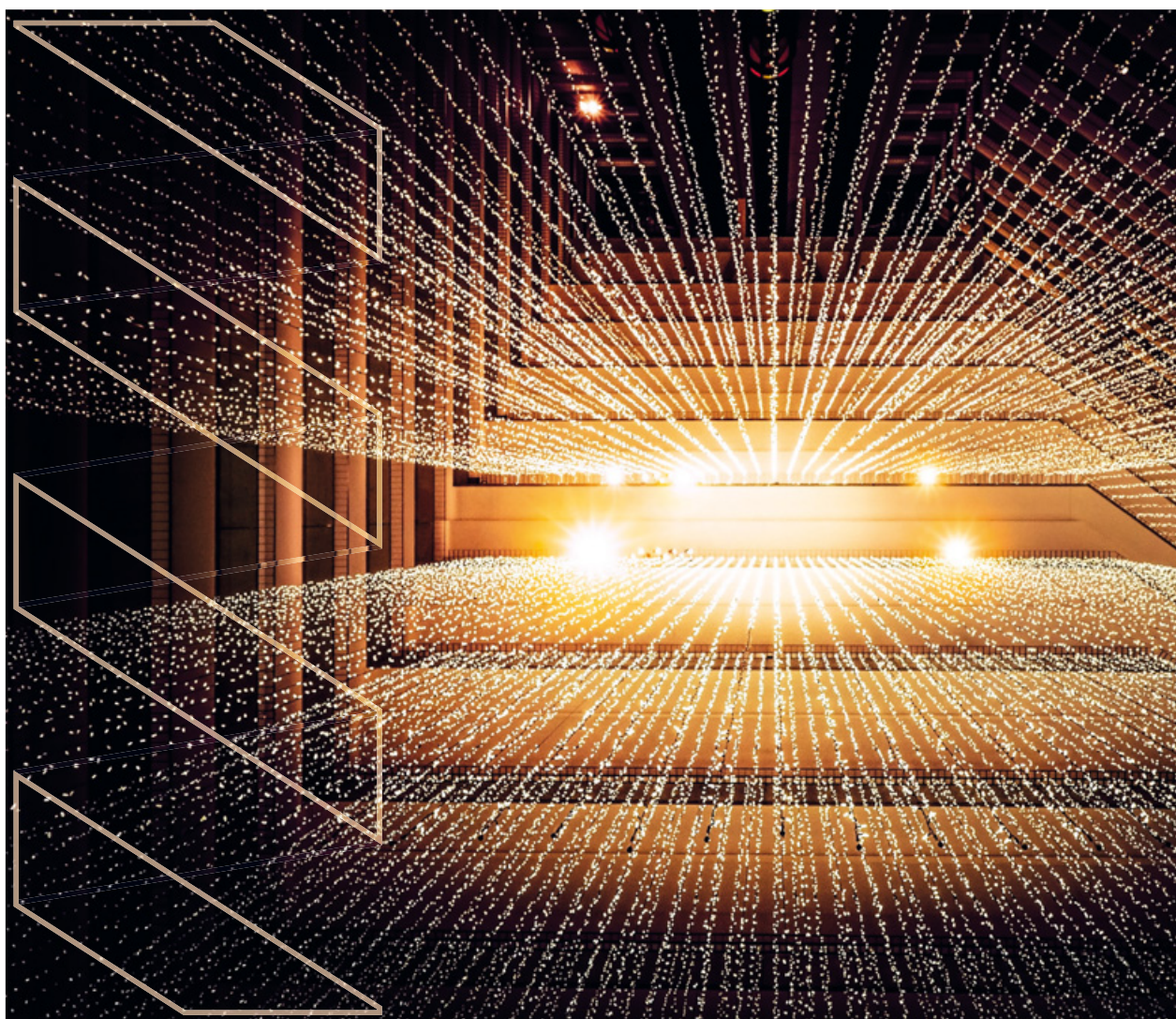


Risk

Markets Technology
Awards 2022

Risk.net



Winners' review

Duncan Wood, **Global Editorial Director**
duncan.wood@infopro-digital.com

Joanna Edwards
Global Director, Commercial Sales
joanna.edwards@infopro-digital.com

Stuart Willes
Commercial Editorial Manager
stuart.willes@infopro-digital.com

Alex Hurrell, **Senior Commercial Subeditor**
alex.hurrell@infopro-digital.com

Antony Chambers, **Publisher, Risk.net**
antony.chambers@infopro-digital.com

Graeme Cathie,
Commercial Director, Risk.net
graeme.cathie@infopro-digital.com

Esha Khanna, **Commercial Manager, Risk.net**
esha.khanna@infopro-digital.com

Todd Heligman, **Sales Manager, Risk.net**
todd.heligman@infopro-digital.com

Baker Jaggwe, **Account Director, Risk.net**
baker.jaggwe@infopro-digital.com

Robert Alexander, **Sales, Risk.net**
rob.alexander@infopro-digital.com

David Pagliaro, **Group Managing Director**
david.pagliaro@infopro-digital.com

Ben Wood, **Group Publishing Director**
ben.wood@infopro-digital.com

Rachel White, **Senior Production Executive**
rachel.white@infopro-digital.com

Infopro Digital (UK)
133 Houndsditch
London EC3A 7BX
Tel: +44 (0)20 7316 9000

Infopro Digital (US)
55 Broad Street, 22nd Floor
New York, NY 10004-2501
Tel: +1 646 736 1888

Infopro Digital (Asia-Pacific)
Unit 1801-05, Shui On Centre
6-8 Harbour Road
Wanchai, Hong Kong
Tel: +852 3411 4888

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BestX

The joy of flex

Tech users want the freedom to tweak and change their systems – not always an easy ask for rigid, legacy software. By Becky Pritchard

When Russell Feldman started working as an analyst in the bond trading department of what was then Deutsche Asset Management, he compared notes with his father, who had also spent time as a bond trader. Despite working in the markets at very different times – the younger Feldman started in the role about a decade ago – they both complained of clunky, inefficient systems that made their jobs harder and often meant they had to stay late at the office.

“Everybody in the bond market has this issue of massive inefficiency of workflow. I found the same problems [that he had experienced], and I was burning the candle at both ends,” says Feldman.

He didn’t stay in the job for long, and is now working at a tech vendor, trying to ensure future generations of Feldmans are not confronted with the same woes.

Over the past few years, many working in capital markets have started demanding more of the technology they use at work. Fed up with old-fashioned systems that need them to ring up a tech support desk to make basic changes, many traders and back-office staff are now pushing for systems that are more intuitive, easier to customise and have automatic workflows to save them time.

“Clients are demanding more transparency, more customisation – they want more control,” says Feldman, who is now chief operating officer at IMTC, a provider of fixed income investment management software.

The evidence of this year’s Markets Technology Awards suggest the message is getting through. Among the more than 190 submissions to the awards, innovation and user experience were a common theme, for large and small firms alike. From the back office all the way through to traders and portfolio managers, vendors are increasingly focused on making their products easier to use and more engaging – not an easy task for many legacy systems, which were not designed to be flexible (this year’s roll of honour, awards methodology and list of judges can be found at the end of the article).

No train, no pain

Ronen Kertis, head of global regulatory reporting at IHS Markit, has seen first-hand how client expectations are changing, and thinks this is driven partly by advances in consumer technology.

“We all want to get the technology to work for us. When was the last time someone trained you to use an app on your iPhone?” he says. “I know that if a system requires me to watch a one-hour video tutorial and then get people to explain how to work with it, I’ll try to minimise my use of that system.”

He says making products easier to use and more customisable is a “big focus” that “we invest heavily in”.

