02 May 2025

FORRSight

A brief history of swap curves

A quick look at where they come from and why they vary

Market data licensing: from cost driver to value creator

Here is what leading firms do differently!

Liquidity in focus: categories, players & price impact

Unpacking liquidity's role in market efficiency and price discovery

It's All About Data!

From insight to action – fueling innovation and decision-making in financial markets

FORRS

Content

Dear readers,

As both Financial and Energy markets face increasing complexity, 2025 is bringing new challenges and opportunities for trading firms. Global market data spend reached a record US$44.3 billion dollars in 2024, up 6.4% from the previous year. This reflects the increasing volume of data and the growing pressure to manage it effectively. Around 90% of financial institutions report increased complexity in licensing, driven by multi-asset usage and cross-border access, to name just a few factors.

At the same time, scalable cloud platforms, AI-driven analytics, and unified data strategies all offer new ways to manage complexity and turn governance into a strategic advantage. Success increasingly depends on the ability to adapt to the latest information, systems, and strategies in a rapidly evolving environment.

We are excited to publish this second edition of FORRSight Magazine. This issue focuses on the rising importance of market data in Financial and Energy markets. At DKF, Europe's leading event for financial information services, industry leaders explore how data is driving transformation and innovation. Here are some key takeaways: the growing need for robust data, strong licensing, sound governance, and smart technology choices. In this issue, we share our perspective on the evolving landscape – from rising data volume and complexity to the critical role that data plays in decision-making. As firms strive to manage and analyze vast amounts of data, ensuring compliance plus selecting and implementing the right technologies become vital to staying competitive.

At FORRS, we support clients in building future-proof data strategies and platforms. Our Commercial Market Data Management Services enable clients to choose the right technology, reduce costs, streamline usage, and ensure compliance. With continued investment in our GRYT platform, we help organizations tackle modern data challenges.

Stay tuned for more in upcoming editions of FORRSight Magazine!

Goeksel Yildiz
Director License Management at FORRS

Dear friends,

Over 35 years ago, the idea for DKF was born. Today, I'm extremely proud to see that this event has grown into Europe's leading tradeshow and conference gathering for professionals in the Financial Services industry.

Such an achievement is only possible when the people in charge have a strong focus and commitment to become the best in the world at what they do. More important, industry participants (data and software providers) and visitors are instrumental to its ongoing success.

In an era where it seems as though most communication, information sharing, and data (intelligence) collection goes via computers and mobile phones, it makes me very happy to see that we still have not forgotten the importance of a face-to-face meeting or chat. DKF provides a platform to present the latest trends, to discuss them with peers, and allows industry participants to experience firsthand the most interesting solutions for them. By discussing your requirements with other professionals, doing your research by attending interesting conferences, or by having a friendly chat at the tradeshow, you will gather more market intelligence than any search engine. However, this requires active participation and focus on what you're trying to achieve.

In 2023, DKF started broadening its scope to include Energy markets, bringing industry participants together and allowing them to learn from each other. Especially in areas like trading technology, modeling, data usage, compliance, cost and license management, and end-user support, there's much intelligence that can be shared. This is why FORRS has decided to focus on DKF as its main industry event, to present its unique know-how of both the Financial and Energy markets.

A preview of FORRS's capabilities can be found in this great magazine in front of you.

Happy reading!

Kees Brooimans
FORRS Supervisory Board Member, DKF Co-founder & Screen Group Co-founder

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Maneuvering through your data management journey

Harvesting the full potential of artificial intelligence relies on the best possible data management as a foundation.

Efficient data provisioning is more crucial than ever, especially within financial organizations. Technology or services offerings are growing fast. Organizations are moving their business models towards data-driven revenue generation and are preparing for the age of artificial intelligence (AI). Increasing automation enables enterprises to operate faster and more efficiently.

Data is a paramount ingredient for all business processes. Efficient data management is complex and needs senior management attention. Strong leadership teams must prepare to make impactful decisions around data, technology, and services.
Professional data management in financial services organizations is a continuous delivery journey, rather than a project initiative with a definite end.

Rising challenges of managing all aspects of the data management journey

Data management technologies have developed dynamically over the last decades. Recent innovations, such as extremely competitive cloud offerings or new types of services, are speeding up this development. These innovations have reached satisfying maturity levels, which make them highly relevant for financial organizations.

Financial organizations must make a growing number of decisions when navigating through a labyrinth of offerings, which are typically not directly comparable with each other.

Moving from decision support to decision automation

Future business cases in financial organizations will mostly involve initiatives where decision automation is key. Historically, IT systems were used to support and enable decisions but nevertheless were based on manual interactions. With automated decision taking, manual interactions are removed from corporate workflows and decision taking is reaching new levels of quality.

A key ingredient for reliable decision automation initiatives is a fully managed data landscape, including reliable data quality. Successful implementations are already widely available – for example in areas such as anti-financial crime (AFC), where real-time decision-making in fraud prevention enhances customer value.

Integrated management of the data management journey

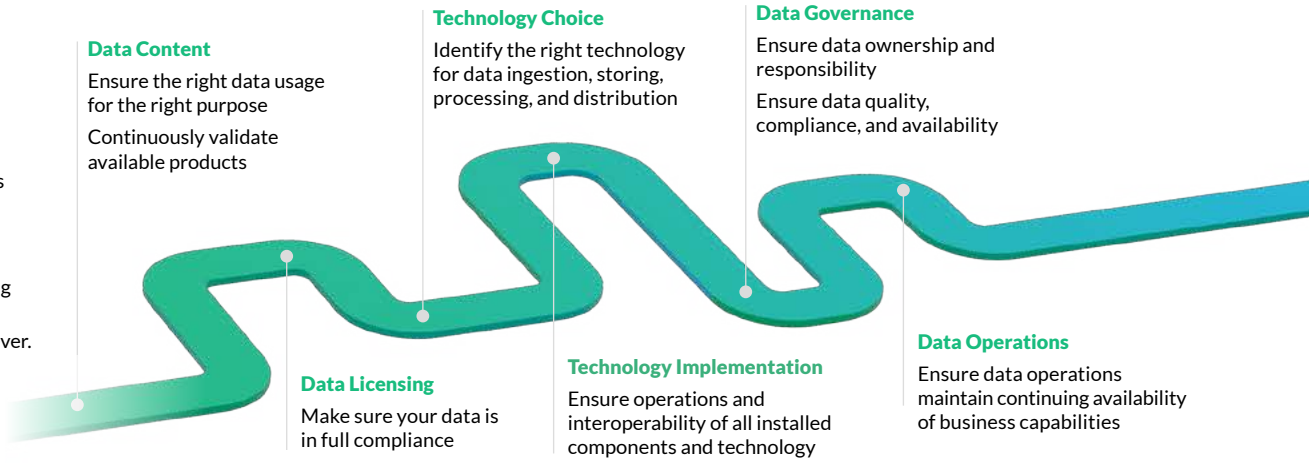
The sophistication level of data usage within business processes is developing extremely fast – for example, business intelligence (BI) and dashboarding solutions are market standards nowadays. However, organizations still have room to improve significantly their internal data provisioning journeys.

The following sections outline a typical data journey:

Data content
New products, new requirements, new regulations, all drive the development of data content needs. At the same time, data vendors are constantly reacting with new offerings to meet customer needs effectively. Overseeing the ever-changing requirements of an organization, while following market developments and relevant vendor offerings, is an increasingly difficult challenge for any organization.

Data licensing
Utilizing data for commercial purposes increases costs, which must be constantly monitored, managed, and optimized to prevent unexpected budget overdrafts or scrutiny by data vendors. With constantly changing data content offerings, managing data licenses, such as switching vendors, or validating internal demands, becomes a complex task that requires a professional organizational structure and well-trained staff.

Technology choice
Identifying the most efficient technology for ingestion, storing, processing, and distribution of data is a complex challenge. Technology offerings have exploded over the past few years. Moving



Navigating a labyrinth of choices around your data: Efficient data availability and usage within trading organizations are more crucial than ever. Fortunately, there are more and more options for data management.

all your data into cloud-based solutions looks appealing at first, but evaluating whether it is really the best choice requires sophisticated validation.

Financial organizations historically utilize specialized systems to manage data and its usage, whereas recent cloud-based developments show a more technical generalization of data management. Identifying the ideal solution mix that addresses specific data usage requirements, while leveraging the benefit of modern cloud-based data architectures, requires new skills within the organization. Continuously managing technological choices within a financial organization is increasingly important for ensuring competitiveness.

Technology implementation

Constantly overseeing multiple technology implementation projects at the same time is the new reality for financial organizations. While system implementations alone have their complexities, managing a portfolio of innovative technology implementations is even more difficult. Still, many financial organizations manage technology implementations as cost center implementations, and do not see technology as a value-creating benefit for their business. We see successful organizations transitioning to more value-driven technology implementation projects, providing, for example, B2B customer services directly on their technology platforms.

Data governance

Ensuring data ownership and responsibility around data is a well-understood task within financial organizations. Since other related factors of the data management journey are becoming increasingly complex, data governance management needs to gear up and increase efficiency. Poor governance and compliance becomes costly, since addressing these issues requires the complete focus of an organization, which slows down business growth and value creation. Given a smaller workforce in the future, such constellations become extremely painful and operational risks arise. That is why more organizations are outsourcing their governance and compliance efforts.

Data operations

Based on all the above aspects, managing data landscapes in the future will become more complex and multi-dimensional. Effective data provisioning services within an organization require new operating models and highly integrated structures.

One of the most effective methodologies used by successful organizations is to design integrated data solutions and operations that are based on capability architectures. This allows business-related decisions to be separated from technology decisions. Technology can be exchanged, while capabilities remain the same. FORRS uses capability architecture as a leading principle when planning and designing data architectures and platforms.

Conclusion

Technology choices and data content challenges typically introduce additional complexity, particularly arising from data governance and data licensing. A lack of effective data governance is an internal cost driver, while poor data licensing practices represent an external operational risk, often leading to significant costs or even fines. Successful organizations of the future will manage and operate these aspects in an interlinked fashion and will focus on timely and high-quality delivery to support their business cases.

