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Elly Hardwick's meandering path to
head of innovation at Deutsche Bank

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AI: Let's Not Get Bogged Down by Semantics

“A rose by any other name would smell as sweet” from Shakespeare's *Romeo and Juliet* is one of the Bard's best known quotes, in which he insinuates that arbitrarily assigning names to objects has no intrinsic bearing on their nature. Names and tags that we use in everyday parlance are therefore inconsequential to the objects or concepts they describe, although they do offer us a succinct and efficient means of exchanging universally accepted ideas pertaining to them.

You might ask what this has to do with capital markets technology, but bear with me. You see, this issue cropped up a number of times during the course of the Buy-Side Technology European Summit on May 16 in London, when delegates became bogged down by semantics when discussing what exactly constitutes artificial intelligence (AI). In fact, the discussion around AI's definition became so turgid and protracted that not a lot of ground was covered during the half-hour workshop mid-way through the day. It happened again two days later at SmartStream's European user conference in the wake of my presentation of the research we recently carried out in conjunction with SmartStream, *AI Adoption Across Capital Markets—Opportunities, Challenges and Use-Cases*, when I was challenged by a delegate about my definition of AI. I dodged the bullet by explaining that if you were to line up 10 AI specialists and ask them the same question, you'd likely get 10 different answers, implying that the umbrella under which various AI technologies—algorithms, machine-learning tools, neural networks, natural-language processing and robotic-process automation technologies—reside has become so broad and all-encompassing that inevitably it has come to mean different things to different people.

Elly Hardwick, head of innovation at Deutsche Bank in London, the subject of this month's cover story on page 20, believes that AI includes robotic-process automation, machine learning, natural-language processing and smart-documentation automation, which, she says, is now so ubiquitous across the capital markets that it has “almost become its own horizontal,” illustrating the elusiveness of a universally accepted definition.

But does it really matter what hook we choose to hang AI on or what box we put it in just so that we are comfortable with where it sits with respect to our own personal view of the world? No, not in my opinion. What's important is that the technology carries out its role, that we have a clear understanding of what that role is, and crucially, the fine detail about how exactly it performs its role. Those are the issues that will come to dominate AI discussions in the future. **W**

Victor Anderson
Editor-in-Chief

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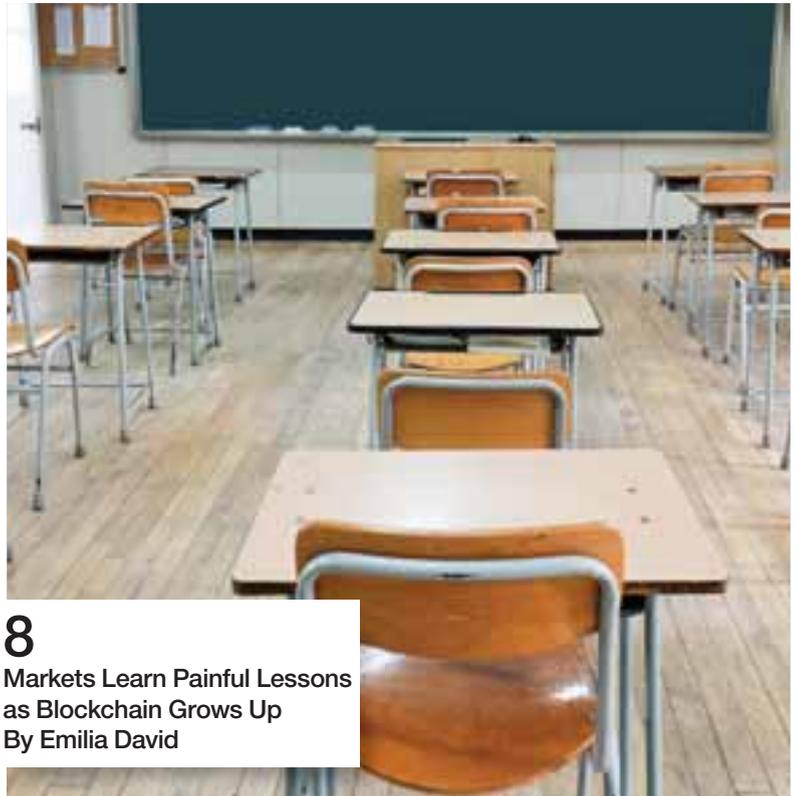
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As the global fintech boom shows no signs of slowing down, and the need for more specialized technology skills are in high demand, vendors and financial services firms are left competing for the Einsteins and the Marie Curies of the industry. Josephine Gallagher examines the heightened challenges of discovering, attracting and retaining the best technology talent in the game.

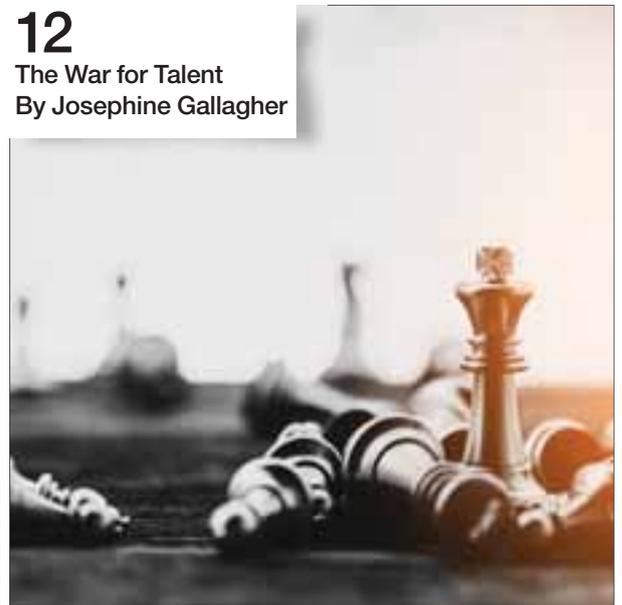


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Roz Savage, the first woman to row solo across the Atlantic, Pacific and Indian Oceans, presented the Sell-Side Technology Awards to the winners on April 20 in London. By Anthony Malakian, James Rundle, Wei-Shen Wong, Emilia David, Josephine Gallagher, Hamd Ali, and Victor Anderson

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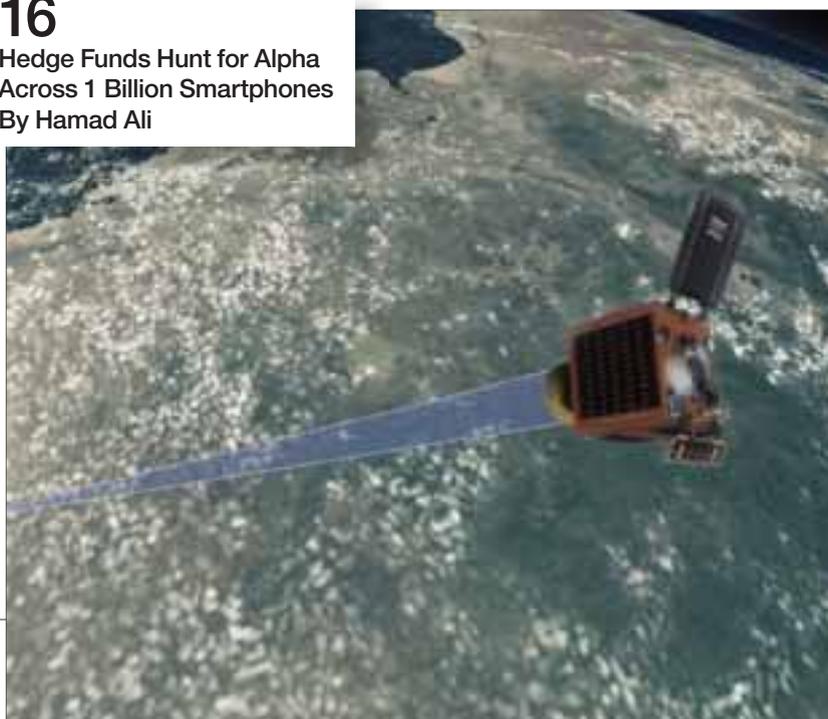
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Mapping Data a Worthwhile Project While the CAT Lies in Wait

Broker-dealers should look into gathering data that may be reported into the CAT, even before the system goes live, for their own internal purposes, experts say. [By Emilia David](#)

The Consolidated Audit Trail (CAT), envisioned as a database of transactions in the market to track trading activity in US equities and listed options, is expected to start in November with self-regulatory organizations (SROs) reporting to the system. But broker-dealers should start figuring out their data custody, even if further delays persist, according to executives.

Ronald Veith, executive director at JPMorgan Chase, said during a panel discussion at the annual Securities Industry and Financial Markets Association (Sifma) operations conference held in May in Phoenix, Arizona, that the data still has a lot of business value for firms, so it's not helpful to wait for the CAT to finally go live.

"There has been a lot of talk of the usefulness of your data and getting it ready to go. We're trying to do everything that's going to be useful whether or not the CAT ever happens," Veith said. "So you want to make sure you know your data front and back, know the data allocations in your data warehouse. You want to be able to pull customer IDs for trades. You [want to] get your options data, which never had to be reported anywhere but is still useful internally. You want to get that in shape and ready to be reported somewhere in some format because it still has value in it."

Reporting to the CAT requires SROs to report customer information, like customer type, account types, and account open dates, as well as order-allocation information. Much of the data requested for the system is not reported under the current Order Audit Trail System.



Personally identifiable information including social security numbers may also be collected but the Securities and Exchange Commission (SEC) is reconsidering its inclusion after concerns were raised in Congress.

Taking stock of where this data resides provides additional analytics for a firm, said Andre Frank, president of Thesys CAT, the firm tasked to design the system and process trade information.

"The CAT will look at the life-cycle of a transaction so it will be useful to get that information for your own use, internally," Frank told *Waters*. "While the format for reporting has not yet been finalized, this is data that is still important for internal information so it is helpful to know where this data might be within an organization."

SROs were meant to report to the CAT on November 15 last year, but this did not come to pass. The

SROs and Thesys CAT are working toward a go-live date of November 15, 2018, based on a revised timeline submitted by the CAT National Market System (NMS) committee. This proposed extension, however, has not been formally approved by the SEC, though the CAT participants still follow this timeline.

Frank noted during the panel discussion that everything is on track at Thesys CAT to meet the November 2018 go-live date, and any potential security concerns, particularly around customer identity data, are being addressed.

Separately, a webcast hosted by *Waters* at the end of April saw a number of experts, including former SEC staff members involved in writing the original CAT rules, argue that the regulator may need to appoint a "tsar" to oversee committee discussions and keep the plan on track. **W**

Tradeweb and Plato Bring RFQ Model to Cash Equities

Partnership will see the launch of quoting for block orders in the first phase, with more planned over coming years. [By James Rundle](#)

Usually, the tenor of conversation around fixed-income markets is that they will become more like equities over time. Now, it seems the reverse may actually be the case.

Tradeweb, one of the pioneers of the request-for-quote (RFQ) system in electronic fixed income, and a significant consortium of buy- and sell-side firms, the Plato Partnership, have joined forces to bring a new way of trading equities to European markets, amid significant shifts in market structure brought about by sweeping new rules in the revised Markets in Financial Instruments Directive (Mifid II).

The two firms will be releasing Tradeweb Plato eBlock, a platform for trading large-in-scale equity orders. Phase one of the project, set for release in the third quarter of 2018, will bring RFQ functionality to the platform.

Better known for their role in fixed-income markets, RFQs allow a trading firm to send out, as the name suggests, requests to a number of dealers for a price on a certain quantity of instruments. Given thin volumes in bond markets, and a paucity of reference and market data relative to other asset classes, they have been successful as a means of liquidity and price discovery.

Equity markets, however, are structured differently. While RFQ processes have been successfully introduced—by Tradeweb, and others—in the past for areas such as exchange-traded funds (ETFs), futures and options on equities and convertible bonds, this is the first

time the company will deploy them into cash equities.

“With Mifid II bringing in a series of waivers, including large-in-scale waivers, the thinking was that we might get more requirements to trade blocks, and that’s where the collaboration started,” explains Adriano Pace, managing director, equity derivatives at Tradeweb. “We looked at whether there was a way to get a trade that had a sense of urgency to it done between buy-side investors and sell-side dealers in a way that is very efficient, which is fully audit-trailed, and where the liquidity providers are willing, within the platform, to share their principal risk positions with clients they’re comfortable showing that to.”

Tradeweb and Plato are not the first firms to pilot such a scheme. Earlier in 2018, Nomura-owned agency broker Instinet announced that it would be offering RFQ for equities via its BlockMatch multilateral trading facility (MTF) in March.

Part of the reason for this is the fact that RFQ mechanisms are seen, under Mifid II, as a form of disclosed—or “lit”—trading, and are thus exempt from restrictions on trading stocks in the dark through the double volume cap (DVC). Stocks are prohibited from trading on dark venues if they breach specific thresholds under the DVC.

The cap, which was meant to drive volumes from dark venues and onto registered exchanges, has instead resulted in a fragmentation of trading activity among workaround entities such as systematic internalizers, which replaced the old broker crossing networks that were outlawed by Mifid

II, and periodic auctions, which have gained tremendous popularity since the start of the year.

“Mifid II has undoubtedly been the main driver behind the new cash equities RFQ platforms,” says Tim Cave, a London-based analyst at Tabb Group. “The rules have also made block trades a more compelling part of the marketplace and encouraged the development of alternative venues that allow the buy side to transact in size with discretion. Allied to that is the fact that brokers need to find ways to deploy risk capital in an automated fashion. RFQ is one solution of many; it potentially has a place but the buy side needs to get comfortable with it.”

The quality of the data will be key to this project. Traditionally, while an investor may have gone first to a dark pool or a matching engine to find natural flow, if that proved fruitless, then other block services may have been a natural next step. With eBlock, Tradeweb’s Pace says, the RFQ functionality gives a buy-side firm another option—and one that may not even require multiple dealers.

“With the RFQ platform, you could go to multiple dealers at the same time, and that’s what we’ve seen in a variety of our products—you can go to two, three, or four dealers,” he says. “But it could also be that, because of the quality of the data, you could see clearly that one dealer is axed in the size that you’re interested in trading, and you just aggregate them.”

Cave adds that he wouldn’t be surprised if more venues decided to extend RFQ models currently used for ETFs into cash equities, in response to Mifid II. **W**

Crypto Markets Continue Breakneck Pace of Development

The release of professional-grade services by the largest digital currency exchange demonstrates a breathless pace of growth that may be masking wider issues with the nascent asset class, traders suggest. [By James Rundle](#)

In cryptocurrencies, the tortoise is beginning to catch up with the hare. This time last year, digital currency exchanges were considering something they'd never had to do before—implementing circuit breakers to halt volatile price swings on their markets, ones that could wipe out clients trading on margin in nanoseconds.

Fast forward 12 months and the cryptocurrency markets have a derivatives layer, professional-grade tooling and, with the latest announcement from the largest exchange operator in this space, they now arguably have what they need to be considered a bona fide asset class.

Coinbase, the operator of the eponymous retail exchange and the institutional-targeted GDAX venue, announced on its website on May 15 that it would be launching Coinbase Markets, an offering focused primarily at institutional traders, which will introduce custody, prime services, professional-grade technology and research, sales and trading services for this segment.

Yet despite a new raft of tools and flashy technology permeating crypto markets—not least of all in the form of professional-grade trading software being offered by Trading Technologies and others, and the deployment of sophisticated surveillance software such as Nasdaq Smarts on the Gemini Exchange—there are still several extant problems that require solutions in the market. One of those is the current split between the Commodity Futures Trading Commission (CFTC) and the Securities and Exchange Commission (SEC) in the US.

“The biggest problem, by far, is [uncertainty in] regulation,” says a Washington DC-based regulatory affairs head for a major market-maker in traditional asset classes. “The CFTC says it can regulate the derivatives but not the spot markets, the SEC says that initial coin offerings look like they pass the Howey test and are securities, but it’s also not addressing just who is responsible for all this. Meanwhile, you have some senior regulators who are saying, you know, let it regulate itself, which seems like the best idea since someone thought about packaging up subprime mortgages and trading them.”

The approach that Coinbase has taken with its suite of institutional offerings demonstrates the scope of its ambition. Coinbase Markets, the company said, will offer on-premise datacenter co-location, low-latency market access and professional-grade settlement and clearing services. Such offerings—in particular, co-location, low-latency access and data feeds—are usually prerequisites for the introduction of high-speed and high-frequency trading strategies.

Coinbase said its Markets division will be based in Chicago, home of many high-speed trading shops, which have emerged as major participants in crypto markets. The core trading system will be built in-house by its Chicago-based team, a spokesperson for Coinbase tells *Waters*, with a target of “microsecond-level roundtrip response rates.”

“Our institutional product offerings are one part of a larger strategy to accelerate the adoption of cryptocurrencies,” the spokesperson says. “We are actively

working in parallel on products—for consumers, professionals and institutions—that fall into the ‘investment phase.’ In addition to the investment phase set of products, we’re building ‘utility phase’ products that will accelerate actually using crypto to do things on the decentralized web.”

Coinbase declined to reveal what percentage of its volume is attributable to institutional over retail participation at present, but says “the trend is growing and we are seeing more interest from institutional traders.” It also declined to share a specific timetable for when particular services, such as co-location, will be rolled out.

In addition, the firm announced the launch of Coinbase Prime, which is designed to offer services such as high and low-touch execution, and market data products. Finally, it also announced the Coinbase Institutional Coverage Group, which will provide sales and trading, research, and execution strategy support, which will be based in New York.

Even traders who are enthusiastic about bitcoin express some hesitancy at this pace, however. There are still unresolved questions around the construction of default funds and the commingling of margin for bitcoin trades with wider futures and options products, for instance.

Likewise, the degree of volatility to which bitcoin has been subject in the past—although this appears to have been largely stabilized in the short term by the introduction of futures—raises questions over whether real money, such as pension and superannuation funds, should be involved at all. **W**

Quants Say Internal Data will Unlock AI's Full Potential

At this year's North American Financial Information Summit, industry experts talked about the importance of sourcing and using internal data to find alpha. [By Anthony Malakian](#)

To hear Neeraj Hedge talk about artificial intelligence (AI) in the world of trading, the hype cycle is well into the rearview mirror.

"On the trading side, to say you're using machine learning is like saying, 'I'm using tools to build a house'—it's just a given at this point. This is not something that we're toying with, playing with, don't know how to monetize—this has been, for quite some time, very real," said Hedge, a quantitative trading architect at Societe Generale, who was speaking at this year's North American Financial Information Summit, held in New York on May 23.

Where the industry is still on the hype cycle, he said, is when it comes to AI delivering on sparse datasets to generate predictive analytics that will have an organizational impact. This is the point where internal data will prove to be vital in unlocking the true potential of AI and machine learning.

"On the organizational side, AI provides a great deal of value and I think it's nowhere close to the top of the hype cycle because organizations do not have data," Hedge said. "That's why you see companies are not shy about giving away their AI models. That's not where the game is. The game is what data do you have internally that you can leverage in a unique way to make a return on investment (ROI)-based decision on where your organization is."

Julia Bardmesser, head of data, architecture and analytics at insurance firm Voya Financial, agreed with the sentiment, adding that this is the key reason why firms need to be well on their way toward building a mature data structure if they're going to keep pace in an AI world.



"[Internal data] is where the edge is going to come from, because everyone has external data," she said. "You also need to have a really mature state of data fundamentals, data definitions, cleanliness of data—all the standards that data people like me are always talking about."

In addition to trading, AI is also having real effects in the worlds of surveillance and fraud monitoring. Manan Rawal, head of US model risk management at HSBC, noted that, as an example, machine-learning techniques have been deployed inside the bank to help improve its anti-money-laundering (AML) processes. As a result, he said, there have been "tangible, bottom-line savings," as it's helped to cut down on the number of false positives that need to be investigated by analysts.

But there are other areas of AI where the ROI is not as tangible. That can include internal processes. That's

why, Rawal said, that it's vital to show the scalability of an AI investment in order to prove its worth.

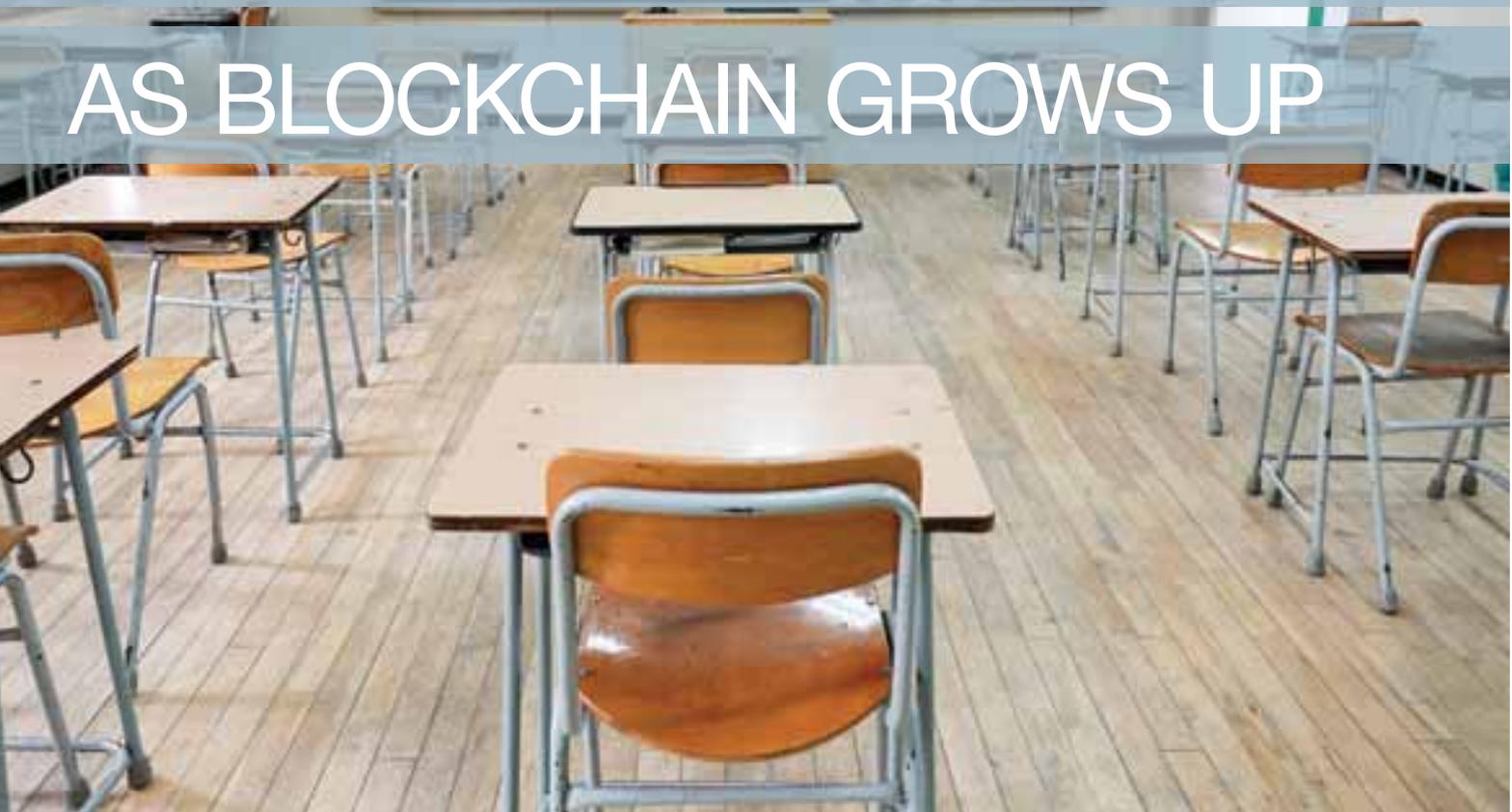
"It's not that easy to articulate the ROI in the case of a support function; when there's a business case it's typically driven by revenues or returns and you can get your hands around it," he said. "In the support function it's a different challenge and this is where we need to think more laterally as opposed to within our own individual space or functions. We need to think: Is that solution that you're thinking about for a support function scalable, does it have an impact on a business process that can be improved?"