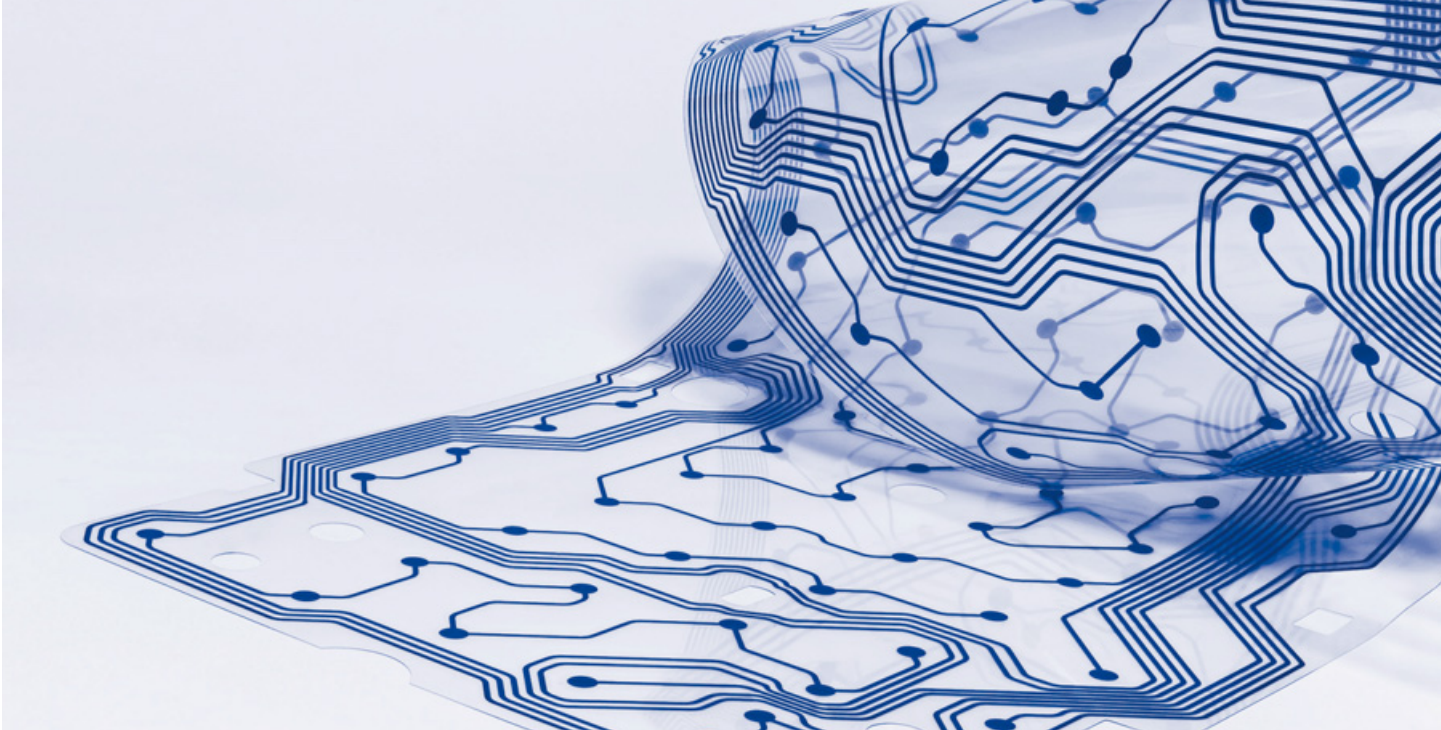
One example of a new function the team hopes will save clients time and provide new insights, is a business intelligence tool that allows clients to get into the weeds of their SFTR (Securities Financial Transactions Regulation) reporting – a new-ish European transparency regime for repo and securities financing markets. The tool enables users to create reports and charts for large volumes of complex SFTR data and benchmark their regulatory reporting against peers.

Pierre Khemdoudi, senior vice-president, equities and regulatory reporting at IHS Markit, says: “We don’t want to be in the way of our clients. Instead of trying to create reports ourselves, we’re giving the power to our users.”

Generational trends

Rohan Douglas, chief executive of risk management software provider Quantifi, has also seen a shift in client expectations. He says a big reason for this is the pace of change in capital markets, which has left companies wanting to tweak systems – and frustrated if they have to wait weeks or months for vendors to make system upgrades.

“Our experience is that pretty much every client needs something a little bit different,” he says. “People have struggled with systems that are a bit older and bit more difficult to change or customise. So, I think clients are putting a lot of value in systems that are up-to-date and able to stay up-to-date with how rapidly things are changing.”



New generations of staff are also behind the shift, he adds. Traders in their thirties or forties may be happy to do many of their calculations in Excel, but younger traders increasingly want tools that allow them to do their own basic programming. As a result, Quantifi has been integrating coding tools into its services. The firm's data science platform allows users to do analysis and create their own custom reports using Python and Jupyter Notebook. Users can also mix data sources from many different data providers and use third-party analysis tools, such as Power BI and Tableau, to create custom reports.

"There will be a bit of Python; instead of using Excel, it might be some data science tools. But this will be foreign to their manager. That transition is still happening and will probably take another five years to be as pervasive as it is outside of finance," Douglas says.

This generational factor is something Ganesh Natarajan, chief operating officer of energy and commodities trade management software provider, Enuit, has also noticed. Over the past two years, he has seen decision-makers in the energy and commodities trading sector become younger and more tech-savvy than their traditional customer base.

Natarajan says these younger users have an "Alexa background" and expect systems to have easy-to-use workflows that automate processes, a clean user interface and minimal mouse clicks.

"A decade before if someone came to me and said, 'I have a great product and it looks super nice', my first answer would have been: 'I don't care if it looks nice, does it do number-crunching and can it manage my risk?' But right now, that is not the case. People are interested in the user experience," he says.

"If a system requires me to watch a one-hour video tutorial and then get people to explain how to work with it, I'll try to minimise my use of that system"

Ronen Kertis, IHS Markit

He points out the commodity trading and risk management space is never going to be able to compete with the user experience offered by consumer tech companies, like Apple or Netflix, but says vendors are still under pressure to make their product "more engaging".

As an example, he says Entrade has integrated maps into its system, making it easier for users to see when shipped commodities will arrive at their destination and to plan for things like insurance.

"Let's say a vessel is moving from Indonesia to Singapore. If I put it into a map, it doesn't even have to be real time GPS, and I can see my vessel is here and the travel time will be three weeks. It makes it much more appealing," he says.

Covid side-effects

The pandemic intensified some of these trends, and added new twists. Work-from-home orders prompted many technology providers to put more of their services on the cloud, while increasing the need for systems to be more intuitive – users could no longer ask a colleague at a nearby desk for some quick tech advice.

Oliver Jerome, co-founder of best execution analytics company BestX, says the shift to remote working pushed many of his clients to start using his platform in a different way, with many applying some existing functions for the

METHODOLOGY AND JUDGES

Technology vendors were invited to pitch their products and services in 35 categories covering traded risk, front-office regulation, pricing and trading, buy-side technology, back office, data and other specialist areas.

Firms were required to answer a set of questions about how their technology met industry needs, its differentiating factors and recent developments.

More than 190 submissions were received across the categories. A panel of 12 industry experts and Risk.net editorial staff reviewed the shortlisted entries.

The judges scored and commented on each of the shortlisted entrants, before meeting in November to review the scores and, after discussion, make final decisions on the winners. In seven categories, our judges decided not to name a winner due to a lack of compelling submissions. Judges recused themselves from categories or entries where they had a conflict of interest or no direct experience. In all, 28 awards were granted this year.

JUDGING PANEL

Sid Dash, research director, Chartis Research

Sudipto De, deputy head of investment risk, Lord Abbett

Ahimsa Gounden, senior specialist in market risk, Liberty Group

Max Gokhman, chief investment officer, AlphaTrAI

Judith Hilton, regional chief risk officer, DWS

Jenny Knott, chief executive, FinTech Strategic Advisors

Ray O'Brien, advisory board, Quantexa

Becky Pritchard, contributor, *Risk.net*

Peter Quell, head of portfolio analytics for market and credit risk, DZ Bank

Navin Sharma, head of fixed income risk management, T Rowe Price

Ed Wicks, head of trading, Legal & General Investment Management

Duncan Wood, global editorial director, *Risk.net*

"We found that clients were still screenshotting little bits of [our system] and putting it in their reports. So we thought, maybe we could save them a job," he says, explaining that around 25 clients sent examples of their committee reports and, later this year, the firm will release a tool to generate a chunk of these reports, hopefully automating the process and saving clients valuable time.

Think of the vendors

All this effort may be good for the client, but it can be painful for the vendors.

"We've made a rod for our own back because it's so customisable and therefore people need to understand how to customise it," says Jerome. "It's a complex piece of kit and the biggest issue is turnover of staff at the banks." Each new intake requires a new round of training.

More than that – it could also leave vendors in a tough spot, burdened with unwieldy platforms that are difficult to update.

Back at IMTC, Feldman agrees that the issue of proliferation can be tricky to manage. But he says new

first time. He compares the effect of the pandemic to flying a jumbo jet through fog. Often, market participants had fewer sources of information – just what they could see on their screens.

