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## Quantity vs. quality

**When I was named** editor-in-chief about 20 months ago, I wanted to shift the focus of our coverage. It's not that what we were doing was bad—quite the contrary; I believe we were already the best in the business within our small universe of capital markets technology coverage when I took over. But as more publications turn to a subscription-based model, it's not so much about the number of stories produced, but the quality. You need to justify that subscription price tag (and ours is ... hefty), and you need to do that with exclusivity and depth.

A couple years ago, if you logged onto our website, [waterstechnology.com](http://waterstechnology.com), you'd find an assortment of stories, many of which were based on press-released information, but with added context and information gleaned from interviewing the subjects of those releases. It was solid content, but it wasn't exactly exclusive, as the gist of the story was already public domain, and there were other outlets doing something similar.

So halfway through 2019, we looked to make sure that 95% of our coverage was truly exclusive content. For the 5% of stories that were based on publicly released information (i.e., mergers, new regulations, massive announcements), if we were going to write about it, we would go deeper than anybody else. For example, while we might not break the news that S&P Global was acquiring IHS Markit, we provide more information around that announcement than any other publication in the B2B world, and even among mainstream outlets like *The Wall Street Journal*, *Financial Times*, or *Business Insider*. We don't always succeed in this endeavor, but I think we're doing a solid job.

This year, I want us to build on that foundation. If I'm being honest, in our history we've published a fair number of zero-calorie stories—for example, about XYZ Company upgrading one of its products. It wasn't press-released information—it was exclusive news, by definition—but did it really provide value to you, the market data specialist, or platform engineer, or CTO, or senior vice president of product development, or sales rep? It was a low-calorie snack. It's not that the project wasn't important, but we weren't doing a good enough job of explaining why it was important and how it compared to what other companies were developing.

We weren't always taking that extra step. I want that to end this year.

It will take some time. We won't always be successful in explaining the "why" and "who else" pieces, but that's our North Star going forward. Sometimes we might have a story that can be published, but we need more time to answer those broader—and, hopefully, more important—questions.

We need to explain why this news event matters to you, the data or tech specialist. I hope we do that in the pages ahead, but it's also my promise that we will look to continue to improve the stories we publish online and that you read here in the magazine. Let me know if you think we're hitting the mark or if we're coming up short. [wt](http://wt)

**Anthony Malakian**  
Editor-in-Chief

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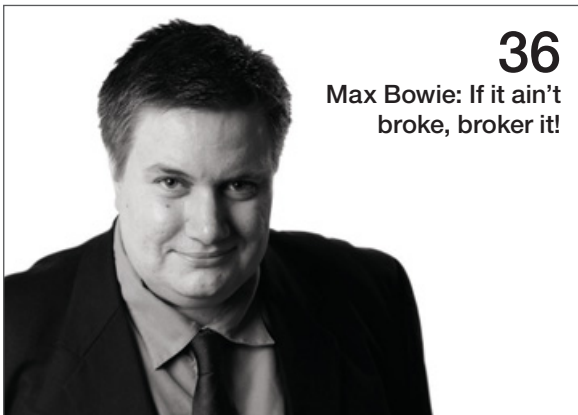
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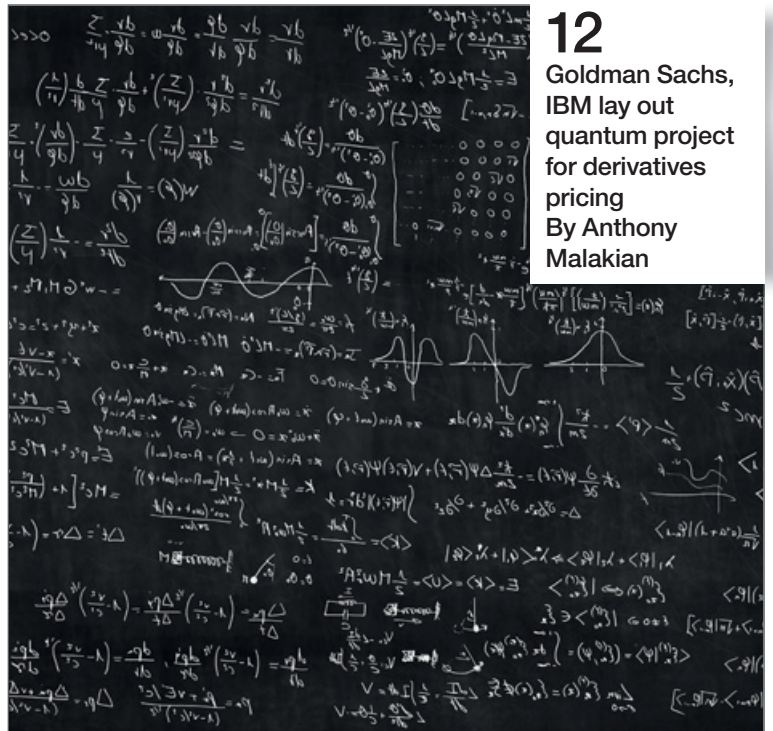


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# HKEX targets company disclosure gaps with artificial intelligence

The system monitors annual reports for issuer compliance with listing rules, speeding up a formerly manual job. By [Wei-Shen Wong](#)

As part of its three-year strategic plan, one of Hong Kong Exchange and Clearing's (HKEX's) goals was to use technology to modernize its core functions. In the past two years, some examples of this work include its next-generation post-trade platform, stock connect programs, and the buildout of its data marketplace platform.

While work on some of those projects is ongoing, one of the solutions that HKEX has already put in place is an artificial intelligence (AI) system called Jura, which aims to improve corporate governance and disclosures.

There are more than 2,500 listed companies on HKEX, and each issuer is required to publish an annual report, presenting their financial results, business performance, and management commentary to the general public. As the primary regulator of stock market participants, HKEX monitors issuers' annual reports and other commentary documents, and checks whether they are compliant with the exchange's listing rules.

Previously, HKEX conducted this exercise on a thematic basis, focusing on major topics, such as environmental, social, and governance (ESG) compliance. It would then issue guidance and interpretation to issuers on what companies were reporting well and what they weren't, so the next time they reported, issuers could correct those shortcomings.

In the middle of 2020, HKEX introduced Jura within its listing division to determine whether issuers are compliant, and to automatically review all annual reports.



## Dealing with unstructured data

HKEX and its listing division built Jura in collaboration with Beijing Paoding Technology (PAI Tech), an AI company specializing in financial semantic understanding, including document intelligence and regulatory technology. Together they used a combination of natural language processing (NLP) and deep learning techniques to create models that can read, understand and interpret all elements of an annual report, often in varying, unstructured formats.

"HKEX refined some existing natural language algorithms specifically for this regtech use case. You'll find a lot of people in the market are using NLP to look at company disclosures—that's nothing new. But usually, people look for specific things, like the

dividend payout, the date of the annual general meeting, or the bond prospectus, where the information is kind of structured," Lukas Petrikas, head of HKEX's Innovation and Data Lab, tells *WatersTechnology*.

Annual reports, however, are very much unstructured documents, as companies can produce them in whatever formats they like. First-time listers, in particular, can take creative approaches to these documents.

"You'll see things like mascots with speech bubbles, or charts that are very colorful. It's not like there's a standard for how you say certain things. You can use thousands of choices of words to say the same thing. And sometimes it's a graph, sometimes it's text, sometimes it's a picture, and sometimes it's a chart," Petrikas says.

The Jura system downloads annual reports and supplementary announcements, locates disclosures within the content corresponding to each listing rule, and deduces whether issuers are compliant. It then retains the assessment and compliance analysis.

Petrikas says its developers trained Jura for eight to nine months by tagging new reports and exposing the model to different listing rules. HKEX used more than 3,800 English language annual reports and more than 400 items of corporate communication to train the system to assess 140 different types of corporate disclosure and compliance. Jura can now find inconsistencies in annual reports and issuers' communications in company announcements.

Petrikas says it's the "silences" in the annual reports that are most difficult for AI to pick up. "Whether they're false negatives or true negatives, you don't know unless you check some other document. For example, if a company says, 'During this year, the company did not issue any warrants for shares'—how do we know if that's true? What if somebody remembered that actually, back in May, the company announced it had issued some warrants to its senior employees, and they forgot to mention it in the annual report?"

Mistakes do happen, especially with new issuers and companies that are disclosing for the first time. The annual report is a big document, often between 300 and 400 pages long, and its writers often omit important details. "Our job is to find that," Petrikas says.

In that kind of situation, Jura would send an alert that the company had in fact issued a warrant in May, and return the announcement so that a human reviewer could look into it.

Benjamin Quinlan, CEO and managing partner of Quinlan & Associates, a Hong Kong-based strategic consulting firm, says while he doesn't know the specific mechanics of Jura's algorithm, it will deliver huge efficiencies if it can identify reporting discrepancies with greater speed and accuracy.

“Accelerating corporate governance checks is a major plus for companies, especially when the whole industry is very manual, racking up huge bills with lawyers, accountants, and others. Moreover, many current processes are prone to human error.”

**Benjamin Quinlan, Quinlan & Associates**

“Accelerating corporate governance checks is a major plus for companies, especially when the whole industry is very manual, racking up huge bills with lawyers, accountants, and others. Moreover, many current processes are prone to human error,” he says.

However, the strength of the algorithm driving the technology is key, he says. If it's not well trained, it can create a lot of unnecessary "red flags" that end up producing more work for the user in the end.

"It will take time for these solutions to show their worth. The use of NLP, optical character recognition and other forms of AI helping to cut through laborious human tasks is becoming common practice across many industries. I see this as a positive development overall, as it allows a company's employees to focus their efforts on higher, value-added activities while streamlining compliance costs," Quinlan says.

### Beyond disclosures

HKEX's Petrikas says Jura can also be deployed elsewhere within the exchange. Extending it beyond the current use case will just involve more training.

"[Jura] is something that we can apply across other use cases because the examples I used are as hard as it gets," he says. The nirvana for NLP models is having a high recall and high precision rate, he adds; it's usually a trade-off between the two.

"You might achieve high precision and low recall, and a human has to check. Or you have high recall and low precision, in which case the system probably picks up a lot, but it's hard to say when it didn't pick it up. As a regulator, it's the things that you might have missed that's always worrying. So to get to a place where we have both high recall and high precision—within the 90% range—with the system has been a huge achievement," he says.

According to a HKEX case study detailing how the Jura AI system was used to assess the annual reports of listed companies, the overall accuracy rates for location of annual report disclosures and issuer compliance recommendations for the training set reached 90% and 92%, respectively.

The exchange then tested the model against 50 previously unseen reports, and the accuracy rates were 84% and 85%, respectively. HKEX aims to improve performance through a regular review of data generated from user verification.

"The amount of learning we had in terms of applying AI, I don't think we could have picked a better use case [for regtech], because it was so challenging to get it right. Now that we've got it right, other use cases are easy. So now, if we want to look at the simpler stuff like companies announcing convertible bond issuance—looking at the conversion price, the maturity, the coupon—that's very easy because we've done something that's much harder to capture," Petrikas says.

In such a case, for example, the system would need a little bit more training on convertible bonds. "And then the infrastructure is there, the dashboards, the analysis—it's all there. So it's really just training the AI model incrementally," he says.

Future areas of research will include extending Jura to results announcements and other types of regular corporate communication, but HKEX is committed to refining and enhancing Jura in its current use case. [WT](#)



**Benjamin Quinlan**  
Quinlan & Associates



# S&P/IHS Markit: OPIS faces spin-off; Cappitech beefs up regtech frontline

Commonalities between the two firms' commodities pricing units bring them under regulatory scrutiny as they move closer to an acquisition deal. At the same time, it appears that IHS will lean into the regulatory reporting space. By [Josephine Gallagher](#)

As S&P Global Market Intelligence sets out to acquire IHS Markit by the second half of this year, some analysts, including those advising on the deal, say S&P will need to divest itself of OPIS, IHS Markit's energy and commodities pricing business, to satisfy anti-trust laws.

The proposed deal would bring together several complementary businesses, including combining S&P's equities index unit with IHS Markit's fixed-income index offering; and S&P's artificial intelligence (AI) research platform, Kensho, with IHS Markit's Data Lake. While much of the two companies' product lines are largely complementary and have little overlap, sources say one exception is S&P Platts and IHS Markit's Oil Price Information Service (OPIS). Both of these services offer pricing information for many of the same products, including gas, oil, coal, chemicals, and renewables.

One analyst at a tier 1 US bank who is familiar with the inner workings of the deal says OPIS is an obvious candidate to be sold off to avoid regulatory problems or delays in closing the deal.

"For regulatory or antitrust reasons, they're likely to have to sell OPIS, [which sits] within the Resources business of IHS, because it would just give them too much market position if you put that together with the Platts business at S&P," says the analyst, who requested anonymity because of how close they are to the two companies.

During IHS Markit's fourth quarter 2020 earnings call on January 13, IHS chairman and CEO Lance Uggla said that the firm is working to address any



“I think for regulatory or antitrust reasons, they're likely to have to sell OPIS, [which sits] within the Resources business of IHS, because it would just give them too much market position if you put that together with the Platts business at S&P.” **Analyst at a tier 1 US bank**

hurdles and business overlaps between the Platts and OPIS businesses: “All the hurdles that we knew going into it, in terms of the business overlap within our Platts and OPIS businesses, are there, and the teams are working to address those. My view is there shouldn't be any significant roadblocks or hurdles; we would expect to close in the second half [of 2021] and expect the teams to work with the regulatory bodies to determine the precise nature of the overlap

with any assets, which are substantive, [but are] insignificant in terms of size across the transaction.”

A spokesperson for S&P Global declined to comment for this story. An IHS Markit spokesperson said the firm did not wish to comment on speculation. “From our side, we are not going to comment on anything until we have spoken to the regulator,” they add.

One reason attention has turned to Platts and OPIS is that the commodities space is dominated by an elite few.

The IHS/S&P deal “comes into real focus because there's a limited number of providers in that market,” says Virginie O'Shea, CEO and founder of Firebrand Research. “In terms of commodity pricing, you do not have a huge number of players in that space.”

Platts is the market leader in energy and commodities benchmark pricing globally, according to the bank analyst. Argus Media, a London-based private equity firm, and OPIS come in second and third, respectively, in terms of commodities coverage and market share in the space, says the source.

S&P's latest 2019 annual figures show revenues of \$850 million, and the firm is expected to make similar returns for 2020, according to its quarterly reports. Cited in its 2020 fourth-quarter earnings, IHS Markit's Resources business stream, which includes OPIS, pulled in annual returns of \$863 million in 2020, down circa 8% on total revenue from 2019.

“It strikes me and a lot of market participants I've talked to—and certainly there are some press reports on it—that putting one and three (in terms



of market leaders) together is probably something that could raise some concern,” the analyst says.

Other, smaller players in this space include Metal Bulletin, a London-based provider of metal and steel pricing information, and Commodity Market Analysis, which offers data on mining, metals, and fertilizers.

While the deal is expected to close later this year, in coming months regulators will scrutinize the dominance of a possible Platts–OPIS merger, or whether the two companies could grow to a point where they would monopolize energy and commodities pricing.

The head of market development at a Europe-based exchange says that more broadly, many users of financial data will look at this deal with some trepidation. The concern is that the dominant few are becoming more dominant. As big players like S&P or London Stock Exchange Group, with its acquisition of Refinitiv, buy up more and more data businesses, banks are being forced to accept the growing fees of a diminishing number of providers.

“Now you are seeing this level of consolidation, which in some ways is going to give these guys even more negotiation clout,” the exchange executive says.

As one market data manager at a European asset manager told *WatersTechnology* just after the S&P/IHS deal was announced, “M&A in this industry is rarely beneficial for customers. The most welcome ones are... where there is not much crossover, such as a data company buying a technology provider. But when one fish swallows another, it just creates more dominance and less end value for clients.”

But there is an important difference between the Bloombergs and the LSEs of the world, says the exchange executive, as S&P and IHS Markit’s index information and Price Reporting Agency (PRA) data are embedded into products or contracts, where there is less optionality in the market to source those kinds of datasets. PRAs are



**Lance Uggla**  
IHS Markit

privately owned publishers or information providers that report prices on the physical commodities markets, including oil, metal, and chemicals prices.

“The irony is that Markit was started by a bunch of banks... and they ended up spinning it off. IHS Markit is going to come back in a new form and squeeze money out of the very banks that started the company in the first place,” the executive says.

### Consolidation continues

Even as S&P and IHS Markit prepare to present their case to regulators, the deal-making has not stopped.

On January 11, IHS Markit made a bid to bolster its regulatory reporting businesses by acquiring Tel Aviv-based regtech firm Cappitech. The two firms already had a relationship, as IHS Markit selected Cappitech’s Cappitivate platform as a key component of its Securities Financing Transaction Regulation (SFTR) solution in 2019.

