group chief operations officer in April this year, as well as holding the role of global head of rates and foreign-exchange (FX) derivatives since March 2014. He will also

Managed services provider Options has hired former Bloomberg and NYSE Technologies sales executive Jay Miller as vice president of sales in New York, responsible for new business growth and US client engagement. Miller was previously global head of sales at Usam Group, an outsourced sales agency focusing on the market data and trading technology industries.

Before his Usam tenure, Miller was a strategic sales executive at Bloomberg,

responsible for the vendor's enterprise content and distribution business. Previously, Miller was vice president of strategic account sales at NYSE Technologies, prior to which he served as director of sales at a number of startup technology vendors, including Tervela.

become a member of London Stock Exchange Group's executive committee, reporting to Xavier Rolet, LSEG chief executive.

Bakhshi, who announced in summer this year his intention to step down as chief executive after four years at the LCH helm, will take on the role of chairman for LSEG International Advisory Groups.

Knott Steps Down as NEX Optimisation Chief Executive

Jenny Knott, chief executive of NEX Optimisation, the trading and technology group's post-trade division, is stepping down in the wake of a profit warning issued on October 2. She was named chief executive of NEX Optimisation in 2015.

Knott's departure comes two weeks after a profit warning from London-based NEX (formerly Icap) in which the company announced that it would increase investment in sales and marketing for NEX Optimisation. After the announcement, shares dropped 8 percent.

Knott will be replaced by Ken Pigaga, formerly NEX chief operations officer and a board member. Sam Wren, group chief financial officer at NEX, will take over Pigaga's chief

operations officer responsibilities while maintaining her CFO role.

Knott's departure is one of several by senior executives at NEX in the past year-and-a-half, including the company's chief financial officer, heads of training and market plumbing, plus two other post-trade executives.

Confluence Promotes Moyer to Chief Operations Officer

Confluence, a buy-side data management software vendor, has promoted Todd Moyer to chief operations officer, a strategic role tasked with operational excellence and revenue growth across North America and Europe.

Moyer's tenure at Confluence began in 2012 when he was senior vice president of global sales for two years before being promoted to executive vice president of business development in 2014. According to Confluence, under Moyer's management the vendor has broken growth records year after year. Moyer also provided strategic direction for Confluence's platform, including the launch of its asset management platform, RegTech, which handles reporting for post-trade regulatory compliance.

Moyer has worked in the financial services industry for 20 years. Prior to



joining Confluence, he was executive vice president of SunGard's wealth management business.

Synechron Adds Memon as Head of Emerging Technology

Financial services consulting and technology provider Synechron has appointed Peter Memon as its head of emerging technology, as the company prepares for further growth. Memon has over 25 years' experience in the industry working on new technologies.

Prior to joining Synechron, he was executive director of JPMorgan's corporate and investment banking emerging technology unit. He also held positions at Barclays, managing risk and trade data analytics, and Lehman Brothers overseeing architectural development.

As head of emerging technology, a newly created position, Memon is tasked with exploring new technologies and potential partnership opportunities for Synechron. He will report directly to Synechron's chief executive, Faisal Husein. Memon says part of his job will be working on potential applications for the financial services industry

He adds that one of the first priorities is to find further uses for AI, as it has very real applications, but he believes that banks have not yet fully explored its uses. Synechron is already offering consulting services for AI and blockchain through its accelerator program. It allows clients to bring AI or blockchain programs to market faster through applications developed by Synechron. The blockchain accelerator was launched in September 2016, while the AI accelerator was released in March this year.

State Street Makes Global Head of Currenex, FX Connect Appointments

State Street has appointed new global heads of its foreign exchange (FX) businesses, Currenex, FX Connect and GlobalLink. James Reilly has joined State Street as global head of FX market technology provider Currenex, while Beverley Doherty has been appointed global head of FX Connect, State Street's FX execution venue.

Doherty was most recently chief operations officer and North American head for GlobalLink, State Street's suite of e-trading platforms, technology, data and workflow solutions.

Reilly joins State Street from Cantor Fitzgerald, where he was most recently global head of foreign-exchange sales and trading, with the remit of expanding the business and creating new partnerships.

Reilly's predecessor, David Newns, has taken on the role of global head of GlobalLink Execution Services.

Ex-PolarLake Chief Executive Randles Heeds Siren Call

John Randles, former chief executive of enterprise data management platform vendor PolarLake, has

joined Galway, Ireland-based "data intelligence" platform provider Siren as its chief executive.

Randles was chief executive of PolarLake between 2006 and 2012, and remained chief executive following the company's sale to Bloomberg in 2012. Before joining PolarLake, he was chief technology officer of Siebel Systems' banking division, and previously served as chief technology officer of multi-channel retail banking software vendor Enotec.

At Siren, Randles takes over the chief executive role from co-founder Giovanni Tummarello, who becomes chief product officer, and will bring his operational and financial data management experience to the role, developing a go-to-market strategy for its year-old product—which uses big data analytics to explore relationships between companies, their investors, and competitors, for example, using data held in commercial, public and proprietary datasets—and exploring potential partnerships to create an ecosystem of services targeting the financial services market. **W**



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