"Suddenly the fog has come down, and you are flying the jet just using instruments," he says. "We gave them all the instruments pre-pandemic and they were using them, but also relying on what they were picking up on their own trading floors."

Jerome says customisation will become increasingly important in the coming years – and there is still a lot that can be improved. He gives the example of best execution committee reporting, which many asset managers are required to submit quarterly. His team realised many of their clients were spending up to a week each quarter creating "pain in the backside" custom reports, despite all the sophisticated charts and custom pages the BestX system could provide.

cloud development tools make it easier for technology providers to come up with customisation tools quickly.

"Now the technology has caught up to deliver that type of customisation and deliver it in a reasonable way. We are using devops to reduce the amount of waste when it comes to development time. So, I think that allows us to put out an offering that is incredibly efficient, but not overwhelming for the user," he says.

Feldman also argues vendors need to understand properly why clients are asking for a particular feature; this allows them to create features that work not just for one client, but for many.

"It is about asking the right questions to dictate what the actual outcomes are that people want to accomplish. That way we can work backwards to building a flexible enough solution that doesn't just satisfy one use case but satisfies 95% of use cases." ■

MARKETS TECHNOLOGY AWARDS 2022

The Markets Technology Awards were as fiercely contested as ever this year, testament to the volume, strength and variety of technology firms playing a key role in today's markets. Bloomberg and IHS Markit shared top billing, scooping three awards each. Both firms had broad appeal to the judges, winning in categories across traded risk technology and front-office regulation, with other wins in pricing/trading technology and innovation. Murex also won awards in two categories in front-office regulation.

The other awards were shared across a mix of large, established trading and risk vendors – such as Moody's Analytics and FactSet – and younger or specialist firms such as BestX and commodity player Eka Software Solutions.

TRADED RISK TECHNOLOGY

Market risk management product of the year

Murex

Market liquidity risk product of the year

Bloomberg

Counterparty risk product of the year

Quantifi

XVA calculation product of the year

IHS Markit

FRONT-OFFICE REGULATION

FRTB product of the year

Murex

Regulatory reporting product of the year

IHS Markit

Best support for Libor reform

Bloomberg

Best UMR service of the year

Cassini Systems

PRICING/TRADING TECHNOLOGY

Pricing and analytics:

Commodities

Enuit

Pricing and analytics:

Fixed income, currencies, credit

RiskVal

Pricing and analytics:

Structured products/cross-asset

Bloomberg

Trading systems: Commodities

Hitachi Energy

Trading systems: Equities

Itiviti, a Broadridge business

BUY-SIDE TECHNOLOGY

Buy-side market risk management product of the year

Qontigo

EMS provider of the year

FactSet

Performance attribution product of the year

Confluence Technologies

Best execution product of the year

BestX

Buy-side ALM product of the year

Moody's Analytics

DATA AND OTHER SPECIALIST CATEGORIES

Market data vendor of the year

360T

Alternative data vendor of the year

RavenPack

Risk data repository and data management product of the year

Databricks

Best vendor for system support and implementation

Eka Software Solutions

BACK-OFFICE

Central counterparty clearing support product of the year

swissQuant

Collateral management and optimisation product of the year

CloudMargin

INNOVATION

Best use of machine learning/AI

IHS Markit

Best use of cloud

Torstone Technology

Best modelling innovation

CompatibL

CompatibL

Best modelling innovation

To address the need for accurate risk measurement during the Covid-19 pandemic, CompatibL developed a new and innovative software feature – a machine learning-based market generator. With pre-pandemic historical data no longer accurately representing the current levels of risk, its ability to measure risk from a shorter time series has been advantageous during the pandemic.

Banks and asset managers cannot accurately calibrate traditional risk models to the short-length pandemic-era time series. The time series for any given currency, stock or credit name is too short to gain any statistical confidence in the estimate. While sufficient data is available across the entire range, combining it only produces a model for the ‘average currency’ or ‘average name’, which is not sufficiently accurate.

Using unsupervised machine learning, CompatibL’s market generators rigorously aggregate statistical data and then generate data samples for each individual name. The use of machine learning algorithms makes it possible to reduce the inherent statistical uncertainty of the short time series, while preserving and incorporating the differences between the names into the model. This ability was validated by comparing it to out-of-sample data – the gold standard of model validation.

CompatibL’s machine learning-based, market generator-driven models are an industry first, based on pioneering research by quant experts. The models can generate the data for time horizons between the one and 30 years that risk models require. This has made it possible during the pandemic to accurately measure credit risk, limits, insurance reserves and macro-strategy performance. The machine learning algorithms generate samples of market data when historical time series have insufficient length, without relying on any preconceived notions about the data.

Unlike traditional ‘model-free’ techniques that rely on interpolation, model learning can recognise and use patterns in data. And incoming data is continuously incorporated into the model, enabling it to evolve gradually.



Alexander Sokol, CompatibL

CompatibL’s machine learning-based solution addressed the need for an accurate way of measuring risk from short time series during the unfolding Covid-19 crisis, while meeting the regulatory requirement of being free from subjective judgement.

The model is also able to capture and use the full range of data in both crisis and normal regimes for long-term risk projections. It evolves gradually as the crisis subsides over time, so that banks and asset managers do not need to carry out a disruptive switch to another model when regimes change.

Judges said:

- Machine learning-based market generator, making optimal use of sometimes scarce data.
- Obvious problem, interesting solution.
- Reduced the reliance on pre-pandemic historical data.
- This is truly innovative. Being able to generate time series data adequate for risk management from sparse and short true periods will be crucial given the ever-lower utility of actual historical data as a consequence of events like negative rates, Covid, credit crisis, and so on.

Alexander Sokol, Founder, Executive Chairman and Head of Quant Research at CompatibL, says:

“On behalf of CompatibL, I am honoured to accept the *Risk* Markets Technology Award for Best modelling innovation. Machine learning is a transformative new technology that will touch every aspect of the front, middle and back office. I am confident that, before the end of this decade, it will become the market standard in financial product valuation and risk management.

Last year, financial markets experienced unprecedented upheaval. Managing the new levels of risk required innovative solutions, and machine learning was able to meet this challenge. The CompatibL team is proud to be at the forefront of integrating machine learning into trading and risk software.” ■

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Analytics development



UI/UX design



Cloud development



Model validation



Best modelling
innovation
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swissQuant

CCP clearing support product of the year

CleaRisQ is a comprehensive, real-time, data-driven, portfolio value-at-risk (VAR) management system based on filtered historical simulation (FHS), which supports more than 100 million transactions per day. It was developed by swissQuant Group to serve financial market infrastructure (FMI) providers and central counterparties (CCPs). The risk management system was launched in April 2021 at EuroCCP, where it now supports the firm's pan-European growth strategy by calculating real-time FHS VAR risk on 8 million transactions worth €40 billion per day. This is one of the first successful implementations of an FHS portfolio VAR methodology at a CCP.

CleaRisQ supports the management of end-of-day and intraday margin calls based on real-time calculation of initial margin, variation margin and collateral haircuts. Its customisable portfolio VAR/conditional VAR methodology factors anti-procyclical components and custom add-ons – such as liquidity risk, wrong-way risk and the risk associated with large portfolios – into its real-time, data-driven and data-intensive risk algorithms. Each risk model is highly parameterisable, allowing CCPs to meet their own corporate and regulatory nuances. The result is a far more efficient and effective risk model, which contributes to improved market liquidity and resilience.

CleaRisQ includes comprehensive modules for risk managers, quants and clearing members. The stress-testing module enables CCPs to size their default fund(s) and calculate liquidity requirements. Position drill-down analytics, what-if scenario analysis, backtesting, sensitivity analysis, reverse stress-testing and other modules deliver core CCP risk functions on a single code base. This enables CCPs to reduce systems architecture complexity, operational risk and methodological inconsistencies across the enterprise. CCPs can also expect to implement faster, more agile, risk management processes – which is particularly important during times of market stress – by leveraging CleaRisQ's real-time risk analytics.

CleaRisQ also serves clearing members. Beyond optimised and robust margining, the system offers clearing members real-time, read-only risk analytics, inclusive of

"The future of financial markets, their effectiveness, efficiency and resilience will in part be defined by implementing more advanced and performant risk models that can be scaled up using advanced technology"

Greg Campbell, swissQuant

individual positions, and the ability to run CleaRisQ Java libraries on in-house, clearing member applications.

While swissQuant's risktech culture has been proven in the wealth management industry, with CleaRisQ the firm aims to differentiate itself from other CCP providers by offering a synthesis of advanced mathematical risk modelling with the newest event-based technology.

