

# Bare necessity

The pressure on investment firms to improve the quality, use and timeliness of data is intensifying. As data volumes grow, **data management** is becoming a necessity, not an option. **Hardeep Dhillon** explains

**D**ata management is seen as a vital and increasingly indispensable exercise, because the ability to acquire clean reference and market data from disparate sources affects the ability of office systems to monitor investment activity and manage risk. Data management involves an array of issues, from governance and oversight, data structures and definitions, to the storage, movement and retrieval of information.

The wide range of data types encompasses reference data, such as corporate actions or instrument and client information, transaction data relating to market and deal information, and unstructured data, which supplement analysis, such as agreements and policy documents. In order to reduce the volumes and improve quality, these types of data must be aligned, says PJ Di Giammarino, chief executive of JWG-IT, the London-based financial services think-tank. "Understanding how each of these data types is spread and used throughout the operating model will be the first step to obtaining the right information to tune a firm's operating infrastructure," he says.

Managing reference and market data can be an expensive and complex task – costing \$30bn a year worldwide, according to estimates. At present, firms



PJ Di Giammarino, chief executive, JWG-IT

are not only battling against pressures to cut costs and reduce spending on information technology (IT) because of the dismal market conditions, but they also face a ubiquitous deluge of data volumes. As institutions move to ever more sophisticated investments and counterparty risk becomes a growing concern, investment firms need more and more data across a wider universe of content in order to research and identify areas of return or risk.

## Markets in Financial Instruments Directive

Markets in Financial Instruments Directive (MiFID) has brought about far-reaching change within capital markets concerning best execution,

client classification, systematic internalisers, pre- and post-trade transparency, and the ownership of market data. These obligations have had a significant impact on market data provision, particularly in equity markets, and led to significant growth in the volume of information generated from exchanges. Market participants are also now required to maintain much more data long-term for compliance purposes and this has boosted reference data requirements, such as revised documentation and classification data, and new types and sources of market data that had never before been published.

MiFID has also introduced greater competition into the market, as evidenced by the early success of new trading venues such as Instinet Chi-X and new market data providers such as Markit BOAT. As more trading venues enter the scene, such as Turquoise, Equiduct, BATS, NASDAQ OMX and SmartPool, the relentless rise of data volumes is set to continue.

JWG-IT forecasts 2009 equity order levels in Europe to skyrocket by 1,600 per cent to 191m orders a day. The number of venues has risen by 140 per cent since 2006 and in equities alone, Europe is approaching two execution venues for every one venue in the US and

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Asia, which together total 75 across all asset classes. Europe will host four times as many execution venues as the rest of world by the end of 2008.

The number of trades and quotes on the New York Stock Exchange (NYSE) surged to more than 494m in January this year, more than tripling the 133m figure from a year earlier. What's more, there were more than 650m trade messages on the NYSE on its busiest days, a considerable rise from the 2m-5m trade messages per day a decade ago.

As tick sizes reduce, large trades are unbundled, new sources of prices come online and trading volumes continue to rise, trading data volumes will soar even higher. This is not only reference data due to instruments' availability on more venues, but also in new arbitrage opportunities between venues.

“The data explosion presents significant commercial opportunity because a key differentiator between execution venues is the tick size, or price granularity, available on them,” says Di Giammarino at JWG-IT. He adds that firms need to be able to monitor and measure the performance of the different venues, as they become more or less liquid, in order to make informed decisions about connectivity to venues.

Because of the paucity of observable price data for structured finance

securities, Ned Myers, chief marketing officer and vice-president of product strategy at Lewtan Technologies, believes the best proxy for deal comparison and analysis is to use data in bulk. “Credit performance data is serving more than just the middle-office credit surveillance functions and front-office trade support. It is being used in other support functions, like audit, trade verification and accounting,” he says.

IT investment among European firms is forecast to remain flat or decline to offset the financial market conditions, which could create challenges for firms in effectively managing the data mountain. This requires firms to stay ahead of the curve by making sure that internal infrastructures, systems, networks, applications and support people can keep up with the relentless growth in data, says Bob Cumberbatch, business lines director at Interactive Data (Europe).

“There is a danger that a lack of investment could lead to technical bottlenecks that will slow down data – and potentially data could be dropped and lost. Keeping up with data is a technology arms race,” he says.