Cappitech CEO Ronen Kertis and Pierre Khemdoudi, global head of equities at IHS Markit, say it is still too early to tell how the technologies will be integrated, and which systems will be picked to support the regulatory reporting services, but initial integration has already begun. Kertis adds that the two firms’ experience with integrating their SFTR solutions means they already have a common understanding of each other’s technologies.

Kertis will transition to the role of head of regulatory reporting at IHS Markit, overseeing the combined businesses and reporting to Khemdoudi. The objective for the acquisition is to integrate and build out the existing services in the future, Kertis says. He adds that there is no intention to cut staff.

The latest acquisition highlights the continued consolidation in the regulatory reporting space. Last year saw market operator MarketAxess acquire Deutsche Börse’s reporting arm in September, and CME Group unwind several reporting units in November. Regulatory reporting is an area in

which Khemdoudi and Kertis believe IHS Markit can grow its footprint and become dominant. They see an opportunity for growth because of the complexity and constantly changing regulatory landscape—including new and upcoming rules such as SFTR, which went live in April 2020, and the reviews of the latest Markets in Financial Instruments Directive and its associated regulation.

“We see the regtech space growing at a fast pace, and we see a lot of interest coming from the buy side, the sell side, larger organizations, and so on,” Khemdoudi says. “We expect that trend to keep growing over the next few years, as we see that regulations are becoming more and more complex, and all our clients are telling us there is a need for a frictionless, accurate, and cost-effective solution that will help them to tackle those very complex regulatory reporting challenges.”

Kertis says Cappitech won 50 group-level clients from the CME following the exchange’s rollback last year. He adds, however, that within those 50 group-level clients, that there are multiple legal entities that it services.

As result of the acquisition, IHS Markit will absorb Cappitech’s 200 group-level clients. These clients are large companies that include multiple global legal entities or subsidiaries.

“Working with a firm like IHS Markit is a great opportunity to have access to a wider client base, to be able to grow the business, and further enhance the products,” Kertis says.

Another player, MarketAxess, has taken strides to extend its position as a leader in regulatory reporting. In its takeover of Deutsche Börse’s reporting businesses, it acquired the exchange’s entire log of 500-plus reporting clients. In August 2019, Bloomberg also acquired RegTek Solutions to extend its services and reach to more jurisdictions for European Market Infrastructure Regulation, Dodd–Frank Act, and Monetary Authority of Singapore reporting needs. [WT](#)

# State Street focuses on six data vendors to close gaps in ESG analysis

State Street's Chris Berry explains how the asset servicer winnowed 60 ESG data providers down to six. By [Mariella Reason](#)

**G**aps and guesswork are part of the process for portfolio managers incorporating environmental, social, and governance (ESG) data into their investment processes, as the pool of available data is highly variable and difficult to correlate.

*WatersTechnology* has reported that these data gaps are holding asset managers back from truly understanding how well a corporate is performing on these measurements. The problem is that the various ratings providers with a focus on ESG scoring come to their results in divergent ways and present the information using a variety of methods; there is no overarching standard to pull together these disparate methodologies.

Chris Berry, head of ESG product at State Street's asset servicing arm, hopes this will change in the next few years. But for now, he says, his careful selection of data from six different providers helps him to advise State Street's asset management clients on ESG.

"We hear from a lot of clients that they struggle with the differences between ESG datasets, and which data provider to believe—who's got the best data out there?" Berry says. "The answer to that question also depends on what you are looking for: Different investors have different priorities and understandings of what constitutes concepts like 'sustainability.'"

Though official efforts to standardize reporting, such as the Sustainable Finance Disclosure Regulation and the EU taxonomy for sustainable activities, are poised to take effect in the next couple of years, criticism of the reliability of corporate disclosures of ESG factors continues. Ratings and data providers can pull together a company's



State Street picked providers that worked best in conjunction with each other

self-reported ESG data but come up with completely different scores. For asset managers trying to navigate the different ratings providers, Berry says the challenge is knowing which one to use or trust for their intended purpose: "It's not that one dataset is necessarily better than another; it's that they're designed to measure different things."

## The contenders

To answer its clients' questions, State Street sought data providers that could work best in conjunction with each other, whereby each firm selected offers an integral piece of data that verifies or negates an overarching ESG thesis. After a due diligence process, analyzing over 60 different ESG data providers, State Street landed on six winners: MSCI, Sustainalytics, IdealRatings, Trucost, Arabesque, and Truvalue Labs.

Index and data behemoth MSCI provides an ESG rating service that is designed to measure a company's resilience to long-term, industry-material ESG risks. It uses a rules-based methodology, bucketing companies as leaders, average, and laggards.

Sustainalytics offers a range of services, including its flagship ESG Risk Ratings, research reports, and data analytics. It has data on 40,000 companies globally and ratings on 20,000 companies in 172 countries. It has a big presence in the fixed-income space and was acquired by Morningstar last year.

IdealRatings has two business units: ESG & Responsible Investment Solutions, and Islamic Finance Solutions. The latter provides web-based tools for screening and compliance around ethical and sharia-compliant investing, covering over 40,000 equities and

3,000 sukuk bonds, globally. The ESG & Responsible Investment Solutions unit has a product that combines 130 inputs to develop letter grades where the key performance indicators (KPIs) are tied to the industry the company serves. So, for example, the "health and safety" KPI is considered to be material for energy production and not material for the financial sector.

Trucost, which was bought by S&P Dow Jones Indices in 2016, provides services including a very strong carbon data and analysis offering, as well as indicators around natural capital investment, which allows users to measure risks based on the disturbance of natural resources, such as soil, air, and water.

Arabesque is something of a hybrid, with an asset management arm in addition to S-Ray, an ESG research unit that provides data and tools to assess the performance and sustainability of companies around the globe based on the core principles of the United Nations Global Impact, sector-specific ESG scores, and metrics that quantify how much individual firms contribute to the rise in global temperatures.

Lastly, Truvalue, based in San Francisco, applies artificial intelligence-driven technology to over 100,000 unstructured text sources in 13 languages, including news, trade journals, non-governmental organizations and industry reports, to provide daily signals on positive and negative ESG behavior. It covers over 19,000 companies and generates short-term, long-term, and momentum scores. In 2017, State Street partnered with Truvalue Labs to use its signal based on the Sustainability Accounting Standards Board's materiality framework. [wt](#)



# Pictet AM enlists Finsemble to overhaul fixed-income, FX workflows

Swiss bank Pictet's asset unit division has worked with Cosaic for a little over a year, and has used Finsemble to automate heavy workflows in FX pricing, money market yields, and credit. By [Rebecca Natale](#)

For Carl James, global head of fixed income at Pictet Asset Management, the pull and promise of desktop application interoperability seemed blindingly obvious. A little over a year ago, he made the first move to bring interop into the fold, as he sought to simplify cumbersome cross-application workflows.

James runs a team of 17 traders across four desks at the buy-side arm of Swiss bank Pictet Group. It was around the end of 2019 that he and David Harvey, head of trading technology at Pictet, who specializes in working with order management systems, with a focus on the Charles River Investment Management Solution (IMS), started to seriously discuss the rise of app interoperability platforms—the main trio being Cosaic (formerly ChartIQ), OpenFin, and Glue42.

“In the push for automation, I wanted to find a way of collapsing trader workflows. Having reviewed other offerings, we landed with Finsemble,” James says. “They were a company that, culturally, was a good fit. They were used to helping companies build the Finsemble ‘narratives’ from the ground up; they understand that there is a ‘try and fail’ element to the process.”

## Rapid progression

Pictet Asset Management has since used Finsemble to automate three workflows: foreign exchange (FX) pricing, money market yields, and credit-instrument pricing.

The money market workflow was perhaps the trickiest of the bunch. It involved much back-and-forth between applications and screens, and copying data from those disparate apps into



Pictet first used Finsemble to create an FX pricing app

many fields. However, a fundamental building block the team needed in place before they could trim the workflow's length was a reliable FX pricing system.

“Particularly in the money market space, where we're really looking for very, very accurate pricing—your standard optimal Bloomberg pricing doesn't really cut it,” said Dan Benninger, investment platform integrator at Pictet, during a recent webinar.

The development team then set out to build a proprietary FX pricing application for the traders. The tool, dubbed FX Pricer, leverages a back-end FIX gateway with connectivity to several liquidity providers. They built interoperability with the Charles River IMS using FDC3—a set of standards meant to create a common language for sharing context and data between applications—not only to trade bonds, but also to perform FX hedging in cases where the bonds are priced in different currencies. With one click on an order, the trader has a full understanding of the pricing around that FX instrument, along with a graphical view of the spread and mid-price. Through Finsemble's Bloomberg integration

(via the Bloomberg Terminal Connect API) the application can then launch Bloomberg's historical charts of the currencies to provide additional context to the trader.

That was only the beginning of the development team's work as the FX Pricer gave way to the Money Market Pricer. The traditional trading workflow involved manual FX pricing via a third-party platform, spreadsheet calculations to gauge yields and cash flows adjusted for different currencies, and returning data to prospective investors.

Enter Finsemble, which acts as the workflow engine that allows Pictet to input data from one application—for example, details of a commercial paper offering that's sitting in the Charles River OMS—automatically into Bloomberg and other systems.

“It allows them to write a small piece of code in one place, living inside Finsemble, that connects to different systems and automates the multi-step calculation process,” Dan Schleifer, Cosaic CEO, says.

The third workflow to be aided by interop thus far is in credit, which constituted the firm's first major back-end development by creating an AX database. The database, which uses a flow of axe data—essentially, wishlists of securities that other firms are interested in buying or selling, and which are provided through trading counterparts and aggregators like MarketAxess or Tradeweb—serves as an automatic cross-referencing system that can recognize opportunities to sell certain bonds already on Pictet's books, while identifying opportunities to buy similar instruments with better yields, for example, with one click. [wt](#)

# FactSet, Snowflake take aim at financial data mapping challenges

FactSet's mapping service, Concordance, can be used on its own or with Snowflake's cloud, enabling users to apply the offering to other datasets in Snowflake's ecosystem. By [Max Bowie](#)

**F**actSet unveiled Concordance on January 12, a new service for performing outsourced data mapping of traditional, alternative, and clients' proprietary data. It leverages its existing operations and technology, as well as its relationship with cloud provider Snowflake to provide mapping of data stored in mutual clients' cloud environments.

Concordance aims to link standard reference data to alternative data and a firm's own internal datasets—in the same way that FactSet already links identifiers and other metadata to “traditional” market data—so that all relevant information can be mapped to the companies and securities it relates to.

For any data—such as new “alternative” or proprietary client data—that does not immediately match the reference data in FactSet's security master file, clients can submit the unmatched data via the vendor's Concordance API, and the vendor will accurately link it to reference data using AI algorithms, then send it back to clients with the metadata required to link all of a client's data with minimal effort. The data matches are checked and validated by FactSet's data teams, who also manually link any data that does not match automatically.

Once data is mapped and linked, it can be used to power clients' security masters, data lakes in the cloud, as well as creating new usage opportunities, such as an input to customer-relationship management (CRM) systems, says Jonathan Reeve, global head of content and technology solutions at FactSet.

The big challenge to achieving this is that many firms have assembled proprietary datasets which have value but don't conform to FactSet's reference



**Matt Glickman**  
Snowflake

data. Previously, to use its own data in conjunction with FactSet's market data, a firm would have had to manually link the content, which could take a minute per company, whereas the new service aims to match up to 80% of data instantaneously, with the remainder matched manually by FactSet's operations staff.

“Think of the service as concentric circles of capabilities: At the center is a service we call Data Management Solutions—a reference data file that allows you to connect securities with all standard identifiers and reference data, full descriptions, our FactSet ID, other vendor identifiers, and entity/issuer identifiers, so that you have the relationship between a company and the securities it has issued,” Reeve says.

Accurate reference data allows users to connect and search for firms across industries and sectors, he says. “The next ring of the circle is our Open:FactSet platform, where we bring in ‘alternative’ content... and link it all. That allows people to navigate not just ‘traditional’ datasets, but also new data types,” he adds.

One company already using the service is an alternative data vendor that participates in the Open:FactSet Marketplace of alternative data. This vendor scrapes content from the web, and in the past needed to source and link reference data to its content by hand to make the data usable. Now, it can achieve that almost immediately using Concordance, Reeve says.

FactSet will offer Concordance as a standalone service, but Reeve believes it offers even greater value when applied to data being stored and shared in Snowflake's cloud.

“This mapping problem—whether

internal or between providers—plagues every industry, but in particular financial services,” says Matt Glickman, VP of customer product strategy at Snowflake, who spent almost 25 years at Goldman Sachs prior to joining the company. Addressing the data mapping challenge is as “strategic” to Snowflake as expanding its ecosystem of data and services, because it will help clients not just integrate but also search for and identify potential services on its cloud.

“I could take a dataset that uses natural-language extraction to generate sentiment, and tie it to classification data in FactSet, and then I have a classified dataset that I can join with other data I have from FactSet in minutes or hours, without having to undertake a big project,” Glickman says. This enables firms to use the data not just to support trading and investment decisions, but also to support new business development.

For example, another potential—and non-traditional—use-case for Concordance is that of an unnamed European financial firm that uses it to augment client data in its CRM system with reference data and other information, so that the firm can link FactSet's market and fundamental data to its database of customer data.

“Everyone has client data in a CRM system,” Glickman says. “What if you could enrich your CRM system to identify which clients are ESG (environmental, social, and governance)-friendly, or which companies in a client's supply chain have experienced Covid-related earnings disruptions?”

“It transforms the client's CRM platform from being a call-tracking system to a lead-generation system,” Reeve adds. [WT](#)



# OPEN OUTCRY

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“Cloud gives us features and functions that are cost-prohibitive in any other way—such as deploying infrastructure globally—and clients get lower latency and great quality regardless of market volumes. With ticker plants, you have to size for the highest market volumes, so you need a lot of capacity. And when you onboard new clients, it takes time to get infrastructure in place. This will allow us to onboard new exchanges very quickly and onboard new clients in a fraction of the time—and we’re going to gain a ton of operational efficiency.” **Gene Fernandez**, chief product and technology officer at FactSet

» see page 30 for full feature...

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“I think for regulatory or antitrust reasons, [S&P Global] will likely have to sell OPIS, [which sits] within the Resources business of IHS, because it would just give them too much market position if you put that together with the Platts business at S&P.” **Bank analyst** talking about regulatory challenges facing the S&P-IHS Markit deal

» see page 6 for full story...

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“Currently, interdealer brokers are trying to be more like exchanges, not only by performing more audits, but also by changing how they package and sell data. For example, they are becoming more granular now in breaking out things like application use cases, such as derived data redistribution and index/benchmark creation. And they are under great pressure to increase data revenues.” **Mike Kirby**, managing director of advisory firm MWK Data Services



» see page 20 for full feature...

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“It will take time for these solutions to show their worth. The use of NLP, optical character recognition and other forms of AI helping to cut through laborious human tasks are becoming common practice across many industries. I see this as a positive development overall, as it allows a company’s employees to focus their efforts on higher, value-added activities while streamlining compliance costs.” **Benjamin Quinlan**, chief executive officer and managing partner of Quinlan & Associates

» see page 4 for full story...

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“We’re definitely getting inquiries from potential investors, from potential clients, asking, ‘Can we come up with products that are more focused on social issues?’ Or, ‘How do you think about that?’ So I think that ESG is having a moment. And, because of Covid, because of racial tensions, I don’t think that moment is going to disappear once Covid is over.” **Mike Chen**, director of portfolio management and sustainable investing at PanAgora Asset Management



» see page 16 for full feature...

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“You’re trying to capture something that’s not in the conventional accounting metrics that other factors rely on.” **Yin Luo**, head of quantitative research at Wolfe Research



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“Particularly in the money market space, where we’re really looking for very, very accurate pricing, your standard optimal Bloomberg pricing doesn’t really cut it.” **Dan Benninger**, investment platform integrator at Pictet

» see page 9 for full story...

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“There’s a really big ecosystem out there—there’s probably \$22 or \$23 billion in government funding [directed toward quantum exploration] that’s been announced globally in recent years, with maybe a little more than \$1 billion in private VC investment. There’s a lot of resources going toward building this technology and so we want to help guide that towards the opportunities that we see in finance.”

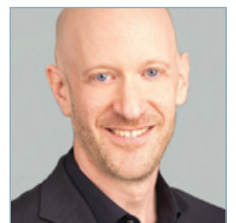
**William Zeng**, head of quantum research at Goldman Sachs



» see page 12 for full feature...