And, again, it all comes down to the data. Rawal, echoing Bardmesser's earlier sentiment, added that having a cohesive data strategy that can be easily leveraged throughout the organization is the only way for AI to have a sustainable impact on the organization.

Or, as Hedge said, it's time to get the data internally in order. As AI becomes more efficient at being predictive, this will prove beneficial for budgeting and client engagement.

"If you have been capturing data on what the projections have been, and you are able to keep it clean and well-curated, there is the ability for an AI to sit at the table, take in information from public markets, take in information internally, and be a player at that table," Hedge said. "You will have an AI assistant who will make a very credible assessment of what your next year's sales will be in a particular product. This is going to be game-changing." **W**

Markets Learn Painful Lessons AS BLOCKCHAIN GROWS UP



Firms have begun to shelve some early blockchain projects as efforts to bring the technology to maturity continue. But the reasons why these projects stalled offer valuable lessons for the future of blockchain in financial markets.
By Emilia David.

Even in an industry known for its tendency to obsess over the newest tech fads, blockchain stood out as the frosted tips of fintech.

When it first emerged as an area of interest, blockchain, and distributed-ledger technology (DLT) more broadly, was touted as being able to solve problems in everything from highly centralized market structure through to the very foundation of capital markets. Years—and a litany of shelved projects later—some of the hot air seems to have gone out of the room.

People with “blockchain evangelist” in their title have been quietly moved into other roles—or the unemployment line. Consortia with projects

stretching across the entire ecosystem of finance have been forced to narrow their interest to a few key areas. Even some of the technology’s earliest proponents have abandoned industry alliances and tried to spin off their own projects.

Johan Toll, product manager for Nasdaq’s clearing and risk offerings, tells *Waters* that people have started to realize blockchain is not the answer for everything, despite an enormous number of studies and proofs-of-concept (PoCs).

“With blockchain, you need to learn how to crawl before you can run,” he says. “It’s not the silver bullet for everything so, as always, the business case has to be made.”



“With blockchain, you need to learn how to crawl before you can run. It’s not the silver bullet for everything so, as always, the business case has to be made.”
Johan Toll, Nasdaq

This doesn’t mean that blockchain is over, however. Even if they aren’t quite as publicly advertised as in previous years, investments continue to pour in for the technology from banks, venture capital firms and even individual investors. A report from KPMG released in February 2018 noted venture capital investment alone in 2017 reached \$512 million, with additional interest in 2018 expected.

And despite the history of blockchain to date being littered with the bones of failed projects, the industry as a whole is beginning to adopt a more nuanced strategy toward the technology, learning from the mistakes of old.

A Problem of Scale

It is easy to see why people allowed themselves to be carried away with the promise of the technology. When blockchain first gained popularity, it seemed like it was the answer to every problem. PoCs and pilot programs abounded for projects as varied as creating know-your-customer databases to overhauling clearing and payments systems.

Its shared databases and golden record features made it particularly enticing to help replace manual processes and the constant back-and-forth communications that cause inefficiencies and introduce the potential for

error, particularly in processes like reconciliations. So, companies and developers began to try to solve most business issues with DLT, just to see where the limit of the technology could be.

This experimentation has, however, led to rationalizing. Projects like the Depository Trust & Clearing Corp.’s (DTCC’s) blockchain platform for clearing repurchase agreements, or repos, have been shelved, with the company choosing to follow through with other projects around the technology.

SIX Securities Services scrapped its securities processing project, while BNP Paribas paused its venture with SmartAngels to register investor payments, a project it announced in 2016. Projects around syndicated loans on a distributed ledger, like those from NEX and Symbiont, have either gone quiet or dropped out of the limelight. NEX declined to comment but Symbiont co-founder and CEO Mark Smith says the project “has gained momentum in the space by partnering with four global banks to not only be customers, but also investors.” He adds the team are continuing to build smart contracts to handle the full lifecycle of a loan on a distributed ledger.

Companies have also decided to continue with blockchain but restruc-

tured the parameters of their projects, like moving from a proprietary venture to one done through a consortium, which is what happened with BNP’s private equity blockchain, or dropping some initial partners—which was the case for a precious metals post-trade blockchain between startup Paxos and Euroclear. The partnership ended in July last year, but Paxos made it clear it will move the project through the production pipeline regardless and hopes to roll out the first stage of the platform in a few months.

The DTCC—which was partnered with Digital Asset—managed a successful PoC in February 2017 with its repo blockchain project, hoping to better manage netting of repo transactions and let the firm calculate new settlement amounts that will be recorded to an immutable and transparent ledger. SIX was also working with Digital Asset for a blockchain-powered securities lifecycle processing system, which the company said was important to understand the technology and get ahead of the game. For BNP, its blockchain projects were a chance to explore the possibilities of the technology for the listed securities market.

SIX declined to comment for this article. While the DTCC, Digital Asset and BNP Paribas were able to give some details as to their decisions to move away from these projects, they said they could not get into particulars as to their decisions to abandon them.

More than the Tech

One of the primary issues blockchain development faces is not necessarily its viability, but rather its inability—as of yet—to meet the industry’s demands in terms of scale. Any technology that aims to make the financial services industry more efficient by replacing older transactional systems, must be able to at least handle what it has to process. For firms like the DTCC, which settles equity trades in US



Jean Devambe
BNP Paribas

markets, this means many thousands of transactions per day. Waiting for scalability to be resolved has influenced why some projects have been moved off the production pipeline.

It's a curious case of the market's mentality catching up and overtaking the technology—even though attitudes have matured, the technology is still in its relative infancy.

Jennifer Peve, managing director, business development and co-head of the office of fintech strategy at DTCC, says the use-cases brought to production must take into account where DLT currently is, and if the project can wait until the technology is a little bit more mature.

"I think it's important to assess the maturity of the technology based upon the use-case that you want to implement," says Peve. "At this point in time, the technology has not been truly tested or implemented within the financial services industry at scale."

She notes the technology still has a way to go before it has not just the ability to process the huge volume of transactions that pass through the DTCC's systems—in 2017, it settled \$1.61 quad-

trillion worth of securities—but also widescale adoption, as the industry still grapples with understanding how it can fit within current systems.

While the DTCC shelved its repo project, the firm will be pushing through the "replatforming" of its Trade Information Warehouse Initiative, essentially a database for the reporting of credit derivatives, which will be replaced with a blockchain-based system. It's currently being built by IBM, Axoni, and blockchain consortium R3 and is slated for release sometime this year. Peve says the initiative is its largest implementation of DLT so far as more transformational projects, including those that require critical mass adoption, will need to wait until the technology is better able to scale.

James O'Neill, managing director for operations risk at Fidelity Investments, also notes scalability could still be decades away, so in the meantime other options might be worth exploring. The firm has been a proponent of DLT, particularly through its Fidelity Labs research and development arm.

"Blockchain [today] does not have the scalability yet but as we build that scalability, we need to look at other ways to interoperate," O'Neill says. "Fidelity takes a slow approach to technology. We want to understand the technology and how it fits into regulations."

Nasdaq's Toll adds that the exchange is keeping a close eye on how fast scalability improves, especially as its projects come up for review. He says the rapid evolution of the technology and its march toward handling processes in larger scale shows it is maturing, though he acknowledges it needs to go further so scaled testing can begin.

As the industry looks through its slate of blockchain initiatives, proponents of the technology say it has proven itself for various use-cases. Peve points out PoCs often work out because the technology does work, so any hesitation is a matter of the technology not yet able to scale to the needs of the larger industry.

Yet others say that it's the reason a company chooses to deploy DLT, not the maturity of the technology, that ultimately determines success.

Lessons Learned

Chris Church, chief business development officer at DLT specialist Digital Asset Holdings, is one. He says the most important element to consider when determining which distributed ledger project to pursue is not the technology itself or its maturity but rather the business case.

"People should always look at the business case and not the technology—ask what is the business case, the problem that needs to be solved—before trying to see if the technology fits it," Church says.

The experimental phase of the technology is not truly over, as companies are still determining the best use-cases for blockchain to be deployed. But, they say, the process is far more circumspect now as the business case must be proven first before

more money is invested. Church notes use-cases are more important as they inform how fast to develop the program and which technology best solves any issues.

Firms have learned their lessons from the more experimental phase of blockchain, as DTCC, BNP and Paxos have reevaluated their pilot projects. Each says it undertook a rigorous evaluation process, similar to what is done for other business and technology investments, before deciding which can continue to be pursued.

“We’ve learned a lot of things over the course of the last year and we share those lessons learned with the industry so they can apply them to other use-cases. All of this has been about building that operational confidence and collaborative development to continue the progress of the technology,” DTCC’s Peve says. “One of the biggest lessons with regards to blockchain is that the value comes in changing the business process and introducing standards around that process. It’s less about technology and it starts with how we are actually going to change a business process. The technology itself doesn’t provide standards for you; it helps to enable or enforce them.”

Moving projects aside also brings lessons on how the technology should be used in the future, particularly around the idea of interoperability.

Jean Devambe, global head of digital and acceleration at BNP Paribas, says one of the biggest lessons the bank learned was to work on providing interoperability considering the future does not guarantee one blockchain framework to take center stage but rather multiple ones, like R3’s Corda, Ripple and Ethereum.

“Blockchain needs interoperability. There is no single blockchain—that is just impossible,” says Devambe. “There will be more platforms on blockchain and if you don’t want an illiquid market, what we have to provide is a guar-



Jennifer Peve
DTCC

antee that these blockchains will interoperate with each other. This is why we put a strong focus on—and prioritize—interoperability.”

He adds that BNP also learned to deploy blockchain on permissioned ledgers that have a larger network as small networks do not need to employ blockchain to build consensus or share information. As a result of these lessons, the bank has been able to reevaluate how it goes about the projects it works on, including its private equity blockchain project.

“We have reoriented some projects. There was one project on private equity where we decided to go in a more architecture mode,” Devambe says. “We decided to stop our proprietary project to be part of a newly created consortium because in this use-case we discovered that it made more sense to do it jointly with others in the LiquidShare initiative. It is good technology but you have to think about the business case and sometimes it makes more sense to do it jointly.”

By moving to a consortium—LiquidShare counts BNP, Euronext, Euroclear, Caceis, Caisse des Dépôts and Societe Generale in its membership—Devambe hopes to spread out the cost and value of the project.

What Works

But this does not mean blockchain for larger transformative projects will not work at all, and some companies are even betting big on the technology despite concerns over scalability. The Australian Securities

Exchange (ASX) is pushing through with its project with Digital Asset to replace its Clearing House Electronic Subregister System (Chess)—the exchange’s equities clearing system—with DLT. Unlike other blockchain projects however, Chess needed to be replaced as it was in its end-of-life stage, so a whole new system had to be developed. ASX chose to deploy blockchain for Chess late last year and has said it is considering using the technology again for its fixed-income clearing system called Austraclear.

While blockchain moves toward scalability, some firms are pushing forward with their projects, even if these are ones other firms have shelved. Broadridge Financial Solutions, for example, recently patented its proxy voting and repo blockchain process. JPMorgan also applied for a patent for a system using a distributed ledger to process payments and reconciliation between banks. Calastone, which conducted a successful test of a blockchain for mutual funds, has said it wants to put it into production by 2019.

Largely, though, the decision to move on to blockchain is not dependent on where the technology is but rather what the firm believes it needs.

Companies still announce new blockchain projects these days, but it may take a while before scalability is solved. In the meantime, though, some smaller projects will be pushed ahead. It’s just a case of separating nuance from the hype. **W**

SALIENT POINTS

- Blockchain projects have been rationalized to focus on smaller, more manageable use-cases that can be brought to production faster.
- Scalability is blockchain’s biggest stumbling block, which is why firms have pushed back some projects.
- The technology is still moving forward, although it may take more time to get to more transformative projects off the ground.

THE WAR FOR TALENT



As the global fintech boom shows no signs of slowing down, and the need for more specialized technology skills are in high demand, vendors and financial services firms are left competing for the Einsteins and the Marie Curies of the industry. **Josephine Gallagher** digs deep to examine the heightened challenges of discovering, attracting and retaining the best technology talent in the game.

The financial industry has always been competitive by nature—some may even say Darwinian—in its thirst for the very best and the brightest. Typically, the compensation on offer has been sufficiently grand to attract and keep them, too.

But given recent shifts in the marketplace landscape, regulation is now dictating agendas and emerging technologies—such as artificial intelligence (AI), distributed-ledger technology (DLT), cloud computing and the issue of big data—are dominating the conversation. These

changes have ultimately given way to the birth of regtech and a surge in fintech firms across the globe, putting a further squeeze on a shrinking talent pool.

The difference in compensation has also shrunk to such an extent that many would-be Wall Street tech types may be minded to head to Silicon Valley, rather than the City—a 2018 study by headhunters Morgan McKinley found that, for most IT developer positions, the salary gap between finance and other industries is often less than \$10,000.



“We like to think we can offer a different—and potentially, better—quality of work at a smaller company and what really matters for a lot of people is seeing their work actually put into action.”

Ben Nielson, Finbourne

“I think we are all seeing and experiencing the same level of competitiveness across the board, where it is challenging to hire,” says Armando Gonzalez, CEO of Ravenpack, a data analytics provider. “I don’t think anyone, without exception, could say that it isn’t challenging for them. So I think we all share the same struggle there.”

It’s hard to understate the scale of the challenge, with market experts saying the talent race now resembles an amphitheater where firms are left to battle it out for the best and brightest.

The Battleground

To add to the pressure, fintechs and financial services firms are also competing for talent with the likes of the heavyweight tech giants that they rely on, such as Google, Microsoft, IBM, and Amazon. Many financial services firms are also establishing and reestablishing themselves as technology businesses, blurring the lines between two industries that are often targeting the same skilled workforce. This limited talent pool is commonly made up of science, technology, engineering and mathematics (STEM) graduates.

“I think you also have to know the STEM population is not a big population, and you have large

industries coming in and switching gears—like financial firms thinking they’re now technology houses—and you have more startups, more fintechs, etc. Those are new and exciting, and attracting these candidates from a small pool,” says a European head of graduate recruitment at a global investment bank.

These fintechs and startups are increasingly popular among younger generations given their reputation for being dynamic, innovative, fast-paced and offering a quicker pipeline to progression. The appeal extends to their often flexible work hours and the ability for each individual employee to greatly impact the growth of a small firm.

Ben Nielson, co-founder of Finbourne, a startup and provider of asset management solutions, says he believes that although some larger financial institutions can award higher salaries, a growing fintech can offer candidates more opportunities to learn and play a crucial role in the success of the company.

“We like to think we can offer a different—and potentially, better—quality of work at a smaller company and what really matters for a lot of people is seeing their work actually put into action,” he says.

Ravenpack’s Gonzalez says people are eager to invest them-

selves in a startup that enables them to take greater responsibility and ownership of projects. He highlights that younger candidates are now focused on alternative rewards, such as the culture and the lifestyle that a firm can offer, and ancillary benefits, including a desirable location to live. In recent years, there has been increasing pressure on employers to satisfy the demands of the less-patient generation of tech talent by offering more immediate results in terms of work, growth and moving up the ranks.

As the marketplace expands, firms across the board are also having to up the ante on what they can offer employees. In some cases, particularly for larger institutions such as investment banks that have highly stratified hierarchies, this can prove difficult in terms of speeding up the path to progression, given the size of the organization, various levels of approval required, and the time it takes to meet the criteria to advance. After all, one does not become a partner at Goldman Sachs after only a few years as an associate.

“They expect their career to progress instantaneously,” says the head of graduate recruitment. “They want something every couple of months, every year—and I’m not sure that financial institutions have necessarily adapted themselves to that, or can adapt to that, because in essence, experts are grown over time.”

Gemma Jackson, global product manager for IT operations and automation at Credit Suisse, who has over 10 years’ experience in recruiting for technical analyst graduate programs, says she believes that the hiring landscape has changed due to the “fintech explosion,” and that larger institutions are pushing to distinguish themselves as attractive employers. She explains that larger



Elise Hauge
SimCorp

banks and financial institutions are having to adapt to these changes by trying to market or rebrand themselves as more innovative and exciting places to work.

“[Candidates] may perceive us as being more rigidly structured as a financial services company,” she says. “We have to make sure that we go out there with that brand to make sure that we do keep attracting [talent]. So I would definitely agree that we need to make sure that we highlight that we do operate in a pretty innovative way.”

As the financial industry is pulling its socks up to hone in on the best talent the market has to offer, underlying concerns remain, not just over attracting new blood, but ensuring that those who do enter the industry are equipped to deal with emerging technologies that are gathering pace.

The Skills Gap

The market has witnessed major advancements in complex technologies in recent years with the ongoing development of AI, DLT, cloud services and analytics platforms, to mention a few, and a concomitant rise in the need for staff to manage those changes. One example is the shift of fintechs and financial firms toward cloud services operated by companies such as Google and Amazon. But another issue is that, even leaving aside the general talent crunch, there are not enough skilled graduates or candidates equipped to understand the technology itself and both maximize and capitalize on its advantages.

“I think [cloud services competency] is a skillset that is still lacking very much, and it’s extremely valuable because those individuals can turn around an organization very quickly in terms of how they go about taking advantage of their own internal data and how they are able



Gemma Jackson
Credit Suisse

to build solutions for the customers that are more effective and less costly, so that makes it more competitive,” says Ravenpack’s Gonzalez.

This is a common concern across the industry as firms increasingly switch to the technology to manage their data. One explanation is that many students are often more interested in studying and specializing in other technologies that are seen as more exciting, making it more difficult to recruit experts for areas that are perceived as being mundane by comparison, such as cloud.

“Someone who knows about cloud—it’s really hard to get these people because everybody wants to be into AI and big data and all of that,” says Elise Hauge, chief human resources officer at vendor SimCorp. “And that’s hard. It’s hard to get

people there regardless of where you look in the world.”

As pressure mounts to find the right talent to develop, operate and scale these complex technologies, many believe there should be an emphasis on training and educating both future and present employees to fill the skills gap.

Charlotte Wood, head of innovation and fintech alliances at Schrodgers, is one such advocate. She emphasizes the importance of bridging the skills gap and upskilling the workforce, and argues that each organization is responsible for offering their employees the necessary training to become experts in their roles and the technologies they work with.

“It’s sort of our responsibility as an innovation practice, or transformation [practice], to help people have the right access to technologies, to knowledge, to tools so that they can innovate within their own areas,” she says. “So we really need to enable people to take on that knowledge and then apply it within the company.”

Curiously, however, it seems that the very technologies that banks and institutions are having trouble hiring talent for, are increasingly doing the hiring.

Breaking Down Barriers

Indeed, fintechs and financial services firms are having to take a fresh approach to the traditional methods of recruiting talent in an effort to fast-track the process and stay ahead of the herd. Many are, in fact, replacing headhunters and recruiters with automated systems and even natural-language processing, one subset of AI technology. These technologies are used to review multiple applications and resumés, using algorithms to match key characteristics and features with job profiles, significantly cutting down the lengthy hiring process.



George Zarkadacis
Tower Willis
Watson

George Zarkadakis, digital lead at Tower Willis Watson, a global advisory and broking firm, says he believes that technologies such as AI have turned the recruitment process on its head.

“So all this automation that takes place right now, I think is really exciting,” he says. “Especially if you think that some organizations are hiring graduates in the thousands. And this is what I think the new thing about recruitment is—the application of AI, particularly natural-language processing and natural-language algorithms, is revolutionizing the recruitment process.”

There is a major emphasis on speeding up the hiring process, especially for larger global financial institutions that tend to have multiple levels of approvals for signing off on employing candidates. However, one underlying concern of using AI technology to fast-track the process is that it removes the human factor, meaning that machines or algorithms are less likely to pick up on desirable characteristics of a candidate and the process can lead to repetitive profiling.

Ronald Visser, head of human resources, UK region, at ING, explains that although the multinational bank is at the beginning stages of using automation and AI technology for recruiting, there should always be some form of human involvement to accompany the process.



“It’s sort of our responsibility as an innovation practice, or transformation practice, to help people have the right access to technologies, to knowledge, to tools so that they can innovate within their own areas.” **Charlotte Wood, Schroders**

“I hope that we can still apply the human touch, because if we do everything via an algorithm, the risk, of course, is that you start to see a little bit of the principle of cloning and rule out potentially great people because they just didn’t tick the box of an algorithm,” he says.

The Gorilla in the Room

Unfortunately, it seems that problems with accessing a wider talent pool are only set to increase, particularly in Europe, due to the UK’s planned departure from the European Union (EU) in 2019. This issue has warranted worldwide attention over the past two years given the uncertainty over the Brexit negotiations and how that relationship will play out with regards to hiring UK and EU nationals in both regions.

As multiple fintech and financial services firms are headquartered or have prominent hubs in the UK’s major

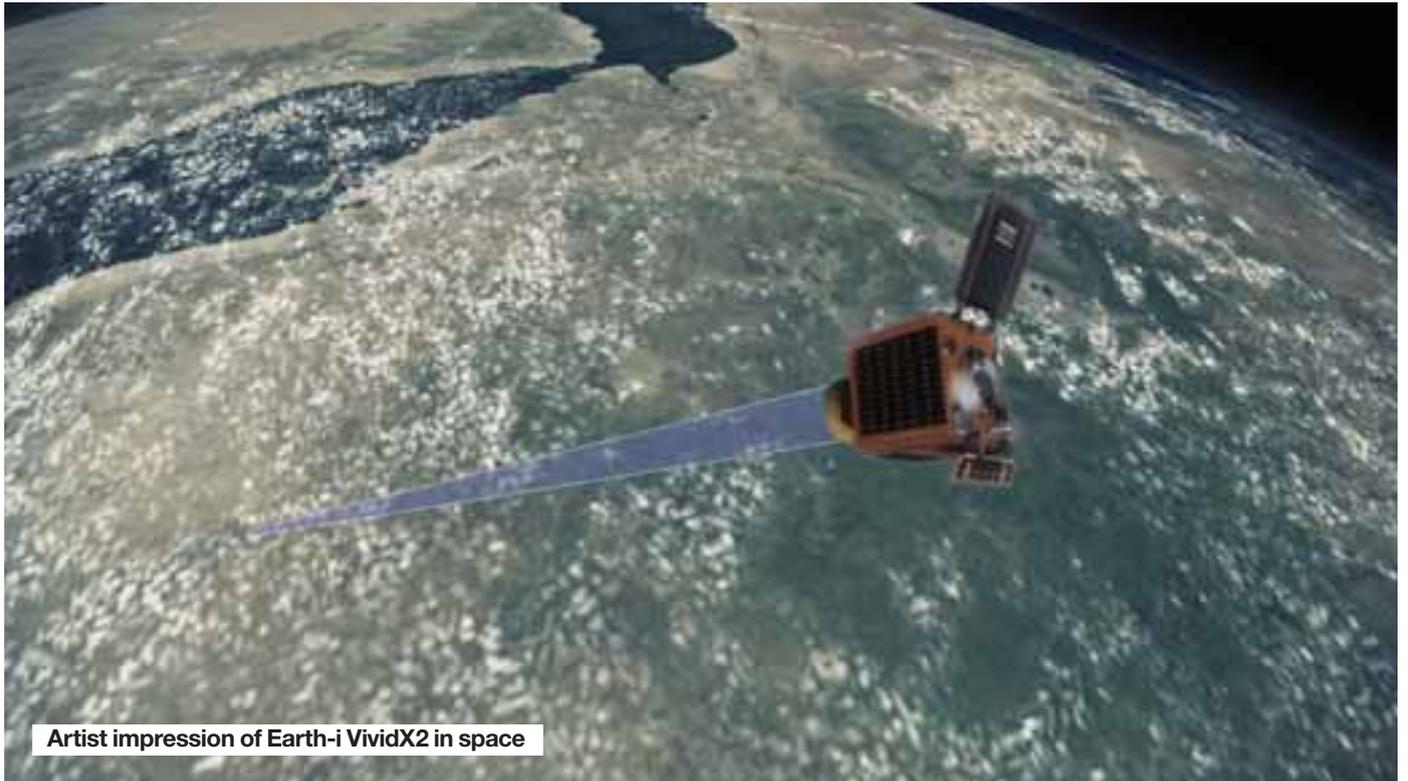
cities, there has been a visible drive in recent months for businesses to have fewer dependencies on single centers and to label themselves as pan-international. Many major banks and asset management firms have responded to the Brexit uncertainty by making plans to move personnel from the UK to other financial centers in Europe—such as Frankfurt, Amsterdam, Paris and Dublin—in an effort to balance out their global footprint.