The hidden maze of market data licensing

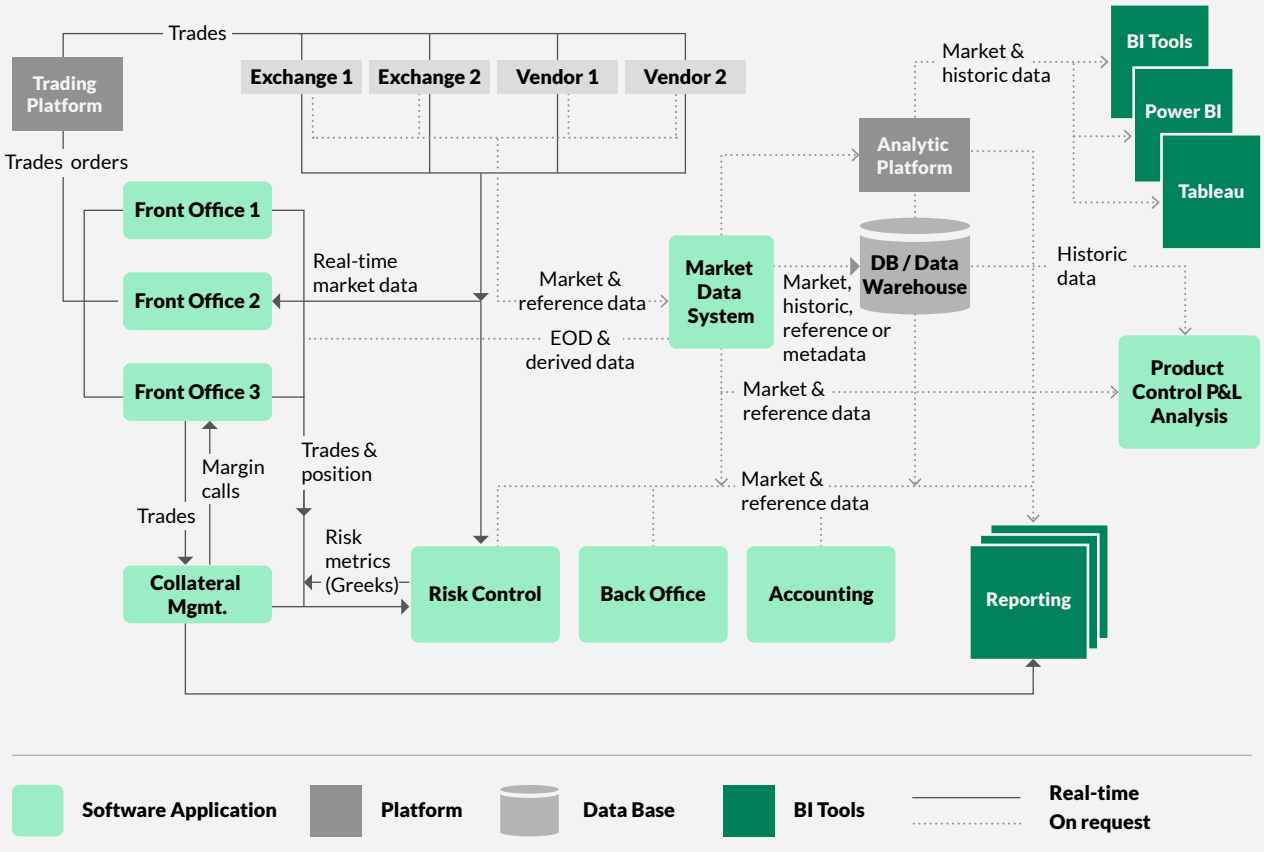
Managing market data licenses today is anything but straightforward. What seems like a simple subscription quickly turns into a complicated mix of licensing rules, usage restrictions, and rising costs.

Challenge 1: Lack of transparency in a complex IT landscape

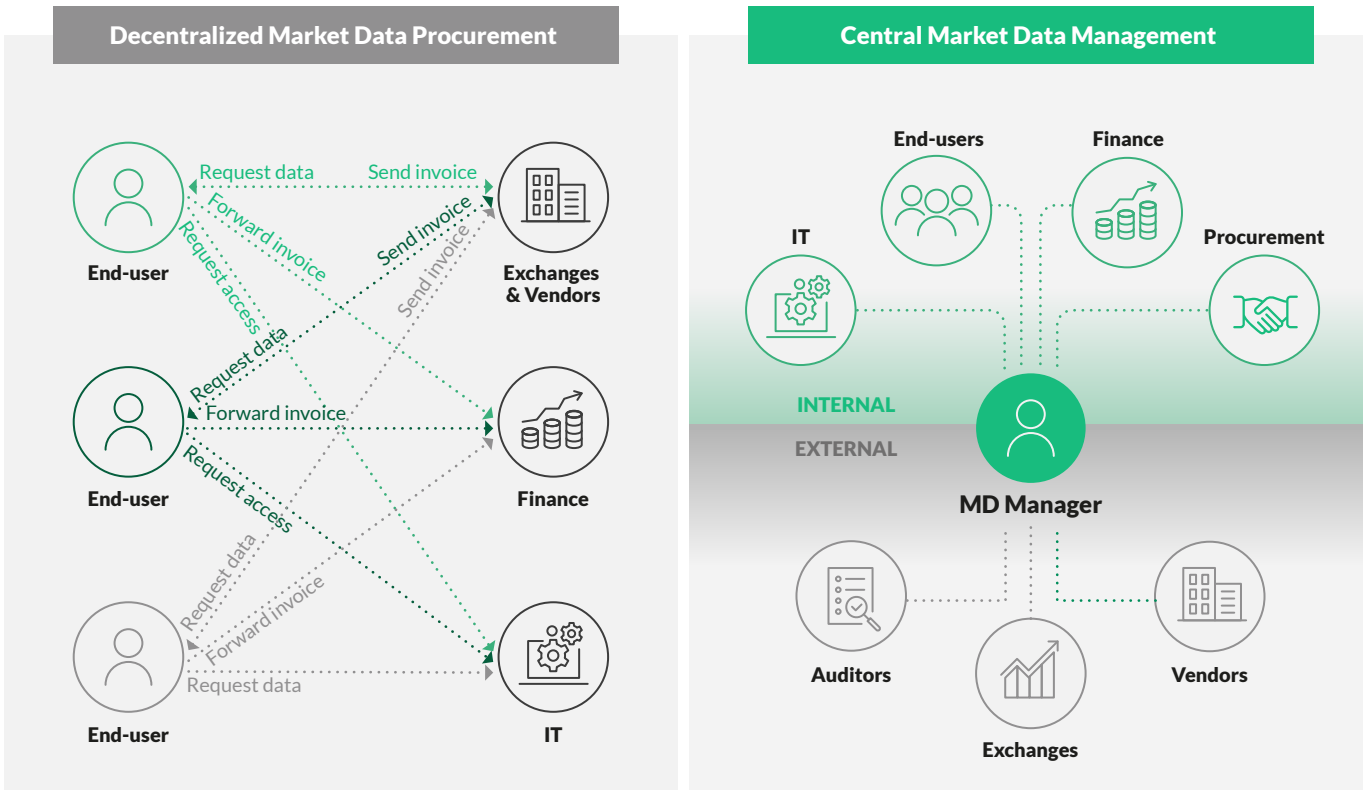
Market data now flows through a wide range of systems (trading platforms, risk engines, dashboards, data lakes, and internal databases). With so many tools and technologies in use, companies often lack a central overview of where licensed data is used and whether it complies with licensing terms. This lack of transparency increases the risk of misuse, inefficiencies, and problems during audits.

Challenge 2: Licensing complexity and lack of transparency

Licensing models vary widely across vendors and use cases – internal vs. external, display vs. derived, redistribution rights, and more. Often, it is unlcear what is allowed, creating a high risk of accidental misuse.



Market data flow across the enterprise: Market data from external sources flows through internal systems.



Gain transparency, control, and operational efficiency by centralizing data procurement and data management

Centralizing market data procurement: Centralization improves transparency, control, and operational efficiency.

Challenge 3: Rising costs and growing pressure

Market data is becoming more expensive. Many vendors are raising prices and introducing new fee models. At the same time, data usage is being watched more closely. This makes it harder for firms to keep track of costs. Without clear oversight, they risk surprise back charges, audit issues, and rising operational expenses.

Challenge 4: Decentralized data procurement

Many firms still operate with decentralized data management. Individual teams procure data independently, leading to redundancies, uncontrolled usage, and license breaches.

Challenge 5: Growing demand – existing sources and new data types

As firms expand their data strategies, demand is rising not only for traditional market data but also for new, often unstructured sources such as ESG metrics, sentiment data, or weather data. These emerging datasets offer valuable insights but often come with fragmented standards and unfamiliar licensing terms. This dual pressure heightens the complexity of data integration, governance, and compliance across the enterprise.

Challenge 6: Cost allocation according to causation

Accurately attributing market data costs to the business units or activities that drive consumption remains a key challenge. With complex licensing terms and widespread data usage across teams, establishing true causality is difficult. However, transparent cost allocation is essential not only for accountability and cost control, but also to evaluate business cases more effectively and support data driven investment decisions.

Here is the good news: This is not a hopeless puzzle. Smart firms are starting to treat data licensing as what it really is, **a strategic capability**. And they are seeing results.

The history of DKF – a successful journey over 15 years

From zero to 1,000 visitors and the world's largest market data industry event.

DR. ALEXIS EISENHOFER
CFO | financial.com AG
Founder | DKF

Back in the 1990s, following initial meetings around CeBIT computer trade fair in Hanover, the German financial information industry met at the European Banking and Insurance Fair (EBIF) in Frankfurt am Main. With over 100 exhibitors, EBIF was a central trade fair for information providers, as well as an important industry meeting point for providers of payment and lending solutions. However, the financial crisis, triggered by the insolvency of the US investment bank Lehman Brothers, marked the end of EBIF after 11 years.

Susanne Fröhlich, back then Head of Market Data at Allianz, and I saw this as an opportunity to bring the target group of information providers to our home city of Munich. We were able to convince Kees Brooimans from the Dutch company Screen Consultants of our idea. Kees had already established successful annual events in Amsterdam and Stockholm, and Screen Consultants had a broad portfolio of sponsors, primarily vendors offering market data solutions. Allianz, in turn, was one of the largest customers of these vendors.

While Screen Consultants and Allianz had valuable relationships in the vendor landscape, I brought a

strong network of information product clients, particularly in the German-speaking financial industry and in Munich itself. As I would have been unable to establish a large event in Frankfurt, we focused on the D-A-CH region and positioned Munich as its focal point, only four hours by train from Frankfurt, Vienna, and Zurich.

In 2011, the first D-A-CH Congress for Financial Information took place at the Hotel Bayerpost Sofitel in Munich, where we already welcomed over

500 trade visitors to the premiere. Over the years, the event has grown to up to 1,000 participants, making it the largest industry event in the world. By comparison, the North American Financial Information Summit in New York attracts around 500 visitors, and the Asian Pacific Financial Information Summit in Hong Kong hosts around 450 guests.