Control of and investment in data management processes is a challenge but imperative for investment firms, says a consultant in New York. He believes that the latency and accessibility of data

is becoming more important in decision making or trading strategies and identification of opportunities for alpha, given that volumes of data are growing at such a fast pace.

“Data is the lifeline of the financial services industry; without it you cannot achieve much. Organisations have to continuously look at managing data; those firms that are not, are doing something seriously wrong,” he says.

Gert Raeves, senior vice-president of strategic business development and marketing at GoldenSource, equates the outcome of failing to invest in data management to delaying car maintenance. Nothing dramatic will happen if you skip the usual service intervals and there is roadside assistance if the car starts breaking down. But eventually the wheels will come off – and the cost is not measured in the few extra minutes it took you to get from A to B, but in the fallout from total failure – you are going nowhere.

“Data management is not like breakdown insurance; it won't save you once you are by the side of the road. Rather, it is like a maintenance plan that ensures that your infrastructure is ready for anything that might happen,” he says.

By not investing in data management technology, Raeves says that firms may encounter numerous business dilemmas. For instance, the inability to move into new product areas because operational inefficiency will not allow it. This scenario is evident in the classic confirmation backlog that the industry has experienced in fixed income, equities and derivatives over the decades.

Also, the struggle to win customer mandates as sophisticated buyers of services (execution, investment advice, custody, research) are demanding data transparency in order to compare performance.

There are also obstacles, in the form of fines or further mandates, put up by regulators unless data auditability is in place as well as the need to show exposure when things go wrong. Raeves adds that instead of being able to push a

button to show exposure, a firm will need to call in forensic teams of accountants and actuaries to unwind a paper trail of contractual obligations across products, counterparties and business lines.

“CFOs and CROs need high-quality data to feed their own financial and risk-reporting goals. If businesses cannot make use of and contribute to automated and centralised data assets, they will have to defer to expensive and error-prone manual alternatives,” he says.

Di Giammarino concurs there is a cost issue associated with data management, as cost income ratios come under severe pressure as revenues start to decline. Though the cost of collecting, analysing and storing data is going up exponentially, given that order-to-trade ratios continue to rise by the multiple, firms cannot afford not to have access to what is going on in the market. “A drop in investment may not be the right avenue if firms really want to understand and manage the data explosion,” he says.

The quality and cost of reference data present the greatest risk to trading. Without investment in IT, firms will be hard pressed to take advantage of any commercial opportunities presented by the data explosion. Moving towards a higher performing/lower cost operating model will help tone a firm's infrastructure and Di Giammarino sees a real opportunity to employ technology to obtain a competitive edge by making changes better, quicker and cheaper.

“The quality, volume and integrity of data are the lifeblood of the organisation now and in the future. Those infrastructure tools that fire the right ammunition of better quality data, linked together to make decisions, are more likely to win the RegTech data war,” he says.

Di Giammarino adds that there has to be renewed focus on enterprise risk and how to bring together different disciplines of information and operational risk management, record keeping, business continuity with market risk and credit risk. Firms can no longer

afford to have customer and counterparty risk information spread across all the different disciplines. He believes that organisations need to be able to create integrated views that cross the different desks, geographies, systems and data



Gert Raeves, senior vice-president of strategic business development and marketing, GoldenSource

sources very quickly in order to manage their risk.

“Everyone has a little piece of the data pie but it comes down to who owns all the data in the firm, who is responsible for pulling it all back together again, where those central utilities that allow people to undertake that are and how are they funded,” he adds. “It is a very big challenge for many firms because if you do not understand whether your counterparty's data is right, how are you going to understand how to operate in the market when markets change? The reality hitting home is that these are not theoretical problems any more and they'd better get sorted out.”

#### Infrastructure needs

Cumberbatch of Interactive Data adds that a firm's infrastructure needs to allow fast collection and dissemination of information internally to the right recipients, but also analysis of the

different types of data and information to discover context, meaning and gain valuable knowledge. “The market recognises that different asset classes interconnect and interrelate and that movements in one asset class can have an impact on others,” he says. “A renewed focus on risk management will force firms to put together the full picture and understand the direct and indirect impact across asset classes and markets so they can make informed decisions about managing risk.”