In such cases, executives say, technologies can be utilized to break down barriers to recruiting through talent platforms, via virtual hiring or allocating teams across global centers. Both ING’s Visser and SimCorp’s Hauge share a similar perspective, in that immigration and location issues with regards to hiring talent may become a thing of the past as firms are working to brand themselves as more international and port their services to the cloud.

“I think it is maybe a bit further down the line, but given technology and also where people are, we are becoming more and more location-agnostic,” says Visser. “In Europe, of course, we have a big debate on who is the financial center of the future. But you could say that in the future—in 10 years—it is somewhat of a moot point because the financial center is somewhere in the cloud.” **W**

SALIENT POINTS

- A rapidly expanding industry leaves financial firms struggling to compete for brightest tech talent in a squeezed pool.
- As firms are investing more and more in emerging technologies such as AI, DLT, and cloud services, concerns arise over the skills and capabilities of graduates and candidates to fill these roles.
- Ironically, AI, cloud services and other technologies are proving useful in “revolutionizing” the hiring process and creating a global workplace, even as the talent to develop these technologies is limited.



Artist impression of Earth-i VividX2 in space

Hedge Funds Hunt for Alpha Across 1 Billion Smartphones

Over the past couple of years, mobile geolocation data has started to pick up steam as a method of generating alpha. But questions over the quality of data currently available, as well as a skills shortage among hedge funds and quants, mean there are limits to its usefulness. [By Hamad Ali](#)

In 2011, John Collins was a graduate student at the Massachusetts Institute of Technology (MIT), focused on finance and statistics. His life changed during class one day, when he met two people who shared common interests about leveraging non-financial data sources for drawing economic insights. One was Greg Skibiski, a visiting lecturer, and the other, Wei Pan, a PhD student in computational science.

One development led to another, and the next year, all three found themselves working together at Thasos Group, a company that had been incorporated with Skibiski as

its CEO and chairman. They were based across the street from the college, and heavily leveraged connections across the campus in the early stages of the company. “All of our early hires were from MIT,” he recalls.

From 2013 onward, they ran a portfolio that was data-driven in terms of investment decisions. By 2015 they were managing \$100 million. They were also interfacing with other portfolio management teams that were ingesting different forms of alternative data, such as transaction and web-surfing information, and thinking about how



“You might get lucky and have a good quarter, a good year, but how can you consistently over-perform a passive index if you don’t have some additional information advantage? So the industry has to go to alternative data, and I would say in the last 12 to 18 months, they have actually realized that.” **Yiannis Tsiounis, Advan Research**

to use cell-phone location data for their investment decision-making processes.

“What we see on our end, in the raw data, is we may get a location when someone is up in the morning, getting ready for work, on the commute to work, at the office sitting in a conference room, at lunch, on the way home stopping at a grocery store—you get the idea,” Collins says. “We get a really rich sort of sequence of locations visited because we have all of this passive collection from many different sources.”

Thasos is far from the only company to recognize the potentially rich yield from this data—that is, if it can only be properly harvested.

One Billion Eyes

There are over one billion smart phones in the world. Most modern devices have the capability to geolocate and generate data about users’ foot traffic, information that has become a category of alternative data used by a small but growing number of hedge funds.

The most common way such data is collected is by asking consumers for their location through mobile applications such as a navigation, weather, shopping and/or social media. The apps generally obtain location infor-

mation in a passive way, meaning even when the consumer is not using it, they will automatically grab the latitude and longitude that represents the position of the phone at any given time.

Vendors have been quick to catch on. Last year, in March, Thasos used the knowledge it had gained from managing its portfolio to launch a real-time data series product, Streams. As the name suggests, it tracks a stream of foot traffic to a point of interest, and offers information on a variety of performance metrics ranging from areas such as employee hours worked on an assembly line and patient counts in hospitals through to foot traffic at stores, restaurants and malls. Thasos’ clients include hedge funds, as well as commercial real estate firms and a handful of retailers.

Advan Research is another vendor working with location data. Its CEO, Yiannis Tsiounis, predicts that in the next year or two, 1,000 hedge funds will incorporate these datasets into their strategies. He describes it as a new frontier for providing alpha.

“The financial industry has to go into some alternative data in order to survive,” says Tsiounis. “It is a survival issue. If you don’t do it, you might get lucky and have a good quarter, a good

year, but how can you consistently over-perform a passive index if you don’t have some additional information advantage? So the industry has to go to alternative data, and I would say in the last 12 to 18 months, they have actually realized that.”

Right Tool, Right Job

Another use for location data is as an independent check on existing investment theses that may be based on other datasets. No one type of alternative data is perfect, and studying different types can help reduce risk. Thasos’ Collins cites several examples of hedge funds that, based on mobile phone location data trends that were diverging from transaction data, decided to pull out of a position in which they had already done quite well.

An inevitable question for hedge funds to ask is if mobile geolocational data is the right type of dataset to be looking at. The range of alternative datasets is in the thousands, with new types emerging all the time, and particularly through partnerships between data providers and specialist market participants. One such example occurred when Marex Spectron, a commodities broker, recently announced a joint venture with Earth-i, to develop and distribute a range of analytics tools. They will initially focus on the copper market, combining Earth-i’s satellite imagery and video analytics with Marex Spectron’s datasets.

According to Guy Wolf, Marex Spectron’s global head of market analytics, modern technology is capable of taking images at multiple angles, which permits the creation of three dimensional images of objects on the ground, as opposed to two-dimensional. Any changes in a mining pit, for instance, will correlate to the volume of earth removed, or it could be used for measuring the size of stockpiles.



Guy Wolf
Marex Spectron

As with any type of data, there are challenges with satellite imagery. “The biggest challenge in satellite data is, frankly, cloud cover. The advantage of Earth-i’s constellation is that it actually allows for multiple pass-overs every day, whereas a lot of satellite structures allow for only one potential image opportunity per day.”

Is there a particular reason they are not looking at mobile geolocation data? “I struggle to see what the applications would be within the metals market, to be honest,” says Wolf. “Ultimately, we are only interested in data that can provide insights into what goes on in the metals derivatives markets, and with geolocation data I struggle to see what the use-case could be.”

While it may be true that particular types of alternative data may be more applicable to a certain industry, a hedge fund investor who spoke with *Waters* says he figured out how to use mobile geolocation data under certain circumstances.

“For metals and mining, if you wanted, you could measure the number of trucks coming in and out of a copper yard,” he says. “It is useful; you just have to be smart enough to figure out how to use it. That was kind of my value add. When I figured out how you correlate these alternative datasets to things that matter or interest. Some things are more useful in some places and less useful in others. Like credit card data is not going to be useful to help you figure out global copper stuff, but you can definitely use geolocation data productively.”

But even though service providers and data brokers are stepping into this new field, much of the footwork to gain any actionable insight rests squarely with the person on the trading desk.

This was the experience of one US-based hedge fund analyst, who asked not to be named when he spoke to *Waters*. When he joined the fund, his employers were buying some of this data, but they weren’t really using



it as they didn’t have anyone on staff with the right skills or desire to do it. It was a more traditional long-short equity fund where they would rely on management calls, reading transcripts or having people go visit actual stores and malls to try and understand how a company was performing.

His employers didn’t have a data scientist, so he spent about 20 percent of his time doing the grunt work required to analyze these datasets, and the remaining 80 percent of his time turning the data into actionable strategies. “I knew some of this stuff was there, it was being unused, and I have the right math and stats background to actually use this stuff and connect it with traditional investing,” he says.

According to this analyst, it is getting more difficult to make money

solely using traditional data. “Most hedge funds that rely on traditional data—meaning like Capital IQ or Bloomberg, or whatever—they are no longer generating returns. I was able to return a 20 percent market-neutral alpha by using alternative data,” he says.

He was buying data from firms like Thasos, who pre-process it. But he found the data in itself was not useful. “The raw data is hundreds of gigabytes of data that you can buy in raw form,” he says. “You need a huge team of data scientists and cleaners to clean up the data; that is step one and that is what places like Thasos do. After that, you have to realize, now that you have cleaned the data, how do you turn it into something you can use to actually make money or make it investible? That second piece I was doing.”



John Collins
Thasos Group

Finding this blend of scientist and trader, however, is harder than it seems.

A lot of people buy such data; the challenge is having somebody who can understand it. “Even in the traditional hedge fund world, what differentiates a good versus bad hedge fund is not whether they are buying Bloomberg data or not; everybody has it. It’s the people who learn to extract more value from that same source of information versus their peers,” says the analyst.

Most traditional investors, whether mutual funds or hedge funds, need someone who has both a math or statistics background, as well as an understanding of how a business works. According to the analyst, most places have one or the other. The quant funds have people who are very good at the math, but don’t understand the business side. The inverse is true for traditional asset managers that typically lack qualified personnel to analyze the data.

Most hedge funds buy processed data from vendors like Thasos and Advan. But if a fund feels it has a very strong data science team and technical infrastructure, it may be able to glean additional insights from the data that others cannot, according to Octavio Marenzi, CEO of consultancy Opimas, and the author of a recent report on generating alpha from mobile geolocation data.

However, the number of people who can really do that is very small. Marenzi says he is only aware of one fund, Two Sigma, that is buying the raw data and doing the analytics in-house. Two Sigma did not respond to a request for comment.



Octavio Marenzi
Opimas

“Most others, in the top-tier funds, might buy the raw data, but then they might buy the normalization algorithms from somebody else, and then tinker around themselves with it to try and improve the data quality. But I think the vast majority of people are not going to have the skills or the resources to do that and are simply going to buy the finished analytics from these providers,” Marenzi says.

Even if such a capability is found, however, the data can just as often be a wild goose chase rather than a golden egg.

Data Wrangling

Mobile geolocation data has problems with accuracy. For example, to know how many people were inside a retail chain you must be aware of the exact polygons and shapes of the shops. “It becomes a bit difficult because there might be someone walking by the outside of an H&M shop on a busy street and that could look like someone who is in a shop, even though they are not, and that becomes even worse in smaller locations like Starbucks,” says Marenzi.

That can then also be skewed by things like a major road that goes right by a location, with the risk of picking up all that traffic that is just driving by. “You need very accurate data to be able to do that,” says Marenzi.

Another difficulty Marenzi notes is that mobile apps can vary widely from day to day, from month to month, in terms of how many users they have. According to Marenzi the data currently is not nearly as clean as users

would like it to be. “You can get some interesting information out of it but there is so much work that needs to be done to sort of normalize the data and get a clean signal,” he says.

Another general concern with mobile geolocation data is privacy. Tsiounis of Advan Research has a PhD in cryptography and a bachelors degree in mathematics. “My PhD was actually in privacy and anonymity. So I did anonymous electronic cash. I was building algorithms specifically to protect privacy,” he says.

Tsiounis says geolocation is one of, if not the most transparent dataset in terms of privacy. “You explicitly are told that this data is going to be used and resold and you get permission. Compare that to point-of-sale data: I swipe my card to buy something, somebody takes that information and sells it. They didn’t ask me,” he says.

According to the report by Opimas, the market for mobile geolocation data is expected to exceed \$250 million by 2020. Some of the problems with data accuracy could start changing with the 5G connectivity standard, which is supposed to be position-accurate down to about one meter, and will give almost continuous location updates. The problem with 5G when it first really comes live, notes Opimas’ Marenzi, is that there won’t be historical data to compare it to. Investors will have to wait for a year or two to have enough historical data to make comparisons and figure them out—that is, if they can stomach the requirements for doing so.

The hedge fund analyst, who recently left his job, is currently in the process of starting his own fund to focus exclusively on using alternative data to generate alpha. But will his old firm still be using such data?

Probably not, he says, because he doesn’t imagine his former employers will continue to use the data now that he’s left. After all, he says, they lack the interest and skill set to actually do this without him. Time will tell who’s right. **W**

SALIENT POINTS

- The most common way geolocational data is collected is by asking consumers for their location through mobile applications.
- Buying geolocational data is not enough. Hedge funds need staff with the proper skills to generate alpha from it.
- Mobile device users are explicitly informed their information will be used and resold, making geolocation arguably more transparent than other data sets.
- The growth of 5G networks will improve accuracy, but lack of historical data means investors will have to wait a year or two to get results.



A Serendipitous **JOURNEY**

Innovation is a key theme across the capital markets right now, to the extent that its pursuit has spawned large numbers of roles across the buy side and sell side responsible for introducing change to the business through the adoption of new technologies. Victor Anderson meets Elly Hardwick, Deutsche Bank's head of innovation, and traces her circuitous route to the firm's Upper Bank Street offices in London's Canary Wharf. Photos by Jonathan Goldberg

Before we even get a

chance to engage in some customary small talk at the start of our interview, Elly Hardwick, head of innovation at Deutsche Bank in London, has a confession: "I am not a technologist—my story is one of serendipity," she admits. "My degree is in oriental languages—specifically Indian languages, although don't ask me to speak any—which you might not think is the best training for this job."

Indeed, studying Hindi and Tamil—even if it was at Cambridge University—is hardly orthodox preparation for a life in capital markets technology, but as Hardwick explains, hers was a serendipitous journey, kicked off by her first post-varsity move to the UK's civil service, of all places. "That was my first tech role," she says. "I was on the European Fast Stream program, which at the time trained British officials for a career in European institutions. One of the rotations I did while I was there was in the communication and information industries. That was right at the beginning when the government had just discovered the internet and I, like most 'Fast Streamers' in those days, was given amazing levels of responsibility to think about things like domain naming and illegal content on the internet."

Hardwick was involved in the Internet Watch Foundation—"one of the first responses to what to do about illegal content posted on the internet, and which is now hugely topical," she explains—in addition to working on the approval of the design of the first digital television set-top boxes in the UK. "That was my introduction to the business aspects of technology and that has always been my focus—not so much the technology per se, but its business application in the real world."

After her stint in the civil service, Hardwick moved to Booz Allen Hamilton, a telecommunications, media and technology consultancy



Elly Hardwick, Deutsche Bank

where she focused mostly on media. “As a non-technologist, I have followed a lot of the business applications of technology,” she says. “In hindsight, it looks beautifully well planned, but it was serendipitous at the time.”

Back to Cambridge

The first hint that Hardwick was destined for a career in the capital markets came by way of a two-year stint at the other great university based in Cambridge—this one, Harvard University, being based in Massachusetts, where she earned an MBA. “I had always taken the view that if anyone wants to have a global career in finance or industry, you have to understand the US,” she says. “I did a two-year MBA from 2000 to 2002 at Harvard and deliberately chose to go to the US because as a European, you have to have that perspective. It was an absolute eye-opener for me in terms of how Europe is perceived and the sheer scale of the economies.”

Hardwick returned to the UK, MBA in hand, and made the transition to the capital markets by joining Morgan Stanley in Cabot Square, Canary Wharf. At the time, she remembers Canary Wharf “wasn’t even a building site,” given that One Canada Square, the 50-story, pyramid-topped, post-modernist monolith now synonymous with the commercial district, had only been standing for just over a decade, while much of the remaining vicinity of the West India Docks was still in the grip of industrial decay after the port fell silent in the early 1980s. “I was in equity sales, which I think was very useful both in terms of my credibility with people at the bank—I walked in their shoes and knew what they were talking about—and also in terms of understanding how the capital markets work.”

After her three-year stay at Morgan Stanley, Hardwick joined Thomson Financial in 2006 (which became Thomson Reuters in mid-

2008) for a total of six years, where she served in a range of strategy roles and also headed up the firm’s Professional Publishing division, which owned *IFR*, *Private Equity Week*, and *Venture Capital Journal*.

But it was her next move that proved pivotal in her career, combining technology, the capital markets and establishing a startup in one fell swoop: She helped co-found CreditBenchmark in 2012, a business that is still going strong today and of which Hardwick is a shareholder. “I was tempted away [from Thomson Reuters] by a former Thomson Financial boss of mine, Donal Smith, to look into the concept of credit ratings, which was the genesis of CreditBenchmark and which I



became CEO of,” she explains. “The thesis was this: We’ve had a financial crisis, it was widely believed that the credit rating agencies had played a role [in the crisis] in that they hadn’t forewarned people about credit issues, and despite that, there hadn’t been a successful challenger in that space. We wanted to think about why we had a \$6 billion industry dominated by three large incumbents, but no challengers. It should have been ripe for disruption and yet it wasn’t happening.”

CreditBenchmark’s strategy largely mimicked that of Mark-it Partners (now IHS Markit) in its early years when the firm, led by ex-TD Securities head of Europe and Asia, Lance Uggla, established a credit default swap (CDS) pricing service based on banks’ own CDS pricing data, which they submitted to Mark-it and which it then blended and benchmarked overnight and sold back to them the following morning. It was an innovative solution to a vexing problem facing large numbers of credit market participants, which also turned out to be stunningly successful and lucrative.

“The approach we came up with was to go to the banks that have mini-rating agencies within them by virtue of their credit analysts numbering between, say, 20 and a couple of hundred, who produce internal credit-risk ratings for their own reg-cap calculations,” Hardwick explains. “That data had been kept confidential because it is a differentiator for them when it comes to lending and making credit-risk decisions. Our pitch [to the banks] was that if they would share that data with us, we could pull it all together, match up the entities that they had rated, and provide them with a consensus. The challenge for us was to convince the banks to share their data with a startup that had never been shared before. That gave me a very good grounding in the hygiene factors of running a company.”



“Deutsche Bank wanted to make it easier for startups to do business with the bank and by that I mean sell things to us. I had spent the past five years trying to get banks to become customers, so I had an intimate understanding of what works, what is more challenging, and what could be fairly easily tweaked to make life easier for everyone.”



Joining Deutsche

Four years after starting CreditBenchmark, Hardwick was on the move again, this time to Deutsche Bank, which she joined in December 2016 as its head of innovation, a role she and JP Rangaswami, Deutsche’s chief data officer and group head of innovation, had been mulling for some time. What attracted her to the business, she says, was that she felt that Deutsche was open to the concept of innovation across its various business units, and that what it was looking to do was practical and that it leveraged her CreditBenchmark experience.

“Deutsche wanted to make it easier for startups to do business with the bank and by that I mean sell things to us,” she says, intimating why Deutsche had considered her to be the ideal candidate to lead its innovation drive. “I had spent the past five years trying to get banks to become customers, so I had an intimate understanding of what works, what is more challenging, and what could be fairly easily tweaked to make life easier for everyone.”

The bank’s innovation function, established by former COO Kim Hammonds, who stepped down from

her role on May 24 this year by mutual agreement with the board, has three objectives: outside-in technology transfer, ensuring that the business has access to technology from the outside ecosystem that it otherwise wouldn’t have encountered; cultural transformation, which Hardwick by her own admission was “pretty skeptical of,” but has since come to realize that it’s “one of the most powerful levers” the bank has in terms of driving change; and supporting the bank’s digital strategy.

How Hardwick and her team go about achieving those three objectives centers primarily on the technology transfer piece by way of a series of global innovation labs—two in the US (New York and Silicon Valley), two in Europe (London and Berlin), and one in Singapore, which the bank will open this year. “Our pitch to the business—and I view the business and supporting functions within Deutsche Bank as my customer—as to why we should have these labs, is that we will bring them the best solutions globally, rather than, for example, a lab in Frankfurt talking to the business

in Frankfurt and bringing them a Frankfurt-based startup,” she says. “That’s kind of pointless.”

Lean

According to Hardwick, the labs are “emphatically demand-driven” in terms of what they focus on. What they don’t do, however, is identify a technology theme—quantum computing, for example—establish a team, provide it with some money, and ask it report back in a few years when it has some results. That, she maintains, is not a pathway to new technology adoption.

Eric Ries, the developer of the Lean Startup methodology, advises startup principals to “get out of the office,” much along the lines of Genba, the Japanese word for “the actual place” which, when used in a lean manufacturing context (upon which Ries’ methodology is loosely based), focuses on the importance of time, productivity and space. One of Lean’s central tenets is the importance for a startup to establish what its target market wants and then solve those problems rather than developing products based on what it assumes the market might want and attempting to shape the problem to fit

the solution. That, he contends, is one of the primary reasons why so many startups fail. “That is exactly what we do,” Hardwick, explains. “When I say we are demand-led, I am careful that we position ourselves as extremely business-like and practical with our customers, the bank.”

Hardwick’s team typically works with each business or support function within the bank—legal, risk, or sales and trading, for example—and has a group of people who come together regularly that includes the coverage leads from the labs, a senior person from the business, a senior representative from the CIO’s office, some technologists and some ops people, where they discuss the bank’s demand challenges. The innovation team then matches up those demands with what it is seeing in the market and develops a prioritized list of demands.

“We’ll go out and look at who is active in the space and who is getting traction—a little bit like a VC would,” Hardwick explains. “We’ll then do the boiling-down process to find out which of all those firms not only has a product doing well in the market, but which one has a solution that fits the reality of Deutsche Bank, because we have geographic specificities, we have regulatory specificities and everyone has specificities about their technology stacks and their data. So we need a recommendation that will work [for] Deutsche Bank. That is my currency for the business—I bring them stuff that will help them, and it will help them now.”

Technology

In terms of the technologies Hardwick has her eye on at present, it’ll come as no surprise to *Waters’* readers that artificial intelligence—encompassing robotic-process automation, machine learning, natural-language processing and smart-documentation automation—which, she says, is so ubiquitous that it has almost become its own horizontal, is one of two that top that list,



while distributed-ledger technology (DLT) is the other. “As an institution, we’re fairly bullish about DLT,” she says. “There are a number of initiatives with pilots in development. One example is a consortium called *we.trade*, a trade finance blockchain initiative. But the point is not that it’s blockchain—the point is that there’s a business application that happens to be particularly well supported by DLT.”

Hardwick anticipates seeing a number of in-production instances of distributed ledger and blockchain-type initiatives at Deutsche this year, while another initiative the bank is participating in is the Utility Settlement Coin, a form of digital cash designed to clear and settle financial transactions, underpinned by blockchain and expected to launch this year.