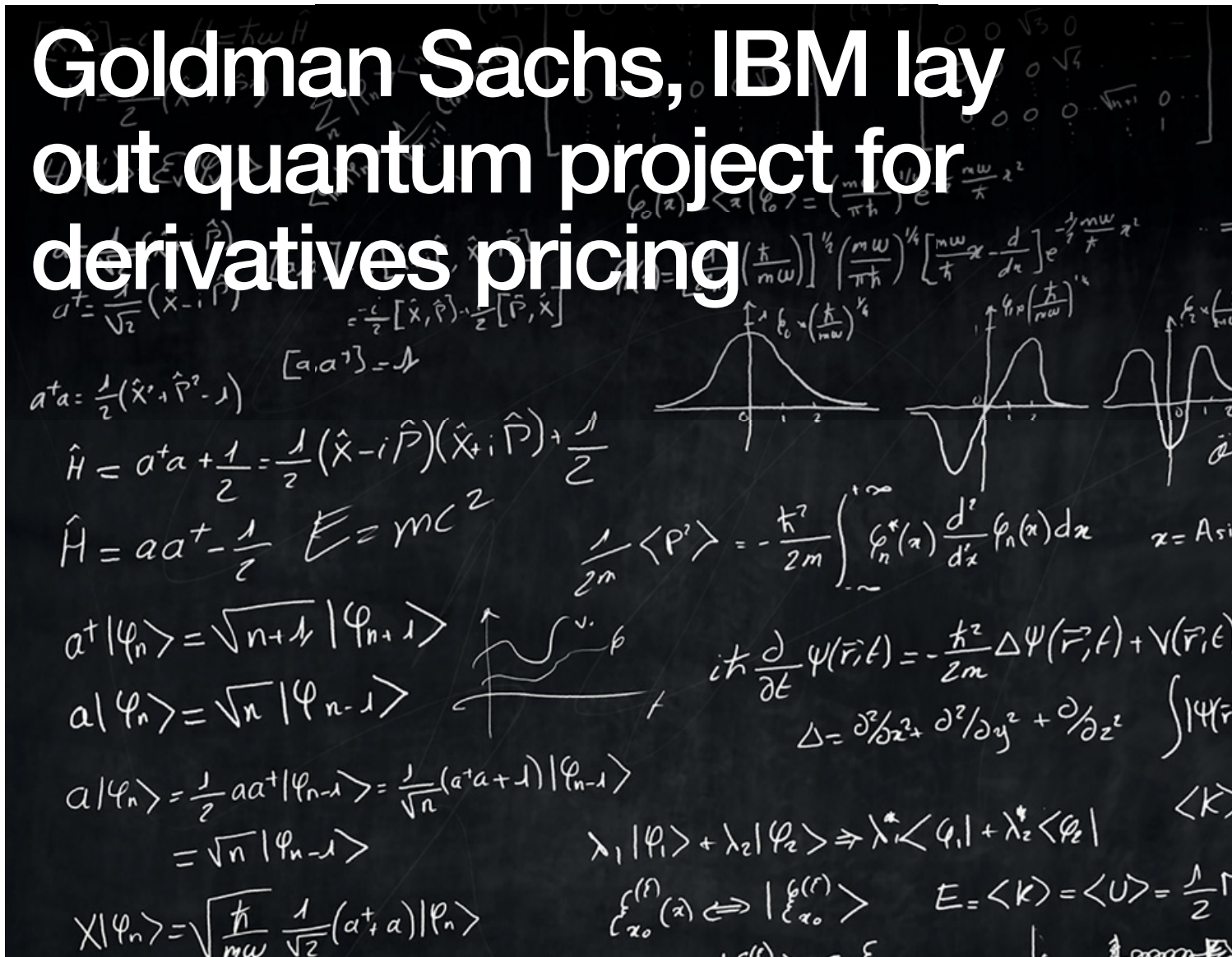
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“Everyone has client data in a CRM system. What if you could enrich your CRM system to identify which clients are ESG (environmental, social, and governance)-friendly, or which companies in a client’s supply chain have experienced Covid-related earnings disruptions?” **Matt Glickman**, vice president of customer product strategy at Snowflake



» see page 10 for full story...

# Goldman Sachs, IBM lay out quantum project for derivatives pricing



Goldman Sachs and IBM spent the better part of 2020 developing a detailed analysis of the quantum computing resources needed to achieve quantum advantage in derivatives pricing. Execs from the two firms explain why this benchmark is important for future advancements in the field. By Anthony Malakian

In the world of financial services, a lot of computation goes into the pricing of derivatives, and those derivatives themselves are becoming more complex. It's a process that could—and perhaps one day will—be improved using a quantum computer, according to executives at Goldman Sachs and IBM.

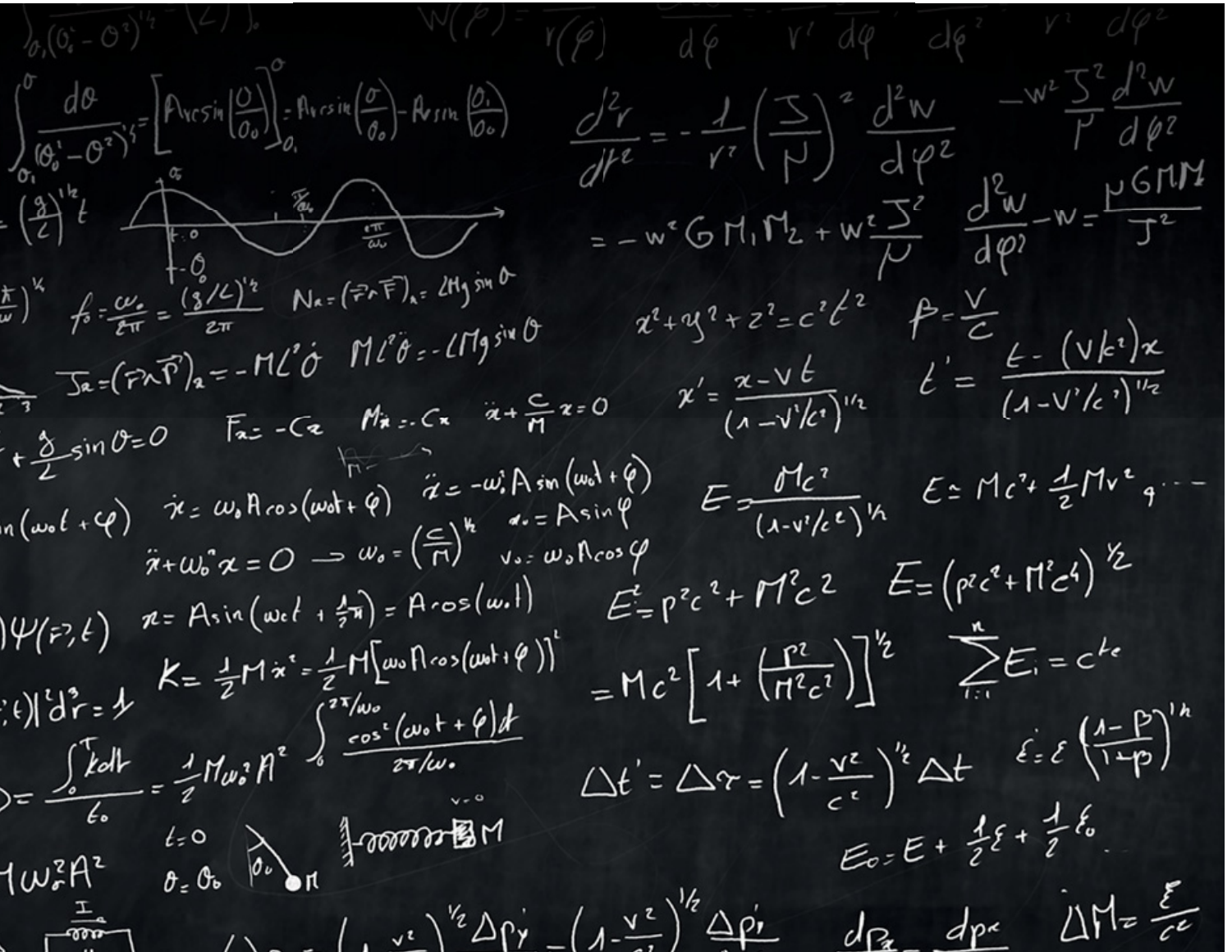
Last year, executives from the Wall Street titan and the technology giant partnered to see how this process could be improved, publishing their results in mid-December. The paper serves as the first detailed estimate of the quantum computing resources needed to achieve quantum advantage for derivatives pricing.

There are two ways that computation comes into pricing one derivative. First, trading firms have large portfolios that they need to price, and they need to understand those portfolios' risk. Today, portfolio managers traditionally use Monte Carlo simulations and other risk models to simulate how a derivative's price will change over time relative to market conditions. William Zeng, head of quantum research at Goldman Sachs, says these are often "large, overnight calculations," making it a problem of scale and time. There's also the challenge

of "real-time compute," which occurs when a client asks the manager to let them know what a particular derivative's price should be.

In the first case, the more accurately a firm can gauge the value and risk in a portfolio, the more efficiently it can allocate capital. In the second case, if a firm can accurately quote a price for a client, it can lead to a competitive advantage and increased market share. While there are several areas of finance that could potentially benefit from quantum advantage, Zeng believes this





sort of process is an achievable first step for quantum research.

“Most of the time when people talk about quantum advantage, it’s usually to allow you to compute something that you never could compute before,” Zeng tells *Waters Technology*. “Here, actually, if we do it just a little bit better, because the problem is so big, it could matter a lot. So that makes it appealing as a place to start.”

Classical computers—or the computers commonly used today to run these calculations—have computational limits, as the number of samples in a Monte

Carlo simulation, for example, would need to be increased by a factor of 100 in order to improve an estimate’s precision by an order of magnitude. A quantum computer, on the other hand, could reach the same improvement by increasing the samples by a factor of only 10, which is known as a quantum speedup, according to the researchers at IBM and Goldman.

Stefan Woerner, quantum applications lead at IBM Quantum, says they decided to start with options pricing because it was a process that could con-

ceptually achieve quantum advantage. The problem, however, was that there were never any numbers put to the concept, which this joint benchmark achieves.

“This is the first time that we have concrete numbers,” Woerner tells *Waters Technology*. “We knew conceptually that we could do this, but now for the first time we have a complete blueprint to map an option that is relevant in practice to a quantum circuit that, if we would have such a hardware available, could be executed. We are not there

yet—it will take years before the hardware reaches that point—but it's the first time that we have a full picture."

Specific to those concrete numbers, the resource estimates that it would need 7,500 logical qubits (or physical qubits in a quantum error-correcting code, which are used to protect information from errors) of sufficient distance to support the required number of operations to achieve a quantum advantage. It also estimates that 46 million gates (the operations a qubit can perform before there's a loss of information) are needed. Additionally, the researchers posit that in this scenario, quantum advantage would need quantum circuits to run at 10 Mhz or faster, assuming a target of one second for pricing certain types of derivatives.

Woerner says this is an initial milestone, and they expect these numbers

will improve "quite a bit over the coming years."

### Miles to Go

As both Zeng and Woerner note, these are important first steps to document, but it doesn't mean that commercial quantum computers are going to be available anytime soon. Quantum computing, which was born out of the realm of theoretical physics, is complex and stuffed with specialized definitions and terms.

The research field—especially as it pertains to finance—is nascent. And because the researchers still have a long way to go before true quantum advantage takes hold, quantum fatigue is setting in at some banks.

Back in October, Jezri Mohideen, global chief digital officer at Nomura's wholesale business, told *Waters Technology*

sibling publication *Risk.net* that the bank may wait before becoming an adopter.

"Two years ago, I was a lot more bullish, and I felt the evolution would come through a lot faster," he said. "Practical quantum computers can't be used for a lot of tasks that we typically face in 98% of financial domain applications."

And the head of digital at one investment bank said, "It always feels like we're two years away from a real quantum use-case. The order of magnitude of the efficacy of the processing just wasn't where everybody thought it would be."

While speaking on the *Waters Wavelength Podcast* in October, Bill Murphy, former CTO at Blackstone, had this to say: "Most of the problems that we're solving with technology today are not what quantum is good at. [Capital markets firms are worried about] connecting workflows and processes, and



**William Zeng**  
Goldman Sachs

## Quantum exploration

"What's the point?" This question could be used as a response to any number of questions and directives, but in this case it has to do with quantum experimentation.

In October, *Waters Technology* published a story documenting some of the "quantum fatigue" setting in at banks. Off-the-shelf quantum tech is still years away, leaving some bank executives to question why they're taking the time to invest in quantum experimentation today. "Two years ago, I was a lot more bullish," said Jezri Mohideen, chief digital officer for Nomura's wholesale businesses. And as coronavirus-related challenges have diverted staff and resources toward more pressing day-to-day needs, some innovation projects are taking a back seat.

Others view these initial projects as vital to the advancement of quantum and making sure that when these computers are one day available, they are built so as to fit the needs of financial institutions. "It's a voyage of discovery that could lead to radically novel solutions for some of today's greatest computational challenges," said Lee Braine, director of research and engineering at Barclays.

William Zeng, head of quantum research at Goldman Sachs, agrees.

He says the quantum research group at the Wall Street giant "really just got started" last year on its exploration of this bleeding-edge technology. He says there are a lot of hardware providers—including IBM—that are looking for targets for their development roadmaps. Zeng and his team want to show that there are a lot of applications in financial services that provide for great targets for quantum advancement, but they have to prove that with concrete numbers. This recent project with IBM does just that for derivatives pricing.

Additionally, he says, if banks can show the use-cases and benefits for quantum advancement in finance, there is a lot of public and private funding and grants that are targeted specifically at quantum computing. Finance doesn't want to fall too far behind in the funding and discovery race, because that means that when quantum becomes a reality, they will have to play catch-up and that funding might have dried up by then.

"There's a really big ecosystem out there—there's probably \$22 billion or \$23 billion in government funding that's been announced globally in recent years, with maybe a little more than \$1 billion in private venture capital investment," Zeng says. "There are a lot of resources going toward building this technology and so we want to help guide that toward the opportunities we see in finance."

The National Quantum Initiative (NQI) Act was signed into law in the US in 2018. The legislation aims to help lay the groundwork for quantum advancement and commercial quantum computers. As Dr. Charles Tahan, assistant director of quantum information science at the Office of Science and Technology Policy, told federal technology news outlet *Nextgov*, they first must better understand for which applications quantum computers can be used.

"I would say in five years, something we'd love to see is ... a better idea of, 'What are the applications for a quantum computer that's buildable in the next five to 10 years that would

be beneficial to society?'" Tahan said. Through the NQI, the Department of Energy has announced up to \$625 million over the next five years to establish two to five multidisciplinary Quantum Information Science Research Centers. Additionally, the White House's 2021 fiscal year budget includes \$860 million invested within two years for quantum development.

These are just a few examples of public funding for quantum development—and that's just in the US—but there are a range of industries that will be fighting over these funds, including medical and health care, cybersecurity, defense, and energy. The financial services industry is going to have to coordinate its attack if it wants to wet its collective beak.

Also, while quantum computing might be moving into the trough of disillusionment for some, there are reasons to believe that the scientific community is actually heading into a period of renaissance. First, there's the money. Increased funding and decreased regulation can lead to rapid advancements—the fact that Covid-19 vaccines went into people's arms before the end of 2020 is proof of that.

Additionally, as funding is poured into this space, other scientific disciplines are taking notice and joining the fray. At the same time, the academic community is growing and the first generation of students graduating with degrees specific to quantum are filtering into the job force.

"There are a lot of really smart people in this field, but the pond is still very small—we're still in early days," Zeng says. "The first master's degree programs and programs in quantum engineering are just happening now. The amount of global brainpower that is going to start to look at the problems faced here is going to increase very dramatically as the potential becomes more concrete. There are things that are open questions, that haven't been ruled out, that could be found."

For example, quantum error correction—which is used to protect quantum information from errors due to de-coherence and other forms of quantum noise—can be done completely differently, Zeng says, as outside disciplines can bring in new kinds of algorithms. "The growth of the field is very rapid right now," he says.

Stefan Woerner, head of quantum applications for IBM Quantum, worked with Zeng's team for their first benchmark report on derivatives pricing, and he agrees with Zeng, adding that as more brainpower enters the field, advancements could quicken.

"People from mathematical optimization are now starting to look more and more at quantum computing as one tool to solve that problem," Woerner says. "It's growing out of theoretical physics, where it originated, into all these different application fields. This can give the whole field a boost by having not only more brain power, but also way more diverse brain power with completely different points of view and angles to approach a problem. I think it will be really exciting seeing that continue."