CleaRisQ is driven by 'design thinking', aiming to improve standards in the CCP industry. The adaptability and scalability of this risk system offers established FMI providers a means to consolidate their strategic positioning. For less-established FMI providers, CleaRisQ presents an opportunity to implement future-proof risk models, avoid outdated risk practices, and compete in an increasingly interconnected and international marketplace. Accordingly, CleaRisQ has an evolving role to play in helping FMI providers and CCPs make markets more efficient, more liquid and more resilient.

Judges said:

- "Good focus on improving risk management."
- "Well needed."

Greg Campbell, Head of Capital Markets Technologies at swissQuant, says:

"swissQuant is delighted to receive this award for our CleaRisQ risk engine. We believe the future of financial markets, their effectiveness, efficiency and resilience will in part be defined by implementing more advanced and performant risk models that can be scaled up using advanced technology. CleaRisQ and swissQuant meet this need, and so it is especially relevant to us that this has been recognised by the market and now *Risk.net*." ■



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360T

Market data vendor of the year

360T's market data suite solutions solve specific needs for foreign exchange market participants, and provide comprehensive and holistic solutions for a wide array of clients. Swaps Data Feed (SDF), developed through an innovative partnership with Digitec, plugs a gaping hole in streaming FX swaps data. Prior to 360T's SDF, there was a lack of accurate, reliable data available to market participants.

SDF helps buy-side firms accurately assess liquidity and allows for benchmarking execution with more precision. SDF also fuels automated FX trading, using it as a tolerance check to ensure firms never execute further away than a predefined distance from the market mid. This benefits clients by increasing productivity, reducing operational risks and freeing up traders to focus on the most complex trades on the desk.

SDF has also played an important part in the success of 360T's MidMatch platform in the past year. MidMatch is a fully automated FX swaps limit order book with mid-rate matching capability designed to cater to the interbank market. This fully visible limit order book allows market-makers to stream curves out to five years, using the SDF as a mid-reference for grey-book risk exchange.

As a market differentiator, other comparable FX swaps data feeds produce a forward curve that is largely based on a patchwork of contributed rather than tradable rates, and as such are only indicative of where the market is at any specific time.

Over the past year, 360T has doubled the number of contributors to the SDF, bringing the total number of top FX banks contributing to 21. Having multiple banks contributing to the feed has given the reliability of the product and the accuracy of the data a substantial boost.

360T's Essential Data Feed provides a clear view of the spot FX market, and mid and bid/ask spreads in multiple pricing tiers in variable snapshots. The distinguishing factor is speed. This data feed now updates every millisecond, which is very important because in markets trading at increasingly low latencies, such as spot FX, having a data feed that updates this frequently dramatically improves its reliability as a source of reference data.



Lydia Solinski, 360T

360T's Historical Data Feed supports clients in the analysis and display of historical data and the traceability of exported prices. Its Flows Data Feed aggregates the flows from across the entire 360T franchise to deliver unique insights into FX trading activity daily across different client segments and currency baskets.

Judges said:

- "SDF to fuel automated FX trading."
- "Good FX and swaps data feed product as its data is integrated with pricing engines of over 20 large FX banks – this is an important data differentiator."

Lydia Solinski, Market Data Product Manager at 360T, says:

"We are delighted and honoured to win another prestigious industry award for our market data offering, which continues to go from strength to strength. In the past year, with our partner Digitec, we have added specialist contributors to further increase the quality of the SDF, extended the tenors available from two years out to five, made it available as part of Deutsche Börse Group's CEF data feed and launched a new graphical user interface version as well. It's great to see all these efforts rewarded with recognition from our partners in the industry, and market data will continue to be a key strategic focus for us going forward." ■

Torstone Technology

Best use of cloud

Torstone Technology's Torstone Risk platform has brought to market an innovative and cutting-edge solution to make processes faster and more efficient through its library of over 150 credit, fixed income, foreign exchange, equity and commodity derivative pricing models – all hosted in a managed cloud environment on Amazon Web Services.

Torstone Risk is a real-time streaming, cloud-based, software-as-a-service (SaaS) platform that integrates natively with Torstone Post-Trade, providing risk metrics that tick with live positions and profit and loss. A contemporary web app dashboard provides firms with a 'live risk' view and the ability to navigate risk positions, primary and time-bucketed exposures, higher-level risk metrics such as historical value-at-risk, expected shortfall and stress scenario results.

Benefits include that solutions, such as pricing calculations using the models, can be parallelised across as many compute nodes (processors) as are required to complete a given set of calculations in a desired timeframe. Without this flexibility, execution time typically becomes very long and therefore risk calculations increase, eventually to the point that the required risk report arrives later than when it is due.

The use of the cloud to scale the number of compute nodes being used dynamically at run-time means one is able to perform large risk simulations within a relatively short timeframe.

Furthermore, pricing a given security using a particular pricing model typically requires a significant amount of market data and security terms reference data. With the cloud connectivity in place, the user can automatically pull down all dependent market and security terms data from Torstone's cloud data services.

Torstone has also built an add-in for Microsoft Excel so users can perform *ad hoc* analysis using the cloud-based model library. Traditionally financial models are made available in Excel by embedding them as dynamically linked libraries that Microsoft Windows understands.



Brian Collings, Torstone Technology

The solution is innovative because both the primary risk dashboard interface (a contemporary SaaS-based web application) and all supporting data services and model libraries are in the cloud, making it easy to 'spin up' new risk infrastructures when new clients are onboarded.

The cloud services can also be correctly sized to the risk requirements of the client, whether that be the number of open trading positions, amount of historical data, number of stress scenarios, complexity of the securities being traded, and so on.

It is also innovative because the utilisation of the available nodes can be optimised to nearly 100% while they are running. Data transparency, cloud analytics, hybrid pricing interoperability and real-time risk are some of the benefits Torstone's unique solution provides.

Unlimited access to all market data, reference data and derived output risk data uniquely provides firms with transparency. In addition, Torstone Risk is built on a distributed real-time risk engine that allows risk to be recalculated when market data, security reference data or trade positions update. With fast cloud pricing services, post-trade risk has never been so close to the point of execution – it is a true 'front-to-risk' management platform.

Judges said:

- Nice scalable cloud analytics use case.
- Seems like a strong cloud-based risk system.

Brian Collings, Chief Executive of Torstone Technology, says:

"The cloud is an incredibly powerful tool, which is transforming financial services technology. Winning such a prestigious industry award for Torstone Risk is a fantastic acknowledgement of our risk management credentials, using cutting-edge data, analytics and modelling to help clients manage and mitigate risk." ■

Cassini Systems

Best UMR service of the year

Cassini Systems provides pre- and post-trade margin analytics for derivatives markets, and specialises in best-practice uncleared margin rules (UMR) compliance. The platform provider has significant experience helping implement UMR systems for asset managers, insurance firms and top-tier hedge funds.

Cassini has given buy- and sell-side firms that fell in-scope in UMR phases four and five, and those potentially falling in-scope in phase six, the ability to meet UMR compliance or remain under the threshold for exchanging initial margin (IM).

In 2021, Cassini's analytics were chosen for integration into BlackRock's Aladdin platform, which has been widely adopted by buy-side firms. The integration makes Cassini's margin and collateral analytics, and optimisation tools available to BlackRock and all of its clients from directly within Aladdin.

The margin analytics allow firms to calculate and monitor average aggregate notional amount (AANA) exposure to determine if they would be in-scope in UMR phases five or six. Many phase five and six firms want to stay below the UMR threshold to avoid needing to post IM. Cassini's standard initial margin model (Simm) novation analytics allows firms to maintain an optimal portfolio against their counterparties that stays below the threshold.

Beyond compliance, the platform helps firms reduce their derivatives trading costs by leveraging pre- and post-trade optimisation of Simm. The pre-trade UMR/Simm threshold monitoring service covers margin, collateral and cost analytics for all derivatives classes. It integrates the front office into post-trade collateral management, treasury and risk systems, bringing post-trade data into the pre-trade process on a real-time basis. In this way, Cassini allows firms to make strategic trading decisions in a pre-trade environment that factors in post-trade metrics.



Liam Huxley, Cassini Systems

Cassini Systems provides a new layer of transparency over margin impact drivers and optimisation of margin consumption, and supports the entire Simm calculation workflow. In particular, the service allows firms to calculate sensitivities and Simm requirements for all assets under UMR. Calculating bilateral margin under Simm is a complex task that requires the calculation of sensitivities for all bilateral trade types. And the IM requirement under UMR can create a portfolio drag. So portfolio managers need to understand Simm margin consumption and optimise their margin wherever possible.