Cultural transformation is also part of Hardwick’s remit, which she says provides the type of “leverage” within

the firm in a way that it could never get from other types of initiatives. “It enables us to reach a far larger number of people across the bank—bear in mind that Deutsche has 97,000 employees. For us to really change the direction of the ship, we have to deliver significant leverage to those people, and cultural transformation initiatives are one of the most powerful ways of doing that.”

Changes

Given that Hardwick has now been in the role for 18 months, what has she learned along the way? Is there anything she is doing differently now that she has her feet under the table? “Yes,” she responds. “I have learned about the absolute importance of every conversation we have with my customer—the business—and the importance of having a ‘triumvirate’ at the table: the business, tech and ops, and innovation. The quality of that relationship is a great indicator of whether things are going to land and stick.”

Hardwick explains that during her first career in the capital markets while at Morgan Stanley, the producers were the kings and queens of the business. For example, she says, if a senior trader wanted something, they would dictate the strategy and they would get what they wanted or else “things started flying around the room.” In those days, technology was seen as a service beholden to what the senior producers wanted. “If there is one way that technology advancements have changed things it is that that dynamic doesn’t work anymore,” she says. “Where things work is where business and technology are at the table together, setting a common strategy where they understand the other’s contribution.”

A universal truth about journeys is that serendipity often ends up playing a role. And as Hardwick’s meandering route to Deutsche Bank suggests, the most satisfying journeys are those where the destination turns out to be a place that you never knew you wanted to visit ... until you got there. **W**

>< The SST Awards Move to London

This year's Sell-Side Technology Awards lunch was held for the first time in London on April 20 this year, joining the Buy-Side Technology awards that are held in the UK's capital on the first Friday in November each year.

On hand to present this year's trophies was Roz Savage, the first woman to row solo across the Atlantic, Pacific and Indian Oceans. She handed over the 32 gongs making up this year's SST Awards line-up, including the final two categories—the best sell-side product for 2018 and the best sell-side technology provider for 2018—won by the London Stock Exchange Group's UnaVista business, and SIX, the Zurich-based provider of banking

infrastructure and financial data services, respectively.

As we have come to expect over the years, there were a number of new faces in this year's winners' circle, although the total number of new winners was down compared to the last few years. New recipients included Avelacom, a Moscow-based provider of trading infrastructure; NEX TriOptima; Murex; and London-based TransFICC, which provides its clients with a single application programming interface (API)

to 230 fixed-income and derivatives execution venues, which took home the coveted most promising startup of the year category. This year was also SIX's first win in the SST Awards.

Write-ups by Anthony Malakian (AM), James Rundle (JR), Wei-Shen Wong (WSW), Emilia David (ED), Josephine Gallagher (JG), Hamd Ali (HA), and Victor Anderson (VBA). **W**

Victor Anderson
Editor-in-Chief

Winners' Circle

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Sell-Side Technology honored the winners on April 20 in London.





Best Alliance or Partnership

FlexTrade/Dataminr

The win in the best alliance or partnership category goes to FlexTrade and Dataminr and it's easy to see why, as the alliance ticks two important boxes: big data and artificial intelligence (AI).

In September 2017, FlexTrade—which also won the best sell-side automated trading platform award—announced that it was teaming up with Dataminr to create a global macro news alert feed within the FlexTRADER execution management system (EMS). Dataminr's platform uses machine-learning techniques to filter through approximately 500 million public tweets on Twitter. It breaks these tweets into categories such as financial services, geopolitical commentary and market insights. Within their Dataminr accounts, traders can create customized watchlists. From there, alerts are generated based on the traders' criteria and these alerts are fed into FlexTRADER in real time. These alerts can then be used to automatically trigger actions and be coupled with information from other data sources. The framework also identifies deviations from a trade plan so that a trader may change course when necessary.

As an example of the global macro news feed in action, on September 23, 2017, reports were circulated by CNBC that Tesla was working with Advanced Micro Devices (AMD) to manufacture an AI chip for self-driving cars. The platform produced an alert at 3:53 pm EST when AMD was trading at \$13.18. By 4:15 pm EST, the stock had risen by 4.2 percent and in after-hours trading jumped to a price increase of 10.9 percent from the original Dataminr alert.

For traders who have orders in the EMS who are employing an algo-driven strategy over the day, if a Dataminr alert comes in that indicates that a significant change in price might be coming, it alerts the user and can automatically pull or replace the order without any human intervention.

FlexTrade reviewed a number of different social media aggregation platforms—some of which use proprietary sentiment analysis and AI to infer which tweets are most relevant and might have a direct impact on price, according to a spokesperson. "There are plenty out there at varying degrees of maturity, but what struck us about Dataminr was their unique partnership with Twitter and robust analysis and screening tools to provide actionable intelligence into the blotter, rather than noise," says the spokesperson.

Data analytics and AI have been popular drivers for winners in this category. Last year, Nasdaq and AI specialist Digital Reasoning won this award thanks to improvements made to Nasdaq's Smarts trade surveillance platform with the incorporation of Digital Reasoning's machine-learning tools.

—AM



Lee Sherling and Roz Savage

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Within their Dataminr accounts, traders can create customized watchlists. From there, alerts are generated based on the traders' criteria and these alerts are fed into FlexTRADER in real time.

Best AI Technology

Digital Reasoning

The best artificial intelligence (AI) technology category has been around for two years, and in both instances it is Digital Reasoning that has taken home the top honor. Digital Reasoning's Synthesys platform incorporates AI—from natural-language processing to deep-learning algorithms—to derive actionable information for risk and compliance, to monitor for fraud, and to provide customer insights. The platform “learns” human communication, in textual form, audio and through images. It sifts through vast quantities of unstructured data—across multiple languages and domains—to derive intent and human behavior, says Tim Estes, president and founder of Digital Reasoning. “It completes the picture of looking at textual language, audio language, and starting to have a full communications capability to satisfy both risk and revenue-oriented use-cases,” he says. “We think that’s Digital Reasoning’s primary differentiation: We think that understanding people begins with understanding what they want and what they say—everything else is metadata, and that’s commoditized. So when we look at understanding people, we think it has to be about understanding intents and behaviors.”

In March, the vendor raised \$30 million in a new funding round, led by BNP Paribas, but which also included Barclays, Goldman Sachs, Nasdaq, Square Capital, Lemhi Ventures, HCA, and the Partnership Fund for New York City. Digital Reasoning is used by financial services firms, as well as by US defense and intelligence agencies, and healthcare providers to diagnose disease.

Banks use Synthesys to identify customer complaints, find cross-sell and up-sell opportunities, to improve their know-your-customer (KYC) and anti-money laundering (AML) processes, and to meet regulatory demands stemming from Dodd-Frank, the revised Markets in Financial Instruments Directive (Mifid II) and the Market Abuse Regulation (MAR), and to oversee the entire trade lifecycle and provide an analysis of trade intent.

The platform is also being deployed to help firms adhere to the General Data Protection Regulation (GDPR), which went live as this magazine went to press. “It’s relatively easy to say someone has a strong relationship with someone else because of the amount of times they call each other, but what they say—looking at personal compared to business—is interesting. And there are ways to characterize conversations and classify them and categorize them without giving up the content. So in the GDPR world, which we’re moving into, it’s important to know the difference between a personal communication and a professional one,” Estes says.

—AM



Tim Estes and Roz Savage

“Digital Reasoning’s Synthesys platform incorporates AI—from natural-language processing to deep-learning algorithms—to derive actionable information for risk and compliance, to monitor for fraud, and to provide customer insights.”

Best Data Provider to the Sell Side

SIX

Zurich-based SIX has a long history of wins across *Waters'* various awards programs for its acclaimed corporate actions offering, and this year it snaps up the best data provider to the sell side category. This year's win is largely down to SIX's hard work and innovative response to the changing regulatory landscape, where banks are struggling to tackle issues surrounding tax reporting and compliance. To begin with, the firm's database covers 27 million securities and connects customers to over 1,500 global sources of information. Its core data offering, Valordata Feed (VDF), cross references of its securities master and corporate actions data, providing information services to assist firms to meet their tax and legal requirements under sanction rules, Internal Revenue Service (IRS) regulation 871M, Packaged Retail and Insurance-Based Investment Products (PRIIPs), and the revised Markets in Financial Instruments Directive (Mifid II), to name a few.

One of SIX's core objectives to date has been its move toward providing data as a service and offloading work from its clients. Given its industry position and data coverage, the firm can create detailed rule sets, conduct analysis and then provide that information to its clients through regular updates. "While vendors are just selling the raw data to customers, we have actually used the data that we have in our database to create a higher level of service that clients can very easily just take from SIX and implement into their workflow," says Phil Lynch, global head of markets, products and strategy at SIX.

Last year also saw the launch of SIX's global regulatory hub, designed to enable the buy side and the sell side to connect in order to exchange data and documents. The platform acts as a one-stop shop where firms can access up-to-date regulatory information through a single interface. The hub also allows for compliance capabilities to track the lineage of information sourced, where it can be archived into the client's system.

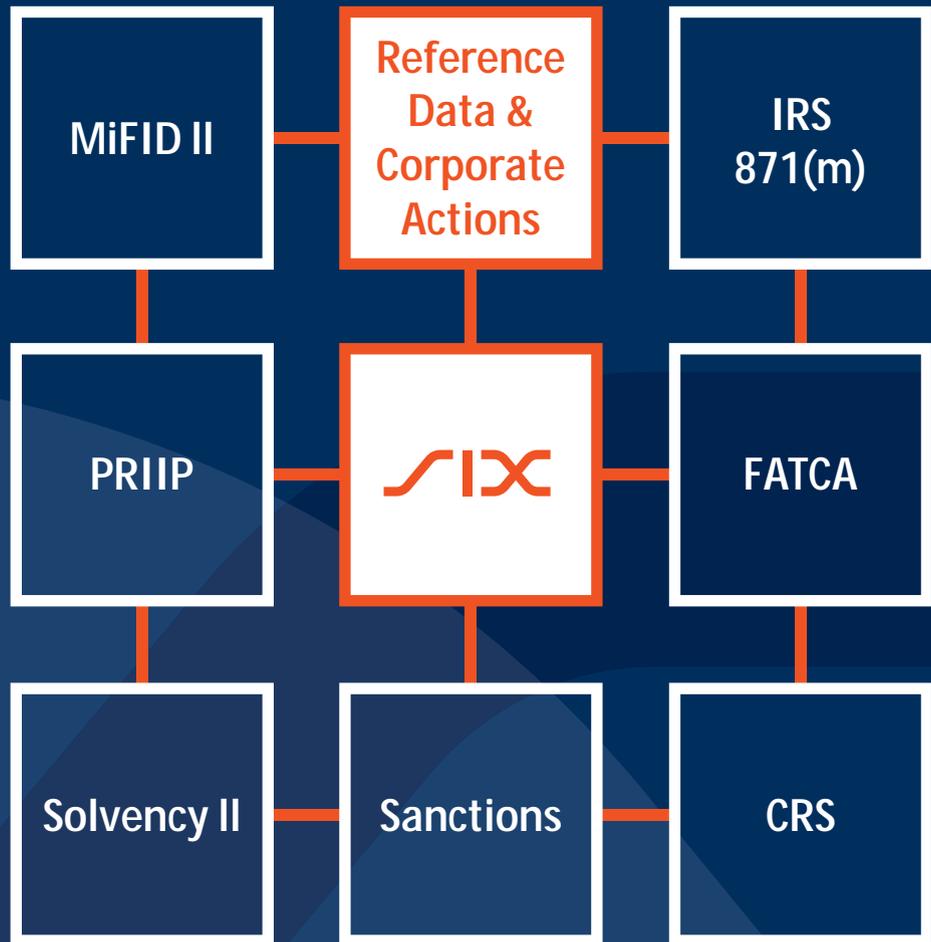
Last year was clearly a successful year for the data technology firm, but now with the focus on 2018 and the year ahead, it aims to assist clients to grow and scale their business by developing their data capabilities and focusing on areas that will minimize workload, inefficiencies and costs. "This is a new direction for SIX and it was extremely well established in 2017, but we see this as a new direction that has a long period of relevance that customers will be coming to us with all kinds of needs," says Lynch.

-JG



Martin Cole and Roz Savage

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One of SIX's core objectives to date has been its move toward providing data as a service and offloading work from its clients.



Consistent
Regulatory Data



Best Cloud Provider to the Sell Side

BT

For the past few years, the best cloud provider to the sell side category has been won by one company—BT—for its Radianz Cloud suite, and this year is no different. However, BT has not been resting on its laurels following last year's win and has instead focused on continuing its multi-year project to co-locate in datacenters to be closer to its clients, says BT Radianz CTO Michael Cooper. "We've established a physical presence at more and more locations where the financial markets are moving to," he says. "This is a continuation of an aggregation trend because as everyone knows across assets, the financial markets have physically co-located to certain datacenters."

Cooper says BT is also working with increasing numbers of firms using public cloud in the financial services industry so that they can facilitate those connections. Integrating with the public cloud, and the increasing interest in working in these public clouds, is one of the biggest trends the company is seeing.

It is also constantly exploring how it can better provide security for its clients. The company sees its value in providing a platform for the financial markets community, Cooper notes, adding that BT is conscious of new regulations that clients have to face and other trends in the market. BT's Radianz Cloud currently has around 400 applications running on it, according to the company.

As part of its commitment to provide customers with what they need to innovate, BT is looking into how best to leverage distributed-ledger technology (DLT) for its clients, particularly around possibly providing infrastructure to support any customers exploring the technology. "I think one of the reasons we've succeeded is that we don't compete with our clients," says Cooper. "We're looking to support what our clients are doing, and in this instance we're looking to provide infrastructure and infrastructure modules that will scale to support our clients' distributed-ledger aspirations and initiatives."

Cooper adds that DLT is "a beautiful fit for us because we're in a collaborative world and networking is the primary function of what we do."

According to Cooper, the company is working on providing support for new entities under the new revised Markets in Financial Instruments Directive (Mifid II) regime. BT is also focused on engaging with the next generation of buy-side and sell-side customers with its programs to encourage emerging financial technology firms to bring their products and services to market.

—ED



Yousaf Hafeez and Roz Savage

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BT has not been resting on its laurels following last year's win and has instead focused on continuing its multi-year project to co-locate in datacenters to be closer to its clients.

Best Distributed-Ledger Technology Project

R3

As far as distributed-ledger technology firms go, there has only been one that stands out for its platform built specifically for finance, and takes home the award for the best distributed-ledger technology project at the Sell-Side Technology Awards 2018: R3 with its Corda platform.

Charley Cooper, managing director at R3, tells *Waters* that the award is a result of its work with the industry in rethinking the blockchain concept entirely and coming up with a new approach to link businesses that reduces cost, risk and duplication.

Corda is backed by \$107 million in investment from more than 40 global companies. It was originally designed by and for the financial industry, with input from over 200 banks, financial institutions, regulators, trade associations, professional services firms and technology companies.

It is designed to record, manage and synchronize contracts and other shared data between trading partners.

One of Corda's unique features is in its approach to data privacy and security in the blockchain space. Corda only sends data to those who have a "need to know." This feature stems from financial institutions needing to ensure the confidentiality of trades and agreements, while simultaneously benefiting from a shared distributed-ledger infrastructure. R3 is now working on the first commercial deployment of applications based on Corda, known as CorDapps. Over the last two years, it has worked to build a community of partners and provide them with the support and freedom to develop solutions that solve customers' specific challenges. "Our partners are working with us in a number of ways: With some such as Microsoft, Amazon Web Services, Intel and Hewlett Packard Enterprise, Corda is being integrated with their technology; some are building end-user applications on Corda, such as Calypso, Finastra, SIA and TradelX; some are delivering custom-built solutions for clients on Corda; and some are advising their clients on the business potential of the platform," says Cooper. He adds that in the next few months, the first CorDapps will be commercially deployed.

While each partner is at different stages of development, the first commercial deployments of CorDapps will include a foreign-exchange application in partnership with Calypso, a collateral-lending application in partnership with HQLAX, an open account trade finance application partnering with TradelX, and a gold trading application in partnership with Tradewind.

Cooper says R3 will continue enhancing and refining the platform and make software updates available when more features have matured.

—WSW



Charley Cooper

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One of Corda's unique features is in its approach to data privacy and security in the blockchain space. Corda only sends data to those who have a "need to know."

Best Implementation at a Sell-Side Firm

SmartStream Technologies

The best implementation award is the only category of all 32 on offer in this year's Sell-Side Technology Awards where the winner is determined by the effectiveness of an implementation at a sell-side firm. This year, SmartStream Technologies emerged on top, thanks to the implementation of its TLM Fees and Expense Management platform at Credit Suisse, an offering designed to allow firms to manage their variable expenses through an end-to-end automated process, across high volumes of transactional information, and accurately and transparently apportion fees.

In 2017, SmartStream and Credit Suisse announced the expansion of their existing agreement around the processing of invoices and reconciliations to include listed derivatives brokerage fees, complementing the managed service for the processing of invoices and reconciliations within the Swiss bank's over-the-counter (OTC) fixed-income derivatives, US listed equity options and cash equities businesses across brokerage, clearing and exchange fees operations. By centralizing the entire cost management ecosystem across all service providers from receipt of invoices to automatic fee calculations, accruals, reconciliations and payments, the bank has enhanced controls and transparency to support greater cost optimization.

"The challenge that you have in the current climate is developing a deep, empirical understanding of what your cost structures are," explains Vincent Kilcoyne, executive vice president of product management at SmartStream Technologies. "For this purpose, we were expanding our TLM Fees and Expense Management solution to provide Credit Suisse with increased accuracy and confidence around their brokerage fees. We needed to be able to provide granularity across asset classes, but we also needed to automate that, while recognizing the key drivers associated with a global bank of the magnitude, depth and diversity of Credit Suisse. We had to be able to capture all that information from a geographic perspective, with all of the different nuances associated with regional relationships, cost structures, ladders and behaviors, and bring all of that information in, in all its different formats, in large volumes, and process it in a short period of time so that we could drive improved decision making."

Past winners of this category include Caplin Systems (2013), Torstone Technology (2014), and Numerix (2015), while New York-based AxiomSL was the recipient for the past two years, courtesy of its collaboration with Standard Chartered Bank on its Bank of England (BOE) statistical reporting requirements (2016) and its work with State Street on its federal statistical reporting obligations (2017).

—VBA



Vincent Kilcoyne and Roz Savage

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By centralizing the entire cost management ecosystem across all service providers from receipt of invoices to automatic fee calculations, accruals, reconciliations and payments, the bank has enhanced controls and transparency to support greater cost optimization.

Costs in the Crosshairs

SmartStream Technologies made a little bit of history at this year's Sell-Side Technology Awards by winning the best implementation category for the first time. [Victor Anderson](#) chats to SmartStream's Vincent Kilcoyne about his firm's relationship with Credit Suisse, and the extent to which sell-side firms are feeling the pinch when it comes to accurately and transparently determining their various fees and expenses.

Q SmartStream won the best implementation at a sell-side firm category in this year's SST Awards. What was the implementation and how did it come about?

Vincent Kilcoyne, executive vice president, head of product management, SmartStream Technologies:

The business partnership between SmartStream and Credit Suisse has existed for many years, and this recent implementation was an evolution of the successful projects across other asset classes, but the driver here was to expand the functionality to cover other asset classes and fee structures that represent a truly global bank. Due to the fact that SmartStream provides a fees and expense management offering on a service basis, through combining industry expertise with operational and technical capability, we are able to ensure the optimal outcome for our clients in terms of speed and quality, thereby driving satisfactory outcomes and success.

Q To what extent are your clients looking to manage their various operating costs more transparently and in a more disciplined fashion?

Kilcoyne: This was a primary driver for the bank. As part of the evolution of the markets, banks are increasingly looking to gain a deeper and broader understanding of the structure and diversity of their fee structures. For many banks, growth is always on the agenda, but this program was aimed at providing the bank with a greater insight into the underlying behavior of the cost structures across a variety of drivers, namely, lines of business, asset class, geographic regions, trading partners, venues etc. By truly understanding this information at a forensic level, the bank is able to optimize their behavior and fee agreements to drive profitability and growth.

Q What are the typical challenges facing sell-side firms when they are looking to manage their various operating costs? What do they tend to overlook in terms of complexity?

Kilcoyne: In our experience, banks (and indeed all market participants) face some common problems around the quality of the underlying data. In most cases, fee structures have evolved over time and in accordance with the growth of the business, with many



“The business partnership between SmartStream and Credit Suisse has existed for many years, and this recent implementation was an evolution of the successful projects across other asset classes, but the driver here was to expand the functionality to cover other asset classes and fee structures that represent a truly global bank.” **Vincent Kilcoyne, SmartStream**

agreements having existed for a number of years. For this reason, harmonizing fee structures can provide a significant immediate benefit to the organization, but as an initial step, the actual capture and remediation of the underlying data presents a substantial challenge. As part of normal implementations, SmartStream experts encounter this problem frequently and as such we have developed a number of approaches and tools to assist in this process.

Q Where are the drivers coming from that are spurring sell-side firms to manage their costs more efficiently? Regulations, internally, or from their clients/investors?

Kilcoyne: In reality, the calls to action in this area are all of the above, together with an increasing need to understand the true cost of doing business. As the markets evolve both structurally and technically, it is possible for market participants to take advantage of newer emerging market practices to drive real benefit to the organization and their customers. Increasing disintermediation is providing organizations with challenges and opportunities, provided they can understand the cost of their operations and how to optimize their market practices to achieve specific levels of profitability and transparency, thereby satisfying their goals and compliance objectives. Some recent regulatory initiatives, such as the revised Markets in Financial Instruments Directive (Mifid II) are requiring organizations to have a greater control and understanding of their cost and price structures to ensure compliance. **W**

Best Infrastructure Provider to the Sell Side

Avelacom

Two years ago, Avelacom was a name that many in the capital markets community were not familiar with. But the Moscow-headquartered company has grown rapidly and is this year's recipient of the best infrastructure provider to the sell side category in this year's SST Awards.

Initially, Avelacom's only offering was low-latency connectivity between Russia and Europe, although it has since extended its reach and built more networks from Europe to Asia and the Middle East. "We have been in the market for almost 12 years," explains Avelacom's global marketing manager, Alina Karpichenko. "We grew out of a pure telecom provider in Eastern Europe and the Russian CIS countries where we served enterprise customers and telecom carriers that wanted to use different kinds of services. Four years ago, we entered the low-latency game—that is how we began providing services to the capital markets."

The Russian company also offers co-location, server and hardware leasing, low-latency market data, order routing, and financial cloud services, and has its own fiber network to deliver those services.

Compared to some of its larger, better-established competitors, Avelacom takes a boutique approach with respect to servicing customers. "From what I see, our competitors are pretty much happy with their niche, and are relaxed in all aspects—in terms of sales, customer support and so on," Karpichenko says. "But we see an opportunity in terms of giving customers what they are missing with the old-style providers. So we are much more aggressive in terms of sales and customer support."

Avelacom has more than 40 points of presence across EMEA, Asia-Pacific and North America. The company's offering includes field-programmable gate array-based switches and 100–400 Gbps dense wavelength division multiplexing technology. It is an authorized vendor for a number of the world's exchanges and counts the Australian Securities Exchange, Borsa Istanbul, CME Group, Dubai Gold & Commodities Exchange and Singapore Exchange among its clients.

Avelacom is now moving to offer its clients a one-stop-shop solution, according to the firm. "Our strategy is to provide clients with a vertical solution—not just connectivity, but connectivity plus managed services," Karpichenko explains. "For example, let's say the customer wants to try a new market, but they don't want to invest in infrastructure. We can offer them ready-to-go infrastructure like hardware and connectivity at the exchanges, so that they can just load their trading strategy and see if it works out in three or four months."