In times of stress, firms may be unable to judge their total risk and credit exposure by counterparty or product, adds Raeves. He believes that gaining a complete view of their total risk exposure does require firms to put in place a local data management infrastructure, which is no longer just an informational nice thing to have. “The data management process has become more audit, compliance and risk management-driven than just looking for operational and cost efficiencies, and almost a necessary condition before you can undertake a lot of front-office activities,” he says.

Many institutions are no longer taking a data silo approach but now turning to a more integrated view and enterprise data management. Firms want a more efficient cross-asset solution that can be quickly and efficiently referenced by many business units, and this is leading to greater adoption of an integrated pricing and reference market data platform.

Raeves notes there is a move to create a single platform to source any type of data that is of value to the business and where all the critical data, whether customer, security or position, is centrally collected, stored and inter-linked. “When you are starting to pull together a regulatory, total exposure or financial report, you will need all those data elements. You also need to be able to show that there are consistent, professional and documented processes in place to source, validate the data and create a single representation or a golden copy of the data, to distribute to downstream sources,” he says.

**Golden copy**

Having a single trusted set, or golden copy, of data within a central data management platform accessible by all divisions in a firm is the ideal scenario. Raeves explains that creating a golden copy enables firms to immediately see the connections between all categories of data, the underlying links and dependencies and to understand the credit risk across all components and counterparties for a particular product. "This allows rapid and accurate assessments of risk and profitability for both plain vanilla and complex products, but also detailed insight into the profitability associated with any customer or instrument," he says.

Maintaining multiple data stores increases costs, can create duplication of effort and result in inconsistent data quality. The consultant believes that taking a golden copy approach can improve data quality and management by replacing a wide number of decentralised data management solutions with a centralised platform.

He sees greater benefits from a central location that houses, cleans and processes the data required throughout an organisation. Sourcing data once lessens vendor costs, while cleansing data centrally can avoid the duplication of effort and reduce maintenance costs.

"Centralising the process promotes business clarity and supports strategic decision making by eliminating multiple copies of the same data. Firms offering golden copy solutions are providing an important utility for the industry," he adds.

Golden copy is heralded as a viable concept, but some believe the reality of implementation is proving to be more challenging. Di Giammarino sees a huge challenge for firms to prove that a golden copy solution is the correct route and that the cost of taking this path is justified. Management needs to judge whether the balance and amount of sharing that is required to make the concept work will actually happen within firms. "I think the cost and the level of expenditure of getting to that reality has been disheartening for many," he says.

Cumberbatch adds that constructing a golden copy of real-time data can pose a number of considerations for firms. Choke points can arise in the application where data streaming in from the many disparate pricing sources meets the output feed to internal recipients. "If it's a funnel into one application and a funnel out to many, it can cause a bottleneck, which can result in data delays that can lead to data being dropped and therefore gaps," he says.



Bob Cumberbatch, business lines director, Interactive Data (Europe)

In constructing a golden copy of a price, pricing sources are disparate and very dynamic. The primary source(s) for each field for a record can change by the second. This requires programmatic rules that have to quickly make a decision on which provider is providing the best quality data to overwrite a field – but are also able to change very fast as the price in the market changes.

Cumberbatch believes it is technically easier to create a golden copy for reference data, which is more static in nature. Nonetheless, firms need to consider the level of content coverage, reliability, accuracy and timeliness of service.

In many instances, he adds, technical performance reasons on the output may not always make it possible for all the internal applications in a firm to actually gain access to that one single copy of a record. This could require a version of the golden copy to be shared with other applications, which highlights the issue of integrity of that golden copy and how to

keep multiple copies in synchronisation. "That becomes more difficult and you have to make sure there is no loss or increased latency of data," he says.

**Outsourcing of data management**

Cumberbatch views outsourcing of data management as an upcoming activity, as interest increases among software and technology firms to provide solutions. He suggests this is driven partly by clients approaching firms to determine whether they have the competence to deliver. Also, he believes that a growing number of board executives view data management as a differentiating commodity and are allowing their IT capabilities to dwindle over time.

"Fewer organisations are making sure they employ all the internal resources, infrastructure, solutions and technology to enable data management inhouse. Outsourcers are looking to exploit this situation and I believe they will be successful in boosting revenues because that is the way that IT is heading," he says.