To address these challenges, firms can access intraday margin and Simm results and drivers rather than batch overnight margin calculations. The platform offers modelling of all post-trade costs, pre-trade, allowing clients to integrate optimisation into all steps of the trade lifecycle and minimising the impact of derivatives trading costs.

Judges said:

- "Great to see endorsement from BlackRock."
- "Impressive that the AANA monitoring service is available via Aladdin."
- "The novation analytics tool means this is more than just a margin calculator."

Liam Huxley, Chief Executive Officer and Founder of Cassini Systems, says:

"We are thrilled to have won this award – especially given the range and quality of the other nominees. Our focus has always been on the bigger picture: providing the buy side with a Simm solution to help proactively manage collateral levels and the costs of trading derivatives. We have been able to help some of the biggest asset managers manage the impact of UMR on their business and gain competitive advantage. We are particularly proud that the value of this fully embedded margin and collateral approach has been recognised by *Risk.net*." ■

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Moody's Analytics

Buy-side ALM product of the year

Firms offering defined benefit (DB) pension schemes need greater visibility and control over their pension plans to manage recent levels of risk exposure and ensure they are protected against downside risk. They are also seeking ways to improve resilience and visibility across their portfolios to meet the challenge of emerging risks and new investment strategies.

PFaroe DB is an asset and liability data and risk analytics platform that helps DB pension stakeholders understand the impact of risk drivers on their investment and funding strategies. The platform's advanced analytics tools provide a view of a pension scheme's key metrics, including multi-asset valuations and liability risk, real-time developments in a plan's funding position, and the potential impact of evolving market conditions across a plan's lifetime.

PFaroe DB provides a high level of visibility on a cross-balance sheet, multi-jurisdictional, multi-asset basis. It also offers schemes an aggregate view of assets and liabilities across funds. Using the platform allows asset owners, investment managers and consultants to move beyond an isolated view of liabilities and assets, and examine the combined effects on hedging, liquidity, funded status volatility and more. This gives schemes greater control over their data, which results in informed decisions and more resilient portfolios. By analysing pension fund risk attributes and aligning the investment portfolio with risk and return objectives, they can perform robust forecasting analysis for asset-liability studies and evaluate the impact of investment and funding strategies over time.

In response to the growing focus on environmental, social and governance, and climate risk, Moody's Analytics has enhanced the PFaroe DB platform to meet current climate reporting challenges. The platform can now support pension plans in meeting the Task Force on Climate-Related Financial Disclosures (TCFD) reporting requirements and understanding the impact of climate risks on the scheme's funding strategy. It offers an analysis of the



Simon Robinson, Moody's Analytics

impact of climate scenarios, including transition scenarios on plans' assets and liabilities as well as reporting on a range of emissions and climate-based metrics.

The platform also allows users to perform real-time scenario stress-testing and projections supported by Moody's Analytics Scenario Generator software or clients' own models. A further upgrade to the solution sees the integration of the CreditEdge system, which allows schemes and their advisers to monitor and assess sponsor covenants

using forward-looking metrics.

Six new firms have selected PFaroe DB as their pension risk management platform in the past 12 months, joining Mercer, Vanguard and HSBC. It is now used to model more than 4,000 plans and \$1.9 trillion in assets, primarily in the US and the UK. And this year saw the launch of the platform in Canada with Lifeworks and Manulife.

Judges said:

- "TCFD reporting is a welcome addition."
- "Climate risk reporting for UK pension plans."
- "Solid asset and liability management upgrade from the leader in the space."
- "Good quantitative models."

Simon Robinson, Director of Product Management at Moody's Analytics, says:

"Fragmented and outdated information is one of the biggest barriers to the effective operation of a pension scheme. Additionally, understanding the impact of risk drivers on investment and funding strategies is key for stakeholders to stay on top of the funding position and manage against future downside risk. By providing the only purpose-built platform that provides a holistic view of the pension scheme, both in terms of assets and liabilities, PFaroe DB connects the dots for all DB pension stakeholders and, as a result, improves resilience and visibility across the entire portfolio." ■

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MOODY'S
ANALYTICS

Murex

FRTB product of the year Market risk management product of the year

From replacing their existing value-at-risk process for a more sophisticated liquidity-adjusted expected shortfall for the internal models approach (IMA) to the Fundamental Review of the Trading Book (FRTB), to leveraging synergies in shaping global regulatory sensitivities for the standardised approach (SA) to FRTB or bilateral initial margin, Murex has accompanied and advised clients at every step of their regulatory compliance and risk management journeys.

MX.3 for Enterprise Market Risk provides risk managers with the required functionality for complete risk measurement and management. It ensures their view of trade, organisational, market data and models is in line with that of the front office and finance. Nevertheless, the system is flexible enough to give independence to risk teams if required, allowing them to perform intraday risk computations, and test different market and historical scenarios and models. This is extended by broad limit and excess management, which allows for proactive intraday monitoring and detailed end-of-day reports.

Head of market risk product management Mickael de Oliveira Neves said that MX.3 for Enterprise Market Risk stands out in a competitive landscape for three main reasons. “MX.3 aligns models and valuation between risk, front office and finance because of its sophisticated product and analytics coverage,” he explains. “A modern technology stack empowers our regulatory suite to manage the huge computational demand of different deployment models. Infrastructure can be provisioned in an elastic manner, optimising cost with a pay-as-you-go approach. Finally, it can also be implemented as a pure enterprise risk platform, enabled by highly scalable architecture with multiple integration capabilities.”

As the FRTB product of the year, the MX.3 for FRTB-SA solution handles all steps of the calculation, from generation of regulatory sensitivities (such as delta and vega) using regulatory bucketing and specific configurations (such as additional volatility dynamics), to aggregation using prescribed regulatory weightings and multiple levels of netting/offset across risk factors, buckets and risk type hierarchies.



Mickael de Oliveira Neves, Murex

Aggregation operates transparently on either native MX.3 produced sensitivities or externally calculated and then imported ones. Regulatory stress-testing for curvature risk, analytical and simulated jump-to-defaults for default risk charges, and residual risk add-on calculations are also handled, as well as the ultimate final capital charge computation.

The Murex FRTB solution is built into the MX.3 cross-asset integrating platform, with its sophisticated offering for consistent structuring and pricing of complex derivatives.

As these capabilities are utilised for the FRTB solution, they ensure required risk inputs can be computed for both SA and IMA methods, with models and data that are natively aligned with the front office and finance, making Murex one of very few vendors that can produce complete end-to-end calculations for both FRTB-SA and FRTB-IMA in one solution.

MX.3 can be positioned at an enterprise level because of the rich functional coverage of its application programming interfaces (such as trades, positions, profit and loss, and sensitivities). It enables MX.3 to fit into a client's systems landscape and stay current with other reference data



systems. Murex clients can benefit from the FRTB solution without having to upgrade. The SA package is managed like a product and delivered to clients when regulations change.

On the technological side, several performance optimisations have been developed in the FRTB context (such as the ‘never-twice’ calculation) as well as advanced orchestration features to make the process of producing daily results seamless. Additionally, MX.3 – and specifically the FRTB-IMA solution – can leverage the benefit of the pay-as-you-go model proposed by cloud vendors.

Judges said:

- “The FRTB solution from the MX.3 suite covers the SA and IMA approaches. Non-modellable risk factor improvements within the past 12 months, cloud-based service-oriented infrastructure available, performance improvement with the ‘never twice’ calculation feature.”
- “Excellent analytical capabilities, speed of product evolution bears testament to commitment to clients.”
- “Wide-ranging capabilities product with well-established base.”

“The next years will be an exciting new chapter for FRTB. We are very proud to offer our clients a strong experience as they move toward compliance”

Mickael de Oliveira Neves, Murex

Mickael de Oliveira Neves, Head of Market Risk Product Management at Murex, says:

“Firstly, this award recognises the dedication and devotion of our teams of experts worldwide. It also acknowledges our investment in the platform since the first Basel Committee on Banking Supervision consultative paper. Over the past year, we have accompanied and advised clients with European Union entities to prepare for European Banking Authority reporting requirements. At the same time, we enriched packaged solutions with the latest regulatory updates locally addressed by other jurisdictions. The next years will be an exciting new chapter for FRTB. We are very proud to offer our clients a strong experience as they move toward compliance.” ■

IHS Markit

XVA calculation product of the year Best use of machine learning/AI

To run a profitable derivatives business, banks need to understand all the costs involved in trading derivatives contracts. Recently, banks have been caught out by mispricing and writedowns of the trading book. To avoid this, banks use valuation adjustment (XVA) calculations to understand their true profit-and-loss and capital in derivatives trading. XVAs have grown in size and complexity over the past decade. The changing landscape, driven by new regulation, means traditional systems are becoming obsolete.