Now is not the time to sit on the sideline. If banks fall behind in the race, and the tipping point for quantum advancement tips quickly, they could find that the gap between their classical computers of today and everyone else's quantum computers of tomorrow has turned into a canyon.

—Anthony Malakian





making things more efficient—those types of things. So I think quantum computing can be revolutionary in the right circumstances, [but] sometimes the marketing is like, ‘It’s going to change everything tomorrow,’ and that’s not really true. It could potentially change a few things a huge amount, and we should pay attention to that and take advantage of it, but it’s not the silver bullet to solve every technology problem.”

Zeng says he has faced similar questions as to how long it will take to reap rewards in this field, but he stresses that this early work is a critical foundation for answering those questions. To take quantum computing out of the abstract, they need specific numbers that can be worked and improved.

“Right now it’s, how do we make this really concrete? Let’s get concrete applications, roadmaps, and estimates, and *then* once we start to think about production—which comes after that—I’ll be excited to see us get there, but we’re not there yet,” he says.

Going forward, Zeng says there are three broad categories that suit quantum exploration in finance.

First, there’s the field of simulation, which is where derivatives pricing falls, but there are also many risk calculations where the bank would like to better understand probabilistic behavior and how calculations can be modeled more accurately. “That’s a big category and there’s a lot that falls in there,” Zeng says.

The second category is optimization, such as portfolio optimization. And in the third group there’s quantum machine learning. “[With] the first two, we have a pretty clear handle on theoretical quantum computer science—at least on the first advantages—and we also have pretty concrete classical applications,” he says. “Machine learning is of interest, but it’s a little more nascent. ... There has been some interesting heuristic work and motivating intuition, but quantum machine learning is a much younger field than optimization and simulation.”

In addition to building out its own hardware and developing more stability around qubits, IBM has partnered with other financial institutions,

including JP Morgan, Barclays, and Wells Fargo. Woerner says his team is looking at understanding algorithms used for optimization—trying to come up with a theory that shows when to expect a quantum advantage there—and understanding what approximations a quantum computer could achieve.

He also notes that growth in the field of quantum computing has been rapid, but more importantly, the research is now crossing disciplines, which could help accelerate advancement.

“People from mathematical optimization are now starting to look more and more at quantum computing as one tool to solve that problem,” Woerner says. “It’s growing out of theoretical physics, where it originated, into all these different application fields. This can give the whole field a boost by having not only more brain power, but also way more diverse brain power with completely different points of view and angles to approach a problem. I think it will be really exciting seeing that continue.” [wt](#)



**Stefan Woerner**  
IBM



# Cohesion on ESG standards still elusive, despite Biden win



While many expect the new president to take a bullish stance on environmental issues, it's unclear what a new dispensation can do for the dilemmas around ESG standards. By *Rebecca Natale*

Over the past five years, active managers have seen increased interest from investors in environmental, social, and governance (ESG) issues and recent history is likely to accelerate that trend. US President Joe Biden campaigned on a very ambitious climate change agenda, and in January he made

good on a pledge to re-enter the US in the Paris Climate Agreement. At the same time, the past year was marked by a new awareness of inequality and injustice, following the tumult of the coronavirus and racially charged protests in the US.

So firms expect to enter a new era of heightened focus on ESG investing, but however high the hopes for ESG products under a Biden administration, the relatively young field remains riddled with data issues; a lack of cohesion on disclosures, practices, and interpreta-





tions; and sometimes drastically varying company ratings. Investment professionals say it will take a coordinated effort across the industry to remedy these shortcomings, as the stakes in understanding ESG issues and their effects seem to grow higher all the time.

“Before Covid-19, I think environmental and climate change issues were probably first among equals [the other equals being social and governance factors]—rightly so, because it’s really something that affects everybody, no matter if you’re rich or poor, if you

live in North Africa or the eastern part of the US; nobody escapes from it,” says Mike Chen, director of portfolio management and sustainable investing at PanAgora Asset Management, a Boston-based quantitative asset manager. “But what Covid has done is made more prominent the inequality that exists in our society in so many dimensions. Not just gender, but racial, in income, in housing.

“We’re definitely getting inquiries from potential investors, from potential clients, asking, ‘Can we come up with products that are more focused on social issues?’ Or, ‘How do you think about that?’ So I think ESG is having a moment. And, because of Covid, because of racial tensions, I don’t think that moment is going to disappear once Covid is over,” he adds.

Chen says a central tenet of ESG is its values-based approach to investing. But this approach opens up ESG’s very definition to interpretation. Different regions care about different topics and in different ways. This has been demonstrated particularly in Europe, which is the most advanced part of the world when it comes to ESG practices, according to the Morningstar Sustainability Atlas. Hong Kong is the highest-scoring non-European market, and the US ranks in the second quintile of global sustainability leaders, despite being the world’s second-largest carbon emitter.

The annual report, last released in April 2020, lacks a strong emphasis on the “S” and “G” factors, as it examines country indexes primarily through the lens of the Morningstar Portfolio Carbon Metrics. The report notes that material issues—for example, that greenhouse gas emissions are most relevant in oil and gas, while data privacy and security issues take precedence in enterprise software—vary by industry.

However, as the events of 2020 illustrated early on, some criteria—for example, healthcare benefits, paid time off, and independent boards of directors—matter across the board. Speaking to *WatersTechnology* last year, Thomas Kuh, then head of index at Truvalue Labs (prior to its acquisition by FactSet), used the term “dynamic



“Competing standards are definitely an issue in the industry for ESG, because it makes it possible to have the perception of greenwashing.”

Frances Barney, BNY Mellon

materiality,” a term coined and trademarked by Truvalue and indicates that every company, industry, and sector has a unique materiality signature that changes over time based on factors like emerging technologies and new regulations.

The shape-shifting nature of materiality explains many of ESG’s shortcomings. Issues that persist include a lack of standards around these datasets, their noisiness, that there’s a lack of history (most of these datasets only go back five to 10 years), and these signals’ behavior can change fairly rapidly. And there are instances of greenwashing, where a company markets itself as operating sustainably but with flimsy proof. And while the term “greenwashing” evokes environmentalist imagery, it can also apply to the social and governance realms. For instance, a company may claim to have racial



Frances Barney  
BNY Mellon

and gender equality in its workforce, and while this may be true when considering lower-level employees in the organization, all its decision-makers in the C-suite are white men.

The reason environmental issues may have attracted the spotlight of the ESG movement so far is that metrics like carbon emissions, water pollution, and resource use are relatively easy to quantify, albeit still imperfectly. Social and governance factors, which rest upon fuzziest concepts like employee and community sentiment, culture, and pay policies, are much more difficult to turn into accurate metrics.

“You want to pay people a living wage; you want to provide healthcare benefits; you want to have good governance, less carbon exposure—these are common definitions, broad areas where people agree. But within the agreed-upon broad areas, there are a couple things, right? How do you measure these issues?” Chen says. Returning to carbon, he says of the persistent lack of measurement standards: “Do you just measure Scope 1 [emissions]? Or do you actually measure Scope 2, or even Scope 3? And what data sources do you use? Those are still outstanding questions.”

When a company reports its carbon footprint, much of that data relies on

Scope 1 and Scope 2 carbon emissions. These include onsite emissions from facilities owned or controlled by the company, as well as emissions from purchased energy. Scope 3 encompasses the entire value chain of a company’s resources and products down the line until they decompose and become atmospheric gas. Scope 3 is roughly equal to about three times the combined impact of the other two, and is more difficult to accurately assess.

### The Best of Intentions

During a webinar in mid-December, Jeremy Brunelli, global head of frameworks at UBS Evidence Labs, applied alternative data and proprietary models to dig into some of Biden’s bullish plans for ESG investments.

As Biden has mentioned instituting solar tax credits, the group used its US Utility Solar Weather Model to gauge the percentage of sun on any given day—called sun traction—using satellite data, and understand where there’s potential for solar investment. The Evidence Lab is combining that with data from its US Solar Equipment Monitor to understand the market share by company of solar panel installation, so that as the firm follows Biden’s sentiment on solar tax credits, it can likely predict locations for installa-

## The new ESG

*Editor’s Note: This is a column written by Anthony Malakian to accompany Rebecca’s story. His opinions are not those of Rebecca or her sources.*

During the Trump administration, the US gave up its seat at the table when it comes to conversations around climate change and sustainability on a global scale. Fortunately, because former President Donald Trump was so ineffective on the legislative front, he was unable to get Congress to pass actual long-lasting laws for his anti-environment crusade. Executive orders, unlike laws, can be easily overturned, and President Joe Biden has indicated that he will dump most—if not all—of those executive orders, posthaste.

Much like global temperatures, environmental, social, and governance (ESG) is hot right now, and getting hotter. The challenge for buy-side firms is making sense of this rising sea of information. There is hope—for some, fear—that the Biden administration will introduce legislation around climate-risk disclosures for corporations and create mandates/incentives around diversity and equality.

But while Biden’s next four years as president are unlikely to be as tumultuous as the previous four years under Trump, it’s impossible to know how much success Biden will have when it comes to introducing a pro-environment and equality agenda. While Trump may be gone, as we saw during the attack on the US Capitol in early January, his voice will be heard for years to come—even if not on Twitter.

The question remains, though: Just how much will Biden’s presidency benefit the ESG industry and data providers?

*WatersTechnology’s* Reb Natale recently spoke with the chief investment officer of PanAgora Asset Management, as well as its director of portfolio management and sustainable investing, to try to answer this question. The Boston-based quantitative asset manager has been a leader

when it comes to incorporating ESG-driven principles in the investment process. Mike Chen, director of sustainable investing, said there’s already a sea-change underfoot when it comes to how clients want to deploy the E, the S, and the G for their investment strategies.

“Before Covid-19, I think environmental and climate change issues were probably first among equals [the other equals being social and governance factors]—rightly so, because it’s really something that affects everybody, no matter if you’re rich or poor, if you live in North Africa or the eastern part of the US; nobody escapes from it. But what Covid has done is made more prominent the inequality that exists in our society in so many dimensions. Not just gender, but racial, in income, in housing,” he said. “We’re definitely getting inquiries from potential investors, from potential clients, asking, ‘Can we come up with products that are more focused on social issues?’ Or, ‘How do you think about that?’ So I think ESG is having a moment. And, because of Covid, because of racial tensions, I don’t think that moment is going to disappear once Covid is over.”

This will be one of the key things to keep an eye on over the next two years before the midterm elections in November 2022: Does Biden use the bully pulpit to focus more on environmental and climate-change issues, or will he focus on inequality? Both are important, and in a perfect world, that would be the case. At the end of the day, though, a president’s time in office is fleeting, and there is only so much goodwill and political capital that can be spent.

So how will the decisions the Biden administration makes affect ESG data providers and how will buy-side firms change their ESG plans for 2021 and beyond? Is ESG a marketing tool, or is it a set of dials that can be turned to help a firm truly mitigate risk and maximize returns? The US spent four years under the rule of an administration that did not believe in climate change or inequality, so it stands to reason that if ESG data actually provides value to investors, ESG should take on greater importance under an administration that will make at least parts of it an important piece of its overall legislative agenda.





tions and which companies will benefit from them.

Brunelli said Biden has also talked about \$300 billion of research and development (R&D) investment in key tech areas such as electric vehicles, as well as a plan to install across the country 500,000 charging stations for electric vehicles by 2030. While both these plans indicate a favorable outlook on national ESG projects by the new president, it's less clear whether the next four years will have much bearing on issues of competing standards and data quality that plague the investing field.

Frances Barney, head of global risk solutions at BNY Mellon Asset Servicing, says that first adopting a shared, common language with regard to the definition and objective of ESG would offer a sorely needed sense of transparency and confidence in how the financial industry approaches ESG issues and investment strategies.

Currently, there are multiple standards for ESG, including the Task Force on Climate-related Financial Disclosures, the Sustainability Accounting Standards Board, and an initiative by

“I don't think it will ever—and it shouldn't ever—be all uniform for every entity around the world. Customization is an important part of it.” **George Mussalli, PanAgora Asset Management**

the International Business Council of the World Economic Forum and the major accounting firms—Deloitte, EY, KPMG, and PwC—that was introduced in September.

“Competing standards are definitely an issue in the industry for ESG, because it makes it possible to have the perception of greenwashing,” Barney says, adding that there's a valid concern among asset managers that existing frameworks and investment strategies don't always describe their objectives effectively.

“And this goes back to the point of language—if we're not talking about the same thing, then it might be that everybody is acting with the best of intentions, and they have a target or aspiration for a particular investment approach that

they're not particularly committing to, but does the name imply [another] particular strategy? What exactly is the intention?” Barney asks.

While it's a somewhat philosophical dilemma, it is a fundamental one, she says. And it isn't made easier by the fact that the last year muddled the concept of materiality. Before Covid-19, Barney says she hoped for greater recognition of the interconnections between all ESG factors and fundamental investment analysis.

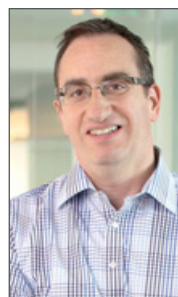
“The pandemic has painfully demonstrated that there is an interconnected web between social issues and financial issues and economic issues and health issues and labor relations and diversity, equal access, and to economic resilience,” Barney says. “You're one disaster away from having something that is perceived to be immaterial becoming catastrophically material.”

While it's generally agreed there will be some forthcoming level of global cohesion around ESG, striking a balance of customization and uniformity remains necessary, says George Mussalli, chief investment officer and head of equity research at PanAgora Asset Management.

“I don't think it will ever—and it shouldn't ever—be all uniform for every entity around the world. Customization is an important part of it,” he says. As an example, individuals and entities within a pension fund might have certain goals and want those goals reflected in their investment decisions, and the fund manager might have to meet several of these individual goals at once.

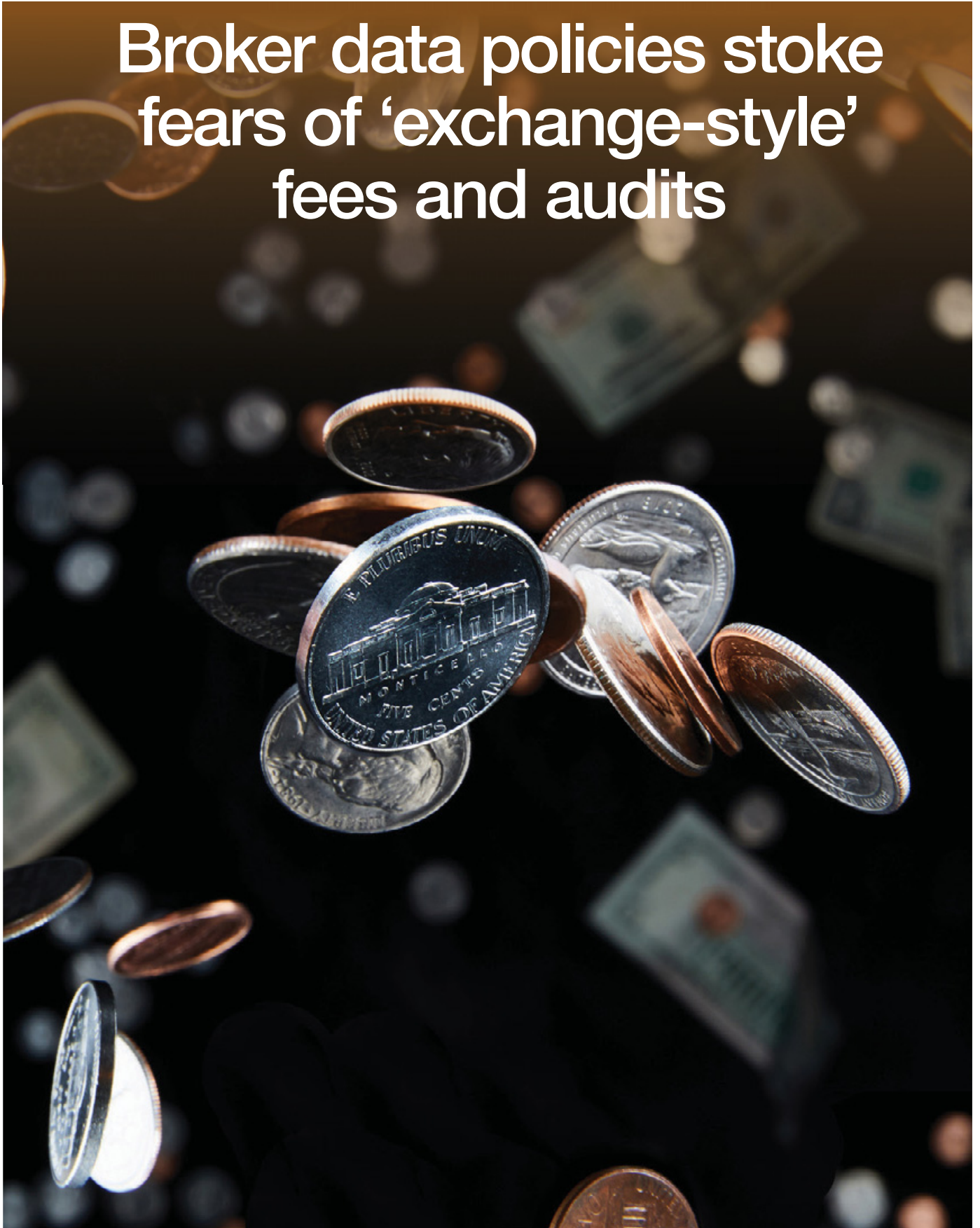
Mussalli also cautions against pushing for lawmakers and regulators to take away opportunities for choice and innovation.