Over time, the circle of organizers has changed. For strategic reasons, Allianz decided not to continue as a co-organizer, as insurance companies are subject to strict regulatory requirements for activities outside their core business. At the same time, Screen Consultants was acquired by US-based TRG Group. TRG Screen is now the global market leader in vendor license management in the financial sector but strategically has withdrawn from the consulting business.

A particular stroke of luck was the connection to Sybilla Hanssen, which I owe to Susanne Fröhlich. Sybilla and her team are responsible for DKF's remarkable success. Her father was managing director of Reuters in the 1980s; by far, the largest provider of market data at the time.

Despite the changes, many key players remain closely associated with DKF. Gosia Dyda-Marino and Hardik Bhandari (both from financial.com), Anja Hohenacker and Ronald Damen (both from TRG Screen) and Evert-Jan ten Brundel (formerly TRG Screen) are the constants behind the event.

The success of DKF in Munich has since led to the creation of satellite events. Ronald Damen played a major role in building DKF in Amsterdam – his hometown – and Evert-Jan ten Brundel was instrumental in founding DKF Stockholm. DKF Vienna was also held for the first time last year (2024). Additional events are planned for Luxembourg and Paris. A long-term goal of our team is to establish an event in New York, the hometown of TRG Screen.

Voices from the market: Data, risk & disruption

From rising licensing complexity and data-driven innovation to geopolitical uncertainty and evolving credit landscapes - industry leaders share their perspectives on the key forces reshaping financial markets. These expert voices spotlight how firms must adapt with smarter tools, sharper insights, and agile strategies to stay ahead.

EVERT-JAN (E-J) TEN BRUNDEL
Managing Consultant |
Silver-Fox-Advisory

In the current market, the importance of market data licenses is growing exponentially. Both security exchanges and vendors are becoming more protective of their IP rights and are deploying AI solutions to enforce, track, and trace compliance. The complexity lies in the opaqueness and diversity of the license agreements, as well as challenges with data lineage and "ultimate ownership." End-user firms should be more prepared than ever for audits.

JORN VOS
Director Business Development EMEA |
Gresham

The financial sector faces rising complexity, tighter regulations, and margin pressure. Banks increasingly see data as a strategic asset. With the right tools, they can use data to enhance investment insights, ease compliance, manage risk, and improve pricing and execution. Success depends on data quality, accessibility, and tailored solutions that integrate with legacy systems. As experts in financial data management, we help banks unlock the full value of insight-driven strategies.

STEFAN VEIGEL
Director EMEA Commercial Strategy | S&P Global Market Intelligence

In the current credit landscape, the dynamics between Credit Default Swaps (CDS) and bond spreads are crucial. The CDS-bond basis, indicating the difference between CDS spreads and bond spreads, can present significant trading opportunities, especially when a negative basis emerges, making CDS protection cheaper than bond exposure. This negative basis often exists as long as CDS spreads are lower than bond spreads, reflecting market dislocation.

Recent changes in U.S. policies under the Trump administration have affected spreads differently in Europe and the U.S., with the latter showing resilience, while European credit faces more volatility. Monitoring these spreads is essential, as they signal shifts in risk perception and provide valuable insights into market conditions.

DR. ALEXIS EISENHOFER
CFO | financial.com AG
Founder | DKF

Digitalization and the API economy are enabling a redesign of value chains. Information providers and transaction platforms can be integrated, allowing decision-makers to act faster, more precisely, and more cost-effectively. Through AI, unstructured information can be structured and used in trading models. In this world, it is not the big that eats the small, but the fast that eats the slow.

PHILIPP SFEIR
Managing Director EMEA North | NeoXam Germany GmbH

The demand for quality data has become paramount for operations, compliance, and decision-making. AI is revolutionizing how firms detect anomalies and automate processes, while rising data costs are pressuring organizations to establish efficient solutions. Effective reconciliation tools like ARO detect breaks in real time, while comprehensive data platforms integrate previously siloed systems. Our R&D commitment to addressing industry trends is key.

DR. ERNST EICHENSEHER
Head of Risk Control | Helaba

With Covid, the Ukraine war, and now, a massive trade war unfolding, the world has become highly volatile and unpredictable. The “unknown unknowns” are driving and challenging risk management to a degree that hasn’t been seen since the financial crisis. Understanding these novel risks, and providing meaningful and actionable information to top management, supervisory authorities, and other key stakeholders are today’s challenges.

FORRS Interview with big xyt

Beyond market data: big xyt's vision for trading intelligence

big xyt's journey from innovation to industry standard: helping institutions navigate global market complexity with independent, turnkey solutions for liquidity analysis, transaction cost analysis (TCA), and regulatory reporting across asset classes and regions.

ROBIN MESS
CEO & Co-Founder

FORRS: How would you describe your product, and what makes it unique or new in the market?

Robin Mess: Big xyt is an independent provider of high-precision trading analytics for global markets. We help clients extract clarity from complexity through normalized, consistent, and granular data. Our solution is unique because it combines nanosecond-level precision, Level 3 visibility to assess participant behavior, and our conflict-free position – free from affiliations with trading venues or market participants. Built on a cloud-native, proprietary technology stack, our platform processes billions of records daily and delivers immediate, actionable insights. We are recognized by our clients as a benchmark for data quality, and our solutions are known for their easy integration into existing systems and workflows.

FORRS: What do your clients value most about your products? How do they use them?

Robin Mess: Our clients value the reliability, neutrality, and depth of our analytics. We support pre- and post-trade workflows, execution quality analysis, venue assessment, and compliance reporting–such as Best Execution (BestEx) and PRIIPs. Market participants – including banks, asset managers, market makers, trading venues, and issuers – use our platform to optimize strategies, monitor liquidity, and meet regulatory obligations. Seamless access via API or GUI means they can integrate our insights with minimal effort, across their analytics, trading, and compliance stacks.

FORRS: How has your client base developed globally? Who are your typical clients?

Robin Mess: Our client base has grown steadily across all major financial centers. We work with a wide range of institutions: global investment banks, exchanges, market makers, asset managers, and regulators. As trading becomes more fragmented and automated, firms need reliable, comparable insights. Our independence and expertise in data normalization and harmonization make us the trusted source for those who rely on consistency and objectivity across different asset classes and geographies.

FORRS: Were there key turning points that showed your product was succeeding?

Robin Mess: Yes. One milestone was when leading global banks retired their internal tools in favor of our platform, proving its scalability and performance. Another key moment occured when exchanges and regulators began using our analytics as reference points for market quality and compliance. These moments validated our role as a trusted industry utility. More recently, a leading data provider included our market structure content into their terminal solution. This confirms that we are working with a wide range of industry participants, solving real, pressing challenges with precision and efficiency.

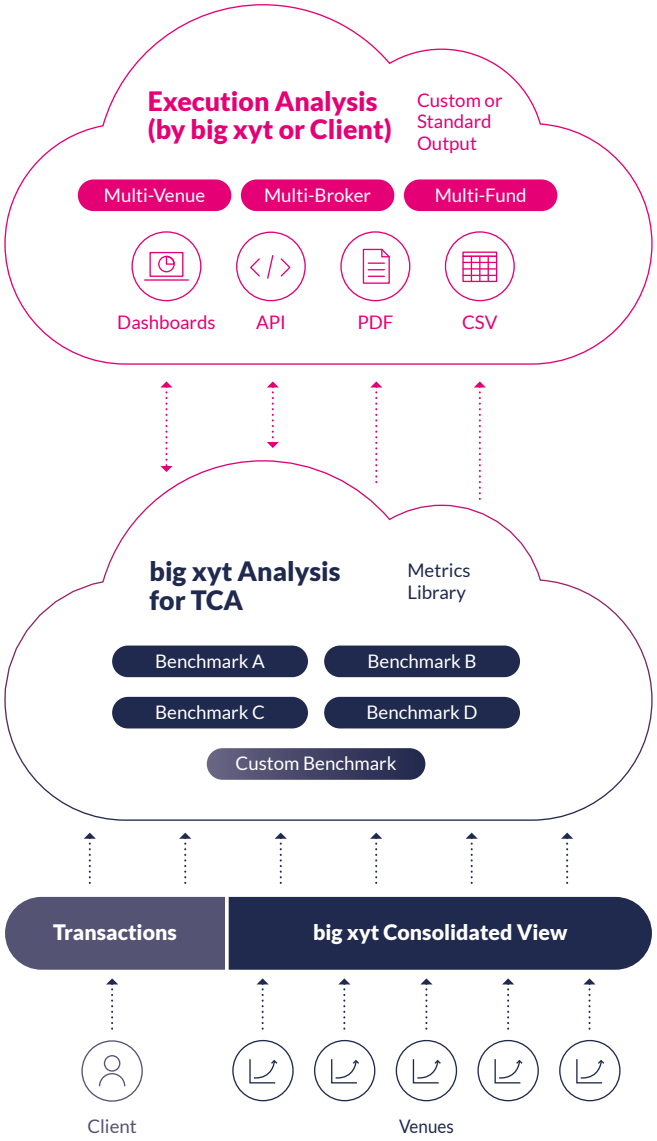
FORRS: What is the technical strength of your solution?

Robin Mess: At its core, our platform is built to handle highly demanding analytics use cases. Our cloud-native architecture enables real-time processing with nanosecond resolution, allowing clients to track trading activity at the most granular level. We deliver full-depth order book analytics, enriched with participant-level insights, while ensuring data is normalized and harmonized across venues and instruments. The result is a robust, audit-ready foundation that supports complex analyses at a fraction of the typical cost for large-scale data initiatives.

FORRS: Why are you entering the German market now, after your global success?

Robin Mess: Germany is a key hub in the European financial landscape and home to many market participants. The demand we see is two-pronged. First, the German market is seeking conflict-free trading analytics – especially with growing regulatory scrutiny. Second, our international clients look to Germany as a key financial market for growth. This provides us with the opportunity to bring our capabilities closer to those in the region. With deep ties to the European market and a proven global track record, we are well-positioned to support German institutions with tools that are powerful, cost-effective, and easy to implement.

big xyt's approach to tackle trading analytics in the global market



FORRS: How do you see the market evolving, and how does that affect the relevance of your product?

Robin Mess: The industry continues to evolve rapidly – toward greater automation, real-time monitoring, and regulatory compliance. These trends highlight the need for high-quality, low-latency analytics. Our solutions help clients navigate this complexity by delivering transparency, comparability, and insight into market behavior across fragmented liquidity pools. Our product continues to grow, as institutions seek to use the latest developments in technology to gain a competitive edge, reduce risk, and stay ahead of evolving rules and market dynamics.

FORRS: Can you tell us about the company's history and milestones?