—HA



Alina Karpichenko

“
Avelacom also offers co-location, server and hardware leasing, low-latency market data, order routing, and financial cloud services, and has its own fiber network to deliver those services.”

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Best Outsourcing Provider to the Sell Side

Broadridge Financial Solutions

For the third year in a row, Broadridge has won the best outsourcing provider to the sell side category in the Sell-Side Technology Awards. Michael Alexander, president of Broadridge's wealth and capital management solutions business, says the company's success can be attributed to the network value from being part of its community. "We've always been client-focused so we focus on always getting better and providing more value to them," Alexander says. "We think that being part of the Broadridge community, the network, has its perks. We believe in mutualizing not just costs but innovation and investments."

As part of its bid to engage customers, Broadridge has transformed its outsourcing dashboard to attract the next generation of clients. Alexander cites the "gamification" of the dashboard—in other words, adding emojis to reflect customer satisfaction, adding benchmarks to track performance and more alerts around task completion—as examples.

"We have largely a millennial workforce and they are very tech savvy—they want to do things the way they do in their normal life," he says, referring to the decision to invest in the user experience aspect of the outsourcing platform.

Broadridge is not just looking to change how the platform looks—it is investing heavily in emerging technology, particularly on robotic-process automation (RPA) and other artificial intelligence technologies. It hopes that by deploying RPA to do much of the manual work—for example, pulling together communication and data on transactions that can inundate firms—it can create new processes without adding additional costs for clients. Machine learning has cut the amount of time it takes to turn over reports back to clients, as well.

The next step for Broadridge is to integrate its technology with more predictive, insightful tools to manage and mitigate risks better, although Alexander notes that this is a multi-year journey for the company. Many of the investments the firm has made in the past few years, he says, have helped build the foundation for these potential cognitive tools.

Alexander believes technology will continue to play a large role in the transformation of not just Broadridge but the whole industry. "Potentially there will not be enough workers in the industry—with a large segment of the workforce retiring and others possibly not wanting to join this side of business—so this is pushing the need for more technology," he says. "Another trend is that the workforce will soon be mostly millennials—people who think differently and are more tech savvy who will have to work on things like robotics in operations. They want empowerment and collaboration, and technology offers that."

—ED



Mike Thrower and Roz Savage

“Broadridge is not just looking to change how the platform looks—it is investing heavily in emerging technology, particularly on robotic-process automation and artificial intelligence technologies.”

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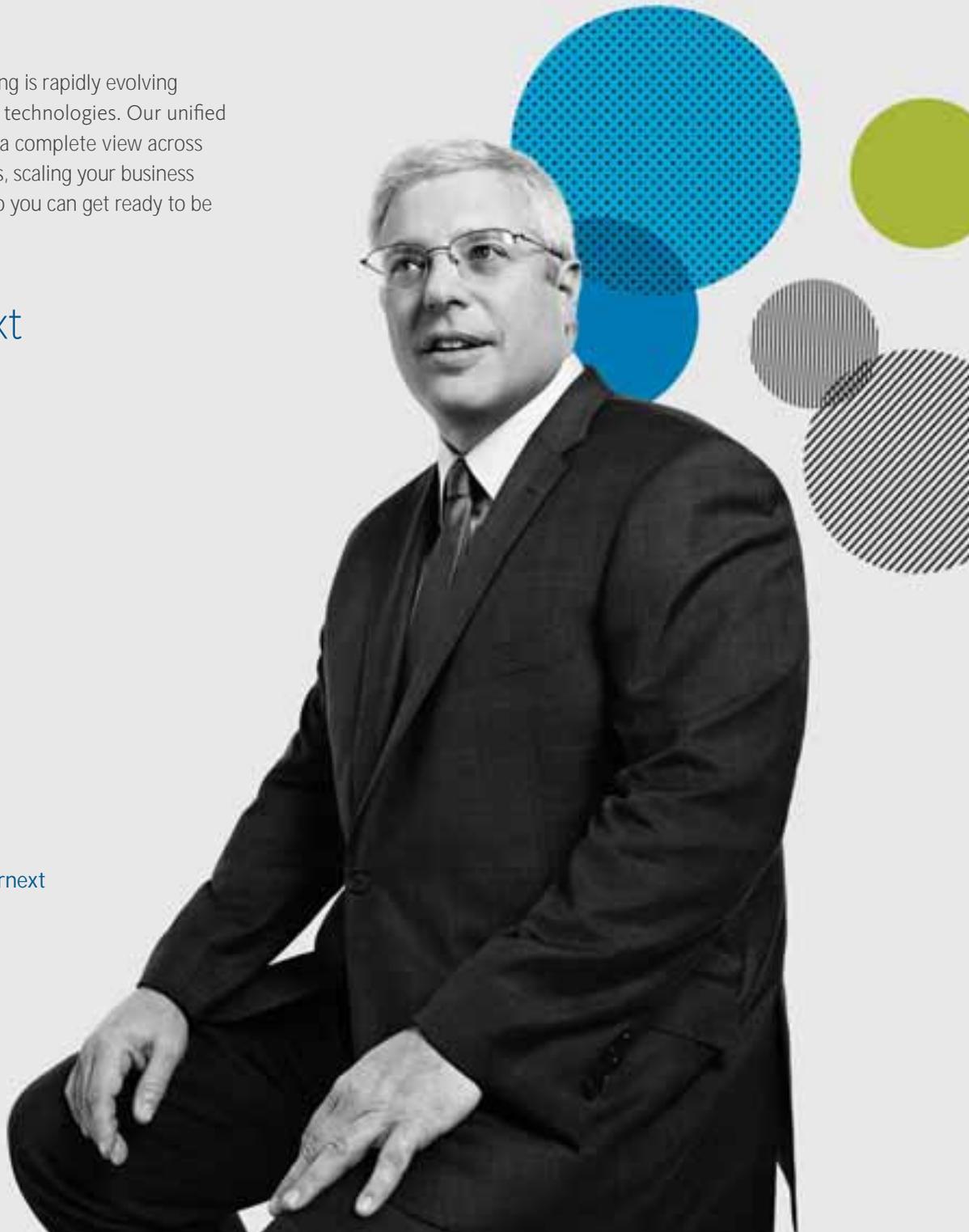
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Michael Alexander
Capital Markets



Best Reporting Platform or Services for the Sell Side

AxiomSL

AxiomSL has been a champion of regulatory technology for a number of years with its approach to managing data and tracking data lineage. This year, its hard work and underlying technologies have been focused on its efforts to resolve the Comprehensive Capital Analysis Review (CCAR) conundrum, an initiative that delivered it the win in the best reporting platform or service category in this year's SST Awards.

Each year, banks are faced with the costly task of sourcing, standardizing, aggregating and reconciling huge volumes of risk and reference data for their CCAR annual reports to the Federal Reserve. To comply with the regulation, they must use the data to demonstrate that they have sufficient capital to operate during times of economic and financial stress. AxiomSL addresses these challenges by offering an all-in-one platform that enables the integration of heterogeneous data from multiple channels, reducing data processing time.

AxiomSL's platform is underpinned by data-lineage tracer capabilities, allowing clients to track and monitor information at all points in the process. This process, built into the technology, involves a series of steps, including ingestion, enrichment, preprocessing, aggregation, validation, submission, archiving and analytics.

AxiomSL acknowledges that every sell-side firm operates differently and that applying a fixed data model approach to a complex problem such as CCAR is not the answer. The New York-based vendor prides itself on its ability to integrate with multiple systems by ensuring the platform is customized and tailored to the needs of each client. "So far, our platform from a technology standpoint, has perfect integration with any banking system," says Efthymios Gkotsis, AVP-regulatory reporting at AxiomSL. "We are database-agnostic and we can create our final output from any source system. That makes our platform very desirable and very easy to integrate to any given banking environment."

Harry Chopra, chief client officer at AxiomSL, explains that the core elements that set the firm apart from competitors include its industry expertise, its data management platform and the caliber of its client engagement teams. As the firm continues to build on its success through innovation and investment, its next move is to solve one of the major challenges the industry has been facing in recent years: the explosion of data. In the coming months, AxiomSL has three major objectives in sight: to work more closely with buy-side firms on their compliance reporting, to deploy parts of its infrastructure to the cloud, and to look at new ways to leverage its platform to deal with greater data volumes in a more effective and efficient way.

—JG



Edward Royan and Roz Savage

“
AxiomSL's platform is underpinned by data-lineage tracer capabilities, allowing clients to track and monitor information at all points in the process.”

Winner of

BEST REPORTING PLATFORM

for the sell side

AxiomSL's data integrity and control platform seamlessly integrates source data from disparate systems, enriches and validates that data, and runs it through risk and regulatory calculations to produce both internal and external reports.

The platform supports disclosures in multiple formats. Its data-lineage navigator tracks and documents the route of a single data-point from its point of origin, through all its transformations, to its end point.



AxiomSL combines deep industry expertise with an intelligent data management platform to deliver regulatory and risk reporting, liquidity, capital and credit, operations, trade and transactions, and tax analytics. Our global footprint spans 70 regulators across 50 jurisdictions, surveilling more than 4,000 regulatory filings. We currently serve national, regional and global financial institutions with more than \$39 trillion in total assets.

Best Sell-Side Analytics Product

NEX TriOptima

Stricter regulatory capital rules and accounting developments are forcing firms to adopt new analytics solutions that are more efficient than their predecessors. TriOptima, a NEX Group company, claims this year's best sell-side analytics product award, thanks to triCalculate, designed to provide trade valuations and counterparty credit risk analytics as a web-based service.

XVA is a term that reflects the valuation adjustments made to the price of an over-the-counter (OTC) derivative transaction to accurately value the costs of the contract. TriCalculate XVA and trade valuation services include data mapping and setup, maintenance, quality assurance, market data, training and support.

While some software solutions can take a minimum of 12 months to be fully deployed, triCalculate can be up and running in less than 30 days, thanks to it being entirely web-based. Its advanced graphics processing unit (GPU)-based technology and probability matrix methodology enable it to speed up XVA calculations to seconds or minutes rather than hours, according to the Stockholm-based firm.

As XVA calculations are often required by multiple business units within a financial institution, triCalculate enables those departments to use the solution to produce results more efficiently without needing additional infrastructure. Banks often require these calculations for accounting reporting purposes, although not many have the time or internal resources to develop robust valuation models. In some cases, they are forced to rely on manual spreadsheet-based methods that expose them to inconsistencies, which in turn can lead to operational risks. Using triCalculate, banks can automate their valuation calculations and feed the results into various reporting mechanisms.

Sell-side firms are able to eliminate the complexity of XVAs by securely sending their data to triCalculate and interacting with its engine through a web interface, or by connecting existing systems directly through an application programming interface (API). "Within the evolving market landscape, the most effective solutions provide XVA analytics as a flexible service rather than static software installation," says Thomas Griffiths, co-CEO at triCalculate. Griffiths adds that triCalculate is relatively easy to implement with rapid onboarding and no additional hardware or software requirements.

TriOptima delivers and implements functionality updates "in the background" so that its clients are always working from the most current version without having to deal with time-consuming and potentially expensive new installations or upgrades. The web-based triCalculate service eliminates the need for sell-side clients to purchase large numbers of servers and incorporates standard models that can be used by all industry participants.

—WSW



Gemma Bailey and Roz Savage

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While some software solutions can take a minimum of 12 months to be fully deployed, triCalculate can be up and running in less than 30 days, thanks to it being entirely web-based.

NEX

triCalculate

Winner, Best Sell-Side Analytics Product
Sell-Side Technology Awards 2018



Fast forward XVAs

We host high volume, accelerated XVA calculation on our powerful servers – so you don't have to.

www.trioptima.com/tricalculate/fast-forward-xvas/

Best Sell-Side Back-Office Platform

Murex

Risk management and processing solutions provider Murex is the first to bag this award, one of the new categories in this year's Sell-Side Technology Awards. Murex's MX.3 platform, responsible for delivering the Paris-based vendor its first SST Award, provides an end-to-end centralized and open operating model for both operations and finance departments. It is based on a common and unique trade and position repository and a shared computational layer across business functions. "It enables users to onboard either the whole or part of the value chain of a given business line and allows an organization to re-think their IT landscape the way they want it," explains Etienne Ravex, head of post-trade operations at Murex. The platform has been designed to remove internal reconciliation requirements and also streamline operational processes across business lines.

The cross-asset platform manages equities, foreign-exchange (FX), credits, rates and commodities products, from vanilla cash to the most complex derivatives. According to Ravex, regulatory and cost pressure, the emergence of market utilities, and a pressing need for thorough capital cost measurement and allocation, are becoming central considerations in the operations and finance domain. "We believe that the operations and finance function will fast become a core business enabler," he says. "Our solution centralizes the transactional reporting and processing of trades, positions and margin calls across all instrument types, trading sources and settlement routes."

The introduction of IFRS 9 and related accounting standards updates could represent the first milestone in moving toward a more global convergence of front office, risk and accounting valuations, shared across a financial institution. Ravex says this trend presents a challenge in terms of change management. "From a software perspective, a cross-asset, front-to-back platform such as MX.3, provides a unified framework for all three functions and would provide valuable support on this journey," he says.

Murex invests more than €100 million (\$118 million) in research and development to continue delivering technical and functional solutions to its clients, according to the firm. Ravex explains that Murex has been using an Agile approach internally to develop the MX.3 capital markets platform. "Our Agile journey started with a core team of engineers and is being extended to our entire software factory of more than 1,000 people," he explains. "This represents a huge change in executing the full development cycle."

—WSW



Laurent deFenoyl and Roz Savage

“
Murex's MX.3 platform, responsible for delivering the Paris-based vendor its first SST Award, provides an end-to-end centralized and open operating model for both operations and finance departments.



Smart technology for capital markets

Markets are transforming and the rules that govern them are changing. The financial ecosystem is rebalancing to a new way of working, driven by regulation, technology and data. Murex changes the dynamic; helping banks move from the reactive to proactive. For over 30 years we have been developing market-leading technology solutions for trading, risk and back-office teams, helping our clients solve their problems today and anticipate their needs of tomorrow.



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Best Sell-Side Automated Trading Platform

FlexTrade Systems

FlexTrade Systems—thanks to its FlexTRADER execution management system (EMS)—has won the best sell-side automated trading platform at this year's Sell-Side Technology Awards. This marks the second year in a row that FlexTrade has won this award, and its third time overall, as it took home the trophy in 2013.

Over the last 12 months, the vendor has been busy partnering with other third-party providers to deliver new solutions to clients. It has integrated Kensho's actionable intelligence into the FlexTRADER EMS. It has also integrated BestX Trade Analytics into FlexTRADER. And, of course, FlexTrade won this year's best partnership or alliance award thanks to its work with Dataminr, where it created a global macro news alert feed that pulls in Dataminr's Twitter news.

Additionally, about a year ago, FlexTrade introduced the FlexAlgoWheel, the company's next generation, data-driven interface for algo selection that incorporates real-time internal and external inputs, as well as transaction-cost analysis (TCA) to optimize the broker and algo selection process. "All of our recent enhancements are essentially meant to provide better/increased analytics/intelligence to assist a trader's decision-making process when executing a trade," says a spokesperson for the company.

The EMS allows for trading in equities, foreign exchange (FX), equity options, futures and fixed-income products. It provides out-of-the-box cross-asset trading strategies that can then be customized to a company's needs. It is connected to over 200 trading venues, including more than 20 dark pools.

One of its key features is the EMS' ability to control multiple portfolios comprising several sub-accounts over numerous global destinations from one trade blotter. And as clients are increasingly clamoring for better analytics capabilities, the platform provides pre-trade, real-time and post-trade analytics, as well as predictive analytics and risk and cost-optimized portfolio trade scheduling.

FlexTRADER also has an order management component that allows for risk and position monitoring, full audit capabilities, and streamlined compliance reporting, market-making and principal trading.

Previous winners in this category include SmartTrade Technologies and SunGard, now owned by FIS.

—AM



Oliver Boatfield and Roz Savage

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One of its key features is the EMS' ability to control multiple portfolios comprising several sub-accounts over numerous global destinations from one trade blotter.

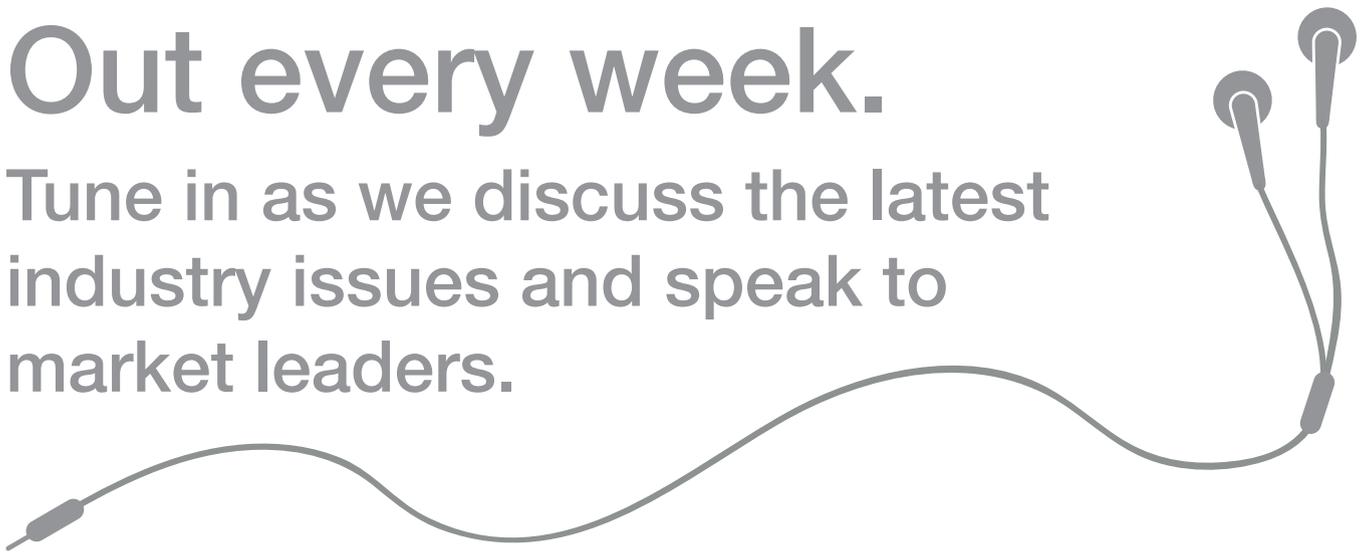
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Best Sell-Side Compliance Product

Imagine Software

Perhaps showing just how difficult compliance can be for banks and brokers in today's regulatory environment, for the sixth straight year we have a new winner in the compliance category, with Imagine Software taking the top nod for 2018. This is also likely an indicator that targeted solutions are needed to handle this sea of new regulatory obligations.

Take, for example, the Fundamental Review of the Trading Book (FRTB) and the Comprehensive Capital Analysis and Review (CCAR) rules, which, in part, require firms to perform enhanced stress-tests and provide empirical metrics, such as historical value-at-risk (VaR), in real time, by individual clients. And that's just the start—the data needs to be sliced and diced in a variety of ways. It's a daunting task and one that Imagine's clients were asking for help with. The result is Imagine's Real-Time Risk & Compliance (RRC) solution.

RRC tracks regulatory limits and investment risk, identifies potential intra-day breaches of capital utilization limits, and aims to provide consistency between start-of-day, intra-day and end-of-day P&L and risk metrics, across various asset classes. "Transparency is the new gold standard for risk systems," says Scott Sherman, Imagine co-founder and global head of business development and sales, adding that banks need flexible and scalable risk solutions that can produce stress-test results for multiple regulatory regimes.

An early partner on the build was Societe Generale Prime Services, which was looking to improve consistency between intra-day and end-of-day P&L. Didier Livio, global head of prime services risk for SocGen, noted in a statement that RRC "really is real time and integrates calculations across all asset classes."

Looking ahead, Imagine is looking to help clients comply with the US Securities and Exchange Commission's 22e-4 liquidity rule, which relates to accessing the data necessary to report liquidity buckets on a portfolio of diverse asset classes, scheduled to go live in December. "Imagine not only summarizes and classifies portfolios by the required liquidity levels, but our core methodology enables each position to be delineated by liquidity levels. The rules and classifications are customizable and easily maintained in client-tailored dashboards," says Sherman.

And, of course, firms across the globe are increasingly realizing the burden that the General Data Protection Regulation (GDPR) presents. Imagine's platform provides features to protect client identities, while still providing data that users need, says Lance Smith, Imagine's co-founder and CEO. "Clients do not need to send any account numbers, client names or other identifiable information, such as internal client references. We can use anonymized data, while clients retain their own identifiers," he says.

—AM



Philippe Lacour and Roz Savage

“
Imagine's Real-Time Risk & Compliance solution tracks regulatory limits and investment risk, identifies potential intra-day breaches of capital utilization limits, and aims to provide consistency between start-of-day, intra-day and end-of-day P&L and risk metrics, across various asset classes.

★ WINNER ★

Best Sell-Side Compliance Product

Real-Time Risk & Compliance Solution

“ Every time futures are cleared, or equities or even Portfolio Swaps are traded, they feed immediately into Imagine, which instantly updates the VaR, Greeks, threshold alerts, and more. ”

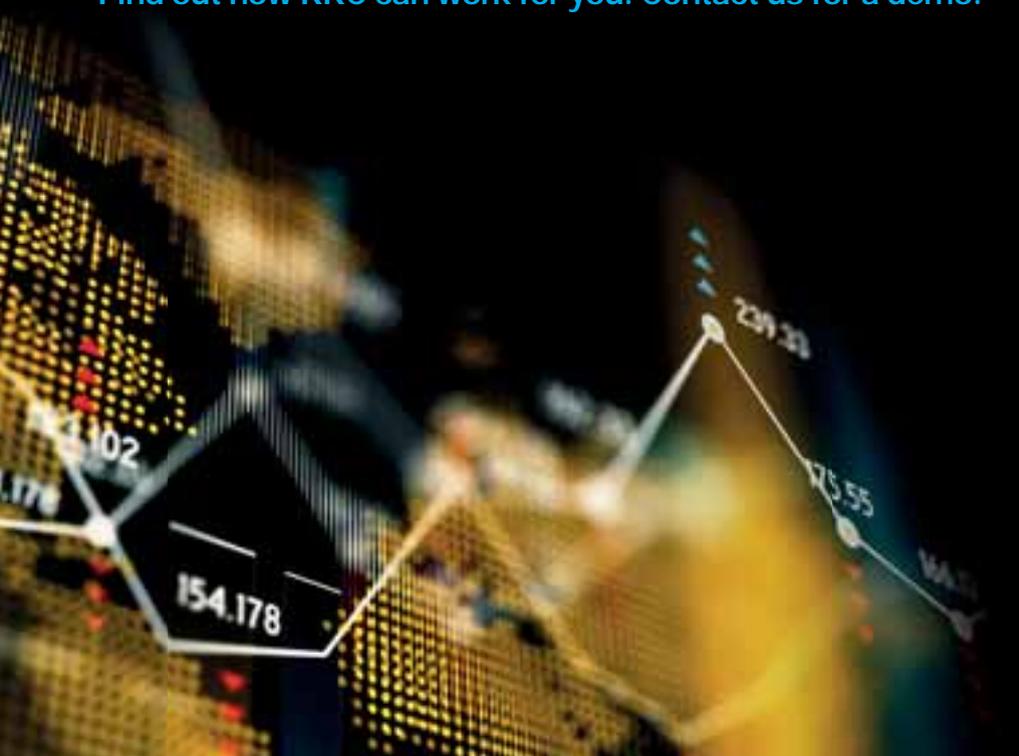
Imagine's Real-Time Risk & Compliance (RRC) Solution is the fastest, most flexible and transparent risk system available today – and recognized by Waters as the Best Sell-Side Compliance Product. RRC manages the risk on many millions of trades per day for thousands of cross-asset accounts. RRC tracks regulatory limits and investment risk, identifies intra-day breaches, and delivers consistency between start-of-day, intra-day and end-of-day P&L.