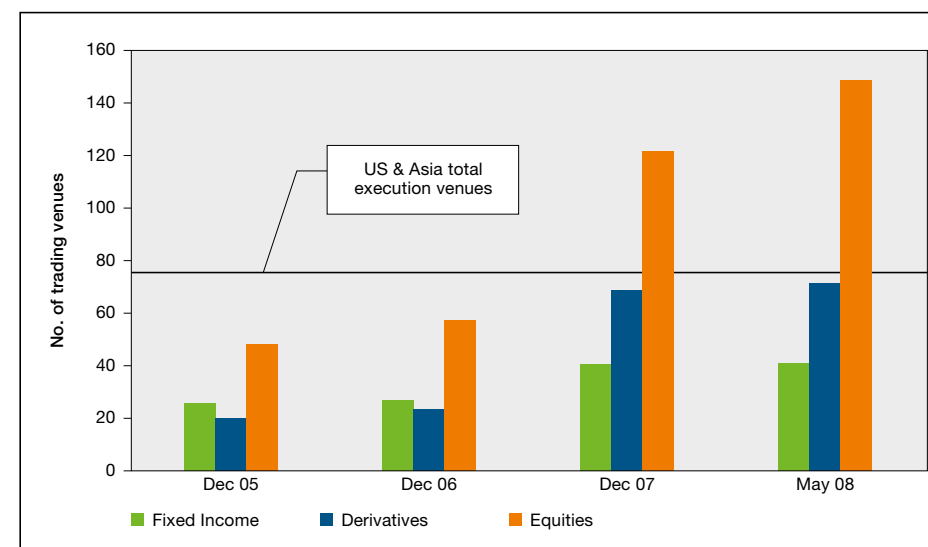
He adds that some firms may draw a line and take charge of real-time data, but hand over historical and reference data to another firm to house and manage. "This hybrid approach is a natural development in the migration from inhouse to outsourcing as executives try to identify what is dear and not dear to their business," he says.

The strategic and tactical needs of an organisation must be calculated when considering whether to build or buy solutions for capture, storage and dissemination of data, says Cumberbatch. A single data vendor may be able to provide an infrastructure that can be used internally by the firm.

But this course of action may limit a firm's access to alternative sources of market data that are perhaps not available from that market data provider. "I suspect that outsourcing the entire end-to-end process may not be palatable with many firms that have mission-critical trading operations," he says.

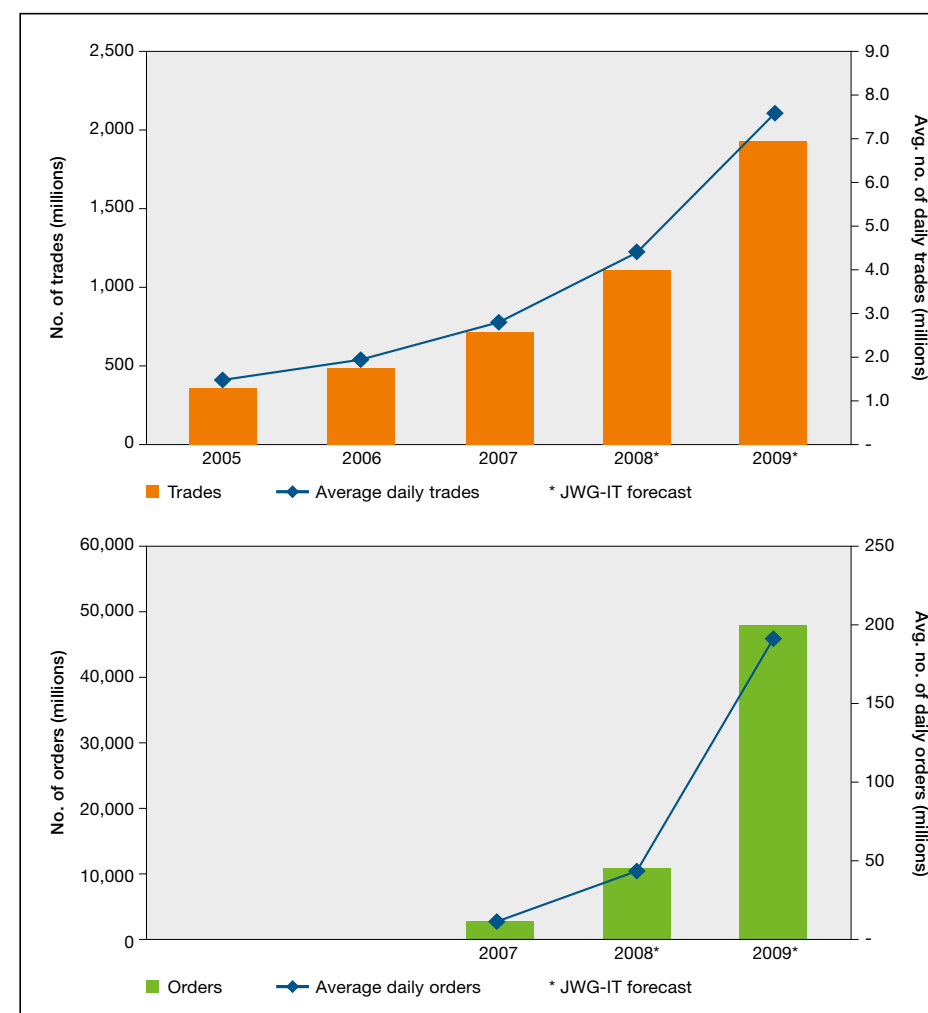
Nonetheless, there are many options open to firms that can help provide