Robin Mess: Founded in 2014, big xyt set out to redefine how market participants interact with data. In 2017, we launched our flagship liquidity analytics tool "Liquidity Cockpit." We followed this with product enhancements in post-trade and regulatory reporting. Our expansion has been organic, driven by growing demand in Europe, North America, and Asia. Today, we are recognized as a reference provider in the industry – trusted by leading firms for our data quality, regulatory expertise, and scalable infrastructure.

FORRS: You recently secured a substantial investment. What was the reason, and what are your plans for the new capital?

Robin Mess: The investment allows us to accelerate growth, while maintaining our independence and high standards. We are using the capital to expand our product suite, grow our strong team, and deepen client relationships in key markets, especially in Europe. It also supports continued innovation in areas like real-time analytics, regulatory reporting, and enhanced integration. Our goal is to support the industry by remaining a trusted, conflict-free partner, helping clients turn complex data into a strategic advantage.

Liquidity categories, market participants and impact on price discovery

STEPHAN LUDWIG
Director

STEFAN KIENLE
Senior Consultant

Liquidity is a fundamental value driver for all marketplaces. In EUR equity markets, it is a main driver of execution efficiency up to price discovery. But how does liquidity differ across various liquidity categories? What are the trends and what impact do they have on price formation?

Let's consider the European equity markets. The chart on next page illustrates the reported share of equity transactions by liquidity category, based on the average daily traded volume of approximately 140 billion Euros in March 2025. However, these reported figures may be inflated, due to double counting or other data quality issues. The company big xyt, known for high-quality data analytics, offers an adjusted figure of 127 billion Euros in average traded volume, on a daily basis. They evaluate the OTC/SI data differently (the plot also uses adjusted volumes).

We observe that Lit Auctions have been gaining market share. Lit limit order book trading has been declining, while Dark Pools have remained stable in recent years. However, OTC and Off-Book volumes appear to be growing, suggesting that traditional trading venues may not be fully meeting the liquidity demands of the market participants.

Lit Exchanges

A Lit Exchange/MTF (Multilateral Trading Facility) is a fully transparent trading platform where buy and sell orders are visible in a public order book. These markets offer the highest level of price discovery – buyers and sellers agreeing on the current value of a financial asset - as participants can see bids and offers in real-time.

Key participants include retail brokers, institutional investors, high-frequency traders (HFTs), and market makers. However, executing large transactions in this market can be costly, as the liquidity premium is comparatively high for this type of deal. Institutional investors often seek alternative venues, to minimize total transaction costs for large transactions.

Lit Auctions

Lit Auctions are scheduled trading events, such as opening and closing auctions. Their asset prices are based on accumulated buy and sell offers collected over the time horizon since the last auction. Compared to Lit Exchanges, the main effect of Lit Auctions is to reduce volatility, as deals are not executed immediately, thereby establishing a fair market price at key moments during the trading session. The primary participants include institutional investors, retail brokers, and arbitrageurs. Since auctions aggregate demand and supply, they play a critical role in price formation as most market participants consider closing auction prices to be reliable indicators of fair market value.

The rising popularity of ETFs has increased liquidity needs for institutional investors, since there are rebalancing days for each ETF. Also, some institutional investors prefer participating in end-of-day auctions, as these prices are typically used for calculating the net asset value (NAV) in their performance reporting. As a result, a significant portion of institutional trading volume is executed during closing Lit Auctions.

Dark Pools / dark MTFs

Dark Pools are non-displayed order books, where large trades, often executed at the mid-price, occur without pre-trade transparency. These markets allow institutions to execute large trades without causing price movements in Lit Markets. The primary participants include institutional investors, hedge funds, and liquidity providers.

Since Dark Pools reference prices from Lit Markets, rather than establishing new ones, their contribution to price discovery is limited. Their market share has remained relatively stable, emphasizing their role as

a reliable source of liquidity for (large) trades. The double volume cap mechanism under MiFID II limits the maximum trading volume in dark pools and other non-transparent trading venues in the EU.

OTC markets

OTC trading involves the direct exchange of financial instruments between counterparties without using a centralized exchange. Common participants include corporations, hedge funds, and banks. Since OTC markets lack a centralized order book, price discovery in these markets is weaker than in lit exchanges.

OTC systematic Internalizers

OTC Systematic Internalizers (OTC-SIs) are investment firms or banks that execute client orders on their own account, rather than routing them through an exchange. Participants include banks, broker-dealers, high-net-worth clients, and institutional investors. These firms often provide liquidity based on internal pricing models that reference exchange prices. As a result, their contribution to price discovery is minimal.

Off-Book transactions

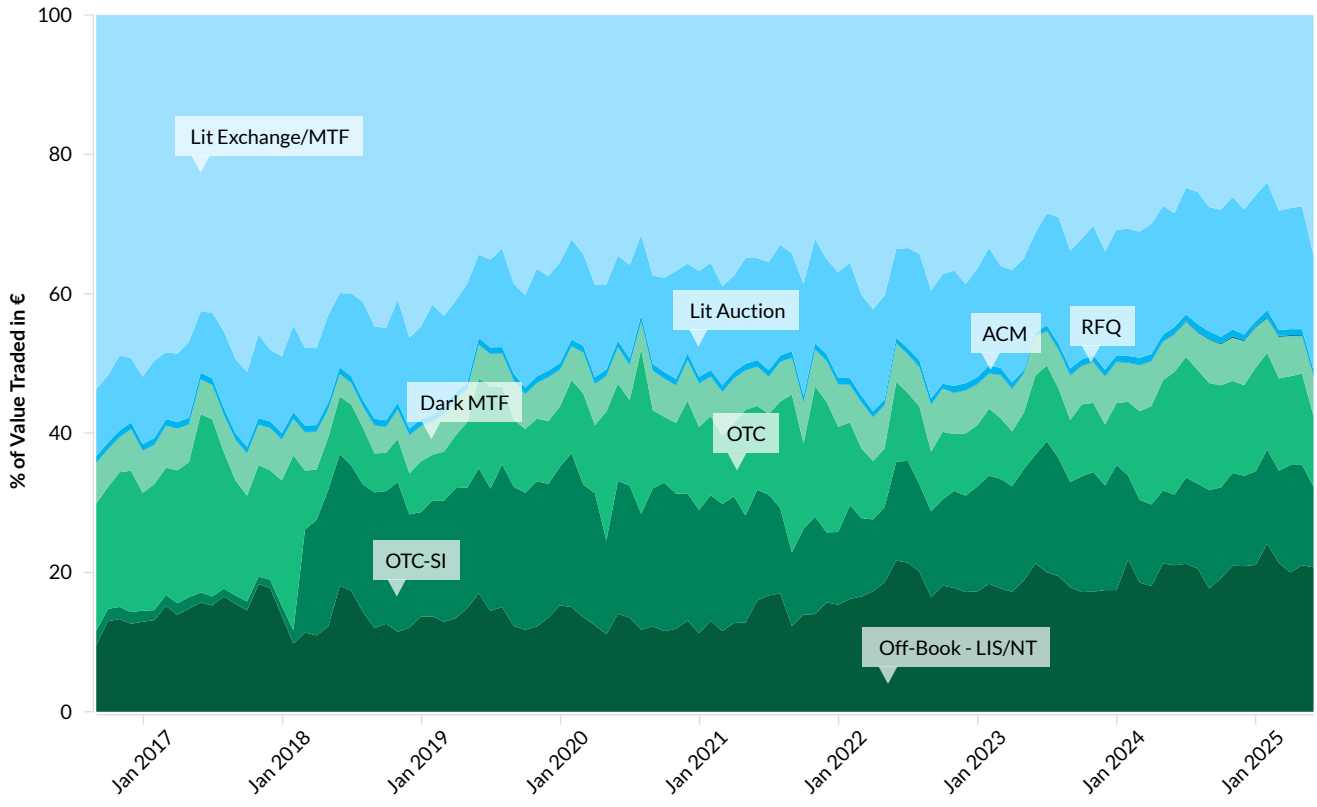
Off-Book transactions occur outside exchanges and qualify as large-in-scale (LIS) or negotiated trades (NT), thereby reducing market impact. Institutional investors, investment banks, and pension funds frequently engage in Off-Book trades to execute large transactions efficiently. Since these trades are privately negotiated, they do not always reflect real-time supply and demand, limiting their influence on price discovery.

The high market share in Off-Book and OTC transactions suggests that broker-dealers and banks can offer highly competitive prices for large transactions. As a result, exchanges and MTFs can struggle to satisfy the extraordinary liquidity demands of market participants.

Alternative closing mechanism and requests for quote mechanism

The market share of Alternative Closing Mechanism (ACM) and Request for Quote (RFQ) mechanism remain negligible, and don't contribute to market liquidity.

Liquidity trends (adjusted)



Liquidity trends (adjusted). The data presented in this figure is proprietary to big xyt. Any further use, reproduction, or distribution of this data requires explicit permission from the data provider.

Navigating market data license management

Capture the true value of market data and vendor-product solutions by exploring the "Seven Cs".

EVERT-JAN TEN BRUNDEL
Managing Consultant

Market data products and services are expensive. To get more value out of market data, it is helpful to understand the following:

- There are market data product and service features
- There are levers in place to steer them
- and, conveniently, all of these features and levers start with the letter C

Product and service features define how they contribute to the output of the end-user. Here are the market data product & service **FEATURES:**

Content is king in market data and financial information services. Content makes the markets move. The more important the content, the higher the value – and the costs. Content sourcing and evaluation strategies include:

1. Assessing relevance: Constantly evaluate the pertinence of content. What was crucial yesterday might not hold the same value today.
2. Source reliability: Verify the credibility of information sources. Reliable, well-established sources are fundamental for accurate decision-making.
3. Cost-benefit analysis: Weigh the costs against the potential insights and advantages gained from the content. High costs can be justified by high returns on information.

Connectivity is all about providing the connections between market participants as offered by the vendors. It ensures that content reaches the intended recipient, with appropriate speed and security. When considering connectivity in decision making, be sure to take the following into account:

By applying the levers to the features, a number of relevant questions can be defined. Once they have been answered, the level of control (or market data spend) becomes clearer.

By asking (and answering) the right questions it will become apparent whether a market data manager is in Control.

Market Data Product & Service | Features	Market Data Management | Levers: Control	Compliance Assurance	Competition	Cost Flexibility
	Content	Is all Content licensed at the optimal condition (detail, timeliness, form of delivery, etc.)?	Are there alternative providers for this Content? Have they been evaluated?	Can Content usage be adjusted up or down easily? How about on-demand products?
	Connectivity	Are all locations licensed correctly? Is user access managed and reported properly?	Are long-term investments in Connectivity economically viable?	Can Connectivity services be scaled up or down cost-effectively? What about platform upgrades?
	Community	Do all end-users have access rights? Are licenses aligned with business use cases?	Do the products and services offer good communication and collaboration?	Can users be added at incremental prices? Can specialized data sets be halted, and costs reduced quickly?