As well as quick calculations of XVAs and capital measures, IHS Markit's XVA system allows banks to focus on more complex issues, such as the incremental effects of trading activity and market moves on the portfolio, and the portfolio's sensitivities to market risk factors. These capabilities enable banks to better balance the increasingly complex regulatory requirements, while making informed decisions on the trading desk – pre-trade and in real time.

The computational expense of calculating XVAs and XVA sensitivities on traditional systems usually means they are computed just once a day. Ideally, banks would have the ability to rapidly compute them intraday to aid in real-time decision-making. IHS Markit's system can calculate the standardised approach to credit valuation adjustment, for example, on a real-time basis, giving banks the ability to make trading decisions with an understanding of return on capital.

Neural networks and machine learning have revolutionised a range of computationally intensive modelling tasks. IHS Markit has applied these techniques to XVA calculation to address some of the toughest modelling and performance challenges in financial markets. IHS Markit's system accelerates XVA computations and delivers XVA valuations and sensitivities to meet the challenges of modern financial risk pricing. The high-speed XVA pricer, based on neural net modelling and accelerated graphics processing unit computing, delivers accurate XVA valuations much faster than traditional methods. This allows for live calculation of XVAs for portfolios of swaps and cross-currency swaps.



Stuart Nield, IHS Markit

IHS Markit has shown that applying deep neural networks (DNNs) to replicate instrument pricing functions offers high-performing alternatives to traditional pricing models. The trained DNNs return full ranges of sensitivities with negligible additional computation expense

than that required to return the present-value. This enables direct computation of extremely data-intensive calculations, resulting in much-needed improvement in accuracy and speed for calculating measures such as margin valuation adjustment (MVA).

Judges said:

- “Strong enterprise risk solution.”
- “Pragmatic use of machine learning techniques to XVAs.”
- “Addresses the growing need to accelerate XVA computation.”
- “XVA calculation as a high-dimensional problem provides good application for DNN techniques. IHS Markit is one of the first to tackle the corresponding challenges.”
- “State-of-the-art product with a strongly quantitative approach.”

Stuart Nield, Global Head of Product, Financial Risk Analytics at IHS Markit, says:

“We are delighted to win these two awards, recognising our dedication to continually improving our XVA product. We are proud to have helped our clients navigate their challenges last year, such as the transition to risk-free rates, improved performance and the new regulatory focus on credit valuation adjustment in Asia. We believe our capabilities make us unique in the market. The best use of machine learning award is a testament to the excellent work of our research, financial engineering and software engineering teams to push the boundaries of what is possible in an XVA engine.” ■



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IHS Markit

Regulatory reporting product of the year

IHS Markit Global Regulatory Reporting Solutions offers a cross-regulation platform that allows financial institutions to manage, process and analyse large quantities of data for reporting purposes. It gives compliance managers the transparency to achieve complete, accurate and timely reporting. The dashboard allows institutions to comply with regulatory requirements without the need to work directly with approved reporting mechanisms or trade repositories.

IHS Markit Global Regulatory Reporting Solutions has doubled its client base over the past year, and is now serving more than 500 clients. Using a robust technology that is easily scalable, the platform processes over 10% of the entire European Union trading volume.

With the acquisition of Catena Technologies in 2020, Cappitech in 2021 and continued investment in research and development, IHS Markit's regulatory reporting business aims to be at the forefront of changing technology and regulations. The platform's data visualisation and analytics tools are contributing to changes in how financial market participants meet their compliance obligations. Furthermore, the insights derived from trading data enable them to improve decision-making and ultimately profit and loss.

IHS Markit also has an evolving role in industry collaboration efforts. The regulatory reporting team establishes focus groups that allow market participants and industry groups to understand what is needed for successful implementation of new regulations. This allows IHS Markit to contribute to impactful changes in regulatory reporting.

Since launching its Securities Financing Transactions Regulation (SFTR) product in 2019, IHS Markit has managed significant flows in the market for SFTR reporting. This reflects the success of the comprehensive and automated approach to SFTR reporting. SFTR analytics allow firms to process and analyse the large volumes of complex data generated by SFTR. This allows multiple business functions to review and analyse reporting information and benchmark regulatory reporting performance against peers.

The successful implementation of the Monetary Authority of Singapore's over-the-counter reporting by all IHS Markit's regulatory reporting clients marks another milestone for the business. Given the complexity of trade reporting and



Ronen Kertis,
IHS Markit

heightened regulatory expectations, this speaks to the regulatory reporting team's talent and dedication.

To comply with best practices of monitoring transaction reporting, compliance managers can leverage the platform's three-way reconciliation solution and the validation engine. The data visualisation and analytics allow them to focus on exception management.

New functionality allows firms to review submissions on an entity level as well as on a global level. And IHS Markit has also added an advanced eligibility tool for verifying reporting completeness. Finally, the introduction of enhanced pairing and matching functionality provides post-trade repository pairing and matching reconciliation status, enabling a complete view of reporting data.

Judges said:

- "A true industry platform."
- "Much-needed addition of advanced eligibility tool for verifying reporting completeness."
- "Strong analytics capabilities."

Ronen Kertis, Head of Global Regulatory Reporting Solutions at IHS Markit, says:

"We are thrilled to win this award. It is a testament to our continued dedication to the regulatory reporting space and the tangible impact we have had on the industry. Global organisations with complex legacy systems grapple with adapting to constantly evolving regulation. We believe this is an area where we can really support the market with our deep domain reporting expertise, innovative technology and focus on creating a positive user experience. Particularly as new regulations such as the Commodity Futures Trading Commission Rewrite, the Japan Financial Services Agency Rewrite and European Market Infrastructure Regulation Refit are looming, experience tells us that the more the industry prepares in advance with the right solution, the smoother and easier implementation will be." ■

CloudMargin

Collateral management and optimisation product of the year

CloudMargin's collateral and margin management system covers all asset and instrument classes, from pre-trade to post-trade settlement and reporting. The system is used by sell-side firms, such as global investment banks and brokerages, and buy-side firms, including asset managers and institutional investors involved in derivatives and that need to collateralise their trades.

The single-instance platform enables much-needed cost efficiencies and risk mitigation for firms facing regulatory and cost pressures, as well as operational challenges. It facilitates exception-based, straight-through processing (STP) by centralising data, connecting to industry utilities and automating workflow. Open access to its comprehensive, real-time collateral data helps users manage risk and utilise assets more efficiently.

The uncleared margin rules (UMR) have created new challenges for industry participants, which CloudMargin has worked hard to address. Its holistic initial margin (IM) solution enables clients to calculate IM, agree margin amounts automatically and instruct settlement to third-party custodians and tri-party agents via its extensive settlement network. The broader connectivity to other key services and providers in the industry further facilitates firms' IM compliance.

Since adding a Swift service in 2016, CloudMargin has been able to establish connectivity to all four major tri-party agents, which now facilitates UMR compliance. As part of the effort to help phase five and potential phase six firms prepare and give more options for in-scope firms, CloudMargin has now expanded its network to include nearly 60 custodians globally. As part of its comprehensive settlement capabilities, CloudMargin also offers bespoke client integrations and an extensive range of application programming interfaces, as well as new integrations with distributed ledger technology partners. Finally, a new dashboard offers a broad view of payment status across all custodians, instrument classes and payment methods.

CloudMargin provides the technology for the collateral platforms of three of the industry's largest infrastructure providers: Acadia, IHS Markit and Finastra. As such, CloudMargin has an evolving role in UMR compliance and collateral management within the industry.



Stuart Connolly,
CloudMargin

By integrating with Acadia's margin management services, CloudMargin was able to help generate significant efficiencies for firms managing both variation margin and IM. In addition to providing the technology for IHS Markit's collateral management service, CloudMargin is also integrated with the firm's portfolio valuations and IM calculation services.

Last year, CloudMargin began providing the technology behind Collateral Management as a Service through Finastra's open platform. This joint solution facilitates end-to-end STP of derivatives transactions and related collateral management workflows. All these initiatives support automation and optimisation of the collateral management process, helping clients reduce costs and realise significant efficiency gains.