“I think it's a healthy process to throw in a lot of different ways. I think the better outcome will be organic, where over time, it will gel into something where you'll see different pods of investors gravitate toward different things,” Mussalli says. “It's never a good thing when a government entity says ‘We know better.’ Between asset managers and asset owners we can figure it out better than a government entity telling us what to do.” [wt](#)



**George Mussalli**  
PanAgora Asset  
Management

# Broker data policies stoke fears of 'exchange-style' fees and audits



Interdealer brokers are looking enviously at the way exchanges have been able to grow data revenues, providing a stable stream of profits as other business lines have declined. But following the exchange model has its own challenges.

By **Max Bowie**

**A**t a time when global exchanges are snapping up over-the-counter (OTC) securities and derivatives marketplaces that have traditionally been the domain of brokerage firms, industry observers say (and not always in a good way) that brokers are conversely becoming more like exchange operators—not necessarily in terms of the markets or instruments they trade, but rather in their approach to licensing the market data generated from their broking operations.

Some of this is not a bad thing: Many brokers beyond the largest interdealer brokers (IDBs) have under-utilized their data assets over the years, giving data away only to trading clients, and ignoring potential interest from other areas within the financial markets. And those that have tried to capitalize on this interest have found themselves unprepared to handle the commercial demands of running a data business add-on, both in terms of having the appropriate commercial terms, pricing, and data-usage policies in place, and in terms of staffing, with brokers sometimes taking on additional duties for data sales.

Tom Roberts is the founder and CEO of UK-based energy, freight, and commodity brokerage Arraco Global Markets. He says that as the main exchange markets and their data become more commoditized, traders are turning to less liquid listed and OTC marketplaces to achieve greater profits, and brokers are finding their expertise in these less liquid assets—and, crucially, their data—is in high demand, and therefore more valuable than ever before.

Price discovery in these less-liquid markets is more difficult, and new entrants to these niche markets face a knowledge gap, Roberts contends. This creates opportunities for brokers who can corral and structure this information.

“We’re generating data that’s useful and that we can monetize,” he says. “And I’m not just talking about

regular Brent Crude prices—these are highly-illiquid markets that only we operate in.”

And the broker is looking to capitalize. Arraco is in the early stages of creating a dedicated data business. Currently, the broker doesn’t monetize its data directly, but makes some price data available via TMX-owned energy trading software vendor Trayport, and produces a daily “Closing Run” report of interesting trades, high volumes, and other notable factors.

“I believe that those times [of brokers not practicing audits] have changed and, currently, interdealer brokers are trying to be more like exchanges, not only by performing more audits, but also by changing how they package and sell data.” **Mike Kirby, MWK Data Services**

“I’ve been talking to our board about how we can use our data to attract interest in the markets that we broker,” Roberts says. “So we’re definitely exploring it—the question is, how do we make our data available to clients.”

Arraco is far from the only IDB trying to figure out an appropriate data-monetization scheme.

### Stick and Carrot

To sell their data to a wider audience and protect the value of that data, brokers need to establish policies and processes. The fear, though, is that they may follow the kinds of policies that have been established among exchanges.

These policies are often geared toward generating higher data revenues for the source, and to protect those revenues, exchanges use the stick of a data audit to keep users in line. Audits scrutinize a client’s data usage for any evidence of use beyond the strict terms of their contract, but they can be time-consuming and operationally burdensome for clients.

Today, Frank Desmond is the director of data advisory for FXD Data, but prior to that he was CEO of TP Icap’s Data and Analytics division and was global head of content at Reuters before that. He says that while exchanges were “the original architects of audits,” IDBs are taking notice and staffing up. “I’ve heard in the market that certain large brokers have been increasing their auditing capacity.”

Mike Kirby, managing director of MWK Data Services, has more than 30 years of experience working at IDBs,

including 20 years in senior data roles at Prebon Yamane and subsequently Tullett Prebon Information as head of the Americas, where he served alongside Desmond. He says that historically, auditing was “not something IDBs ever really did.” This is set to change, though, because he says brokers see how exchanges have turned data sales into a substantial percentage of overall revenues, and want to follow suit.

“I believe that those times [of brokers not practicing audits] have changed and, currently, interdealer brokers are trying to be more like exchanges, not only by performing more audits, but also by changing how they package and sell data,” Kirby says.

As an example, he says IDBs are now becoming more granular in how they break down metrics like derived data redistribution and index/benchmark creation. “They are under great pressure to increase data revenues,” he says.

Aaron Garforth echoes this sentiment. The co-founder and CIO of exchange



**Mike Kirby**  
MWK Data  
Services



data policy information provider Axon Financial Systems, and chief content officer at parent company TRG Screen, says his company is having more conversations over the last few years with brokers looking to monetize their data.

“Some are taking a lead from exchanges as they realize their data has value for other uses beyond just trading with them,” he says. “For example, we were talking with one broker that was initially keen to follow exchange best practices, but the person in charge needed to achieve a revenue target.”

To further highlight the point, some industry observers are concerned that the largest IDB, TP Icap, may be adopting a more aggressive approach to enforcing licensing after hiring Eric Sinclair, former head of data at Canadian exchange TMX Group.

Over the past two years, the broker has also hired other former exchange data executives, including Caroline Watson, former head of the customer compliance unit at Deutsche Borse, as chief data compliance officer, and Noemi Lusztig, who was named Watson’s deputy. Lusztig was previously a sales manager in the Intercontinental Exchange’s pricing and analytics department, and she had spent more than 11 years as director of market data at the Budapest Stock Exchange.

Sinclair tells *Waters Technology* that these hires are part of a strategy to grow TP Icap’s data business overall. Over the last three years, the firm has hired 20 employees in product management. Included in these new hires is Jonathan Cooper, who was named global head of sales in 2019. Cooper has previous sales experience at S&P Global Platts, FTSE Russell, TradingScreen, and Bloomberg. Sinclair says Cooper will continue to add resources this year to focus on segments including the buy side, corporates, and energy and commodities markets.

“We have hired proven people from a variety of organizations, including market data vendors, benchmark and index providers, risk management providers, regtech solutions [providers], regulators and exchanges,” Sinclair says. “Given that the other industry sectors have more experience in market data relative to the IDBs, we accelerate our learning from hiring experienced veterans.”



**Aaron Garforth**  
Axon Financial  
Systems

He says that rather than seeking to emulate exchanges, the brokerage industry is simply playing catch-up to data vendors and exchanges. He believes that these companies are “much more advanced than the IDBs in terms of commercial practices relating to data.”

Having recognized this, TP Icap is addressing the issue by making strategic hires, such as adding Mark Ellul as head of commercial policy. Ellul is the former head of sales for StatPro’s StatPro:Source unit. He has also held senior partnerships and sales roles at the London Stock Exchange Group (LSEG) and Rimes Technologies. “We’re going further in terms of shaping a new future,” Sinclair says, which includes new types of policies to serve new types of data consumption, such as cloud distribution.

### Different Strokes for Different ‘Brokes’

Because of its dominant market share, TP Icap may be suited to adopting a model similar to exchanges, which typically have monopolistic features insofar as they control trading in certain instruments—and, therefore, their market data—whereas the broker space has traditionally been more competitive, says one former broker data executive, who adds that each commands a different skillset.

“The further away you get from cash, the more complicated the instrument becomes, and if you’re selling to an analyst or someone in independent price verification, you need to understand the product—because they will,” says the source, speaking anonymously because his current role involves consulting with various brokerages. “Selling cash equities data has always been more about taking orders, while derivatives has always been a harder, more sales-oriented business.”

However, this model is changing. Regulatory bodies around the globe are taking harder looks at exchange monopolies and data practices, but at the same time, the IDB universe has seen significant consolidation, leaving the largest institutions—including TP Icap (itself the result of consolidation between various brokers over the years, most recently Tullett Prebon and Icap), the combined BGC–GFI, and Tradition—to command a more dominant share of the market.

As a result, Suzanne Lock, founder and CEO of EOSE Data, which helps data owners set up their own data businesses, says it’s not surprising that brokers would start to behave more like exchanges when it comes to licensing data. Lock, who in previous roles conducted audits for an exchange and spent 13 years in data product management and sales roles at interdealer broker Tradition, adds that unlike exchanges, the complexity of how data on OTC asset classes is used also makes it harder to establish standard data policies.

“It really does vary customer-to-customer. You can’t ‘rinse and repeat’ with the same license and policy, because every use case is different. The use case for foreign exchange is different from commodities. The users are different, and how the data is used is different,” she says, adding that she doesn’t recommend heavy-handed audit approaches to data owners who are trying to be agile about getting their data to market—especially since under-reporting is now rarely intentional, and usually results from mis-interpreting descriptions within contracts. “If you ask the right questions, you often get better answers than an audit, where a client might be trying to hide any mis-use.”

During his tenure at TP Icap, FXD’s Desmond says a collaborative approach always yielded better results, and that while the firm always reserved the right to audit, it only exercised that right sparingly and in extreme cases where clients were clearly breaking the rules around how they used the broker’s data. “When working with content owners in this area, my advice has been to follow a more collaborative, less confrontational approach. Overly aggressive tactics have, in certain circumstances, proved counterproductive.”

### ‘Just Good Business’

So while the introduction of formal policies by brokers might make clients worry that fees and audits will automatically increase, many say it’s just good business, and that regardless of a broker’s plans, anyone in the business of providing data to others should have a proper licensing process in place, says Mark Schaedel, a former NYSE and



**Eric Sinclair**  
TP Icap



**Mark Schaedel**  
DataBP

Markit exec who is now serving as a strategic advisor to DataBP, a company that builds client-facing marketplaces for organizations to automate data sales activity.

Beyond protecting revenues, there's another reason why audits are likely to become increasingly more commonplace for IDBs: intellectual property, says TP Icap's Sinclair.



**“When working with content owners in this area, my advice has been to follow a more collaborative, less confrontational approach. Overly aggressive tactics have, in certain circumstances, proved counterproductive.”**

**Frank Desmond, FXD Data**

“Before a broker can diversify its revenues, it needs to know where its data is going, and to manage those customer relationships. That’s the stage at which we see most companies at the moment,” he says. “Without that baseline, you can’t have any kind of negotiation with clients around compliance.”

A broker’s role as an intermediary is built on relationships, and therein lies the rub—implementing new data fees and restrictions on how their data can be used, while necessary, can be tricky and place strain on client relationships, especially where the usage of data has become more complex, Desmond warns.

“Counting ‘bums on seats’ used to be a pretty straightforward exercise,” he says. “But if you take broker data being used in complex IT environments such as risk management and other downstream activities around the world, then an audit can become fairly intrusive, often involving very sensitive underlying client systems. And if the relationship with the client is not strong, it can create or exacerbate a situation.”

However, he adds that in cases where a client is not deliberately misusing or misstating data usage, an audit—conducted properly and with the findings presented openly and transparently—can provide a useful tool for the client to obtain and allocate budget to fix the problem. And in the “limited situations where there is a failure to engage or indeed comply with agreed usage rights,” an audit can justify “harsher measures [that] may be necessary to protect the content owners’ commercial interests,” he adds.

“Licensing of IP—which is effectively what proprietary data is—is well understood and accepted in a whole host of other industries, be it film, media, whatever. Data is no different,” he says, adding that “in a world where data is increasingly important and valued, scrutiny about how data is used should be understood and welcomed.”

One audit specialist already sees evidence of brokers more strictly managing their licenses, and they expect this to increase, especially since some usage trends seen among exchange data customers should also impact demand for broker data.

The source says that today about 20% of exchange-data clients are paying for application usage of data—a far cry from what that number should be. “Since this [data] would be used by everybody calculating risk in real time to meet regulatory requirements, that figure should be higher—more like 80% or 90%,” they say.

**T&Cs Need TLC**

Identifying these instances can be a challenge at the best of times, but especially when each marketplace’s terms and conditions differ. And despite some industry efforts to standardize exchange contracts, these remain largely individual, and use different definitions, creating confusion among clients. So even though brokers may want to follow exchanges’ examples on commercializing data, getting the fine print right may still prove a challenge. And if exchanges don’t offer the best-practice

model for brokers to follow, where should they look for guidance instead?

Clearly one benefit of hiring former exchange staff, like TP Icap has done, is that they bring with them a working knowledge of how exchanges structure and enforce agreements. But while it may appreciate exchanges’ abilities to generate revenues from data, that doesn’t mean the broker will go about it the same way.

In fact, Sinclair says he believes that end-user subscriptions will be “less significant over time,” and as such, TP Icap is “unlikely to make this a core part of our license policy,” calling it an exception and not the norm for the firm’s business model going forward. “Instead, our priority is to consider new use cases, including commercial policy relating to meeting our clients in the public cloud,” he says.

But whatever strategy a broker employs towards licensing, Arraco’s Roberts says it’s important that policies make it clear that data has a cost, and that those costs are easy to understand. “You have to establish at the start what purpose the data is for, and what is being asked of it,” he says.

**New Normal? More Like No Normal**

In reality, there is no “norm,” with brokers mostly appearing to forge their own paths independently of one another. In fact, some are still grappling with updating legacy contracts to be able to properly manage the agreements they already have, let alone embarking on new initiatives.

“Brokers don’t have standardized contracts,” the audit specialist says. “The bigger IDBs are trying to standardize those internally to level the playing field so that they don’t have some clients with special deals, because it’s hard to manage if you have one set of rules for Bank A and a different set of rules for Bank B. It makes customers’ lives easier, but the main driver is that it makes the brokers’ lives easier.”

Beyond standardized contracts, brokers face a potentially larger obstacle toward monetizing their data, in that they don’t always know fully how their own data is even being used, adds Axon’s Garforth.



**Frank Desmond**  
FXD Data



“You can’t ‘rinse and repeat’ with the same license and policy, because every use case is different. The use case for foreign exchange is different from commodities. The users are different, and how the data is used is different.”

**Suzanne Lock, EOSE Data**

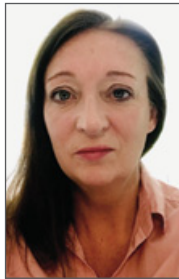
“Brokers seem to be working in a bit of a vacuum,” he says. “Broker data has typically been delivered and contracted via vendors like Refinitiv, so a broker doesn’t always necessarily know everywhere that their data is being used.”

And that’s key: Once a broker realizes its data has value, it needs to obtain an understanding of how its data is being used, so it can determine the appropriate level of controls to put in place, and create policies and pricing structures that address all the use cases for its data.

James Watson, global head of sales at TraditionData, the data arm of inter-dealer broker Tradition, argues that this is where his company is looking to create a differentiated service. He claims to be taking a different route from other brokers, by unbundling data packages and selling data a-la-carte on an “iTunes-style” model where consumers can buy their favorite songs without having to purchase an entire album.

Watson devised the strategy with global head of TraditionData and CEO of the broker’s swap execution facility (SEF), Scott Fitzpatrick, with whom Watson had worked earlier in his career at rival broker GFI. Once reunited at Tradition, the pair set out to differentiate Tradition’s approach to data from its rivals.

The strategy works both ways: It allows clients to add data as needed, without having to sign up for more expensive bundles just to obtain one specific dataset, but it also allows them to turn off specific datasets, rather than renegotiating their entire spend with the broker. “If you’ve already integrated the right pricing and support model, then if a client needs to cull data from other sources, they just come to you for advice,” Watson says.



**Suzanne Lock**  
EOSE Data



**James Watson**  
TraditionData



One area where the new model almost hit a snag was the broker’s relationship with data vendors that traditionally served as the sales and distribution network for its data. Vendors have traditionally provided a conduit to end users for brokers’ data. Where data is particularly valuable, vendors have signed exclusive distribution agreements for sought-after datasets, but in many cases, brokers—especially those beyond the bulge-bracket IDBs—did not derive large revenues from vendor relationships.