1. The nature of data access: Efficient connectivity ensures targeted and commensurate access to market data – whether real-time, snapshot, or delayed – enabling timely and informed decision-making.
2. Integrating diverse data sources: A well-connected market data system can integrate data from various sources, providing a comprehensive market view. This integration is key for complex analyses and strategies that require diverse data inputs.
3. Global reach: Modern connectivity transcends geographical boundaries, allowing global market participation and access to international data.

Community refers to the market participants in their actual roles, such as trading counterparties, researchers, or recipients of credit ratings. Members of a community communicate, collaborate (for example, through chat), and can discuss the elements of a potential trade. Further, they ask questions about a piece of research, or provide financial information.

In terms of market data value added, the crucial community features of a of vendor's products solutions can be characterized by:

1. Collective intelligence: The community is a source of collective intelligence, offering diverse viewpoints, analysis, and insights. Does the vendor offer this access?
2. Networking and opportunities: Networking within the community opens doors to new business opportunities, partnerships, and potential clients.
3. Influence on market sentiment: This occurs through discussions and shared opinions, as showcased by "talking heads" for vendor products.

As an overlay, there is a number of product and service levers that determine how much influence a market data manager has over market data spend. Here are the market data management **LEVERS:**

Compliance assurance is what a product or service does, or offers, to make a bank, asset manager, or otherwise, compliant with rules and regulations. This includes the terms and conditions of agreements with the wide range of contracted vendors. Be sure to keep in mind:

1. The relevance of vendor contracts and regulations: Robust compliance assurance minimizes the risk of vendor-, exchange-, or regulator-imposed fines. Optimal compliance strikes the right balance cost-wise.
2. Compliance evaluation strategies: Market data managers must thoroughly investigate a vendor's compliance requirements (such as terms and conditions for data access), data quality controls, data lineage, data architecture, and security measures.

Competition within a certain space tells us whether market data product or service offerings are interchangeable with other products or services, or whether they are so unique that you cannot operate without them.

The competition lever examines the competitive landscape for a particular market data product or service. Is it a unique offering, or are there readily available substitutes?

Limited competition often translates to higher prices and less negotiating power for the buyer. Within the market data landscape, a number of near-monopoly providers can command high prices, since they are aware of the value that their content provides for end-user firms.

An important competition evaluation strategy for market data managers involves conducting thorough market research by identifying alternative providers and assessing their strengths and weaknesses.

Cost flexibility relates to the level of ease with which adjustments within the product and service offerings can be made. How easily can a switch from modul A to module B be made, even when the total costs (and revenue for the selling vendor) decrease? Can it be scaled up or down easily? Are there modular options?

High-cost flexibility allows to optimize spending based on evolving needs. It also avoids a lock-in into long-term contracts for services no longer required.

Whenever possible, market data managers should prioritize vendors who offer flexible contracts, modular pricing, and usage-based billing.

In summary, features indicate the value and contributions of what market data vendors offer to an organization. Levers are about what a market data manager, can do to steer and influence them, to find what works best for an institution. Combined, they tell whether you are in **Control** – the seventh C!

FORRS

A brief history of swap curves

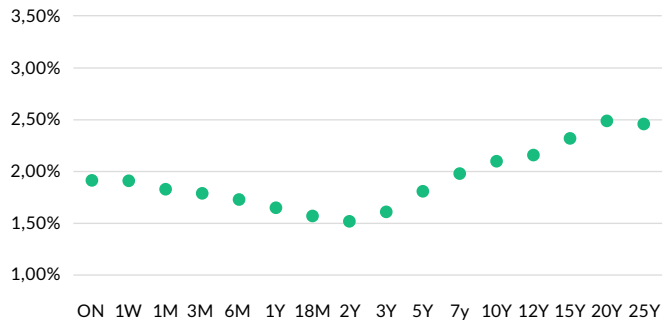
What is an interest rate swap curve?
And why do we have so many different ones?

Back in 1981, the first interest rate swap transaction was traded: a cross-currency-swap transaction of fixed rate USD versus fixed rate CHF between IBM and the World Bank. At that time, no swap curve was available. Since the swap market did not exist, nobody thought about the necessity of a swap curve. The benefits for each of the parties (IBM and World Bank optimizing their funding rates, with Salomon Brothers as arranger) were obvious, so the counterparties just entered into the transaction.

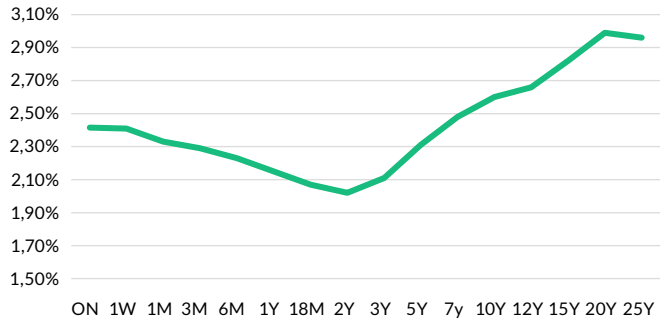
1 Instrument Raw Data

Bucket	Instrument	Quotation	Price/ Rate
ON	€STR	annualized interest rate - spot	2,42%
1W	EURIBOR	annualized interest rate - spot	2,41%
...	...	...	...
6M	3M EURIBOR FUTURE	price terms	98,08%
...	...	...	...
2Y	Interest Rate Swap	fixed rate - par	2,03%
...	...	...	...
10Y	Interest Rate Swap	fixed rate - par	2,61%
...	...	...	...
25 Y	Interest Rate Swap	fixed rate - par	2,96%

2 Bootstrapped Zero Rates



3 Interpolation to a continous curve



A few years later, in 1985 World Bank traded a fixed rate versus floating rate interest rate swap. Today, this would probably be considered the most liquid OTC interest rate derivative globally. The reference rate for the float side was the three-month Treasury bill rate. The market for these products grew very quickly with available quotes for fixed versus float interest rate swaps for various maturities.

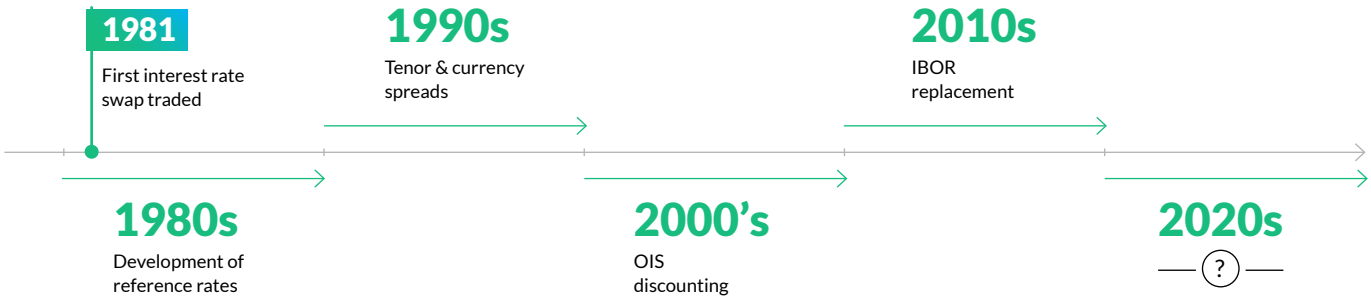
This data series of swap market rate per maturity represents the backbone of a swap curve. We can add non-swap market rates for short maturities where no swap quotes are available. This extended series gives us the so-called pillars of the swap curve. If we now transform different market quotations into a consistent quotation (for example, swap par rates, zero rates, or discount factors) via bootstrapping and agree on an inter(extra)polation method between pillars, we obtain swap market data for each business day in the future.

Why are we doing this? Swap curves have the following use cases:

- **Pricing and valuation:** Financial institutions and corporations use swap curves to price and value interest rate derivatives, including interest rate swaps themselves.
- **Risk management:** Companies use interest rate swaps to measure and manage interest rate risk. By understanding the swap curve, they can decide on the best strategies to hedge against interest rate fluctuations.
- Benchmarking: The swap curve serves as a benchmark for pricing various financial instruments, including corporate bonds and loans.
- **Market sentiment:** The shape and movement of the swap curve provides insights into market expectations regarding future interest rates and economic conditions. For example, an upward-sloping curve might indicate expectations of rising interest rates.
- **Investment strategies:** Investors might use the swap curve to inform their strategies related to fixed income investments, helping them decide on the duration and types of securities to include in their portfolios.

Given the different interest rate levels across currencies, one might expect we should have one swap curve per currency. However, in 2025, we expect an internationally leading bank

Whole swap curves are not directly observable market data. Pillars have to be defined, raw data have to be collected, properly transformed and interpolated.



with a significant trading book size to maintain numerous swap curves, maybe 100 or more. Why ? Let's have a look at what happened.

1980s: Development of reference rates based on interbank trading

Although the first swap transaction was traded between World Bank and a Corporate, the interest rate swap market in the second half of the 1980s was dominated by transactions between banks. Not surprisingly, so-called "Interbank Offered Rates" (IBOR) became the most relevant reference rates. There were local ones like FIBOR (Frankfurt IBOR), as well as the internationally leading LIBOR (London IBOR) – though notably, FIBOR was established before LIBOR! As a result, there was a need to create separate swap curves per currency and reference rate.

1990s: Tenor spreads and currency spreads

With the availability of tenor spread swaps (for example, pay 3m float / receive 6m float on the same reference rate) in the early 1990s, it became obvious that the payment frequency of an interest rate swap influenced valuation. The driving factors for that spread included liquidity considerations and counterparty credit risk. More swap curves had to be established: 1m, 3m, 6m, and 12m curves per currency per reference rate.

Liquidity aspects led to further development. For cross-currency swaps, the potential difficulty in entering or exiting positions – especially during times of market stress – resulted in a liquidity premium for these swaps. How was that reflected in valuations? Through new swap curves that contained cross-currency spreads.

The same is true when it comes to differentiation between onshore and offshore traded interest rates, triggered by differences in regulation, liquidity, and market access.

2000's: OIS discounting

With the derivatives markets and related volumes growing at immense speed, counterparty credit risk moved into focus. The industry found ways for mitigation, including collateral agreements (so-called credit support annexes (CSAs) under the documentation standards). Although this development began in the early 1990s, it was not until the early 2000s that first movers started reflecting it in valuations by using Overnight Index Swap (OIS) rates to discount the cash flows of collateralized derivatives.