Find out how RRC can work for you. Contact us for a demo.

★ WINNER ★

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Compliance
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Best Sell-Side Credit Risk Product

Numerix

In contrast to the market risk award, which has changed hands every year since the Sell-Side Technology Awards started in 2013, there has only ever been one winner of its sister category in credit risk—Numerix. There's a reason for that—none come close to capturing the mathematical and technical prowess of the Park Avenue, New York-headquartered firm, which traces its roots back to a small group of PhDs who sought to bring academic rigor and leadership to financial markets over 20 years ago.

It's certainly the right time for Numerix's particular focus on risk management to come to the fore. Increasingly, derivatives users are faced with a barrage of counterparty risk requirements, from complex, often confounding models through to data analysis that in the past would have required farms of servers to accomplish in the timeframes specified. The various valuation adjustment measurements (XVAs), in particular, have been front-of-mind for most market participants, from hedgers through to dealers.

To assist with the increased load over the past year, Numerix has decoupled its user interface, while moving away from in-memory technology. "We decoupled the calculations from the user interface to improve performance—where our powerful calculation engine can be called [by a programming function] instead of leveraging in-memory technology. This has made the applications much faster, usable and easier to scale," says Steve O'Hanlon, CEO of Numerix. "With exposure calculation performance improvements, significant memory is saved during the calculation. Less memory can reduce the amount of hardware needed, and therefore cause XVA to not only run more efficiently, but less costly."

The firm has also partnered with graphics processing unit specialist Nvidia, using its technology to bring GPU-accelerated technology to market. While firms have been using GPUs for years, the emergence of high-pressure calculations, not to mention the strain of modern data-processing requirements, have made the use of the technology all but essential. "We consistently see GPU technology provide significant acceleration to our core risk and pricing algorithms compared to existing CPU platforms," says O'Hanlon. "Further, we see this acceleration factor readily scales across multiple-GPU servers, allowing Numerix an almost unlimited ability to scale our CrossAsset and Oneview Platforms to meet the most demanding compute needs of our global customer base."

Looking ahead into late 2018 and beyond, the firm will be enabling cloud services through "a new managed services component," O'Hanlon says.

—JR



Rob Gray and Roz Savage

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In contrast to the market risk award, which has changed hands every year since the Sell-Side Technology Awards started in 2013, there has only ever been one winner of its sister category in credit risk—Numerix.



numerix

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Best Sell-Side Data Management Product

IHS Markit

Once again, IHS Markit takes home the best sell-side data management product at the Sell-Side Technology Awards, making it the winner of this category for four consecutive years. According to the London-headquartered firm, it is serving the expanding range of new use-cases for enterprise data management (EDM) solutions. Andrew Eisen, managing director of EDM product management and cloud strategy at IHS Markit, says specifically on the sell side, the three main use-cases are: independent price verification (IPV), product control, and the Fundamental Review of the Trading Book (FRTB). He tells *Waters* that banks are under growing pressure to meet regulatory, audit and internal management requirements for IPV. The firm's EDM IPV solution helps banks automate their asset price validation processes and reduce operational risks.

Meanwhile, its product control solution has been designed to meet two challenges faced by customers: the lack of accurate and efficient auditability around P&L reporting, and the need for reliable P&L analysis to help improve commercial decisions.

EDM is also being used to support data management requirements under the FRTB regulation.

The firm's longer-term strategy focuses on building an end-to-end data ecosystem. Eisen says this comprises four components: data management, data warehousing, data delivery and data governance.

Enterprise data management focuses on acquiring, validating, enriching and reconciling data across multiple sources, while data warehousing involves consolidating and storing historical data on a single platform and making it readily available for client and regulatory reporting requirements. IHS Markit EDM's data delivery component focuses on ensuring data is aggregated and presented in the right format and at the right time as needed by each business user. "In the past 12 months, we've invested heavily in enhancing the user interface and APIs so that users can easily access and query data through a rich user interface or through the RESTful API," Eisen says.

As for data governance, the firm is working to further develop its offering in the next few months. It already enables clients to create a single version of the truth and provide a transparent audit trail.

IHS Markit is also building a data dictionary to provide internal data definitions and visualization for end-users, as well as external dictionaries to support new APIs and data governance products.

Eisen sees a need to provide a central glossary or dictionary that is both business-facing for primary end-users and technical-facing for downstream consuming systems, as clients look for greater understanding of the data within their organizations.

— WSW



Vasiliki Koutoupi, Roz Savage, and Jason Blake

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IHS Markit EDM's data delivery component focuses on ensuring data is aggregated and presented in the right format and at the right time as needed by each business user.

Inside Market Data

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Best Front-Office Execution Platform

Pragma Securities

Pragma Securities wins this year's best front-office execution platform category, thanks to Pragma 360, dethroning the winner for the past three years, Fidessa. David Mechner, co-founder and CEO of Pragma, says the platform's focus on microstructure and best execution has won it plaudits from its clients. "There is increased demand from the buy side for best execution that emanates both from regulations and internally, that has created this need for more sophisticated tools to achieve it," Mechner says. "We're not just providing the pipes—we're also providing the intelligence that connects traders with the markets that lets them effectively use the marketplace, given what a complicated, fragmented world we live in."

Pragma 360—a multi-asset, broker-neutral execution and analytics platform for algorithmic trading—is frequently updated, and the past year has been no different. Updates include an enhancement allowing foreign-exchange (FX) clients to trade non-deliverable forwards, a broadened ability to leverage conditional offers to source blocks of trades automatically, and a new version of the firm's cross-pair trading algorithms, which has improved execution quality.

The platform covers North American equities, futures and FX. It offers transaction-cost analysis and risk controls to its clients on both the sell side and the buy side. Sell-side clients can use the platform to monitor order routing, modify their orders or to determine fills or cancellations in real time.

Best execution has been a big theme for Pragma in the past year. Mechner says best execution will continue to be a trend as more firms see how complex trades have become. This is boosted by regulations like the revised Markets in Financial Industry Directive (Mifid II), which came into force on January 3 this year, and requires market participants to show greater transparency around best execution obligations.

Mechner says smart-order routing and the algorithms Pragma offers are tools companies need to use to realize those best-execution metrics. "It's a continuing trend; firms are always interested in trading results, but awareness is growing about how complex the trading environment is, and ways of trading that in the past were acceptable are now too simplistic or are not really achieving best execution," he says. "That awareness comes from all kinds of places: information that comes out, regulatory scrutiny, and internal mandates."

Another trend the algo specialist has identified is capital markets firms continuing to outsource their technology requirements. Mechner says the company is exploring using artificial intelligence and deep-learning to further upgrade its best execution quality along with other product enhancements.

—ED



Curtis Pfeiffer and Roz Savage

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Pragma 360—a multi-asset, broker-neutral execution and analytics platform for algorithmic trading—is frequently updated, and the past year has been no different.



No detective work required.



Full trading transparency

Pragma is a leading independent, quantitative trading technology provider specializing in algorithmic solutions for Equities, Futures and FX. As Pragma is completely un-conflicted and broker-neutral, we are uniquely set up to provide best execution services to our clients. We are committed to providing the highest level of transparency by openly discussing our algorithmic trade and routing practices so our clients can understand precisely what we're doing for them, and why we are doing it.

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Best Sell-Side Market Surveillance Product

Nasdaq

Unsurprisingly, Nasdaq handily beat out the competition in the surveillance category this year to take home the award, which it has won every year since 2014 in this program. It's easy to see why: Smarts is in use at over a dozen major regulators, including the likes of the Financial Conduct Authority, and at nearly 50 marketplaces, while over 140 market participants make use of the software to safeguard their trading activities. Significant upgrades this year have included the release of its "Lens" module, designed to identify anomalies in trading behavior that may, in some instances, point to wider abusive behavior. It has also continued to expand into new asset classes—most recently, of course, cryptocurrencies, with its adoption by the digital currency exchange Gemini as its surveillance platform of choice.

It has also continued to expand its coverage into more traditional asset classes, through moving into interest-rate swaps, and deepening its presence in the energy and metals sectors. With the go-live of the revised Markets in Financial Instruments Directive (Mifid II) on January 3, too, Smarts has responded by integrating nanosecond-level data models, and further fields as mandated by the regulation, which seek to identify algorithms, market-makers and others.

But where Smarts has really been innovating this year, above and beyond its competition, is in the use of artificial intelligence (AI) and behavioral science. Nasdaq's 2017 acquisition of Sybenetix gave the Smarts team immediate access to a group of behavioral scientists and analysts, while it has continued to push the boundaries in machine learning.

The first test case for its work in AI was on its own exchanges in the Nordics, where machine-learning models were deployed to more effectively categorize and prioritize the alerts received by surveillance analysts, drawing on historical patterns to determine whether they were likely to lead to suspicious activity reports and full investigations. The project was successful enough that the technology was later licensed to Hong Kong Exchanges and Clearing in April and is seeking to expand it into its bank client segment through trials with an investment bank.

"The use of machine learning is going to be prolific and it will improve the way we operate across the whole surveillance spectrum," says Valerie Bannert-Thurner, senior vice president and head of risk and surveillance solutions at Nasdaq. "It will allow us to become significantly more efficient in the way we detect, analyze, investigate, and manage alerts, and it will also allow us to do things differently to before and open up whole new opportunities and approaches to identify suspect individuals and behaviors."

—JR



Saker Aslan, Roz Savage, and Alan Jukes

“Smarts is in use at over a dozen major regulators, including the likes of the Financial Conduct Authority, and at nearly 50 marketplaces, while over 140 market participants make use of the software to safeguard their trading activities.”



SMARTS TRADE SURVEILLANCE

FOLLOW THE MONEY ... AND THEN THE BREADCRUMBS

SMARTS Trade Surveillance is introducing a new entity focused view of trading behavior to uncover potential trading and regulatory risk – the SMARTS Trade Surveillance Lens module.

The Lens module integrates signals from multiple data sources to identify specific traders or accounts that may be more likely to engage in manipulative activity, with a particular focus on identifying extreme trading out-performance (or under-performance).

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Best Sell-Side Middle-Office Platform

UnaVista, London Stock Exchange Group

Once regarded as little more than a reporting platform, UnaVista has become a powerhouse in its own right over recent years, as regulations have continued to force a focus on transparency on pre-trade, at-trade and post-trade levels. As arguably one of the most comprehensive platforms of its kind, it's fitting that UnaVista takes home the inaugural prize for the best sell-side middle-office platform.

The latter half of 2017 and the first quarters of 2018 have been, for want of a better word, hard going for many folks in the middle office. The implementation of the revised Markets in Financial Instruments Directive, or Mifid II, led to many an anxious evening over the Christmas and New Year breaks, while the final stages of migration to the Target2-Securities (T2S) platform completed a long-running saga in European market structure projects. Meanwhile, in the US, the Consolidated Audit Trail came and went without ever really materializing, missing its November 2017 go-live date, leaving middle-office professionals longing for any kind of concrete guidance to move forward with.

UnaVista has been able to step into the breach for some of the most technically challenging aspects of Mifid II, contained within its accompanying regulation, which have covered reporting. Test environments set up by UnaVista helped end-users enormously in the buildup to January 3, 2018, when the regulation went live, while the power of its parent company, the London Stock Exchange Group (LSEG), has given it extra firepower and the ability to deploy this in a nuanced way.

"The test program gave customers the ability to upload their data sources one-by-one to test the validations and configurations," says David Ward, global head of product marketing, data and regulatory technology at the LSEG. "This helped many clients be ready well ahead of go-live, including one tier-one investment bank who told us it knocked four months off their preparation time. The program also included access to our leading team of regulatory SMEs and places for their team on our certified training courses. UnaVista will be replicating the Accelerator program for the upcoming Securities Financing Transactions Regulation reporting."

In many ways, this has actually been the key to UnaVista's success over the years. The ability to integrate LSEG reference data, from legal entity identifiers through to the Sedol master files—along with third-party feeds—gives users a powerful proposition for their middle-office requirements, while sharing in the LSEG's national infrastructure security also assuages concerns over cybersecurity that are ever-present in the minds of capital markets participants today.

—JR



Katie Godfrey, Roz Savage, and Damien Terry

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Test environments set up by UnaVista helped end-users enormously in the buildup to January 3, 2018, when the regulation went live, while the power of its parent company, the London Stock Exchange Group, has given it extra firepower and the ability to deploy this in a nuanced way.

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Best Sell-Side Middle-Office Platform
Winner
UnaVista, LSEG

Sell-Side Technology Awards 2018
waterstechnology

Best Sell-Side Product for 2018
Winner
UnaVista, LSEG



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Best Sell-Side Mobile Initiative

Saxo Bank

For busy capital markets professionals who are always on the move, this is a particularly important category, given that trading has increasingly become a mobile activity. Last year, the award was taken home by London-based Dealogic for its mobile app of the same name. This time around, however, the winner is Copenhagen-headquartered Saxo Bank, which is no stranger to the winners' circle at these awards.

The bank's HTML5-based trading platform, SaxoTraderGo, was launched in 2015 and is available on mobiles, tablets and laptops. It offers access to over 30,000 tradable instruments, as well as a wide range of risk management tools and ancillary features. "You can access 5,000 different bonds globally that more or less address the market in the same manner, and that is new," says Simon Fasdal, head of fixed income at Saxo Bank. "So you more or less have the same technology to provide a client experience that is similar, despite the fact that the markets are very different."

Trading technology is developing fast and the markets are changing rapidly, leading to many traditional bank models being challenged, according to Fasdal. "We have 110 partner banks and brokers throughout the globe and many think that this is a nice solution and will be a part of their offering soon," he says. "The first big names are already on it."

Fasdal has worked in the fixed-income markets for 20 years and says that this is the first time he has seen retail clients able to access the market in exactly the same manner as a large pension fund. "Now you can do it on your mobile, on your holidays or wherever you are, and you can access and trade your bonds just as you have done with equities for quite a while," Fasdal says.

Trading a French government bond is different to trading an emerging market bond, although SaxoTraderGo provides a client experience that is similar, despite the fact that the markets behave differently. According to Fasdal, it won't be long before certain traditional dealer functions will be assumed by robotics. "The robot will survey the market and whenever a buyer or seller comes up in a specific bond that the client has requested, it will counter that data or offer with a price at a certain level," he says.

—HA



Simon Fasdal and Roz Savage

“
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Best Sell-Side Newcomer

OpenDoor Trading

Coming off its win as the most promising startup in 2017, OpenDoor Trading is back in the SST Awards winners' circle as this year's best sell-side newcomer. Last year, it was IHS Markit who won the category.

OpenDoor—a platform that offers access to trading off-the-run Treasuries—was started in 2016. It soft-launched OpenDoor 2.0 on April 25 this year, 12 months after it went live on its first version. OpenDoor co-founder, president and CEO, Susan Estes, says the firm has gone through significant change in the year since it won the best newcomer award, taking into account feedback from its clients. “It was the result of what we learned over the course of the previous year,” Estes says. “When you launch something new that changes market structure, even if it's for a small portion of the market, there's a steep learning curve. We have benefitted from very strong partners that we've had on both the buy side and the sell side.”

She adds that the company prides itself on being agile and able to deliver on client demands.

One of the challenges the company has faced over the past year, Estes says, was connectivity to order management systems (OMSs) and finding workarounds to it, leading it to partner with leading OMS providers for connectivity as well internal solutions. The company also sought to improve the look and feel of its trading platform and provide more information including midday yields and other reference points so that traders can access information of value to them.

Estes says that since the rollout of the latest version of OpenDoor in April, the platform has already processed more than 3,200 orders with a total volume of around 51 billion trades—a quarter of all orders the platform saw during the whole of 2017. “What OpenDoor is doing is solving a problem within the treasury market. If that problem didn't exist and there were better ways to solve it, rolling out 2.0 wouldn't have improved anything,” Estes says. “We thought our value proposition was that traders can trade anonymously in midmarket prices, but what we've heard consistently is that the value is the anonymity, so we focused on anonymity and have proven that we can transform this small portion of the market and allow larger accounts on board.”

Going forward, OpenDoor will be working with a partner to provide transaction-cost analysis to clients as a result of increased demand stemming from the revised Markets in Financial Instruments Directive (Mifid II).

—ED



Susan Estes

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Since the rollout of the latest version of OpenDoor in April, the platform has already processed more than 3,200 orders with a total volume of around 51 billion trades—a quarter of all orders the platform saw during the whole of 2017.



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Best Sell-Side Reconciliation Platform

NEX Group

NEX Group's triResolve reconciliation platform has beaten previous staple winner SmartStream to the title in the best reconciliation platform category, which it had won for the previous five years. Jenny Nilsson, head of product marketing at triResolve, says triResolve's service is an essential component for market participants to validate and align their positions and exposure to reduce credit counterparty risk.

triResolve was established in 2007 and has performed more than 21 million reconciliations since then. The platform currently reconciles over 85 percent of all uncleared over-the-counter (OTC) derivatives across more than 2,100 groups, including all major sell-side institutions. It added 150 clients and achieved an 8 percent increase in revenue in the last year. The platform will continue evolving to better help its clients navigate the changing regulatory landscape, while also increasing operational efficiency, according to the firm.

One upcoming focus area for triResolve is assisting firms in preparing for the Securities Financing Transactions Regulation (SFTR) trade reporting requirements that will go live in 2019. "We are working with several sell-side firms to get their houses in order and are encouraging them to proactively reconcile with their counterparties prior to the deadline," Nilsson says. "By providing transparency and increasing data quality, triResolve enables firms to overcome the challenges presented by SFTR without vast additional resources."

Users of the platform benefit from a centralized service model with a global network where counterparties share the same view and work together to resolve any differences. Nilsson adds that the service has moved reconciliation from a reactive function to a proactive exception-based workflow. This enables users to increase efficiency and manage risk, she says. As triResolve is a web-based service, there is no need for installation upgrades. Users can be operational within a day and receive support from triResolve's service managers at no additional cost.

TriResolve is encouraging the market to adopt its dispute management functionality to help identify, monitor, record and resolve disputes in their portfolio. "We work with our clients to enhance the dispute management workflow to ensure it best serves their needs," Nilsson says. "Using our extensive industry knowledge, we have developed a streamlined workflow, which flags disputes into appropriate categories, enabling users to prioritize investigations and rapidly resolve any differences."

Clients are able to track disputes from inception all the way to resolution on triResolve's case management dashboard, which actively engages clients in terms of automating tasks that were previously manually intensive and fragmented.

—WSW



Barbara Sobocinska, Roz Savage,
and Somerset Wortley-Hunt

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The platform currently reconciles over 85 percent of all uncleared OTC derivatives across more than 2,100 groups, including all major sell-side institutions.

The logo for NEX, featuring the letters 'NEX' in a bold, white, sans-serif font. The 'N' and 'X' are connected at the top.

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We strive
to be the best...

We reconcile your portfolio.
We help you mitigate risk.
We simplify the complicated.

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Best Sell-Side Trading Communication System

IPC

Communication is key. That concept has formed the foundation of IPC's success for well over 40 years and 2018 is no different. Taking home the award for the best sell-side trading communication system at the Sell-Side Technology Awards this year, the communications provider is certainly no stranger to the occasion, given its domination of the category across multiple awards programs.

In a rapidly evolving industry, which forces trading firms to be flexible, scalable, cost-efficient and compliant, IPC has continued to innovate and develop new technologies that enable its clients to communicate and collaborate more effectively. This win comes on the heels of its most recent product release, Unigy 360. This updated version, introduced in June 2017, is a cloud-based software-as-a-service (SaaS) platform that provides end-to-end points of communication across multiple devices and allows middle-office, back-office and other regulated users to connect with traders through a single interface. The platform enables traders to prioritize incoming calls, access specific point-to-point connections and communicate via voice, text or chat across a selection of handsets, intercoms or speaker channels. The upgraded Unigy 360 platform offers clients the option to scale up or down, reduce service costs on demand, access a more efficient network, offload the management requirements of the software to IPC, and ensure regulatory standards are met when archiving communications.

"Unigy, as a platform, has been a market leader for quite a number of years but 2017 was really the introduction of 360 and the ability for clients to receive trader voice in a cloud model—that was a big milestone," says Bruce Bolcer, senior director of project management at IPC. "So it is now available as software-as-a-service, allowing clients to flex up and down as needed."

Data security, including communications data, is one of the industry's leading concerns. Unigy 360 is delivered over a private cloud-based infrastructure where information is transferred from the firm's personal datacenters to client premises. As it doesn't operate across the public internet, this network provides a safer and more efficient communication environment, less susceptible to latency problems or security issues.

IPC has set its sights on building on the success of the platform by developing a more seamless transition from the original Unigy model to the updated 360 version, and by providing a wider variety of price offerings to individual client needs. "We are looking at investing in rounding out the 360 offering with a wider range of end-user flexibility with different levels of sophistication and different price points depending on what the end-user requires," says Bolcer.

—JG



Matt Stocker, Roz Savage, and Marcus Bateson

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The upgraded Unigy 360 platform offers clients the option to scale up or down, reduce service costs on demand, access a more efficient network, offload the management requirements of the software to IPC, and ensure regulatory standards are met when archiving communications.

Best Sell-Side Market Risk Product

RiskVal Financial Solutions

When it comes to market risk, the challenges—and solutions—facing all at present center on transparency. From closing loopholes that in the past allowed regulatory arbitrage, through to more accurately analyzing the market impact of a portfolio's holdings, these aren't easy problems to solve, more often than not requiring fiendishly complex calculations, simulations and constant assessments.

Being a vendor in this space, too, is particularly challenging—while a bank simply has to worry about its regulatory obligations and internal risk metrics, a vendor must produce a platform that can not only perform difficult and laborious work, but do so in a manner that allows it to take the idiosyncrasies of risk management practices across various institutions into account, and the platform must work in all of these scenarios to a high degree of accuracy.

Few have managed that better than RiskVal Financial Solutions, which becomes the only company in the history of the Sell-Side Technology Awards to win the market risk category twice, for its RVPortfolio product. Fittingly, says Jordan Hu, CEO at RiskVal, the key to success has been transparency. “Our RVPortfolio solution is flexible, customizable, and has a unique approach to calculating value-at-risk (VaR) and profit-and-loss (P&L), which makes it easier for our clients to meet the challenges of complying with new regulations,” he says. “RVPortfolio, unlike many competitors, is not a black-box solution, and it calculates an auditable P&L explained at every level of the portfolio hierarchy, allowing users to track the source of portfolio P&L based on each contributing risk factor.”

The historical VaR functionality looks back over 15 years of historical data, with factor-based VaR being a capability developed by RiskVal over the past few years. Under this approach, each instrument-type P&L is deconstructed into a set of market factors, and then actual P&L is calibrated against that. This approach allows daily P&L to be replicated as historical VaR, and can also provide P&L that is comprehensively explained for a range of trade types and strategies.

Further, the platform includes sophisticated techniques for market-risk modeling, including “what-if” scenarios that are user-defined. Looking ahead, Hu says, this will be expanded further.