“In the past, we’d been very dependent on vendors for sales and distribution, and arguably our business model was over-weighted in favor of the vendors managing the end-to-end process, so we got some push-back from the vendor salespeople when we started talking directly to the clients about content,” Watson says.

So TraditionData had to undertake an education campaign, explaining that the broker wouldn’t undercut the vendor and that they would still sell Tradition’s data over the vendor’s platform. The vendors have since come on board, he says. “In addition to expanding our ability to provide data to customers directly, we have worked well with the vendors and their global sales teams to improve that working model and how efficiently we engage with them.”

### **Size Matters, So Does True Value**

Watson says any broker must first determine what makes its data unique versus what is commoditized. From there, it can then assess the true value of that data, and what the broker can charge for it. Once it has determined that “true value” price point, it must then decide how much it is willing to give





up to a vendor or partner to distribute the data, if the broker itself is unable or unwilling to create its own direct sales organization and delivery mechanisms for its data.

How long it takes for a broker to get to a point where it can feel confident that its data is both generating revenue while protected against abuse depends on how far along they are in the process to begin with.

Once a broker has established its policy, it needs to enforce the execution of new license agreements with clients who receive the data, regardless of whether they have a trading relationship with the broker, and that the license clearly explains what restrictions are placed on the data.

Of course, as one of the largest IDBs, Tradition can afford to throw its weight around. But what about smaller brokers

that in the past haven't had the heft to command fees for their data—or have simply chosen not to charge for it—but now see it as an important potential revenue line?

This is part of what Kirby's advisory firm aims to help rising brokers address. "If a broker is looking to grow its revenues from market data, I would want to ensure it has an extensive policy document to provide to subscribers, which is reflected in its license, and which includes audit rights, regardless of whether or not they plan to use those rights ... but so that, for example, if the broker thinks someone's usage doesn't reflect what they're paying, the broker has the right to protect itself," he says.

And in this respect, though end-user firms are those that end up subjected to audits, Kirby says brokers must first make sure their own house is in order



**Tom Roberts**  
Arraco Global  
Markets

and that their staff are not contributing to clients' non-compliance, such as ensuring that brokers, as well as clients, are fully aware of new policies, and know not to distribute proprietary and fee-liable data—such as pricing spreadsheets—to clients as they might have in the past.

"That's what I would advise to help brokers generate revenue from market data: First, stop giving it away, or maybe only give it to those doing more than a certain amount of business with you every month. And second, exercise control: If a client sends your data to the wrong person, or even sends it to another broker to get a better price, that would be a breach—if you have a policy in place," Kirby says. "You can still be a nice guy about it. You're just doing things properly." [wt](#)

# Quants find new ways to identify innovative companies

Buy-side firms are using patent and other types of data to discern trailblazer companies from phonies. By [Rob Mannix](#)

**W**irecard's executives presented the German payments processor as a technological pioneer. Yet the since-disgraced company held just one patent when it filed for insolvency last June.

US rival PayPal, which operates in broadly the same space, has more than 500 patents, according to data from Quant IP, a firm that produces innovation scores for companies. Several Wirecard executives are now being investigated for fraud and stockholders have been wiped out.

The potential gains from identifying innovative companies and avoiding fraudulent, or merely

slow-moving firms has prompted quant funds to use systematic strategies based on patent data.

Investors in aggregate tend to undervalue inventive companies because putting a price on smart ideas is difficult, quants have figured. Identifying and buying shares in the most innovative companies should therefore outperform the market over time. Technological dawdlers and the makers of inflated claims should fall behind their competitors. Shorting those stocks would make sense, too.

Quants have mostly relied on raw counts of patent filings to make these strategies work. Progress has been stuttering at times. An exchange-traded fund (ETF) launched by Claymore Group, now part of Guggenheim Partners, to invest this way ceased trading in 2012 due to a lack of investor interest.

Counting patents as a proxy for innovation has an obvious drawback: Some patents are much more valuable than others. Innovative companies may have only a handful of patent registrations, but they could be disproportionately useful



inventions. Some clever businesses hardly generate any patents. It's hard to see how Amazon would patent its cloud technology, one expert points out.

Quants are using new techniques to overcome the limitations of raw patent counts. They have begun fashioning more advanced signals from the patent data and are looking at alternative datasets, such as research and development and even visa applications, for clues as to how ingenious or not a company might be. Investors are trying to see the bigger picture, explains Chashaka Wimalaweera,

“It is a tangible way to quantify intangible assets.” Yin Luo, Wolfe Research

an analyst at alternative data research firm Neudata. “They are trying to map the patent landscape,” Wimalaweera says.

### Buy signals

Wolfe Research, which licenses quant models to investor clients, uses the number of times a patent is cited as one indicator of its value. The more useful

a patent, the more likely another firm will cite the innovation in its own applications, says Yin Luo, Wolfe's head of quantitative research.

Wolfe's model also creates a diagram of patent cross references—a map of interconnectedness between firms. The closer a company sits to the center of the network—the more it is getting cited by other businesses that are also innovating—the stronger the signal to buy.

“It is a tangible way to quantify intangible assets,” Luo says. For now, the model covers only public companies in





**“This year, and especially around March, a lot of the focus in the market has been on companies that are relying on technology or are more adapted to operating online.” Vinesh Jha, ExtractAlpha**

the US. But Wolfe is collecting patent filings from patent offices in the EU, Japan and China to replicate its model elsewhere.

Buy-siders hint at similar exercises. Vladimir Zdorovtsov, director of global equity research at Acadian Asset Management, says the firm has used quant signals related to innovation in its investing for some time and is investigating new ones.

“Some fall under the rubric of intangibles, both direct and indirect,” he says. Indirect intangibles refer to signals inferred from raw patent data. Experts elsewhere talk of tracking hot technologies in which filing activity is greatest, for example, and investing in those areas. “Other [signals] help unearth hidden connections between firms which may otherwise look unrelated,” Zdorovtsov says.

Quant IP looks at whether patents cite old or new innovations. Patents and citations in pioneering areas are scored as more valuable.

### Alternative Citations

A second way to tell genuine innovators from fakes is to combine patent data with additional information. Abraham Thomas, chief data officer at data provider Quandl, says the vendor has added merger and acquisition data to patent data to help value portfolios of intellectual property (IP). By looking at what companies have paid in acquisitions, Quandl can estimate the value of a target’s patents. “One or two” hedge funds are doing this in-house, he says.

In cases where no valuation data exists, quants are able to sift filings using natural language processing (NLP) to find similar patents for which a value is known, Thomas says.

A third possibility is to look at licensing data. In the US, public companies must disclose their licensing agreements. Alan Kwan, an assistant professor at the University of Hong Kong, has found that

markets react slowly to licensing disclosures, implying that savvy investors can turn a profit simply from buying stocks after announcements. Stocks climb about 3% in the month after a licensing deal is declared, Kwan’s research revealed.

The delay in repricing stocks is explained by corporate secrecy on licensing agreements, he says. “Companies like to go into stealth mode before they make these announcements.” It takes time for investors to work out what a company has done once the information is disclosed.

A fourth means of finding the most innovative firms ignores patents. ExtractAlpha, a specialist in creating tradeable innovation signals for buy-siders, monitors applications for work visas. This approach identifies the companies that are aggressively hiring for technical roles such as data scientists.

### The Proof Is in the Performance

All of these approaches are only valid if they produce benchmark-beating returns. By that test, 2020 has been an encouraging year. Wolfe’s innovation-driven model trading long/short in stocks is up 4.1% year-to-date. A Quant IP mutual fund has beaten the MSCI World Index by 9% since January. ExtractAlpha’s long/short factor is up 55% year to date, though that figure does not account for transaction costs.

“This year, and especially around March, a lot of the focus in the market has been on companies that are relying on technology or are more adapted to operating online,” says Vinesh Jha, ExtractAlpha’s founder. The most innovative stocks plunged with the market in late February and March, but their fall was smaller than the declines of duller stocks. “We’ve seen a trend of more innovative companies and industries outperforming roughly since 2013, with a huge acceleration this year.” During the Covid turmoil in March, the strategy experienced “no discernible dip,” Jha says.

A cynic might say 2020’s rally in big tech stocks propelled the innovation-seeking strategies to success. Yet they also outperformed when the market reversed in November. Wolfe’s strategy was down only 1.8% in the month that the first vaccines were revealed to be effective. The strategy had limited losses even though there was a 10-plus standard-deviation rotation in some equity factors that favored cheap old-economy stocks over more recent winners.

“The model has proved to be remarkably robust at market turning points,” Wolfe’s Luo says.

Likewise, Jha’s innovation model hardly faltered at all in November. Innovative companies are present in most parts of the economy, he says. Businesses such as Regis Corporation—an operator of hair salons—and Children’s Place—a clothing company—rallied 20% or so on November 9 when markets pivoted sharply. Both score in the 90s on ExtractAlpha’s one-to-a-hundred measure of corporate innovation.

### Why ‘innovative’ works

There are three reasons why stocks of innovative companies can be expected to beat the market.

Alan Kwan, an academic at the University of Hong Kong, thinks innovative companies get underpriced because stock analysts won’t make bullish calls on companies that might amount to nothing.

Instead, they fixate on earnings. “The market cares about making sure it can predict company earnings because earnings are what the investor takes home,” he says. “But these companies aren’t earnings stories. They’re long-term bets on a technology. The market is afraid of picking winners when the vast majority of innovative firms go bust.”

Second, the companies themselves are trying to hide their successes. Studies have shown that innovative companies tend not to report research and development. This is known as the information paradox: A company that discloses information about a technological advance devalues its own work by revealing too much about its secrets.

Third, intangible capital expenditure shows up right away as a cost on the balance sheet, unlike capital expenditure on plants or machinery that can be spread over several years under accounting rules.

R&D expenditure can make it look like a company has started spending money “willy nilly,” Kwan says. “Then the market gets disappointed.”



Even skeptics say the new ideas are worth exploring. Harin de Silva, who leads a quant investing team at Wells Fargo Asset Management, tried in the past to extract signals from numbers of patents filed, but found nothing to add to well-established factors in quant equity investing. Looking at how often companies cite the patents of other companies, though, is “very clever,” he says.

At Wolfe, Luo says patent signals are one of the top three areas of interest from clients. In the US and Europe, datasets combining patent and acquisitions data sell for upwards of \$100,000 for a year’s access, says Quandl’s Thomas. The idea is catching on in emerging markets, too. A couple of active managers in China have started collecting patent data there, Luo says.

However, there are reasons not to get carried away. Innovation signals cross over with other factors. Jha says ExtractAlpha’s model has a low correlation to value, a low correlation to

dividend yield but a positive correlation with growth and leverage.

“It’s clearly not uncorrelated to some other things, so we have to be careful about that,” he says. But if you control for other factors, “you can show this type of factor is something additive.”

Intuitively, that makes sense. “You’re trying to capture something that’s not in the conventional accounting metrics that other factors rely on,” Luo says.

Innovation signals may be especially useful in industries such as IT and healthcare, which are gaining extra interest during the pandemic. IT and healthcare valuations often rely on rapid growth, which depends in turn on research and development (R&D), which is costly and can make a company look overpriced by conventional accounting metrics, leading value strategies in particular to go short on such stocks. It’s a glitch that arguably has held back value investing strategies in recent years.

Adding signals based on innovation to value strategies could help. Innovation scores are “a way for investors to get a handle on the growing importance of IP in all industries,” says Lucas von Reuss, Quant IP’s co-founder. They also help picking winners and avoiding losers, he adds.

Von Reuss names Nikola Corp. as an example of a stock that investors would want to avoid. Nikola, a US company that builds electric trucks, holds 20 patents, according to Quant IP. Twelve are design patents bought from another company. The other eight seem not to add up to a coherent patent strategy, von Reuss says.

The Securities and Exchange Commission (SEC) and the US Justice Department are investigating Nikola for fraud. A recent report from short-seller Hindenburg Research said an electric truck showcased in a marketing video was being rolled down a hill. Nikola confirmed in a statement that the truck did not drive under “its own propulsion.” [WT](#)

# Vendors continue to move products, services to the cloud: some examples

Last year, most (if not all) financial technology providers either completed or started major projects that involved moving their products and services to the cloud. *WatersTechnology* looks at 15 of the most interesting cloud migration initiatives from 2020. By Anthony Malakian

**W**atersTechnology published over 150 articles in 2020 that touched on either a company developing or rolling out a cloud-based tool, or that focused on regulation of cloud providers and services.

Capital markets firms are increasingly embracing the major public cloud providers, specifically Amazon Web Services (AWS), Google Cloud Platform (GCP), Microsoft Azure, and IBM Cloud. And thanks to the expansion of cloud tools and platforms moving to the web, tech firms and end-users alike are leveraging APIs to deliver their services, which provides for a more connected industry in the cloud. When com-

bined, these two movements are helping to push along the desktop application interoperability movement in financial services. And, finally, while banks had previously bristled at the idea of using open-source tools, much less contributing to these communities, as they move to the cloud, that ethos is quickly changing.

To show how this great migration is unfolding in the capital markets, we looked at 15 major technology providers and projects that were either started or completed last year. This list represents

less than 10% of the stories we wrote about cloud in 2020, but it provides a good look at the benefits and challenges of making this transition. And we will be writing a lot about cloud-migration projects in 2021 ... and well beyond.

## **FactSet**

FactSet had a busy 2020 expanding its cloud strategy.

First, the vendor migrated its physical ticker plant to AWS's Amazon Elastic Compute Cloud (Amazon EC2). FactSet began the project earlier in 2020,





and expects to complete the rollout this year. It is initially running in parallel with its current ticker plant, which is hosted in multiple datacenters, including two major datacenters in the US, with local feed handlers deployed around the world to capture data locally from exchanges. Once the migration is complete, FactSet will decommission the old ticker plant.

“Cloud gives us features and functions that are cost-prohibitive in any other way—such as deploying infrastructure globally—and clients get lower latency and great quality regard-

less of market volumes. With ticker plants, you have to size for the highest market volumes, so you need a lot of capacity. And when you onboard new clients, it takes time to get infrastructure in place,” said Gene Fernandez, chief product and technology officer at FactSet. “This will allow us to onboard new exchanges very quickly and onboard new clients in a fraction of the time—and we’re going to gain a ton of operational efficiency.”

Second, FactSet partnered with Snowflake, a cloud-based and cloud-



**Gene Fernandez**  
FactSet

agnostic data-warehousing platform. Through the agreement, customers can now access 58 of FactSet’s datasets in the Snowflake environment. The release comprises 34 datasets from third parties through Open:FactSet Marketplace, alongside 24 proprietary FactSet feeds, which include fundamentals; supply chain data; geographic revenues; point-in-time consensus estimates; information on spending trends; news sentiment; and environmental, social, and governance (ESG), among others.

Additionally, while this article is focusing on projects that went live last year, we wrote this January about how FactSet has launched Concordance, a new service for performing outsourced data mapping of traditional, alternative, and clients' proprietary data. It leverages its existing operations and technology, as well as its relationship with cloud provider Snowflake to provide mapping of data stored in mutual clients' cloud environments. Visit [waterstechnology.com](http://waterstechnology.com) to read more about that project.

### Refinitiv

Refinitiv's latest release of its enterprise data platform steps up its cloud compute capabilities, and rebrands the platform from Thomson Reuters Enterprise Platform, or TREP, to Refinitiv Real-Time Distribution System (RTDS).

The name change is part of a project to eliminate instances of branding relating to former owner Thomson Reuters, but also sees the vendor roll out simplified and standardized branding across its product lines.

This version and upcoming releases already scheduled on the vendor's development roadmap add significant capabilities to support the ongoing rollout of RTDS in the cloud as an alternative to traditional client-premise deployments of its data platform, said Steve Moreton, global head of product management at technology support provider CJC.

"For the components released ... it's essentially the same software," he said. "The software contains many enhancements, however—for example, on the ADH, improvements to load balancing."

Moreton adds that one notable change is that its Advanced Data Hub component (which has been rebranded as Refinitiv Real-Time Advanced Distribution Hub), is now certified for AWS, which will help support Refinitiv's plans for rolling out RTDS in the cloud. Another small but "important and symbolic" change is support for Amazon Linux 2, an operating system designed to work best in AWS testing environments.

"The TREP/RTDS software is very mature. We support around 800 clients, and each has different configurations of

TREP—everything from low-latency, co-located clients, to those who use it to delay data for days before they access it. Wherever you are on that spectrum, you have a choice of using TREP/RTDS on a fully deployed or cloud-deployed model," Moreton. "I only know one or two firms that want to keep using on-site deployed technology. ... The multicast element is still a challenge in the cloud, but you've got to move with your firm and your CTO. And the appetite is definitely there to move to the cloud option."