OIS rates were used for two reasons:

1. OIS discounting reflects the actual funding cost of collateralized transactions, as the collateral posted in such transactions typically earns an overnight rate.
2. OIS rates are closer to overnight lending rates, which are considered closer to risk-free rates (reflecting the lower counterparty credit risk through collateralization).

Using lessons learned from the financial crisis, OIS discounting became the market standard. This brought the necessity for even more curves, also differentiated by currency of the CSA.

2010s: IBOR replacement

In 2012, several major banks admitted to manipulating LIBOR. This led to substantial fines and undermined confidence in LIBOR as a reliable benchmark. At the same time, the lack of underlying transactions for IBORs was a weakness, potentially making these references susceptible to inaccuracies, especially during periods of market stress.

Regulatory initiatives led to development of new reference rates like SOFR, €STR, SONIA or TONAR – addressing the afore mentioned issues. These reference rates are now established as transparent and robust benchmark rates. Of course we have new curves being setup in our systems for these new rates!

What have we learned and what's next?

When you look at the past, some of these developments seem obvious, and you could wonder why the market didn't react earlier. Some market participants did move earlier than others and made a lot of money with respective trading strategies. That's why it makes sense to keep your eyes open and recognize early new developments.

Do we expect even more curves? Maybe not in the near future. However, recent discussions around the potential need for convexity adjustments – driven by in-arrears fixings of new reference rates – may become an important consideration moving forward.

Market data licensing – from cost driver to value creator

How forward-thinking financial and energy organizations are transforming market data licensing from a cost and compliance challenge into a driver of efficiency, transparency, and long-term business value.

In today's financial and energy markets, data is more important than ever. It drives trading, pricing, risk management and more. For many companies, market data has become a true strategic asset, essential for staying competitive. More organizations are treating market data licensing as a strategic capability, and they are gaining control, cutting costs, and creating real business value. Here's what leading firms do differently:

Invest in license management and enterprise data solutions

Modern platforms, such as enterprise data solutions, offer automated entitlement tracking, policy enforcement, audit readiness, and powerful reporting capabilities. When embedded into the broader enterprise architecture, they enable seamless monitoring of data flows and ensure license compliance across the value chain. Their agile and adaptive design allows firms to respond quickly to regulatory changes, evolving data strategies, and shifting business demands.

Standardize onboarding processes

Every new data source should go through a standardized process that includes license review, use case validation, metadata capture, and tagging. This creates a single source of truth for what is allowed and what is not.

Recognize the strategic role of data procurement

Market data buyers need more than contract knowledge. They must understand the markets, vendors, and services involved. This enables them to guide internal users, avoid inefficiencies, and negotiate effectively. Their role is key to aligning business needs with licensing terms and turning data into a strategic asset.

Beef up vendor reviews

Keep contracts, usage logs, and access policies up to date and easily accessible. Simulated "mock audits" can reveal weaknesses before real audits occur. This will reduce the risk of costly surprises.

Establish a centralized governance model

Create a cross-functional data governance structure that brings together legal, procurement, IT, data management, and business users. This unit should oversee contract negotiation, usage monitoring, and internal policy setting.

Implement a vendor compliance framework

Define internal policies and controls that map vendor license conditions to actual system usage. This includes tagging data by origin, limiting access to permitted roles, and enforcing contractual boundaries through technical controls. Ongoing monitoring, supported by automated processes, ensures that data usage consistently aligns with licensing terms, minimizing the risk of non-compliance and financial penalties.

Data-driven cost allocation approaches

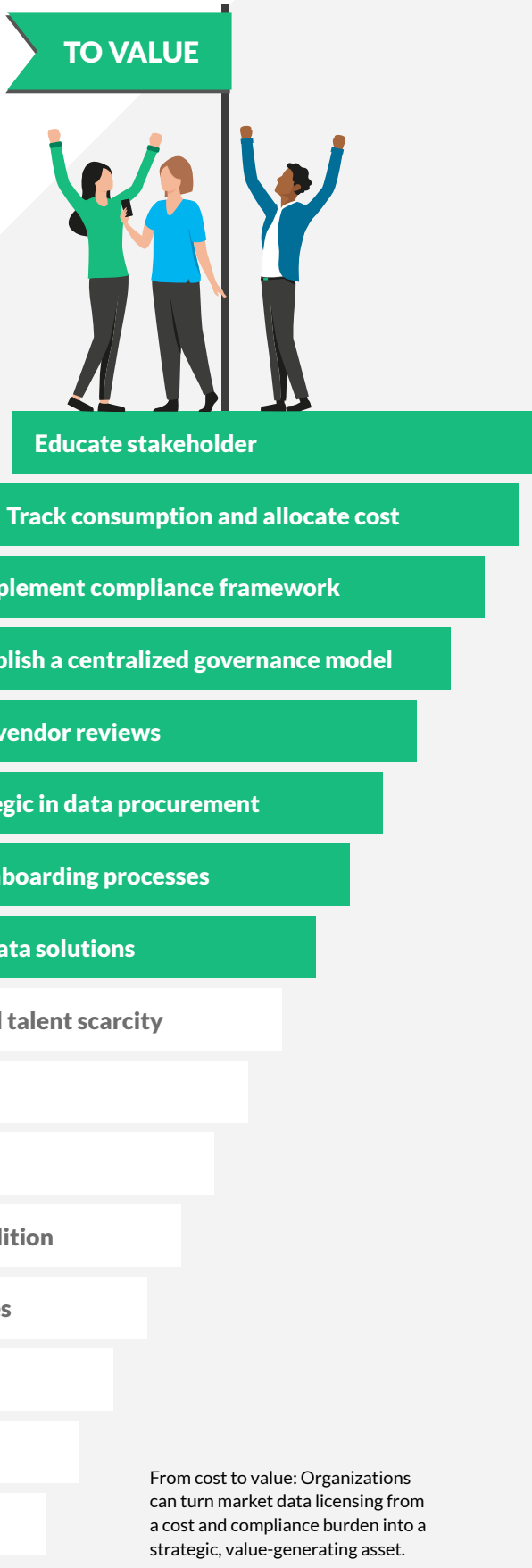
The key to smarter cost allocation is knowing who uses what and why. By tracking actual data consumption across teams and linking it to licensing terms, firms can move away from rough estimates toward fair and transparent allocation models. With the right tools and clear internal processes, costs become traceable and justifiable. This enables the business to manage spend more effectively, as well as to make truly data-driven decisions based on actual usage and value.

Educate internal stakeholders

Many license breaches stem from lack of awareness. Regular training sessions for data users can reduce compliance risks. Tailor content to different user groups like traders, analysts, developers, and more. By fostering a culture of compliance, organizations empower users to make informed decisions and act as the first line of defense against license violations.

Turning licensing into a competitive advantage

Market data licensing does not have to be a burden. It can be a source of competitive advantages. As data continues to fuel innovation in both financial and energy markets, firms that build strong foundations in license management will be better positioned to scale, adapt, and lead. By embracing centralized governance, standardizing processes, and investing in modern tools, organizations can reduce risk, cut unnecessary costs, and unlock new value from their data assets. The shift is clear: From fragmented oversight to strategic control. The time to act is now!



From cost to value: Organizations can turn market data licensing from a cost and compliance burden into a strategic, value-generating asset.

FORRS

Financial crisis and global warming: Similarities between the FRTB and the Paris Agreement

What does the Fundamental Review of the Trading Book (FRTB) have to do with the Paris Agreement?

At first glance, there is no real connection between the two:

- The FRTB is a regulatory framework designed to enhance the resilience of banks' trading activities. Its primary objective is to address the weaknesses of the previous market risk framework, which was exposed by the 2008 financial crisis.
- The Paris Agreement represents a global commitment to combat climate change and limit global warming to well below two degrees Celsius, above pre-industrial levels.

However, if you take a closer look, you can see some interesting similarities.

Globally relevant problems tackled globally

Both the FRTB and the Paris Agreement aim to mitigate complex, globally relevant problems (excessive risk taking in trading activities, issues arising with global warming). Generally, there is a common understanding that global problems must be handled in a joint effort, as regional differences in regulations would lead to ineffective incentives. These regulations can be sustainable only if all major players are reliably on board.

Mechanics

Both the FRTB and the Paris Agreement work the same way. A group of experts has, after lengthy discussions, issued a framework of rules which represents a minimum agreement on how each problem should be tackled. Namely, these experts are the Basel Committee on Banking Supervision (BCBS) and the United Nations Framework Convention on Climate Change (UNFCCC). There is a general agreement that these frameworks are legally binding and that these rules need to be transposed into national law. We have so-called nationally determined contributions (NDCs) for the Paris Agreement, as well as national regulations that follow the minimum capital requirements for market risk of BCBS.

Content differences in local implementations

The Paris Agreement allows NDCs to vary, depending on each country's specific circumstances, capabilities, and priorities. One might think that this should not be the case for FRTB regulations, and expect that identical rules should apply across the world. However, looking at local rules, it is evident that there are differences. For example, each local regulator seems to be convinced that local government bonds are less risky, compared to those of other countries.

Timing

For NDCs, there are a variety of implementation periods, target years, short-term, and long-term goals. The submission date for NDCs varies between April 2016 and March 2025! What's more, FRTB rules do not enter into force worldwide on the same day. For countries like Japan and Canada it is already fully implemented; for others (like the European Union), there are respective reporting requirements. So, it is unclear what is going to happen.

Incentives to not follow the rules

If countries set their NDC ambition levels comparatively low, they might be able to produce goods at a

cheaper price, and gain competitive advantages. The same holds for financial markets. If banks in Country A must follow higher capital requirements for the same market risk profile than banks in Country B, then Country B's banks have a clear competitive advantage. In financial terms for both FRTB and the Paris Agreement, there are incentives to delay implementation, weaken national implementations, or even not implement the rules at all. This is especially true in economically and politically difficult times.