“Our R&D team is currently working on several initiatives, including, but not limited to, expanding our coverage of credit, credit derivatives, options and municipal bonds, as well as expanding the selection of available ‘what-if’ scenarios, including the credit crunch and the Lehman Brothers crash, as an example,” he says.

—JR



Ksenia Dominova and Roz Savage

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The historical VaR functionality looks back over 15 years of historical data, with factor-based VaR being a capability developed by RiskVal over the past few years. Under this approach, each instrument-type P&L is deconstructed into a set of market factors, and then actual P&L is calibrated against that.

Best Sell-Side Trading Network

BT

BT takes home the award for the best sell-side trading network at the Sell-Side Technology Awards for the third time, a reflection of the company's comfortable lead in this ever-competitive category. BT's Radianz service, responsible for much of the firm's capital markets success over the years, supports the networking of financial market participants in an extranet fashion. It also offers an extensive hosting capability, as well as specific support around post-trade clearing and settlement. "It is a reflection of a continued focus and attention," explains Michael Cooper, CTO of BT Radianz. "This is both the consequence of a lot of expertise and a lot of knowledge from a lot of people over a long period of time—it is testament to the network and to our clients as well. We are a community platform and the community that is on our network is extremely important, so this is as much thanks to them as it is to us."

The global market structure has changed rapidly in recent years, partly as a consequence of spiraling costs, but also as a result of increased regulation. One of the big challenges for Radianz, which offers access to more than 400 application service providers, is to ensure that it features the "right" providers. In other words, the applications and services it hosts must be current and feature the functionality firms are looking for in order to address their day-to-day capital markets needs. Another challenge is security. At the network hosting and messaging level, Radianz is architected with a high level of security, according to Cooper. "Radianz makes the grade in terms of security, and consistently applies that same standard wherever it operates," he says.

Looking ahead, BT will be adding additional datacenters to support its network and will be looking at the way in which encryption is made available over its network. "We have an encryption service today and as encryption becomes a more important service, we will be looking at things like that," Cooper continues. "We are also looking at how our infrastructure supports new technologies being adopted by the financial markets. There are a few fairly obvious ones—distributed ledger and blockchain will be one that is a focus, as is data generally. And clearly, the financial markets are really starting to adopt public clouds. So we are looking at how we can extend Radianz into public clouds like Amazon Web Services and Google Cloud Platform," he says.

—HA



Michael Cooper and Roz Savage

“
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BT Radianz

Supporting the world's largest secure, network financial community.

One community. One connection. One focus

400+



data and content providers delivering thousands of application based services critical to the everyday functions of the financial sector



Thousands

of member sites make up the worldwide BT Radianz Cloud community

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64

countries served

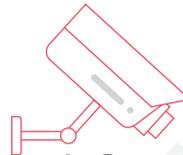
160+

trading venues



40+

Forex Trading (FX) service and information providers



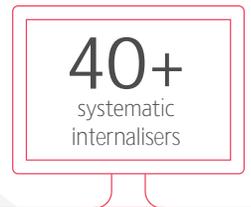
40+

post-trade and securities services providers



40+

systematic internalisers



BT is unique

in the ability of its products and solutions to span the entire Trade Cycle from pre-trade, trade to post-trade



Managed Hosting services in over

40

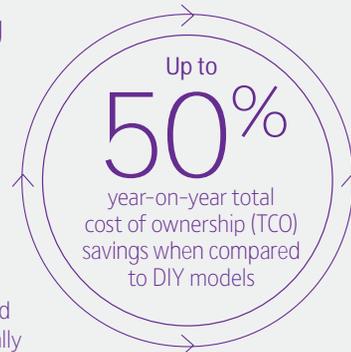
data-centres globally

€ Engineered paths to, within and between



16

key financial markets venues and data-centres globally



Access

to multiple MIFID II applications, OTC venues, European and Govie Bond markets



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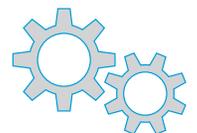
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Best Sell-Side Web-Based Development Environment

Pershing, a BNY Mellon Company

Last year, the winner of this category was OpenFin, thanks to its Chromium-based desktop operating layer. However, this time around, Pershing, a BNY Mellon Company, came out on top in the best sell-side web-based development environment category, thanks largely to its primary offering, NetX360, the firm's platform for broker-dealers, wealth managers and advisors. "If you look at the market and some of our competitors, some of them offer too much choice and it becomes confusing for clients," says Michelle Feinstein, Pershing's director of product strategy and client engagement. "Some of them will also have a closed architecture and will try to limit the client into only using one platform. Pershing doesn't do that."

According to Feinstein, what sets Pershing apart from other similar web-based development environments is that NetX360 offers extensive flexibility and provides clients with a choice in terms of using the Pershing technology platform, as well as the firm's data and its application programming interface (API).

Pershing processes approximately 60 million messages each month through its various APIs. The company's API store offers what it describes as a "self-service experience," where clients can pick certain business processes and implement the corresponding APIs. If they have the talent in-house they can roll out those APIs, and then layer on top of them the user experiences that they desire. Pershing currently has over 55 clients and 37 third-party providers actively in the store.

The firm also offers Components, its next-generation technology that can be accessed through the NetXServices platform. "We allow clients to take the corresponding user interfaces that they are interested in and plug them into their own experiences," explains Feinstein. "What sets us apart is that flexibility—we just want to be the power behind what they are trying to create."

Pershing is currently working on rolling out the next version of its NetX360 platform. It will be a big initiative in terms of offering the market a unified experience across brokerage, advisory and bank custody businesses, according to Feinstein. The company will be strengthening the foundational capabilities within the platform and focusing on operational efficiencies, including "offering a client-centric experience, consistent asset classification, and deepening our integration with our own in-house solutions," Feinstein says.

It will also be creating an integration portal or hub, where clients can access APIs and components in one place, similar to an App Store experience.

—HA



Michelle Feinstein



What sets Pershing apart from other similar web-based development environments is that NetX360 offers extensive flexibility and provides clients with a choice in terms of using the Pershing technology platform, as well as the firm's data and its API.

Best Sell-Side OTC Trading Initiative

FIS Front Arena

Tech giant FIS picks up the gong for the best over-the-counter (OTC) trading initiative this year for its Front Arena product, the second year in a row that it has won the award.

The key to Front Arena, which originally grew up under the SunGard brand until the company was acquired by FIS in November 2015, is its ability to work across electronic trading and OTC on the same digital platform. While most software suites claim to be cross-asset in nature, Front Arena takes that strategy a step further by also combining views for incoming quotes and orders from proprietary desks. “We can market-make fixed-income bonds, equities, structured products, options, interest-rate swaps, commodity swaps or any other products,” says Rob Mackay, head of cross-asset solutions at FIS. “We can also handle the workflow for order management of these products—either the internal workflow or the external workflow toward the execution venues. This makes it possible for Front Arena to replace incumbent single asset class systems in these areas.”

The driving philosophy behind Front Arena’s development, Mackay says, is to combine risk management, trading and all other aspects of the trade lifecycle into a single platform, with an eye on the continuing electronic of OTC markets. This year, of course, the focus for Front Arena’s European client base has been around the implementation of the revised Markets in Financial Instruments Directive, or Mifid II, a piece of legislation that Mackay says has been a “game changer.”

Looking ahead, Front Arena, which issues four releases per year, will be incorporating functionality for a range of regulatory changes. These include the implementation of the Standardized Approach to Counterparty Credit Risk and the Fundamental Review of the Trading Book, but the firm is also eyeing technology developments as well, and plans to incorporate “advanced business intelligence, big data management and aggregation,” Mackay says, which will become increasingly important over the next 12 months. “The key challenges for our customers are preempting ending up behind their competitors and staying agile with regard to disruptive technologies and the ever-increasing digitalization trends,” he continues. “They need to foster partnerships and to be inclusive in an open architecture rather than fending off new innovative entrants. Specifically, in capital markets, our clients need to consolidate more of their IT solutions to reduce costs further and increase consistency across the enterprise. The modern capital markets institution needs to know all the variables affecting overall profitability and risk assessment.”

—JR

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Best Smart Order Routing Tool/Product

Pragma Securities

Pragma Securities has attracted widespread attention over the years due to its flagship offering, Pragma 360, an algorithmic trading platform for foreign exchange (FX), North American equities and futures. Through continuous innovation, the New York-based firm has consistently enhanced the platform's capabilities based on the needs of its clients and the shifting market landscape. Those efforts have borne fruit this year as it takes home the award for the best smart-order routing product/tool at the SST Awards.

Much of the success of Pragma 360 over the past year is down to the evolution of its trading solutions in response to regulation in the shape of the revised Markets in Financial Instruments Directive (Mifid II), which came into force on January 3. As compliance dominated the industry's objectives over the last year, the spotlight fell on banks and brokers to meet best-execution requirements. As pressure mounted on sell-side firms, Pragma 360 stood out among its competitors by offering intelligent and customizable algorithmic trading solutions with smart-order routing capabilities, enabling firms to make better informed trading decisions, achieve best execution, provide greater transparency to their clients, and track order data. "The drivers for the adoption of Pragma 360 are ultimately the need to achieve best execution and to be able to demonstrate best execution from quantitative analysis, where you can look at multiple orders and show that given the market conditions you've got, you know you're getting a good sale on average and good execution results," says David Mechner, CEO of Pragma Securities.

Pragma prides itself on its talented quantitative team of PhDs who specialize in algorithmic and analytical services and have a deep understanding of multi-asset market structures. This quant team is the brainwork behind Pragma 360's ability to leverage machine learning to track orders and fit models using real-life historical events and market information. Machine learning is an emerging technology in trading, used to analyze and "learn" from historical events in an effort to better predict where orders should be made. "An important part of our offering is the tools that look historically at all of the trade data that's generated off the Pragma 360 trading engine," says Mechner. "That entails accumulating that into a database, lining it up with the historical market data, and presenting an analysis to our customers for them to provide to their customers and show that indeed we're performing very well."

-JG



Curtis Pfeiffer and Roz Savage

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As pressure mounted on sell-side firms, Pragma 360 stood out among its competitors by offering intelligent and customizable algorithmic trading solutions with smart-order routing capabilities, enabling firms to make better informed trading decisions, achieve best execution, provide greater transparency to their clients, and track order data.

Best Swap Execution Facility

Tradeweb Markets

When it comes to the ultra-competitive world of swap execution facilities (SEFs), volume is king. But before the mandate to trade certain derivatives contracts through SEFs kicked in during early 2014, Tradeweb's TW SEF didn't look at first like it would be able to challenge the larger players for a slice of the pie.

Fast forward to 2018, and TW SEF is now the leader in volumes for rates. "Tradeweb's market share of buy-side US vanilla interest-rate swaps grew from less than 5 percent before the trading mandate in March 2014, to more than 50 percent today," says Lee Olesky, CEO at Tradeweb. "Initially, clients moved their derivatives trading to SEFs to meet regulatory mandates, but since then, market participants have moved their swaps trading to SEFs as they increasingly realize the benefits of electronic trading."

The secret to Tradeweb's success doesn't just lie in volumes, however. It's become clear since 2014 that on-SEF execution hasn't experienced the same boom in made-available-to-trade (MAT) instruments as, say, clearing has—the vast majority of vanilla rates trades now are centrally cleared, whereas a more significant number of trades still take place off-SEF—and as such, SEFs have become differentiated through their other offerings. "Tradeweb also has seen increased demand from clients because of Tradeweb's buy-side compression tool and its market-agreed coupon (MAC) swap offerings, which have experienced growing adoption among all of our clients," Olesky continues. "Over \$17 trillion in swaps trades has been executed using our compression tool since its launch in November 2013, while MAC swap volumes have reached nearly \$2.5 trillion since being introduced to the platform in February 2014."

In a bolder move than any of its competitors, Tradeweb also introduced automated trading for interest-rate and credit-default swap indices in 2016, through the release of its Automated Intelligent Execution (AiEx) tool. Olesky says that over \$775 billion has been executed through AiEx across these indices on TW SEF. "Using AiEx, clients can automate trading from their own order management systems cutting down on execution time and operational risk," he says. "It allows firms to use rule configurations that can be quickly adapted to support new trading strategies and fine-tune those configurations to intelligently optimize counterparty selection and drive strategic improvements. In addition, clients can codify their own best execution rules into the tool that allows them to monitor best-ex and systematically control trading."

—JR



Mike Roffey and Roz Savage

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In a bolder move than any of its competitors, Tradeweb introduced automated trading for interest-rate and credit-default swap indices in 2016, through the release of its Automated Intelligent Execution (AiEx) tool.

Best Use of the Agile Methodology

Duco

This category, only the second time it has been on offer in the Sell-Side Technology Awards, is awarded to a third-party technology vendor that has embraced the “early and often” release cadence synonymous with the Agile methodology, while also focusing its development on users’ needs through ongoing feedback loops upon which much of the methodology’s effectiveness rests. Last year it was Synechron in the winners’ circle, while this year, London-based Duco takes home the award.

Duco, which typically works in two-week sprints and releases updates every four weeks, describes itself as a software-as-a-service (SaaS) company that provides capital markets firms with self-service data reconciliation and validation solutions. It uses Agile techniques to deliver business value to its customers quickly—not just as part of its software development process, but as a mindset across the whole company. “All of the classic things you see with Agile—close collaboration between product management and development, scoping sprints and releases, self-organizing teams managing themselves through the process, and iterative releases—have been in place for several years, and it’s a slick, well-oiled machine,” explains Phil Jeffery, vice president of engineering at Duco. “What’s also important is that all the functions around development are structured as well. Sometimes you see Agile done in the tech function, but not across the rest of the business, which limits its impact. Here, the whole company—whether it’s development, product management or customer success—is structured to release incrementally.”

Jeffery explains that all of Duco’s development and information-sharing functions are underpinned by Atlassian tools: its internal workflow is managed by Jira, its continuous integration uses Bamboo, its code repository is managed by BitBucket, and Confluence takes care of the vendor’s documentation and information-sharing functions.

One of Agile’s primary day-to-day benefits is that it allows providers to get a lot closer to their clients and engage them on an ongoing basis. To this end, Duco has a customer success team that constantly engages its clients in order to understand their immediate needs and business goals, which then get funneled through into the firm’s sprints and releases. “Therefore, what we are doing is never far from what our customers want,” says Jeffery. “And then because you have fast release cycles, you get quick feedback, which sometimes means there might also be some corrections that need to be made. But we trust our ability to make those corrections quickly. Finally, from a techie perspective, there is also risk mitigation—we release often and we’ve become good at it, and we also release less [software], but more often.”

—VBA



Phil Jeffery



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Most Promising Sell-Side Startup

TransFICC

Founding a fintech startup has its challenges, although the large number currently in existence across the capital markets suggest that it's not especially tough. The difficult part is establishing a successful business that emerges from the valley of death, that can scale sufficiently to sustain itself as a business, while solving real, everyday problems for market participants prepared to pay for its service on an ongoing basis. Those are the really tough nuts to crack.

London-based TransFICC, recipient of the most promising sell-side startup category in this year's SST Awards, appears to have those bases covered, even though profitability is still some way off. The company was founded in March 2016 on the premise of addressing three pain points for capital markets firms active in the fixed-income and derivatives markets: combating market (liquidity) fragmentation; improving performance (numerous bonds, futures, swaps and repos execution venues update their prices thousands of times per second during market volatility); and regulatory considerations, especially around proving best execution.

In response to those challenges, TransFICC provides its clients with a single application programming interface (API) to 230 execution venues, allowing them to connect once to TransFICC's API, eliminating coding, testing and managing upgrades. It also features secure and scalable technology allowing user-firms to keep pace with price updates and not get scooped by high-frequency trading firms, and millisecond-level normalized price/order timestamps for best execution purposes.

Steve Toland, founder of TransFICC, was providing a similar service—an API aggregation service for foreign exchange (FX)—and was approached by a colleague at a bank who wanted to understand the firm's business model. "I drew it out for him and he asked whether we could code to 15 primary fixed-income market venues because he felt that the bank needed an alternate service provider," Toland says. "To cut a long story short, the company I was at didn't want to do it because it was FX-only. He thought that I was missing out on a huge opportunity and so I went to see some banks. After I had seen 10, I didn't need to talk any more—I resigned and started writing a business plan for TransFICC."

TransFICC currently has two investment banks as clients, and is testing with another nine banks and two buy-side institutions. Toland explains that while the business was bootstrapped initially, it recently received seed funding from Illuminate Financial and Frankfurt-based Main Incubator (part of Commerzbank), and has joined Accenture's FinTech Innovation Lab in London and the FinLab in Singapore.

Previous recipients of this category include Green Key Technologies (2015), R3 (2016) and OpenDoor Securities (2017).

—VBA



Steve Toland, Roz Savage, and Stephen Wood

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TransFICC provides its clients with a single API to 230 execution venues, allowing them to connect once to TransFICC's API, eliminating coding, testing and managing upgrades.

Best Sell-Side Product for 2018

UnaVista, London Stock Exchange Group

UnaVista, a wholly owned subsidiary of the London Stock Exchange Group (LSEG), wins this year's best overall sell-side product award, one of only two categories announced at the SST Awards lunch in London on April 20. UnaVista also won the best middle-office platform category in this year's SST Awards (see page 58).

The platform was established in 2008, although its roots go back to 2004 to the proprietary technology LSEG had developed and was using in-house. "We had already been using the technology in the mid-2000s when we launched our Sedol global reference data master file service in 2004," says Mark Husler, CEO of LSEG UnaVista. "We re-platformed the technology onto UnaVista because we needed to expand the database significantly to cover global multi-asset class instruments."

Husler explains that when LSEG took the product to market in 2008, it received a lot of positive feedback on its underlying technology, which prompted it to consider leveraging the technology with the view to helping clients with their regulatory reporting mandates. "We had a few years of building out the service and the client base and we grew from being a startup to the largest approved reporting mechanism (ARM)—a Financial Conduct Authority (FCA)-regulated function in the UK—in that initial five-year period," Husler says. "As we started looking more holistically around the changing regulatory landscape—the European Market Infrastructure Regulation (EMIR) was on the horizon with the trade repository regime—it made sense for us to build out the portfolio. So we built out the trade repository service on the same technology base as the Mifid ARM."

UnaVista is regulated by the FCA and European Securities and Markets Authority (Esma) in the provision of software to its 1,000+ clients, providing them with peace of mind that the service underpinning some of their mission-critical functions is robust and reliable. "There is the assurance and credibility that the software is not built with one firm in mind—it is a community service," Husler says. The platform's base functionality also appeals to clients, Husler explains, especially when it comes to the often complex and laborious process of trade reporting. "We allow our clients to send us data in any format and via any communication method and then we do all the data transformation, normalization and enrichment," he says, adding that UnaVista also provides clients with systems and controls, something now expected by regulators.

Previous winners of this category include Numerix (2013), GoldenSource (2014), Quartet FS (2015) and R3 (2016), while last year the award went to Nasdaq thanks to its Smarts Trade Surveillance platform.

—VBA



**Kirk Gould, Natasha van Abbé, Roz Savage
and Roberto Valladres Navarro**

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When LSEG took the product to market in 2008, it received a lot of positive feedback on its underlying technology, which prompted it to consider leveraging the technology with the view to helping clients with their regulatory reporting mandates.

UnaVista Gets with the 'Programme'

The London Stock Exchange Group's UnaVista platform won two categories in this year's Sell-Side Technology Awards in London: best middle-office platform and best overall product for 2018. Victor Anderson chats to the firm's CEO, Mark Husler, about sell-side demand for the offering and what specifically from a functionality perspective sell-side firms are looking for.

Q London Stock Exchange Group's UnaVista offering collected two categories at this year's SST Awards: best sell-side middle-office platform and best sell-side product for 2018. Can you summarize what UnaVista is and what challenges it addresses for the sell side?

Mark Husler, CEO of LSEG UnaVista: UnaVista is London Stock Exchange Group's regulatory reporting platform. The current platform has been helping firms to report for global regulations since 2011. In short, the platform helps firms to organize their own data in preparation for reporting and then automates much of the reporting process, as well as provides audited workflow and detailed customizable dashboard reports.

While we are very proud of the platform and its reliability (99.99 percent uptime), there is much more to being a regulatory reporting service than just the underlying technology. One of the reasons that 90 percent of the top 20 global sell-side firms have chosen to work with UnaVista is the ancillary services we offer before, during and after the implementation of a new piece of regulation. For example, ahead of the revised Markets in Financial Instruments Directive (Mifid II), we launched an Accelerator Programme to help firms to prepare their data and train teams months before the final versions of the RTS are available. The Programme gave customers the ability to upload their data sources one by one to test the validations and configurations. This helped many clients be ready well ahead of go-live, including one tier-one investment bank that told us that it knocked four months off its preparation time. The Programme also included access to our leading team of regulatory SMEs and places for their team on our certified training courses. UnaVista will be replicating the Accelerator Programme for the upcoming Securities Financing Transactions Regulation (SFTR).

Q What are the drivers that you are seeing across the sell side that are pushing firms to adopt the UnaVista platform?

Husler: Many of our sell-side clients have told us that our large user-base of 100,000 globally, across thousands of firms, means that there is a community that they can tap into. We regularly hold events, working groups and webinars where clients get to learn from UnaVista as well as their peers. We also have a client Advancement Programme where we proactively assess the quality of their reporting, provide them with stats on how they are performing against their peers, and highlight common reporting errors. The goal is not only to show them how to improve their reporting but also to give them tools that they can use internally to optimize their reporting.



“One of the reasons that 90 percent of the top 20 global sell-side firms have chosen to work with UnaVista is the ancillary services we offer before, during and after the implementation of a new piece of regulation.” Mark Husler, LSEG UnaVista

Finally, sell-side firms often have multiple regulatory reporting regimes that they need to comply with. It is often easier for them to work with one global provider such as UnaVista that can offer them robust regulatory reporting solutions across all of the different regimes. This allows them to obtain a complete and accurate picture of their reporting in a single place, eliminating the need to build multiple solutions ahead of each new regulation.

Q What are the firm's immediate plans with respect to the platform/service? Any new functionality on the horizon?

Husler: UnaVista is currently assisting firms with the upcoming SFTR, which is due to go live in 2019. We will be offering a trade repository service for firms to meet their reporting needs, and we will also be offering the Accelerator Programme for firms to help prepare their data and their teams as early as possible.

Aside from SFTR, UnaVista is also looking at ways we can help clients make the most of the data we hold for them. For example, we have built a transaction analytics platform that uses a firm's Mifir reported data to provide them with market abuse and surveillance alerts. The regulators use firms' reported Mifir data to monitor for market abuse, so in conjunction with the London Stock Exchange's market surveillance team we have built many of the same alerts so that firms can view this for themselves. By simply switching a button, customers can get behavioral and market-abuse alerts based on their own Mifir transaction data.

We are also aiming to provide firms with more anonymized benchmarks on their own reporting data. Using peer-to-peer analysis, firms will be able to build dashboards to ensure they are not falling behind the rest of their peers and the industry on the quality of their reporting. **W**

Best Sell-Side Technology Provider of the Year

SIX

Zurich-based SIX, a technology and data provider and infrastructure operator of the Swiss financial center, wins the final category of the SST Awards 2018—the technology provider of the year—announced on April 20 at the awards lunch in London. And while SIX, which also won the best data provider category (see page 30), might not be as instantly recognizable compared to some past recipients of this award, one just has to dig a little and suddenly SIX is everywhere, especially in its European stronghold, most notably, Switzerland.

This year is a big one for SIX: Not only has it collected the highest-profile category of this year's awards, but it also has a new CEO, Jos Dijsselhof, who was on the cover of the June 2015 issue of *Waters* when he was CEO of Euronext.