### SS&C Advent

In the institutional asset management and hedge fund world, SS&C Advent is best known for the Geneva portfolio management system, the Moxy order management system, the APX client management solution, and Genesis, the company's portfolio construction and rebalancing offering. Of those ubiquitous tools, only Genesis is cloud-native. It will take time, but the plan is to move those other platforms to the cloud over the coming years.

"We'd like to do a transformation where we can offer an entire suite that is cloud-based, whether that means building additional cloud-native capabilities, or transforming some of our legacy solutions, like Geneva, to be able to plug and play with a much more open cloud platform," said Karen Geiger, co-general manager of SS&C Advent. "This would be a multi-year endeavor, but we're starting by building off what we already have with Genesis, and extending that."

While Genesis does rebalancing and order creation, Geiger said there are opportunities to expand further into the front and middle offices thanks to the platform's software-as-a-service (SaaS) delivery mechanism. More than that, though, the company is considering how to move an offering like, say, Moxy—which SS&C Advent can currently host for users—and make it a more cohesive front-to-back experience via the cloud.

Geiger said the way she thinks about this transition is a user can pick and choose which components of the Advent offering make the most sense for them. In this scenario, certain specialized

components might fit better for a hedge fund rather than a traditional asset manager, but those pieces would nonetheless "seamlessly talk to each other" so that users could scale up or down depending on their needs.

So while Genesis was the first cloud-native platform under Advent's asset management umbrella, the long-term goal is to have every platform deployed via a SaaS model.

### Charles River

Last year, it was announced that the flagship Charles River Investment Management Solution (IMS) would be deployed on the Microsoft Azure cloud platform, with Charles River also incorporating Microsoft Power BI, data visualization tool, and Microsoft Teams, a communications platform, into IMS. In April, CRD announced that IMS had "achieved platform and operational readiness on Microsoft Azure," and that the vendor was migrating "new and existing SaaS clients onto the new Azure infrastructure."

"This is one of the most important projects for 2020, and we're very pleased with the client response and the third party's work with us as well," John Plansky, CEO of Charles River, told *Waters Technology*.

This cloud migration initiative with Azure will allow Charles River to deploy system upgrades more easily and to add new products to IMS, Plansky said. Additionally, the Azure partnership is just the first piece of a broader cloud strategy, as CRD is currently evaluating other potential partners.

"We need to make sure that we don't lock ourselves in, and we already have a multi-cloud strategy at State Street," Plansky said. "Our intention is to move Charles River in its entirety to the cloud. Those systems that are closest to the front office and to the data are what we are proactively moving to a common cloud architecture. State Street does have a private cloud that we leverage as well for other solutions."

### Confluence

In 2020, Confluence completed the initial tech integration of London-based StatPro, which it acquired in October



**Steve Moreton**  
CJC

2019. Next up for the combined entity—which will operate under the Confluence moniker—will be an expansion of its offerings and client base in three targeted areas: risk analytics, performance measurement, and regulatory reporting.

But the larger goal, said Todd Moyer, Confluence president and COO, is to become a fully cloud-native and cloud-enabled platform leveraging microservices and open-architecture technology as key components of its technology stack.

“I think the biggest change you’ll see from Confluence going forward is that, to us, it’s about ease of access to our technology,” Moyer said. “If you’re dealing with legacy solutions that have heavy installs and a lot of need for human involvement, we feel like that will accelerate the necessity to move everything into a truly cloud-native platform.”

Revolution, which was StatPro’s flagship SaaS-based performance and risk measurement platform, is central to Confluence’s roadmap. It acts as a wrapper for the other acquired business units from StatPro, which include Milan-based ECPI, an ESG research and index business; InfoVest, a South African software provider specializing in data warehouse, extract, transform, load (ETL), and reporting software; advanced-risk-metrics specialist Investor Analytics; and fixed-income analytics service provider UBS Delta. For now, Confluence has decided not to sunset any of either of the companies’ components. However, it may decide to wind down certain legacy apps as it pursues its broader cloud and microservice strategies.

**Nasdaq**

Earlier last year, Nasdaq unveiled Nasdaq Cloud Data Service (NCDS), a cloud-based delivery option for its most popular market data services. It is designed to reduce the cost and time to market associated with deploying datafeeds from the exchange, and aimed at applications, web services, and visual displays.

Hosted by Amazon Web Services—though the service is cloud-agnostic and could be made available via any cloud operator—the data available includes a mix of real-time streaming and his-

torical datafeeds and datasets, including the Nasdaq TotalView real-time feed, Nasdaq Last Sale, Nasdaq Basic, Nasdaq Global Index Data Service, Nasdaq Fund Network, and the Quandl alternative data platform.

Clients access the data using an open-source software development kit (SDK) available via Github to connect to a version of Nasdaq’s data API in the AWS cloud.

“For years, when people inquired about accessing data from Nasdaq, and asked about specifics for an API, we gave them a laundry list of ways to connect to the data, which might include buying hardware, or leasing lines,” said Brandon Tepper, vice president of Americas for Nasdaq’s Global Information Services business. “But a lot of new clients and fintechs were born in the cloud, so it made sense for our data to talk to them directly in the cloud, because they’re not used to buying hardware and leased lines.”

In addition to cloud-native data subscribers, many traditional financial firms with large datacenter infrastructures that are looking to migrate parts of their business to the cloud will be able to focus more on developing their applications faster, Tepper said.

So Nasdaq decided to make its API available in the cloud, which reduces setup time from months to days, he said. “To us, having a client take months to get access to our data is a hurdle. If we can deliver it in hours or days, it reduces time to market and allows clients to get on with building their apps,” he said.

In addition to cost and time-to-market benefits, another advantage of a shared delivery is that firms using Quandl’s datasets can now access Nasdaq’s “traditional” streaming market data alongside it, Tepper said.

**SmartStream**

SmartStream Technologies is in the process of rewriting its entire solutions suite into cloud-native software so the vendor and its clients can exploit the cost and operational benefits of serverless cloud computing.

Having already released cloud-native versions of its Aurora (formerly known as Corona) digital payments processing platform and its SmartStream Air



**Todd Moyer**  
Confluence

(and just recently, Air 2) artificial intelligence (AI)-enabled data reconciliation platform, the vendor is now planning to leverage the benefits of cloud-native software across its entire lineup of solutions, said Nick Smith, senior vice president of managed services at SmartStream.

Though not yet complete, Smith said all the applications comprising the vendor’s TLM solutions suite for corporate actions processing, collateral management, cash and liquidity management, and confirmations management are all “in flow” toward being migrated to cloud-native versions.

**OneMarketData**

OneMarketData is in the last leg of its two-year migration project to deploy its data solutions on the cloud.

The vendor’s two offerings, OneTick, an enterprise platform for managing and analyzing tick data, and Tick Data, a service for historical, intraday, and time-series data, were made fully available on AWS. OneMarketData is currently building out its real-time data feed and processing capabilities—which currently support equities, futures, and options—using the cloud architecture. Users can access the data feeds through a deployed platform, as a managed service, a proprietary GUI for querying the data, or via an API, written in Python.

Although OneMarketData’s cloud journey began around the end of 2018, the planning phase stretches back much further. Jeff Banker, senior vice president of market development, said the idea sprouted when the firm acquired Tick Data in 2015, which, at the time, had already been running its entire infrastructure and data files on AWS.

“When we bought the company, it became obvious to us at the time that there was some benefits and practical metrics that would serve us well in terms of [cloud] conversion. So, we slowly started the process of aggregating all our data in AWS, then testing our software in AWS, our security processes, and so forth. So, it has been an optimization journey,” he said.

Prior to the migration, OneMarketData ran its data, servers, and solution through Equinix’s NY4 or NY2 co-location



**Brandon Tepper**  
Nasdaq



centers, or at private cloud facilities. When the firm bought Tick Data, it integrated the acquired datafeed into OneTick, making both services available on one platform, while transitioning to the public cloud.

### Xignite

Web services data provider Xignite unveiled a suite of cloud microservices for data management, storage, and distribution in the cloud. The vendor said this will help companies already moving from in-house operations to cloud storage for certain data and functions to migrate from monolithic legacy data architectures to more agile and less expensive cloud services and data sources.

Stephane Dubois, CEO of San Mateo, Calif.-based Xignite, said the company has been working on the suite of microservices, dubbed Xignite Enterprise Microservices, for around three years, and is already using them in-house to support its own data management and distribution activities.

“When you are building a cloud, you architect it in a certain way, and if you do it right, you end up building microservices,” Dubois said. “We built them out of necessity to allow us to scale, and now we are offering them to our clients.”

### HPR

While HPR established itself as an ultra-low-latency hardware provider under the moniker Hyannis Port Research, the vendor has slowly entered into the cloud space. One of the best examples of this shift was the creation of Databot, a market data distribution platform that is delivered, initially, as part of its Omnibot switch.

The offering will be available via a field-programmable gate array (FPGA) or via a software-based cloud solution. HPR will first go to market with the FPGA implementation within Omnibot. But, because Databot is built into Omnibot, which also serves as a router and pre-trade risk gateway, firms will eventually be able to purchase a software-based version of the appliance.

“Historically, we haven’t been that interested in the data market because it’s been a crowded vendor space,” said



**Stephane Dubois**  
Xignite



Tony Amicangioli, founder and CEO of HPR. “We now believe, though, that by providing leading performance and the completeness [of a service], it will allow our clients to achieve better performance, reliability, and efficiency.”

This software version of Databot will allow HPR to target large investment banks while pushing into the cloud services space. Amicangioli said that while HPR’s institutional clients predominantly use its FPGA products, the vendor is seeing a growing base for its software tools among individual users within firms.

### IHS Markit

Last year, IHS Markit rolled out a new product dubbed Risk Bureau, which aims to help buy-side firms calculate and model their risk using alternative data, machine learning, and cloud computing.

By leveraging GPUs run on the AWS Cloud and incorporating machine learning, IHS Markit has reduced the time it takes to calculate valuation adjustments (XVAs) for complex and simple derivatives portfolios by 200% to 250%, compared to traditional Monte Carlo models. XVAs include credit valuation adjustments, funding valuation adjust-

ments, collateral valuation adjustments, and capital valuation adjustments.

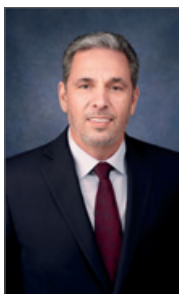
Where a Monte Carlo simulation uses a forward-looking stochastic process, Risk Bureau works backward with a regression technique. By pre-computing all the different simulated parts with machine learning, users who are plotting and moving data points around on a graph can cut the lag time associated with calculating paths of single lines down to milliseconds.

### Linedata

Linedata is moving many of its platforms to the public cloud as the company looks to shift to a continuous delivery model.

Sujit Mascarenhas, vice president of engineering at Linedata, said moving to a public cloud from a private cloud setup has been a lengthy process. The vendor is already using AWS, and it is now looking to tap into Microsoft’s environment.

One example of this transition is its Capitalstream lending and leasing software platform for credit origination and risk management. In 2019, Linedata began to take the private cloud version of the platform and code it for AWS. Capitalstream is the first platform on the



**Tony Amicangioli**  
HPR



credit side of the company to be moved to the public cloud.

Linedata also has plans to transition its intelligence dashboard interface, Clarity; its order management system, Longview; and its portfolio management system, Global Hedge, in the coming months. Mascarenhas said clients who do not want to use services on a public cloud can still use a hybrid system with both private and public cloud deployment.

### Broadridge

In January 2020, Broadridge Financial Solutions announced it had partnered with IBM to build what will be known as the Broadridge Private Cloud, aimed at modernizing Broadridge's infrastructure to provide automated private cloud services for critical workloads, while adding velocity and scale.

One early project focused on Broadridge's data intelligence platform, which caters to the corporate bonds market. Mark Schlesinger, Broadridge's chief information officer, said the platform will help buy- and sell-side firms unlock liquidity in the corporate bond market.

"This really takes the manual process out of this marketplace and brings it

online and helps clients identify natural buyers and sellers, and enable the best execution through this AI-enabled electronic trading platform," he said.

Meanwhile, on the wealth management front, Broadridge is building what it calls a next-gen platform that will rely on private and public cloud components.

### Crux

Data engineering and delivery company Crux Informatics is expanding its existing relationship with GCP by integrating its data catalog—consisting of more than 15,000 datasets sourced from more than 100 data vendors—with Google's own data universe.

The move will allow all GCP customers to access Crux's datasets through the cloud offering, as Google is able to repackage and resell Crux services to its own clients. For instance, if a GCP account holder is seeking particular datasets that happen to be part of Crux's data catalog, the GCP salesperson could immediately turn those datasets on in the GCP customer's cloud environment even if they aren't also Crux clients and as long as the customer has a valid license or evaluation license for

any third-party vendor data they want to access. Crux can help users obtain licenses, if needed, though it wouldn't be a party to them.

The data is delivered directly into users' cloud environments, and specifically into BigQuery, Google's fully managed data warehouse, so users can run analytics right away. Crux also has partnerships with GCP's peers: AWS, Microsoft Azure, and Snowflake Data Warehouse.

### Citco

Fund administrator Citco launched a platform called Data Services that aggregates client information from internal and external sources. Data Services is a web application with the option to use the platform via an API. It is built on a data lake architecture in Amazon Web Services.

Data Services brings together, curates, and stores data from all the different Citco systems, as well as data from external vendors such as private equity fund administration software Investran or software provider Yardi. Data Solutions.

Earlier in 2020, Citco migrated its portfolio management and accounting platform AExeo Technology to AWS. [WT](#)

# If it ain't broke, broker it!



As interest in OTC marketplaces grows, so does the value of data generated by brokers in those markets. But monetizing that data involves many challenges. Max looks at some potential solutions.

The world of broker data has seen its ups and downs over the years. In a few famous cases, vendors would sign lucrative, exclusive contracts to carry certain broker datasets—such as Telerate's exclusive deal to carry Cantor Fitzgerald's US Treasury data—though in most cases, brokers gave away their data to get exposure to vendors' client base so as to drive interest in trading with them.

Now, brokers are selling direct to customers. Traders, seeking new sources of alpha, are turning to new markets, specifically looking for illiquid, less crowded, and less well understood asset classes. But targeting these markets—whether thinly-traded, on-exchange contracts, or over-the-counter asset classes—presents challenges, notably a lack of knowledge of how these markets behave, and difficulties in obtaining reliable data.

That's where brokers come in: Two good examples are Swiss commodities broker SCB, which began setting up a formal data sales division in 2019, and UK-based energy and freight broker Arraco, which is starting the process now. In both cases, the brokers realized that they command leading market share in certain asset classes, where their expertise makes them the broker of choice. As such, their data is the gold standard for those assets, making it potentially much more valuable than something that is only given away to firms who actively trade with them. Instead, they want to sell it to others who can use it to support trading in similar assets, or for pricing and risk

management, or who want to better understand those markets.

This takes a fair amount of effort: first, packaging data into a product, and understanding how users want to consume it; second, building out product management, development, and sales staff; and third (and crucially), putting in place a legal framework to govern how that data can be used, and what it costs. That's a major challenge: figuring

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**Even the largest interdealer brokers that already have big data operations are rethinking how they structure them.**

out the data's true value, then knowing what restrictions to place on it, and how to articulate these within formal and enforceable license agreements. Thankfully, there are experts who've been through the brokerage business who now work as hired guns, guiding firms through these difficulties.

Even the largest interdealer brokers that already have big data operations are rethinking how they structure them, noting how exchanges have been able to repackage data and raise data revenues. Some are even following the exchanges' examples around data license policies and measures such as data audits. Others are seeking to differentiate themselves by figuring out new approaches.

Another possibility is that these large IDBs could offer smaller peers access to their own distribution network under joint ventures, broadening

the potential client base for small brokers—and importantly, making that process much easier, quicker, and potentially cheaper—while also making the IDB's data group a go-to for clients in search of all types of data, from the common to the niche.

In 2019, Interactive Brokers set up a Swiss data vendor subsidiary that consolidated market data along with more than 100 sources of news and research. Others could take a similar approach, becoming a storefront for OTC data and valuable commentary and analysis—the Amazon of broker data, if you will. They could also offer Amazon-style payment and fulfillment services, signing up clients, e-signing contracts, and leaving the smaller broker to just package up their data, ship it out, and wait for payment. There's another benefit to brokers willing to take this approach: Not just streamlining the data license policies associated with broker data, but potentially standardizing them.

A broker's proprietary data is its IP—and it *is* proprietary, unlike exchange prices, which are a public record of bids and offers by participants—and understandably, brokers want to protect that, which is why they include the right to perform data audits in their contracts. However, burdensome and intrusive audits make even the most contract-abiding clients wary—not just that the broker might discover unintentional misuse, but that it will consume time and resources. But get the licensing right, use easy-to-understand standards, and you may never need to exercise that audit clause. [wt](#)



# Advanced analytics ripe for self-service



Jo predicts we will see a rise in no-code or low-code tools in the analytics space, but some barriers to scale remain.