Judges said:

- "Strong collateral and margin management system built for the cloud."
- "Good to see endorsement from Acadia, Finastra and IHS Markit."
- "Nice to see evidence that the firm is committed to giving customers more options – in the form of the additional custodian connections."

Stuart Connolly, Chief Executive at CloudMargin, says:

"We are honoured to win this award, as we have focused intensely on enhancing our platform to be a fully automated solution that offers broader optimisation capabilities to meet the needs of banks and large institutions. Our evolution over the years from a nimble platform to one that includes robust, sophisticated functionality, while retaining that straightforward, easy-to-use experience allows us to meet the demands of the most complex operations. This has been instrumental in expanding our appeal beyond the buy side to major sell-side institutions. We're bringing tremendous cost efficiencies and reducing risk while making collateral usage more efficient for some of the world's largest banks, brokers and asset managers." ■

RavenPack

Alternative data vendor of the year

Risk profiles are evolving, and it is increasingly difficult accessing data to quantify emerging risks from traditional market sources. Leveraging alternative data enables portfolio managers to assess the social and geopolitical impact of emerging threats on their investments.

News sentiment analytics is increasingly seen as a more reliable way to identify, assess and track risk factors. In a more connected global market, news sentiment towards companies can indicate market performance and drive changes in asset prices, volatility and volume. Using real-time news sentiment data gives firms an advantage in interpreting the direction of price movements and making informed, up-to-date investment decisions.

RavenPack offers a comprehensive data solution for global risk analysis to isolate and manage fast-moving issues. The data analytics platform uses natural language processing (NLP) algorithms to scan the news in real time and calculate sentiment and volume risk metrics. RavenPack's clients include some of the most successful systematic hedge funds, as well as asset managers and banks. And the customer renewal rate is 95%.

News sentiment and volume metrics are used in forecasting equity volatility. Firm-level news and news about broader market drivers can help in forecasting and managing systematic risk. Analysing news volume can also help investors anticipate bond liquidity risk more accurately. News analytics can provide an augmentative approach for assessing the quality of credit ratings and can help in environmental, social and governance portfolio risk monitoring. News archives provide historical data for comprehensive backtesting and training. News data is also an established approach to assessing organisational key risk indicators.

RavenPack's Edge platform can analyse content in 13 languages and covers over 40,000 sources of news and social media. It is trained to identify millions of individual entities, including companies, people, products, places, organisations, currencies and commodities, and over 7,000 market-moving events. The coverage has been expanded for



Armando Gonzalez, RavenPack

this new platform to include over 12 million searchable entities, including 6.5 million public and private companies. That's about 25 times more entities, including 150 times more companies than before.

For almost 20 years, RavenPack has used artificial intelligence to provide useful business insights. The technology it provides for knowledge workflows has influenced quantitative investing, systematic trading and macroeconomic

analysis. RavenPack aims to continually innovate and increase capabilities to be positioned at the leading edge of alternative data. Hundreds of white papers by leading academics and researchers demonstrating the value of their news sentiment analytics have been published. RavenPack continues to invest heavily in research and development and data science to produce new and innovative analytical techniques, backed by solid backtesting research.

Judges said:

- "News sentiment analysis via NLP is a valuable way of spotting emerging risks."
- "Great sentiment analytics."
- "RavenPack has a broad scope and coverage as an NLP sentiment provider, and multilingual NLP gives them an edge."
- "Use of alternate data to understand how events impact investment decisions is a leading-edge capability."

Armando Gonzalez, Chief Executive and Founder of RavenPack, says:

"We are honoured to receive the Best alternative data vendor of the year award. RavenPack leads the way with the most sophisticated text analytics platform that turns news, transcripts, filings and any text in different languages into actionable indicators. Coupled with our world-class research, our offering empowers data-driven decision-makers at the most successful hedge funds and Fortune 500 companies to capture investment opportunities, mitigate risk and leverage market intelligence." ■

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Alternative data
vendor of the year
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Bloomberg

Pricing and analytics: structured products/cross-asset

Structured products are becoming increasingly popular but, in a low-yield environment, there is little margin for error. Firms must differentiate their offerings and ensure they have the right structure, payoff and underlying for the risk profile of their customers. Bloomberg's Derivatives Library (DLIB) offers a one-stop shop for trading and managing structured products, bringing tier-one structuring capabilities to the buy and sell sides. The highly automated hosted application is designed to cover any product, even the most exotic, offering scenario analysis, stress-testing, collateral management, and market, counterparty and credit risk management.

DLIB allows buyers and sellers of structured products to view and share their deals, portfolios and ideas on the Bloomberg Terminal, perform backtesting and define key terms. Bloomberg's payoff scripting technology can add coverage for the most customised exotic products in a matter of minutes. It can also be used to compute relevant metrics such as the probability of hitting a barrier or expected coupons.

Since DLIB provides automatic lifecycle management, it can help users comply with the Packaged Retail and Insurance-based Investment Products (PRIIPs) Regulation by generating the PRIIPs output throughout the life of deals. DLIB also helps users understand the major aspects of a deal, including lifecycle events, probabilities, scenarios and backtesting.

DLIB can be accessed through Bloomberg's Multi-Asset Risk System (MARS), which provides buy-side clients – such as insurers and pension funds – with tools that automate report generation and manage the asset-liability management of their portfolios.

Bloomberg's cross-asset, real-time and historical market data sits at the heart of DLIB, and is available as standalone feeds or integrated with desktop analytics and risk systems. Coverage for the most customised exotic products can be added in a matter of minutes.



Abdessamad Khaled, Bloomberg

Users have access to pricing libraries for vanilla and exotic instruments, and pre-integrated input data for valuations. Positions and prices flow through to all other Bloomberg products, allowing consistency from execution through to risk management and back-office functions. This integration means structured products can be analysed alongside any other financial instruments in a portfolio context.

Throughout 2021, Bloomberg updated its market data analytics, deploying machine learning techniques such as

unsupervised clustering to weed out unreliable data sources. Bloomberg expanded its mapping technology, mapping complex fixed income structured notes to DLIB, with the aim of firms being able to manage structured products as easily as managing bonds. It also continued to update its Libor transition products, adding support for pricing risk-free rates-based structured notes using DLIB functionality.

Judges said:

- “DLIB can add coverage for the most customised exotic products in a matter of minutes.”
- “Integration of data and analytics across systems allows structured products to be analysed as part of a wider portfolio.”

Abdessamad Khaled, Head of Structured Products and Derivatives Pricing at Bloomberg, says:

“Bloomberg's goal is to make trading structured products as simple as it is for bonds. We understand that cost efficiency and ease of access are a primary focus – hence our automated solution allows clients to access products easily, spending less time and money doing it. Bloomberg's automated workflow solutions for structured products are an integral part of our risk management offerings. These capabilities are already helping brokers scale up their structured products coverage to meet growing demand from the buy side. The technology enables innovation and allows new products to launch in an unrivalled time-to-market.” ■

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Market liquidity risk product of the year

Compared with credit and market risk, accurate measurement of liquidity risk remains a significant challenge across the financial industry. This is a growing concern as regulators worldwide strengthen their focus on market liquidity and liquidity risk frameworks. Firms need to quantify liquidity risk and generate accurate, defensible metrics – not only for compliance but also for internal portfolio assessment and investor reporting. The monitoring of market liquidity and asset/liability mismatches now forms an intrinsic part of many firms’ risk management frameworks.

Illiquid and opaque markets are a major challenge for liquidity risk management. Bloomberg’s Liquidity Assessment (LQA) solution uses advanced financial models to fill in the gaps where data is not available, accommodating a wider universe of securities, including those with little-to-no recent trading activity. By training the model on a large database of executed trades from a variety of sources globally, the model is calibrated daily to quickly capture changing market conditions. This means LQA has consistently produced accurate results during the extreme and unexpected market events that have occurred over the past two years.

Because every asset class has different trading styles and market nuances, Bloomberg created asset-class-specific models to reflect different underlying conditions. All LQA’s liquidity metrics for cost, horizon and volume are consistent and comparable, making it easy to use and aggregate across diverse portfolios.

A team of data scientists monitor LQA output, with robust backtesting to track and validate the model’s performance and support clients’ model validation procedures. The model can be customised to cater for a firm-specific view and increasingly to support stress-/scenario-testing. In addition to stressing underlying market conditions at the security level, clients can request transaction-level output metrics based upon different percentiles of liquidation cost and horizon distributions. This allows clients to better simulate ‘tail events’. This is particularly useful when building limit monitoring frameworks and responding to regulator demand for stress scenario outputs where greater flexibility than a simple default output may be required.