Now that he has been at the firm for just over five months, what changes has he introduced during that time? “When I joined, the board had already worked out the new strategic direction for SIX—we call it SIX 2020—and in good Swiss fashion, that is called a mandate,” explains Dijsselhof. “It is a strategic framework for the coming years until 2020, and part of that is refocusing our attention on our Swiss customer base, because I think we lost our way a little bit by focusing too much on expansion and diversification and not enough on taking care of our customers.”

Dijsselhof explains that the firm also wanted to simplify and streamline its structure and organize itself in such a way that it could benefit from having its entire value chain under single management. “And finally, we are keen to focus on our key customer groups—the banks,” he says.

Innovation occupies a central position in Dijsselhof's and the firm's 2020 strategy, to the extent that it has created an innovation and digital unit within which the firm's resources that have an innovation remit are housed. SIX has also doubled the unit's budget and provided it with a CHF50 million (\$50 million) venture capital fund to invest in fintech opportunities. “We are not just a company that provides infrastructure, services and utilities and runs things really well with high availability and with high quality,” he says. “We also help Swiss finance firms and international firms to innovate, reshape and restructure, and ensure that the banks in this country can stay competitive and healthy.”

Past winners of this category include SunGard, now FIS, (2013), Markit (2014), Bloomberg (2015), SmartStream (2016), and IHS Markit (2017).

—VBA



Peter Mullinder and Roz Savage

“While SIX, which also won the best data provider category, might not be as instantly recognizable compared to some past recipients of this award, one just has to dig a little and suddenly SIX is everywhere, especially in its European stronghold, most notably, Switzerland.”

Focus on Innovation and the Heavy Lifting

SIX, the Zurich-based financial services firm that underpins the infrastructure of Switzerland's financial center and provides capital markets firms with financial information and ancillary services, won two categories at this year's Sell-Side Technology Awards in London. Victor Anderson chats to Robert Jeanbart, head of financial information at SIX, about the operational challenges it looks to solve for its sell-side clients, and how it differentiates itself in what has become an intensely competitive marketplace.

Q SIX won two categories at this year's SST Awards—best data provider to the sell side and best sell-side technology provider of the year—thanks to its Valordata Feed. What are the core constituents of the feed and what challenges does it address for the sell side?

Robert Jeanbart, head of financial information, SIX: The Valordata Feed (VDF) is our core customer interface. Covering more than 21 million financial instruments, it is a fully structured, encoded data feed that delivers cross-referenced securities master data, award-winning corporate actions and price information in near real time. The Cross-Reference Service helps sell-side firms clearly link instruments and issuers across borders, reducing errors and enabling consolidation for exposure, limit-monitoring and regulatory reporting.

We are very proud that for many years, the VDF has been known for the quality and breadth of its instrument coverage. It is that, coupled with our multi-award winning corporate actions, that powers all of our other services, supporting regulatory, tax and sanctions compliance.

Q The past 12 months have been very successful for the business in terms of new clients. To what do you attribute this success?

Jeanbart: The past 12 months have seen firms grapple with an unprecedented weight of regulations, and our success in signing new clients is largely due to the way we have been able to lessen the compliance burden for firms. That is down to the huge investment we have been making over the last several years to design and build not only the products and services needed to support compliance, but also the infrastructure demanded by the new regulations too.

For example, the revised Markets in Financial Instruments Directive (Mifid II) and Packaged Retail and Insurance-Based Investment Products (PRIIPs) not only require the production of various documents, but also that they be disseminated, updated and collected. We recognized that this was something totally new that the industry did not currently have a mechanism for, and that is what prompted us to build our regulatory hub to meet that need. It is about working as one connected community with firms right across the industry—sometimes even firms that might appear to be competitors to us—to ease the compliance challenge. The hub has proved to be a huge success: since January 3, we have been adding more than one million Priip key information documents (KIDs) to the platform every week.



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“At the product level, we continue to be recognized for quality and breadth of coverage, but we believe our role in the industry goes far beyond that.” Robert Jeanbart, SIX

Q There are a number of well-established data providers in the market. What does SIX bring to the table that it believes helps differentiate it in a crowded marketplace?

Jeanbart: At the product level, we continue to be recognized for quality and breadth of coverage, but we believe our role in the industry goes far beyond that.

To that end, we run a number of user groups to bring communities together—across our clients, partners, and industry leaders to engage with clients and prospects on regulatory readiness.

We also look beyond our products and services to how we can add more value, either by layering on additional services, such as the regulatory hub, or by intelligent delivery of our services. Rather than just delivering our data in one massive feed, we take care to normalize and manage the complexity of integration wherever possible, as well as managing aspects like source compliance. We are always looking for innovative ways to simplify the process for clients.

Q What's on the agenda for the next 12 months? How is SIX as an organization looking to help its clients while simultaneously easing their pain?

Jeanbart: The focus for SIX will be on continuing to try to mitigate challenges for clients by doing even more of the heavy lifting on our side. In practice that means an unrelenting focus on innovation to make our products and services as easy as possible to consume, to empower business users. Now some of the most challenging regulations of late have come into force, we are helping clients ensure that the structures and processes they put in place are scalable and future-proof, as we look toward the next iteration of PRIIPs for UCITS funds and the likes of FidLEG in Switzerland. **W**

The Right to Be Forgotten



At a time when people are increasingly handing over their private information—including DNA!—Anthony hopes that GDPR will be the first step toward a return to normalcy.

A few weeks ago my brother told me that he was going to submit his DNA to the website Ancestry.com to find out our heritage, which the site claims to offer. His girlfriend said she did it and it was fun. I told him something to the effect of, “Like hell you are.” Our grandparents and great grandparents are from Italy and Armenia, our parents were born in the Bronx—that’s all he needs to know.

While I’m not one to boss my family around—I just try to ignore them whenever possible—I wasn’t about to let him give his DNA—and therefore, in effect, my DNA—to some vendor. Can he be 100 percent certain that the government (or hackers) won’t one day want that data? I told him about how the Feds used a DNA-testing site to track down the Golden State Killer. While the Malakians are a law-abiding bunch—and it’s certainly a good thing that Joseph DeAngelo was brought to justice—it was creepy that law enforcement used the DNA submitted by relatives of DeAngelo to crack the decades-old case wide open.

While it will cost more money, if you need to know your ancestry, just go to a doctor. It’s lunacy to hand over your DNA—and mailing address and credit card information—to a third-party vendor out to make a buck.

But this is the new normal. We, as a society, have become so addicted to social sites like Facebook, Instagram, Snapchat and Twitter, that we’ve lost our understanding of the value of pri-

vacuity. It blew my mind when people were shocked—shocked, I say!—to learn that Facebook was selling its data to Cambridge Analytica, and that info was being used to target political content back to Facebook users. Facebook is a free service—it makes money on advertising, sure, but the gold in its vaults come from the personal information that Facebook users

share. My colleague Hamad Ali spoke with a few vendors in the space and some hedge fund traders and—for some—they’re finding great value in this information, even if it is quite hard to corral and analyze. This isn’t *Black Mirror* stuff—your phone is rattling you out with every step you take.

Issues of privacy are going to come to the forefront increasingly as technology continues to dominate our everyday lives. Perhaps one of the first big salvos in this fight is that of the General Data Protection Regulation (GDPR). In the days before, during and after its go-live date of May 25, I’m sure you received a ton of emails imploring you to sign on to new agreements. (This was also a playground for phishing scams.)

While I think that GDPR is a bit too onerous and may need an extension before fines come flinging down, I appreciate the spirit of it. For example, I like its Right to Be Forgotten provision, even if that is something far easier said than done as personally identifiable information (PII) is everywhere and intertwined. It’s an ambitious rule and one that could set the tone for what’s to come in the US and beyond.

In this era of alternative facts and relative truths, data matters more than ever. And when it’s the coding that makes you who you are—whether DNA or trading strategies—you should protect it at all costs. **W**



I like GDPR’s Right to be Forgotten provision, even if that is something far easier said than done as personally identifiable information is everywhere and intertwined. It’s an ambitious rule and one that could set the tone for what’s to come in the US and beyond.

hand over to the company. If you think that Facebook is alone in this, well there’s a bridge in Brooklyn that I’d like to sell you.

Winds of Change

I, too, have been guilty of handing over my information to social media sites. Looking back, I think I’d do it over again and I’m trying to readjust what information I’m willing to put out into the universe. But, as everyone is starting to realize, data is precious and companies will pay a lot of their own money to find out your likes, dislikes, locations, health, and any number of other data points.

Take, for example, the story on page 16 about how hedge funds are starting to look at cellphone geolo-

Can GDPR get us back to normal?
For more information and readers’ feedback please join the discussion at waterstechnology.com

The Risky Business of Splitting Hairs

When it comes to assessing risk in the derivatives markets, US regulators may be entirely correct that notional amount isn't the most helpful tool for actually measuring risk. But, James says, it's so embedded within the system that changing it will be a tough task.

Is using notional a no-no?

For more information and readers' feedback please join the discussion at waterstechnology.com

Derivatives haven't had a banner month. It's not every day that prominent religious leaders single out a financial product for scorn, yet that's what Pope Francis did on May 16, when he called derivatives a "ticking time bomb." Credit default swaps (CDS) came in for particular ethical criticism.

Then there's the battle between Blackstone and Goldman Sachs over a financing deal for home builder Hovnanian. Blackstone's GSO Capital Partners Unit had offered the firm an attractive financing package in return for intentionally skipping an interest payment, triggering the CDS Blackstone owned, ensuring a payout. Goldman, which had the other side of the contract, objected strenuously, and the Commodity Futures Trading Commission (CFTC) took the unusual step of issuing an advisory notice about respecting the purpose for which financial instruments are intended.

Yet the problems with derivatives as a whole run deeper still, with ongoing arguments pointing to how the very structure of the market is still in flux, and in turn, how risk in this market is analyzed and modelled.

Take the concept of notional amount outstanding, a measure of a contract's worth that takes into account all money associated with a transaction. Going by notional value, according to statistics from the Bank for International Settlements, the global market was worth \$532 trillion by the end of 2017. For context, the US national debt level is around \$21 trillion. Yet notional

amount has received something of a backlash this year as an accurate means of depicting what actually goes on inside derivatives markets. CFTC chairman J Christopher Giancarlo has been a particular agitator for change in this regard, saying in a February 1 speech that using such astronomical figures as a means of measurement "has done nothing to bring clarity to newspaper accounts, policy discussions in Congress, or regulatory-policy setting in the decade since the financial crisis."

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Changing the paradigm at a crucial moment when the rules kick in could introduce delays to important dates.

In January, CFTC staff published a paper on using a different metric instead—Entity-Netted Notionals—as a means of more accurately quantifying the actual level of risk in derivatives markets. Using this means of calculation, notional amounts across interest-rate products, which make up the bulk of global derivatives trading activity, across US reporting entities, fell from \$109 trillion to \$15 trillion as of December 15, 2017.

The CFTC's push has received support from various corners of the industry, and on May 25, the International Swaps and Derivatives Association (Isda) published a research paper that demonstrated the extent to which notional amount has become a standard

tool of regulatory policy. It is used, for instance, in European regulation to widely determine thresholds in trading activity, after which an entity must clear its transactions through a central counterparty. This method is also employed in Australia, Hong Kong, Singapore and Canada for the same reasons.

Crucially, however, it is also being used to determine which entities will become subject to rules on posting margin for non-cleared derivatives. September 2020 is commonly cited as the "big bang" moment, when the compliance threshold drops from entities with \$750 billion in outstanding swaps to \$8 billion. Notional amount also appears in reporting obligation thresholds, risk capital requirement frameworks—where notional amount is one of the factors used to determine systemic importance and set minimum capital amounts for counterparty risk—and trading obligations.

Getting the measurements right is, clearly, a task of paramount importance. But given how ingrained notional amount is as a factor in calculating risk, it seems unlikely that forward progress will be made on a harmonized basis any time soon. And changing the paradigm at a crucial moment when the rules kick in could introduce delays to important dates that are not only hard to get around, but dangerous to ignore, too. **W**



Human Capital

BCCGI Bags Data Vet Clark

Market data industry veteran Sheena Clark has joined German real-time messaging platform developer BCC Group International as its managing director for the UK, responsible for client activities globally, and for boosting take-up of the vendor's ONE enterprise data platform and cloud development environment.

In her capacity as founder of data consultancy Financial Machineries, Clark has worked for companies including CJC, Diliger, Rate Validation Services, and Tullett Prebon since 2010, prior to which she was European business development executive at BGC Partners and eSpeed. She was also head of data acquisition at Telekurs UK (now SIX), business development manager at Gissing Software, and served as newsfeeds and business development manager at PR Newswire, and datafeed manager at Icap.

Bloomberg Veteran Sorenson Found Fintech, Data Consulting Business

Former Bloomberg exec Eugene Sorenson has set up a strategic advisory firm, Product Vision Consulting, to help data and technology vendors tap into the collective knowledge within their companies and focus their efforts on product strategy. Sorenson, who left Bloomberg earlier this year, will initially focus on helping startups and small- to medium-sized businesses bring staff members together to define and execute on a "product vision."

Sorenson was previously global business manager at Bloomberg, where he spent more than 12 years and was responsible for areas such as the Graphics and Monitors product



Viral Tolat

suite, geospatial analysis, and the vendor's Launchpad 2010 initiative. Before joining Bloomberg, he was vice president of product development at inter-dealer broker Cantor Fitzgerald, and spent almost six years as director of product marketing at CQG.

Neudata Adds Ex-Goldman Sachs, Euromoney Exec Scibor-Kaminski

London-based alternative data advisory firm Neudata hired Jan Scibor-Kaminski as managing director, responsible for developing new alternative data products and services.

Scibor-Kaminski was previously managing director of Structured Retail Products (SRP), Euromoney Institutional Investor's structured products data business, which the publisher acquired in 2011. Scibor-Kaminski joined SRP in 2008 as head of sales, prior to which he was an analyst in Goldman Sachs' marketing division, performing sales support and creating pitchbooks and marketing materials to support trading strategies. He reports to Neudata CEO Rado Lipus.

Tolat Joins TradAir as CEO

Currency trading platform TradAir has announced that Viral Tolat will be its new CEO. Tolat, who previously held the CTO role at EBS from 2013 to 2017, holds a PhD from Stanford University, which he earned in the 1980s for research into artificial intelligence.

Prior to his EBS tenure, he was CTO and co-founder of Integral, where he worked until 2012. Shortly after Tolat joined EBS, Integral sued the executive, claiming he had misappropriated Integral's trade secrets. Tolat prevailed in initial court actions, but in January 2017, the United



Jan Scibor-Kaminski

States Court of Appeals for the Ninth Circuit reversed a number of findings from the district court in Integral's favor, introducing the possibility of further action.

He takes over the post of CEO at the vendor after co-founder and former CEO Illit Geller announced her departure in August 2017. She remains a board member of the company.

NYSE Promotes Cunningham to President

Stacey Cunningham, COO of the New York Stock Exchange (NYSE), has become the exchange's 67th president, while NYSE's global head of listings, John Tuttle, has replaced Cunningham in the COO role.

Cunningham, who began her career as a summer intern on the NYSE trading floor in 1994, succeeds Tom Farley, who took on the role in 2013 following ICE's acquisition of what was then NYSE Euronext. He had previously been president and COO of ICE Futures US, and became known for a string of high-profile initial public offering (IPO) wins for the 227-year-old exchange, as well as for a colorful and outsized social media

MSCI Taps Thakkar for CTO Role



CTO Chris Corrado moved to the London Stock Exchange Group. Based in New York, Thakkar reports to MSCI president Baer Pettit.

presence in which he often broadcast videos from the trading floor. Farley will become the CEO of “a special-purpose acquisition company,” after leaving the firm, according to an ICE statement.

Cunningham becomes the first female president of NYSE and the second woman currently at the head of a major US exchange group—Adena Friedman is the president of Nasdaq, NYSE’s traditional rival. After her internship, Cunningham spent nearly nine years as a specialist at Banc of America Specialist Inc. She also worked for Nasdaq for a number of years, initially as its director of capital markets, and finally as the head of sales for its transaction services business until 2012. She then joined NYSE Euronext, becoming its head of sales and relationship management, before serving as the president of NYSE Governance Services, after which she took on the COO role at NYSE.

Asset Control Lures Back Wolaver as Americas MD

Financial services veteran Nathan Wolaver has rejoined Asset Control as managing director for the Americas. Wolaver will manage all of the data management and analytics vendor’s business operations across the Americas, including sales, customer support and professional services. Based in New York, he reports to CEO Mark Hepsworth.

Wolaver returns to Asset Control following a three-year spell at Broadridge, where he was global head of data management solutions. Previously, he managed sales for Asset Control in the Americas, and has held senior sales roles at Aleri, Finaplex and Thomson Financial.

Index provider MSCI has hired Jigar Thakkar as its CTO and head of engineering. Thakkar was previously corporate vice president at Microsoft, where he spent 19 years in various roles, including partner and director of engineering for Microsoft Teams and Skype for Business Clients, principal development manager, and software development lead.

When Thakkar joins MSCI in late July, it will be the first time in three years that MSCI has had a CTO, since its previous



Ex-Expand Exec Watson Joins Appsbroker

Jonathan Watson, former director of the Boston Consulting Group’s Expand Research arm, has joined UK-based cloud infrastructure and technology developer Appsbroker Fintech as sales director for financial services.

Watson spent more than 10 years at Expand Research, prior to which he was a European sales manager at Thomson Financial, and served as a European sales executive at Market News International from 1995 to 2000.

In his new role, Watson reports to Appsbroker director Alex Wolcough, who joined the vendor last year via the acquisition of his Sycamore Financial Technology consultancy.

Cboe Bolsters Market Data Sales Team with Two Hires

Chicago-based Cboe is expanding its market data sales presence in London. The exchange has appointed Richard Barden as director of market data sales and Stephen Dorrian as director of European market data.

Barden, who joins Cboe after 14 years in market data sales at Morningstar, is responsible for expanding and distributing Cboe’s market data offerings throughout Europe and the Middle East. Prior to Morningstar, he worked at Thomson Financial. At Cboe, he reports to Drew Carey, head of market data sales.

Dorrian reports to Shaun Baskett, director of index sales at Cboe Europe, and is responsible for the commercial management of Cboe’s European equities market data business globally, including sales and policy. Dorrian held market data manager positions at Chicago



Stephen Dorrian

Mercantile Exchange and London Metal Exchange, focusing on data policy and licensing. He also managed licensing and exchange partnerships at CMC Markets and worked as a business analyst for the consolidated data feed business at NYSE Technologies.

Finastra Adds Fiesel as MD of Capital Markets Americas

Finastra has named Jim Fiesel as its managing director of capital markets and lending sales for the Americas. He will be based in New York and will look to increase the vendor's presence in the US, Canada, and Latin America.

Fiesel joins Finastra from Calypso, where he was managing director for the Americas. According to a press release, he handled Calypso's first sales of its cloud-based products after joining the vendor in 2011. In this new role, he will look to push Finastra's platform-as-a-service FusionFabric cloud offering, an open-architecture big-data platform.

Prior to his Calypso tenure, he also served stints at Tradeweb and Bloomberg, where he was a managing director and a sales director, respectively.

In March, Finastra named Eli Rosner as its new chief product and technology officer. The firm officially came into existence last June after the completion of the merger between Misys and Canada-based D+H Financial Technologies.

Sberbank's Weller Joins Saxo Bank as Middle-East Chief

Saxo Bank, the multi-asset broker and investment bank, has announced the appointment of Steve Weller as CEO for the Middle East and North Africa (Mena) region. Based in Dubai, Weller will be responsible for the growth and development of the business and client base in the region and will report directly to Damian Bunce, chief client officer of Saxo Bank, who was also recently appointed to the role in February 2018.

With over 25 years' international experience in the global foreign-exchange (FX) markets, Weller has held roles such as managing director and global head of Sberbank's FX business, head of Asia-Pacific FX at Barclays, and global head of FX spot and forward trading at Lehman Brothers.

Xceptor Appoints Cooper CFO

Xceptor has a new finance chief and a new head of US sales. The London-based data automation vendor has named Sharon Cooper as its CFO. Previously, Cooper was CFO at Digital Barriers, where she led the sale of the business to Volpi Capital. She was originally an



Sharon Cooper

auditor with Ernst & Young before becoming group financial controller at Sophos, where she handled due diligence during the company's sale to Apax Partners.

Xceptor's new US sales director is Shaleen Dastur, who joins the firm from S3 Partners, where she was director of business development. Dastur was a senior solutions executive for North America with Gresham Computing, and spent 10 years at NorthPoint Solutions, first as business development manager and then as its head of sales for financial services.

Xceptor opened a New York office in April last year.

Ex-Credit Suisse Banker Siegel Takes Reins at Lux FTS

New York-based Lux Fund Technology and Solutions, a provider of buy-side software and alternative datasets, has hired Jeremy Siegel as CEO to lead the vendor into its next stage of growth and build out its flagship Transcend front-to-back office automation platform.

Siegel previously spent almost 14 years at Credit Suisse, most recently as global head of prime consulting, prior to which he was a sales executive at Eze Castle Integration. He also spent four years in Morgan Stanley's prime brokerage and private equity departments and worked in technology support and training at American Express.

His appointment follows a \$6 million Series A investment from Credit Suisse Asset Management's Next Investors private equity arm in Lux FTS in December. He replaces co-founder Nik Takmopoulos, who becomes president of the company. **W**

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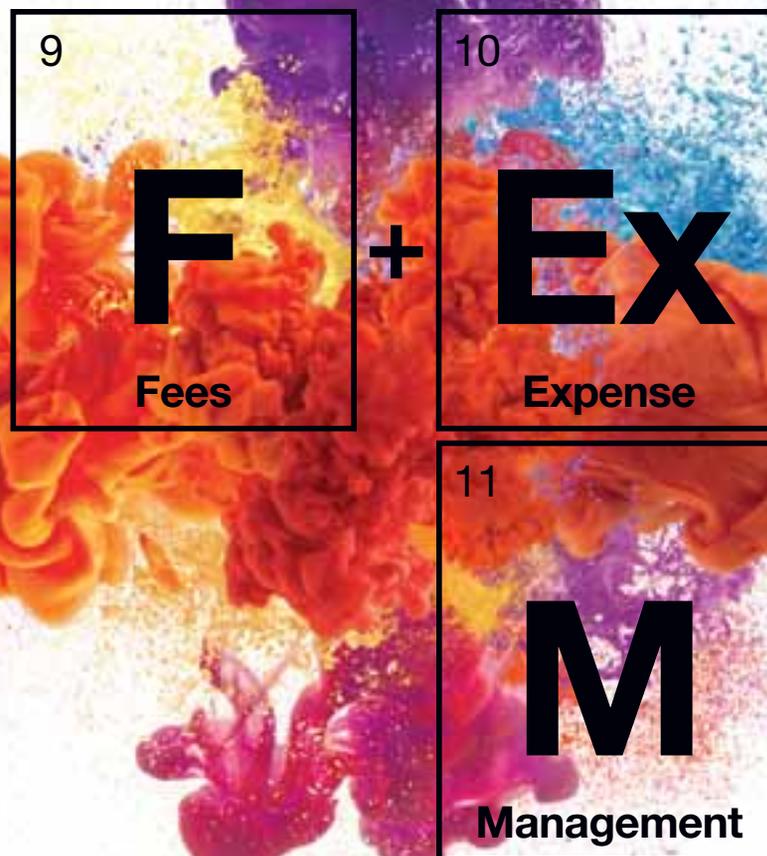
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