**Growth In European Trading Venues**



Source: JWG-IT analysis of CESR and ISO 10383 lists

**European Exchange Trading And Order Volume Growth Trends**



Source: JWG-IT analysis of FESE, LSE, Thomson Reuters and Chi-x data

NOTE: Trade volume forecast based on growth based on year-on-year growth trend from 2005-2007

solutions for some stages of the process. For example, providers of ticker systems can help firms consolidate and absorb market data.

Also, data distribution and management applications, as well as managed network providers, can provide threshold monitoring and generate alerts for capacity planning. "I stress that this is not a simple option, but it does help to overcome some of the problems of trying to build tools inhouse," says Cumberbatch.

Myers of Lewtan Technology believes that firms need to look at not just the outsourcing of technology but also of services. For instance, the trend for the buy-side to subscribe to several pricing and information providers in the structured finance market is being supplemented by clients allocating additional money for consulting services to determine how to better ingest the information and reconcile one source against another.

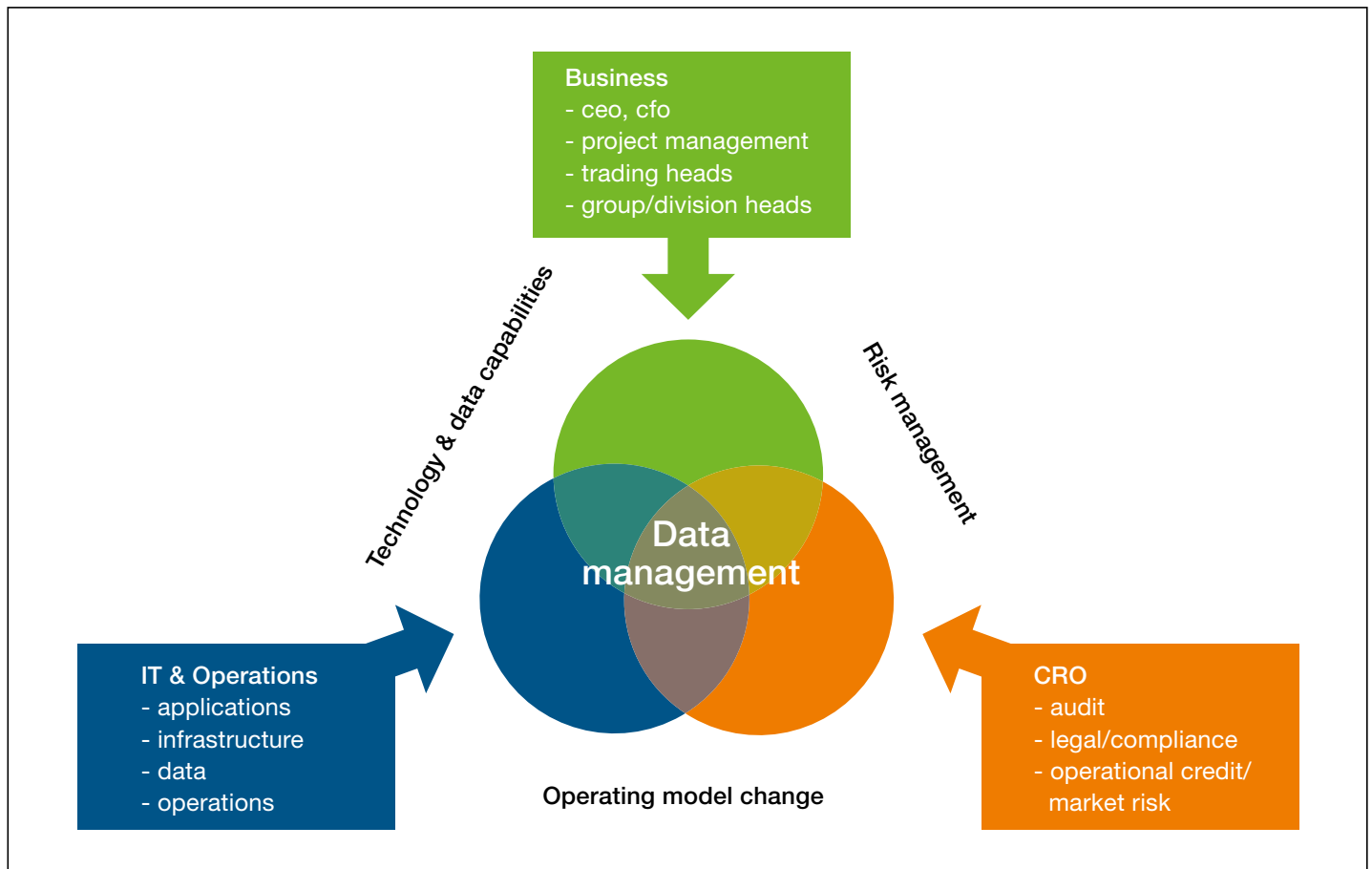
Lewtan last month expanded its credit surveillance and data analysis team to provide additional support for clients in understanding and analysing the inherently complex instruments. "There will be more of an enterprise demand to ingest data in bulk for better surveillance and independent verification of credit risk, but it is also important to couple the data with deep industry expertise and to provide education, additional value and a higher level of service to our customers," Myers says.