Over the past 12 months, Bloomberg has made several enhancements to LQA, including:

- Developing a new suite of metrics that provide more transparency on actual trading volumes of exchange-traded funds, and their implied liquidity.
- Expanding the LQA model to include coverage for collateralised loan obligations (CLOs). This has been done by partnering with experts in this sector to onboard high-quality pricing data for CLOs and to integrate that data into Bloomberg’s liquidity assessment framework.
- Expanding LQA’s functionality to support the upcoming liquidity assessment guidelines from the Japan Financial Services Agency.
- Enhancing LQA’s models to improve the quality and coverage of liquidity metrics. This includes integrating additional data sources and incorporating more advanced quantitative modelling techniques, such as leveraging deep neural networks to predict available volume.

Judges said:

- “LQA’s use of sophisticated modelling techniques to fill the gaps where there is simply no data available creates a potentially very strong tool.”
- “Very strong market liquidity product with a data-driven approach and backtesting evidence.”

Zane Van Dusen, Head of Risk & Investment Analytics products at Bloomberg, says:

“We’re honoured to have LQA recognised as the market liquidity risk product of the year in the *Risk Markets Technology* awards for the third year in a row. LQA has become an increasingly integral part of our clients’ risk frameworks by providing an easy-to-use solution for the ongoing challenge of assessing market liquidity. In addition to regulatory compliance, we are excited to see our clients finding innovative ways to leverage LQA throughout the full trade lifecycle, including pre-trade to proactively manage liquidity risk. While there may be simpler ways to assess liquidity – like static rules-based approaches or trader intuitions – numerous events over the past few years have highlighted the need for dynamic data-driven liquidity metrics.” ■

Bloomberg

Best support for Libor reform

The acceleration of the Libor transition ahead of its partial phase-out at the end of 2021 sparked huge demand for tools to help firms transition smoothly. Ever since the announcement in 2017 that Libor would end, Bloomberg has worked to develop a host of pricing tools, analytics and indexes to support firms through the reform.

The extensive Bloomberg product offerings include analysis of risk-free rates (RFRs) on individual securities, pricing and risk management tools for RFRs such as secured overnight financing rate (SOFR) swaps, electronic trading in overnight index swaps, and new indices.

Through Bloomberg's Multi-Asset Risk System (MARS) clients can perform what-if analyses to understand the profit and loss implications and risk impacts on portfolios under different scenarios and discounting assumptions. In 2021, Bloomberg added support for pricing RFR-based structured notes.

On the Bloomberg Terminal, live interest rate yield curves for RFRs are integrated with structuring and pricing analytics to enable support for the pricing of derivatives and fixed income securities referencing RFRs. Market participants can also trade RFR-based derivatives using Bloomberg Global Trading Venues: Bloomberg swap execution facility (BSEF), Bloomberg's EU multilateral trading facility (BTFE) and Bloomberg's UK multilateral trading facility (BMTF).

There is also a dedicated product that enables clients to assess fallback impact on the securities in their portfolios. Bloomberg created this by manually reviewing final documentation on over 196,000 cash fixed income securities to identify the applicable fallback language. The product indicates whether a security's fallback provisions are inadequate as defined under New York State legislation, whether it is subject to those provisions or adheres to the fallback language recommended by the Alternative Reference Rates Committee (ARRC). The dataset captures the full ARRC-recommended benchmark waterfall, which includes fallbacks to term SOFR and ARRC spread adjustment.



Steffan Tsilimos,
Bloomberg

In January 2021, Bloomberg launched the Bloomberg Short Term Bank Yield Index (BSBY), a set of forward-looking credit sensitive indices constructed using aggregated and anonymised transaction data. The following April, an independent assurance review of BSBY confirmed that it adheres to the International Organization of Securities Commissions' *Principles for financial benchmarks*. Several instruments, including floating rate bank notes, swaps, bonds and loans tied to BSBY have now been issued and traded, and BSBY futures were launched by CME Group in August 2021.

The selection of euro short-term rate (€STR) and SOFR as the new RFRs for euros and US dollars, respectively, brought the issue of credit support annexes (CSAs) with different rates of interest on variation margin into sharper focus. To support this transition, Bloomberg enhanced its CSA curve analytics to allow the user to select the CSA-appropriate collateral curve.

Judges said:

- "Bloomberg offers robust support of the Libor changeover to RFRs with an extensive range of products across its platforms."
- "The fallback language product is impressive, capturing the full ARRC-recommended benchmark waterfall."

Steffan Tsilimos, Global Head of Interest Rates Products at Bloomberg, says:

"There is no 'one-size fits-all' benchmark or solution to Libor transition, and Bloomberg continues to build products to address the various scenarios that could potentially arise. Our clients depend on our analytics and portfolio solutions to provide risk and financial analysis on derivatives, loans and other fixed income instruments due to existing systems lacking the capability to properly handle RFRs. In addition, Bloomberg is one of the only vendors to have mined cash security documentation across more than 196,000 cash fixed income securities, including floating-rate notes, municipal securities, preferred securities, mortgages and syndicated loans, to locate fallback language." ■

BestX

Best execution product of the year

BestX provides sophisticated pre- and post-trade analytics, helping investment services firms meet their best execution obligations under the second Markets in Financial Instruments Directive – known as Mifid II – and equivalent regulations.

Following its acquisition by State Street's GlobalLink division and expansion into equities in 2020, the firm has developed its product offering over the past 12 months to cover multiple asset classes. The expanded offering enables firms to efficiently consolidate their transaction cost analysis (TCA) and best execution metrics with a single provider, computing appropriate and accurate metrics by individual asset class.

BestX's analytics incorporate a proprietary expected cost model, allowing all aspects of best execution to be measured and monitored. Separate analytics layers have been built for FX, fixed income and equities to ensure accurate computation of asset-class-specific metrics, as well as common metrics that allow consistent cost aggregation for multi-asset portfolios.

Pre- and post-trade functionality is linked, providing an end-to-end view of the trade lifecycle, and is backed by customisable reporting. This allows user-defined thresholds on any metric to be configured and monitored, and auditable workflows around exception explanation and approval.

BestX's architecture has been designed with asset-class-specific analytics layers, a common user interface and reporting functionality. The business and product remain independent, with a standalone legal entity, data and technology infrastructure. Its open architecture enables links with any execution/order management system or liquidity provider in the market.

BestX's analytics are delivered via an advanced cloud-based technology stack that is scalable and fast, with specific analytic engines built for each asset class. This allows market nuances and conventions to be correctly accounted for, along with asset-class-specific metrics such as volume-weighted average price for equities, or 'far-touch' and yield calculations in fixed income.



Oliver Jerome, BestX

The system's user interface allows maximum flexibility in report generation and analysis of results. Data can be filtered by any attribute, producing a bespoke user-friendly visualisation. Recent enhancements include multi-asset summary views of cost and performance for heads of trading, best execution committees, chief information officers and investors, and asset-class-specific views for traders.

BestX's data sources are comprehensive. For foreign exchange, intraday data is aggregated from over 120 liquidity providers, with around

1 billion price updates stored per day. For fixed income, the firm processes data for over 2.5 million securities daily from Ice Benchmark Administration's Continuously Evaluated Pricing feed, as well as from Refinitiv, TradeWeb and MarketAxess. Futures data is taken directly from exchanges, while equities is fuelled by a Refinitiv data feed from more than 70 global exchanges. The firm also provides access to a community pool of anonymised performance data for the buy side for FX and equities. Comprising more than 50 million trade records, this provides further insight and peer analysis.

Judges said:

- "The breadth of products covered is strong."
- "The firm has clearly kicked on after acquisition."
- "Great request-for-quote functionality."

Oliver Jerome, Co-founder and Director, BestX, says:

"BestX provides a fully integrated multi-asset class transaction cost analysis product, covering FX, fixed income, equities, commodities and, in 2022, the launch of cryptocurrency TCA. The product serves multiple use cases, across both the sell and buy sides, effectively allowing an institution to implement and codify its best execution policy in a single platform. Configurable BestX factors, benchmarks, outlier detection and reporting support bespoke implementation and best execution committee reporting. Unique analytics engines provide specific metrics per asset class, in addition to common metrics to allow aggregation across entire multi-asset portfolios." ■

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