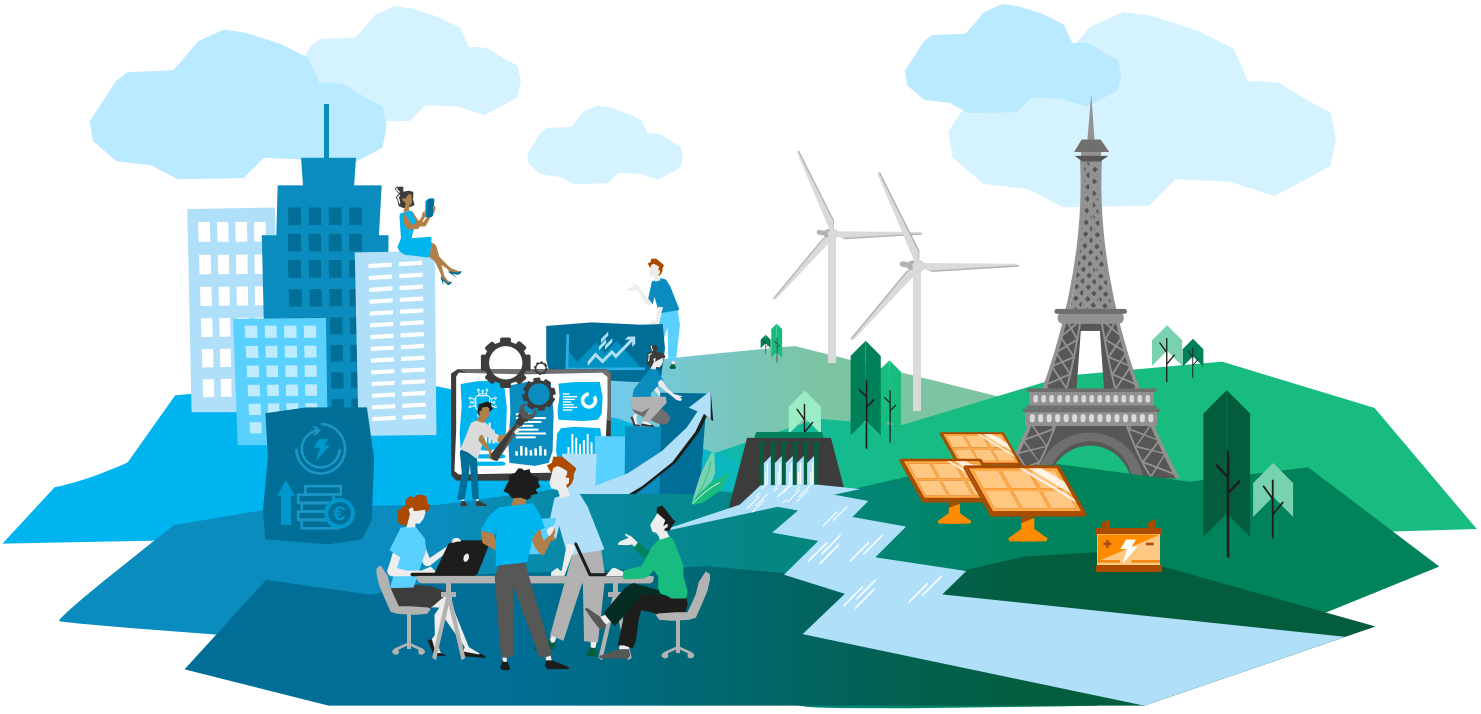
The role of the USA

The United States of America (USA) is obviously a major player in both FRTB and the Paris Agreement. The global financial crisis, which created the need for a review of the rules, was primarily triggered by the collapse of the USA housing market. The country has also been one of the major contributors to global warming.

The USA is far from being a pioneer when it comes to regulations. The country stepped out of the Paris Agreement for a second time, and is more restrained regarding FRTB implementation. This has prompted the United Kingdom to again delay FRTB, with the European Union likely to follow.

Thus, the USA, as a major global player, significantly influences the success of both the FRTB and the Paris Agreement. Its decisions and actions can have a profound impact on global efforts to manage financial risks and combat climate change.

The future evolution of these frameworks will reflect the complex interplay between national interests, global challenges, and the need for coordinated action. As both financial markets and climate change continue to evolve, the adaptability and responsiveness of these regulatory frameworks will be crucial in addressing new and emerging challenges.



FORRS Interview with Greenium

An innovative platform for the future of sustainable investments

Greenium connects institutional investors with sustainable real-world assets through an innovative and transparent platform. By combining Securitization-as-a-Service, customizable real-time reporting, and optional asset tokenization, the company offers a modern infrastructure for financing the next generation of ESG-compliant investments.

LUC OLINGER
CEO Greenium Service GmbH

FORRS: What is Greenium and what do you do?

Luc Olinger: Greenium is essentially a bridge. We connect institutional investors with physical sustainable assets, like corporate bike leasing portfolios, solar parks, or battery storage systems. Our platform, the Greenium Calculation Hub, manages and structures the financing of these assets through Luxembourg-based securitization funds. It may sound technical, but the core idea is simple: We turn sustainable assets into transparent and investable financial products by securitizing the associated cash-flows. We call it "Securitization-as-a-Service".

FORRS: Why did you start Greenium?

Luc Olinger: The idea came from a very practical need: financing corporate leasing bikes. We realized there was a big demand for scalable, alternative financing solutions for sustainable assets, especially outside of traditional banking structures. At the same time, we saw that institutional investors were looking for ways to access these asset classes without getting bogged down in regulatory red tape and due diligence requirements typically associated with AIFs (Alternative Investment Funds). That is how Greenium was born.

FORRS: Who are your typical clients?

Luc Olinger: We serve two sides. On the one hand, we work with originators – companies that build, develop, or operate sustainable assets. These can be leasing companies, project developers, or infrastructure operators. On the other hand, we work with institutional investors like insurance companies, pension funds, and asset managers looking for ESG-compliant but professionally structured investments.

FORRS: Were there any key turning points when you realized your product was working?

Luc Olinger: Definitely. One big milestone was working with Bike Leasing Group. When we successfully structured and refinanced a €100 million portfolio with full transparency and minimal friction, we knew the model worked. More originators reached out soon after, confirming the market need.

FORRS: How do you see the market evolving? Are there trends making Greenium more relevant?

Luc Olinger: Absolutely! Two trends are working in our favor. First, there is growing pressure on institutional investors to make their portfolios truly sustainable – not just on paper, but in real-world impact. Second, there's a clear move toward more transparency and digitization in investment

products. That's exactly where our platform and real-time reporting come into play.

FORRS: Can you tell us about Greenium's history and key milestones?

Luc Olinger: We launched Greenium at the end of 2021, initially focusing on Bike Leasing Group. Structuring that first major transaction gave us the foundation to scale the model. We then expanded the platform, added new asset classes, and built a strong investor network. A key milestone was integrating an optional tokenization Distributed Ledger Technology (DLT) – enabling us to potentially issue digital securities in line with eWPG regulations down the line.

FORRS: How do you differ from traditional ESG-AIFM funds?

Luc Olinger: That is a great question. It really highlights our unique approach. Traditional ESG AIFs often come with regulatory complexity, long due diligence processes, and limited structuring flexibility.

We intentionally built Greenium outside that framework. Our Luxembourg securitization funds are not AIFs, so they do not fall under the AIFMD regime. For investors – especially insurers and pension funds – this means less regulatory friction, faster investment processes, and better portfolio compatibility.

Plus, our platform offers deep, real-time, customizable reporting. And we think digitally from the ground up. You do not get that combination of flexibility, transparency, and digital readiness in most traditional ESG funds.

FORRS: How do you see digitalization – such as tokenization and real-time reporting – in the evolution of sustainable finance, and how is Greenium positioned to lead in this space?

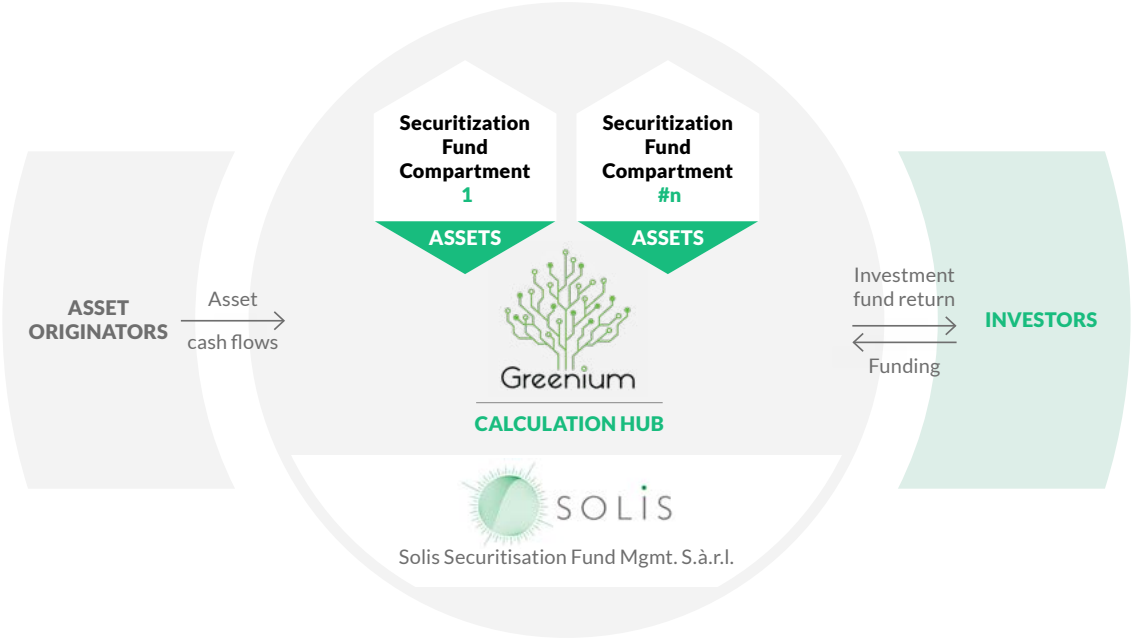
Luc Olinger: Digitalization is key to scaling sustainable finance. With our Greenium Calculation Hub, we offer real-time, customizable reporting that meets institutional expectations for transparency and compliance. Tokenization adds further value – enabling faster settlement, broader access, and future-ready infrastructure through digital securities aligned with eWPG standards.

FORRS: What are your plans for the future?

Luc Olinger: We aim to expand into more sustainable asset classes – like solar, charging infrastructure, and industrial energy/battery storage. At the same time, we are pushing to internationalize the platform and make investment access even easier and more flexible – for example, through standardized, digitally accessible product structures.

Greenium provides a proven securitization infrastructure and legal setup

- Greenium uses Luxembourg- based securitization funds that are managed by "SOLIS Securitisation Fund Mgmt. Luxembourg S.à.r.l."
- Greenium acts as the advisory and calculating agent of SOLIS
- Greenium's GCH calculates, reconciles, and checks all cash flows between the parties
- Each investor has its specific segregated compartment within the securitization fund



Voices from the market: AI, data & execution

From scalable analytics and AI governance to execution excellence and platform consolidation - these expert voices reflect the evolving priorities in the financial markets. As firms navigate complexity and fragmentation, success will depend on trusted partnerships, integrated technology and aligning innovation.

ROBIN MESS
CEO & Co-Founder |
big xyt

With identical raw market data available to all, users can focus on generating actionable insights, rather than investing in custom data pipelines. Modern, scalable infrastructures provide seamless access to both real-time and historical high-quality data, supporting tasks like liquidity analysis, TCA, best execution, PRIIPs compliance, and volume forecasting. In today's fragmented market, superior data presentation enhances transparency, drives performance, and strengthens regulatory confidence.