**Soaring volumes**

Soaring trade and market volumes will also mean that firms need better infrastructure and storage capabilities for streaming and historical data. Myers notes that firms are paying closer attention to technologies that store and maintain large amounts of historical data and enable quick and efficient access to information. "Firms want low latency solutions that enhance the turnaround and utilisation of data in their trading environment," he says.

Also important are capacity management processes to ensure that data flows preserve low latency

Upgrading The Organisation



Source: JWG-IT

distribution within an organisation and are constantly monitored and tracked, says Cumberbatch. Average and peak watermarks for “normal” market conditions need to be established and monitored, and there needs to be an additional degree of headroom to cater for unusual market conditions and times of high volatility.

“Firms need to monitor and manage those thresholds on a continuous basis and take action to maintain sufficient capacity in systems and applications, networks and people prior to when it is needed,” he says.

Other considerations for firms include having a high level of expertise and flexibility within their technical infrastructure, not just for systems and applications, but also for personnel who understand what good data is and where to source it. Management tools are required to allow a firm to monitor

the arrival or non-arrival of market data and for internal distribution mechanisms.

Firms also need to consider quality issues and make sure data is correct and consistent. The consultant notes that front-office trading environments will be highly cognisant of the importance that real-time data is reliable.

Reference data quality can be more problematic, as interpretations vary in how to house, maintain and source the information. “A common problem of alternative OTC investments in the market is getting details about securities and who the counterparties are; it requires a concerted effort to bring all that information together,” says Cumberbatch.

Raeves of GoldenSource notes there is an emergence of a much stronger corporate mandate to resolve the data management issue. “We have heard that data management projects are

not only quarantined from any ongoing prioritisation exercises, but in most cases they are being prioritised higher and effectively brought forward in the queue of things to do,” he says.

Di Giammarino adds that firms are being compelled to take decisions on how they are linking the data internally, whether that is unstructured, instrument or static data and not just market data. They need to assess what data they already own and will take in, so as to obtain a view that gives them the ability to manage their risk.

“The fragmented market environment really now forces firms to look at how they are pulling all their data together and whether they are taking the right steps to build the right infrastructure, both in terms of cost and competitive advantage. This will then allow the chief risk officer to analyse and measure the overall health of the firm,” he concludes. ■