Last year, my colleague Rebecca Natale wrote a great article on the “no-code movement,” which its supporters are saying has the potential to democratize software development. No longer do you have to be an expert coder to build software, even full-stack apps or enterprise platforms; low- or no-code providers supply tools with which any user can build software visually, dragging and dropping pre-figured components and widgets into their apps. Genesis, a start-up on the roster of specialist VC Illuminate Financial, is one example of a vendor that is offering this kind of solution now, with its microservices development framework that uses pre-built software to create new applications. Reb quotes figures that say the low-code application market is set to reach nearly \$50 billion by 2026.

I can see why low code is seductive to financial services, because it seems to offer a solution to problems that have appeared intractable. If anyone can build platforms, organizations no longer need worry so much about attracting developer talent, and business and IT can be united in one individual. It could enable firms to develop their own tools more easily without involving external vendors on the build. And I think there is one area in particular where more modular approaches will be attractive in 2021: advanced analytics.

Any reader of this magazine surely knows all too well how banks and asset managers generate and collect vast amounts of data; and how they fail utterly to make any real use of it

in advanced analytics. Consultancy Element22, in conjunction with Greenwich Associates and UBS, published a benchmark study in which they found that most buy-side firms they surveyed are eager to leverage alternative data to beat the competition, but only a minority were anywhere near being able to do so. The study was published in late 2019, but Element22’s London-

“**Organizations should have data governance policies and plans in place before they can really tap the benefits of advanced analytics**

based partner, Mark Davies, says those patterns are still relevant, and there is no reason to think that the situation is much better at banks.

So is it likely that, as a kind of corollary to the low-code movement, we will see more self-service providers emerging in the next few years, specifically in advanced analytics? Davies seems to think so; he says the technology from vendors in this space is maturing.

Analytics tools emerged about five years ago, he says, but were mainly targeted at data scientists who were wizards in languages like R or Python. The scientists had to then build the analytics capabilities from the ground up.

Providers in this space are now lowering the bar in terms of the expertise needed to build analytics capabilities, he adds, which has meant more offerings in self-service tools that give users capabilities that they couldn’t write themselves.

Apteo, for example, says co-founder and CEO Shanif Danani, wants to “give every person the tools to become a data scientist,” and believes its Predictive Insights is a no-code tool for identifying the segments of users’ data with the biggest impact on their KPIs. It wants to use artificial intelligence to create predictions from machine-learning models built from their data.

So, yes, I think we’ll see more of these providers emerge this year. However, not to be the raincloud at the picnic, I suspect these tools in some cases will be wastes of time and money for many firms. It’s a boring fact of life that financial firms wanting to take advantage of self-service tools for advanced analytics will have to get their data management right first.

If a firm wants to use a self-service visualization tool for a single task, that is one thing. But if it wants to scale it up for enterprise-wide use cases, the data will have to be sourced from siloes in legacy systems and prepared for use. There’ll no doubt be gaps and inconsistencies in this data, some of it will be stale, and there will be security concerns and controls around its use. Companies should have data governance policies and plans in place before they can really tap the benefits of advanced analytics for customer insight, or getting the best prices for the front office, or beating competitors to investment opportunities.

These old-fashioned data governance concerns are perennial, no matter what shiny new toys may be available to financial services for analytics and machine learning. [WT](#)

# Financial markets and herd mentalities



Support for the little guys (and girls!) of retail investing has been encouraging to witness, but when it comes to GameStop, Wei-Shen wonders what the bigger picture shows.

Not since the collapse of Bear Stearns have the financial markets quaked quite like they did at the end of January. But the market disruption didn't result from the demise of an outlaw investment bank. No, Wall Street shook because of the ascension of a bricks-and-mortar video game company called GameStop, all thanks to retail investors banding together through the social media platform Reddit.

On Dec. 31, 2020, GME was listed at \$18.84 on the New York Stock Exchange. By Jan. 28, 2021, the stock had soared to a high of \$483. A movement to save the store from hedge funds shorting the stock began in a subreddit group called r/WallStreetBets. From there, it enveloped not only the hedge funds shorting the stock—most notably Melvin Capital Management and Citron Research—but eventually, the likes of Citadel and BlackRock were also pulled into the fray.

How this will all play out is anyone's guess. Is it a larger trend that speaks to the power of retail investors when they pull their weight together? Will the US Securities and Exchange Commission have to step in and re-evaluate its rules and regulations? Or will this simply be a funny punchline a few months from now?

What has been most interesting to watch, though, are some of the ripples in the market resulting from the so-called GameStop Rebellion. Half-a-world away from Wall Street, a group of retail investors in Malaysia—taking inspiration from r/WallStreetBets—have

established a new subreddit community called r/BursaBets, named after Malaysia's stock exchange Bursa Malaysia.

As I write this, the group has grown to about 12,000 strong since it was set up on Jan. 28. So far, it has been using “diamond hands”—lingo that means there's value in a stock (or person or thing) and it's worth holding onto—on the stock of Malaysian glove

to discuss the potential toxicity of herd mentalities, of which the subreddit communities r/WallStreetBets and now r/BursaBets remind me. There is absolutely value in these types of groups in that they help investors educate themselves and share ideas. But there's also a danger.

Yes, while the group was successful at sticking it to the “shorties,” every single investor that dumped their money into GME at \$480 or \$380 or \$280 is likely going to see their funds disappear (assuming they're still “diamond hands” and holding the stock) because there's no real reason for that company to be priced so highly. It's just the high of winning on a gamble and following the hot hand.

My worry is that people, in general, are becoming increasingly prone to following their herd no matter the paths they're led down. If 2020 taught us anything, it's that strongly opinionated people will try to make their voices heard—and we're seeing how technology greatly amplifies those voices, sometimes for better, sometimes for worse.

As a result, the loudest voices in the room reach the largest audiences, while the moderates and non-confrontational among us are content to retreat to the wings, where things are less exciting, but our thoughts are still our own. Following a herd isn't always a bad thing, and often, many people flock to the right causes at once, just as they do to the wrong ones. The problem is, a stampede is always a stampede, and unintended targets tend to get flattened. [wt](#)

“**The problem is, a stampede is always a stampede, and unintended targets tend to get flattened.**”

manufacturer Top Glove. Top Glove's short position of around 3% of its floated shares is a far cry from the 140% short positions in GameStop's shares, but still, the group wants to fight back against the hedge funds that have taken a negative view of the company.

Short selling is more heavily regulated in Malaysia, where Bursa Malaysia and the Securities Commission determine a list of securities eligible for short selling. Therefore, it's unlikely that the war anthem for Top Glove will ever match that of GameStop. Still, there are posts on the subreddit group that say things like, “Strategy to TRAP shorties & make them BLEED.” Of course, other posts on r/BursaBets explain the “strong fundamentals” of Top Glove.

## What goes up...

I'm not here to give investment advice, as my fund accounting days are long behind me. Instead, I'd like

# Human Capital



## Former Trump advisor Gary D. Cohn joins IBM as vice chair

IBM has appointed Gary D. Cohn as vice chairman and member of the executive leadership team.

Cohn will work on a wide range of business initiatives and external engagement, in areas including business development, client services, public advocacy, and client relationship management.

Cohn was assistant to President Donald Trump for economic policy and director of the national economic council between 2017 and 2018.

Before serving in the White House, he was president and chief operating officer at the Goldman Sachs Group from 2006 to 2016 and held several other leadership positions in his 26 years with the company.

He is co-chairman of Cohn Robbins Holding Corporation, a special-purpose acquisition company.

## Former Nasdaq CIO Anna Ewing joins Rimes board

Rimes has appointed former Nasdaq chief information officer, Anna Ewing, to its board of directors as a non-executive director.



Gary D. Cohn



Raj Paranandi

At Nasdaq, Ewing led all aspects of the firm's systems and infrastructure, and guided exchange technologies.

During her career, she has established multiple industry-leading business units at Nasdaq, CIBC, and Merrill Lynch. Ewing is also a board member of Financeware and Orchid Insurance. She was previously a non-executive director with NEX Group.

She also supports women entrepreneurs as a mentor and angel investor with Astia Angels.

## MarketAxess hires Raj Paranandi as regional COO

MarketAxess has appointed Raj Paranandi as chief operating officer for Europe, the Middle East and Africa, and Asia-Pacific.

Based in London, Paranandi joins from UBS, where he was most recently global co-head of digital transformation for UBS Global Markets and global head of change for UBS Investment Bank. Prior to this, he spent four years as global chief operating officer for FX, rates, and credit at the investment bank.

Paranandi will report to Christophe Roupie, and will work closely with Chris Concannon, president and chief operating officer at MarketAxess.

## Former Reuters America CEO joins SimCorp

Phil Lynch, former CEO of Reuters America and Asset Control, has joined SimCorp in New York as senior strategy principal, part of the vendor's global go-to-market team, reporting to vice president and head of go-to-market strategy, Jon Irgens.

Lynch will collaborate with sales, pre-sales, professional services, product management and marketing teams to support growth of the Coric digital



Phil Lynch



Anna Ewing

client communications portal for buy-side firms.

He was most recently global head of markets, products and strategy at SIX Group's financial information unit.

## Santander UK taps Rakshit Kapoor as chief data officer

Santander has hired Rakshit Kapoor as chief data officer for its UK arm and head of data transformation for Europe.

Kapoor brings over two decades of experience in senior data and IT roles. He most recently served as group chief data officer at HSBC, where he developed the bank's group-wide data and analytics strategy. Kapoor has also held roles at US insurance firm Travelers, where he was global chief information officer for data, analytics, and AI/robotic process automation.

He reports to chief operating officer Iain Plunkett in the UK, and Cristina San Jose, global head of new models and data unit, in Europe.

## John Young joins Barings as chief data scientist

Investment manager Barings has hired John Young as chief data scientist.

Young joins Barings from C2FO, a working capital marketplace that matches the cash flow needs of buyers and suppliers, where he was chief data and scientific officer.

Young reports directly to chief operating officer Steve Boehm, and joins the global technology and operations leadership team.

## BNY taps Neal Chansky and Amos Rogers for asset team

BNY Mellon has announced two senior hires in its asset servicing unit.

Neal Chansky joins as global head of consultant relations. In the new role, Chansky will partner with





consultants to develop and implement asset servicing solutions for clients. He previously worked at consulting firm Olmstead Associates, and spent over 30 years in various roles at State Street.

He reports directly to Christine Gill, head of commercial development for asset servicing.

Amos Rogers is BNY Mellon's new director of business development and alternatives. He joins from State Street, where he was a managing director responsible for leading business development efforts for the firm's real assets fund administration and fund services business.

Rogers will report to Brian McMahon, global head of credit and debt fund services.

### **S4 expands data admin team**

Miami, FL.-based market data consultancy S4 Market Data has hired Jason Allen as market data analyst to bolster its expertise in market data administration and vendor management.

Allen was previously vice president of market data services at BNY Mellon's Pershing division, where he spent almost 14 years.

He reports to S4 founder and CEO Bernardo Santiago.

### **Capco hires James Arnett as head of APAC**

Capco has named James Arnett as managing partner in Asia-Pacific, responsible for business in Hong Kong, Singapore, Thailand and Malaysia.

Arnett led Capco's UK finance, risk and compliance practice, and was most recently head of the UK capital markets practice. He joined Capco in 2011 having held roles at IBM Global Business Services, Capita and Hewlett Packard Enterprise.

Arnett is based in Hong Kong.

### **BTIG bolsters international equities with senior hires**

BTIG has made two senior hires in its institutional equities division. Neil Roberts joins as equity sales trader and

## NASDAQ PROMOTES JEREMY SKULE TO HEAD OF STRATEGY

Nasdaq has appointed Jeremy Skule as executive vice president and chief strategy officer, responsible for leading global strategy to drive strategic planning, mergers and acquisitions, divestitures, venture investing and NasdaqNext innovation. He will also continue to oversee Nasdaq's marketing and communications division, now part of global strategy.

Skule joined Nasdaq in 2012. He led the company's global rebranding, and held a leadership role in developing its 2017 strategic pivot to improve data, analytics and technology. Under Skule's leadership, his team revamped Nasdaq's



**Jeremy Skule**

lead generation process, redesigned its digital and social media properties, and introduced a new global thought leadership platform.

managing director, while Matt Austin joins as equity trader and director. Both are based in London.

Roberts was previously a sales trading director at Barclays Capital, where he spent more than 11 years.

Austin was most recently a director in the equity trading unit at Barclays, where he spent nearly 10 years.

### **Dominic Dowd to build Americas unit for Shoreline**

Shoreline, an Australian management consulting firm focusing on the buy side, has hired data industry veteran Dominic Dowd as director of North America, responsible for establishing and growing a team of specialists and expanding its client base in the region.

Dowd previously ran his own data strategy advisory firm, Palisade Advisors, and was director of enterprise data services at the Canada Pension Plan Investment Board.

Based in Toronto, Dowd reports to Shoreline founder and managing director, John DiBiase.

### **Sova Capital taps Fraser Smith as CFO**

Fraser Smith has joined Sova Capital, an independent brokerage with a focus on emerging markets, as chief financial officer. Smith has significant experience as a global financial director with expertise in

asset management, global banking and markets, ultra-high-net-worth wealth management, and securities services. He spent the past 12 years at HSBC, and prior to that was a vice president at Merrill Lynch.

### **Volante makes senior hires**

Volante Technologies, a specialist in cloud payments and financial messaging, has announced senior hires across sales, partnerships, and marketing.

Jeff Otten has joined as global head of sales from Finastra, where he was managing director. He previously led teams across fast-growth cloud start-ups and financial services firms, including Thomson Reuters/Refinitiv and Morgan Stanley.

Randy Rodriguez joins as regional sales head for North America. Rodriguez most recently led cloud go-to-market and revenue strategies for Bluewolf, an IBM company.

Jim Chow, vice president of partnerships, will expand Volante's partner ecosystem. He spent the past decade growing Google's cloud business through strategic partnerships.

Rachel Hunt, vice president of growth marketing, will head Volante's global go-to-market growth. Hunt's background includes leading real-time payments marketing for ACI, and managing global marketing for Temenos. [wt](#)



**James Arnett**

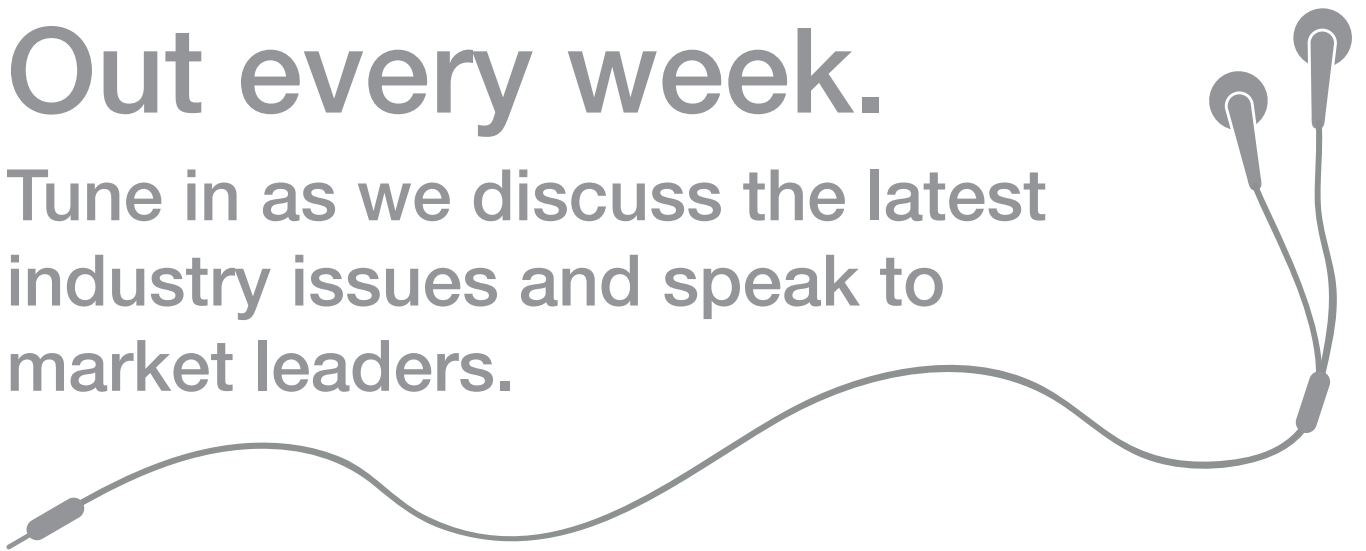
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