MAXIM PERTL
Partner Asset Owners DACH |
Clearwater Analytics GmbH

Our perspective is broad, as we are currently processing 98 asset classes on a single platform. Across Europe, no matter which markets and assets clients trade or invest in, we see a common set of hurdles caused by a historically grown complexity of underlying system architecture, which now meets with three key strategic game changers:

1) Worsening demographics
2) Increasing cost pressure
3) Lack of x-asset class data for real-time analytics and decision support

Technology and services at scale can help solve this dilemma.

ANJA HOHENACKER
Director Customer Organization Europe | SCREEN Germany GmbH

Managing market data is no longer just about contracts – it's about usage, automation, and strategy. Anja Hohenacker of TRG Screen emphasizes the importance of trusted partnerships and automation in navigating these complexities. By leveraging tools and services that provide real-time insights into spending and usage, firms can overcome inefficiencies and challenges. Like marathon running, market data management requires preparation, endurance, and trusted partners to cross the finish line successfully.

MARC BURGHEIM
Head Flow Trading | BayernLB

Trading is facing major challenges, especially around digitalization and constantly changing market volatility. In our Flow Trading department, we focus on FX trading and execution, as well as on optimizing bond trading and advancing automation. One example is our project to consolidate trading IT, which has significantly simplified the process chain and enabled faster, more precise execution. In addition, we are actively working on strategic partnerships in bond trading to strengthen our market position and expand our product offering, leveraging our long-standing experience in foreign exchange trading.

NORBERT BOON
Managing Director | Easybroker DMA Europe

AI's role in financial data management is evolving – from early Natural Language Processing (NLP) and mapping tools to autonomous systems driving decisions. As AI governs data quality and workflows, questions arise: Can AI self-regulate through inter-AI governance? And how do we ensure GDPR compliance? An independent entitlement layer may be key to trusted, scalable, AI-led data ecosystems.

ALEXANDER SPERLICH
Managing Director for Germany, Austria and Switzerland
Head of Strategic Business Development EMEA | Morningstar (Germany GmbH)

AI holds transformative potential for the financial industry, yet its real-world impact remains uneven. While interest and experimentation are high, many use cases still fall short of delivering scalable, client-centric value. True progress will come when AI is embedded into strategic workflows, supported by regulatory clarity, strong data foundations, and a clear focus on outcomes. For financial institutions, the challenge lies not in adopting AI tools, but in aligning them with real business problems. As the technology matures, the winners will be those who balance innovation with discipline and client trust.

Redefining data management for private markets

MAXIM PERTL
Partner Asset Owners DACH

The future for alternative investments looks bright, as adoption by institutional investors continues at an unprecedented pace. But where the sun shines, there is shadow: the increasing complexity and cost of managing alternative assets. Investors must weigh risk, data management hurdles with look-throughs, ESG, data for analytics or client responsibility, and regulatory reporting. What does the newest solution look like?

The growing prominence of alternative assets in investment portfolios is driving a transformative shift in asset allocation. **According to Fidelity, institutional investors allocate an average 24% of the assets to alternative investments**, driven by their potential to deliver uncorrelated returns and long-term growth.

However, managing these assets introduces significant challenges. Unlike traditional assets, such as equities and fixed income, alternative investments generate high volumes of fragmented, unstructured data. These volumes require a fundamentally different approach to both data management and the way in which teams access and interact with said data.

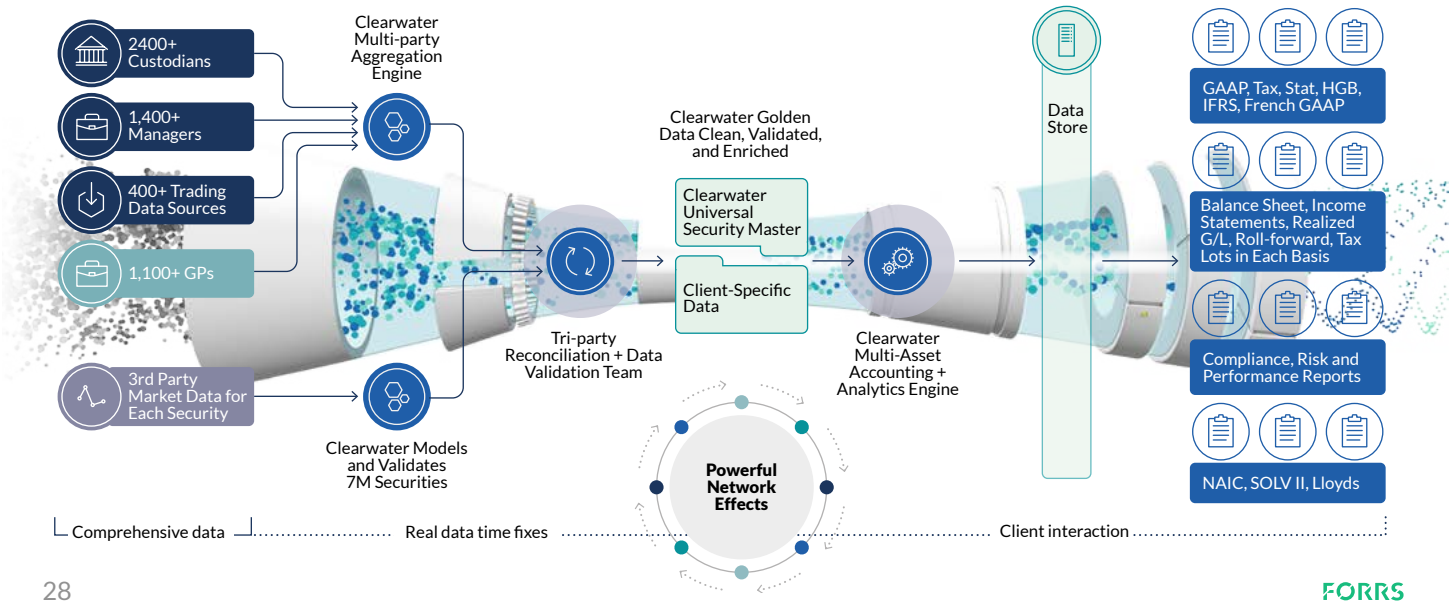
Investment firms are finding that traditional systems, designed for public markets, cannot scale to meet the complexities of alternative assets. Manual processes – though still widely used – are resource-intensive, prone to errors, and unable to keep pace with modern investment management. As alternative assets become integral to strategic growth, firms must transition to robust, scalable data solutions that ensure high-quality, actionable insights.

Artificial intelligence (AI) is the key element in this data evolution. Behind the scenes, it enhances data integration and standardization to create the robust, scalable, and accurate platforms that firms need. Then, generative AI tools create opportunities to easily interact with complex datasets through intuitive, conversational prompts. These advancements redefine data management, making it faster, more collaborative, and transformative.

New assets demand, new data solutions

Alternative assets have rapidly emerged as a core component of investment portfolios and new investment flows. As investors increasingly rely on alternative assets for diversification and higher returns, the need for advanced operational processes and resources is growing immensely. It is widely acknowledged that the relationship between the increased flows into alternative assets and the operational effort required is not directly correlated – in fact, alternative assets notably increase the operational burden.

Single source of data across 98 asset classes: Complete. Accurate. Consumable.



With global alternative assets under management projected to grow from US$15 trillion in 2022 to over $24 trillion by 2028, or $60-$65 trillion by 2033, the industry's evolution shows no signs of slowing.

Managing alternative asset data is complicated, and presents unique challenges that require a disproportionate allocation of resources:

- **Data complexity:** Alternative asset data is fragmented, high-volume, and often unstructured, originating from diverse sources such as private equity firms, real estate platforms, and bespoke financial models. A lack of standardized datasets and custom-tailored deal structures adds to this difficulty.
- **Integration challenges:** Existing data platforms, typically designed for public markets, struggle to scale for the reconciliation, reporting, allocation, and analysis demands of alternative investments.
- **Operational inefficiency:** Manual processes are a significant drain on time – creating bottlenecks, increasing the risk of errors, and limiting access to real-time or near-real-time data. Without robust oversight, firms face heightened exposure to operational and compliance risks.

Conclusion

The growing prominence of alternative assets brings both significant opportunities and operational complexities. Managing fragmented, unstructured data while meeting client and regulatory demands requires a fresh approach. Traditional systems and manual processes are no longer sufficient to support the scale and intricacy of modern investment portfolios.

A reimagined data management strategy – centered on integration, collaboration, and advanced tools like AI – offers a clear path forward. By adopting scalable, automated solutions, firms can enhance efficiency, ensure real-time access to actionable insights, and allocate resources more effectively. Generative AI further accelerates this transformation by enabling intuitive data interactions, empowering teams to access critical information with speed and accuracy.

The future of investment management will be defined by firms' ability to adapt to these demands, leveraging innovative technologies to streamline operations and unlock the full potential of alternative assets. By taking these steps, firms can position themselves to meet evolving client needs, navigate regulatory requirements, and support strategic growth in an increasingly complex market.

In contrast to public markets, which benefit from decades of refinement and established data standards, private markets remain fragmented, requiring firms to stitch together data and create custom processes. To overcome these inefficiencies, investment firms need a unified, scalable platform that is capable of transforming fragmented data into actionable insights.

The role of data-as-a-service

Data-as-a-Service (DaaS) offers a transformative solution, by centralizing data collection, validation, storage, and governance. This approach helps firms:

- Reduce operational risks and costs.
- Standardize data formats and streamline data sources.
- Establish a "single source of truth" for more effective decision-making and reporting.

By adopting a DaaS model, firms can focus on their core competencies while benefiting from consolidated, validated, and business-ready data. This model enhances operational efficiency and empowers end clients by providing direct access to actionable insights. For alternative investments, a unified data framework is vital.

Data collaboration as a strategic imperative

Effective data collaboration involves the integration of investment management data with a powerful cloud-based data platform.
Data collaboration goes beyond centralized storage. It makes data accessible, usable, and actionable across the organization. What is more, it ensures that different parts of the data ecosystem interact with each other to maximize the data's value and accessibility for all parties.

Key components of this integration:

- **Data accessibility:** Comprehensive investment datasets readily available to users through a centralized data marketplace.
- **Seamless processes:** Accurate, timely, and comprehensive data fuels the entire investment management process.
- **Operational efficiency:** Direct access to data eliminates the need for multiple data storages, enhancing operational efficiency.
- **Advanced AI tools:** The integration leverages advanced AI capabilities to facilitate natural language queries, transforming how teams interact with complex data sets.

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Problem Focused – Solution Driven

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