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Managing Risk

Special Report

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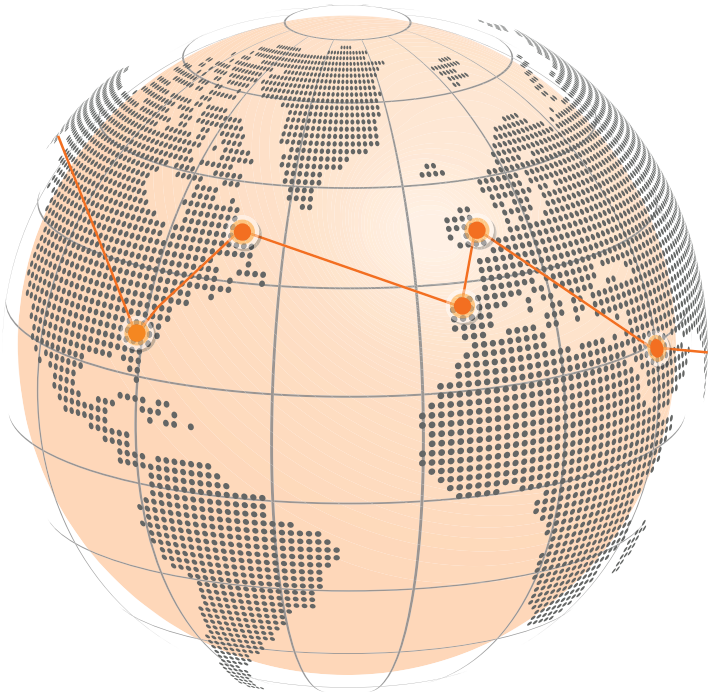

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Editor's Letter

Hand in hand

When thinking about how efforts to manage risk apply to data management methods, or how data can be better managed to better support risk management, cooperation in many facets of operations is necessary, as expert industry practitioners note in this special report.

Consultant Michael McMorrow, speaking in the Virtual Roundtable, frames the overall emphasis that should govern activities, saying, "Data management and risk management prove to be most effective when they are passionate allies." This means data managers should put themselves in the risk managers' shoes with everything they do, he adds. Often, the information is there on both the data and risk sides that would enable them to interact better, but it is not leveraged, he says.

Larger firms often have achieved their size through acquisition, getting saddled with legacy risk management infrastructure in the process, observes Kate Toumazi of Thomson Reuters. "As a result, many firms have numerous risk data repositories based around these siloed risk management structures," she says. Cooperation is then essential between the managers responsible for each silo, to ensure coordination of risk and data information.

For any size firm, building a data governance model is key to effective data management. As Deloitte & Touche's Ed Hida points out, data stewards with designated domains of certain business units may be even more important to the success of a governance plan than chief data officers. Cooperation between these stewards, similar to what is needed between managers of silos, is another necessity. No matter what the data units are, or who is responsible for them, if they are walled off from each other, inevitably risk management will suffer.

Yours sincerely,

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News Review

DTCC, Risk Focus Partner On Trade Validation Testing

The Depository Trust & Clearing Corporation (DTCC) has partnered with Risk Focus, a custom risk management solutions provider, to allow users of Risk Focus' Validate.Trade validation and emulation engine to test trade submissions in the DTCC's Global Trade Repository (GTR) service, according to Brian Lynch, CEO of Risk Focus.

Under the arrangement, GTR users will get feedback on how trade messages should appear before being posted live on the GTR service. DTCC is planning to add more new functionality to GTR later in the year, to support compliance with upcoming regulatory mandates including EMIR level 2 validations (L2), according to a DTCC spokesperson.

GTR handles global over-the-counter derivatives reporting. Validate.Trade is used by banks for G20 regulatory reporting requirements worldwide, including EMIR, as well as US Dodd-Frank, Hong Kong, Japan, Malaysia and Australian rules.

The newest version of Validate.Trade uses L2 FpML and CSV validations, as required by the DTCC.

DTCC has started integrating Validate.Trade with GTR. In October, ESMA Level 2 rules will take effect, becoming another regulation that DTCC plans to address. The integrated service may also help smaller firms, according to Lynch.

Michael Shashoua

Risk Data Preparedness Low, But Rising, Survey Finds

Compliance with regulatory demands concerning risk data, such as data quality and aggregation, Solvency II, Markets in Financial Instruments Regulation, Options Clearing Corporation standards and others, is proving difficult for some firms, according to a survey of chief risk officers from 71 firms with aggregate assets of $18 trillion, conducted by Deloitte Global from August to November 2014, with results issued in May this year.

When naming compliance challenges, 62 percent of respondents said risk information systems and technology infrastructure is extremely or very challenging, and 46 percent said risk data is extremely or very challenging.

Although when asked in which areas of risk data and infrastructure their firms are effective, less than half of survey respondents could cite any single category.

Michael Shashoua

Risk Data Aggregation Begins With Division, Executives Say

Risk data aggregation can begin with dividing up data, according to executives from JP Morgan, RBS and other firms who spoke in a recent breakfast briefing hosted by *Inside Reference Data* in New York.

"We agree we need to divide up the data and the domains, and we should be owners of each of the domains," said Ulku Rowe, managing director of credit risk technology at JP Morgan. "But those domains are not easy to define. What do we mean by client data? If it's just the name and address, give it to the onboarding people. But you may have to figure out what Basel treatment the client has, or what they are allowed to trade." Dividing data begins with determining ownership, she added.

The number of stakeholders with an interest in data has also increased, observed Daniel Schwartz, managing director at RBS in Stamford, Conn. "We would produce risk runs for traders and they would think about their market and trading risk, and that was enough," he said. "Now we're producing turnover measures for regulators, based on the best assumptions one could have, but these are still pretty complex questions being asked. I wonder if the proliferation of stakeholders in the result and the organic evolution of our infrastructure are really at odds."

Michael Shashoua

Thomson Reuters Enhances Credit Risk Capability

Thomson Reuters has upgraded its DataScope suite, including its proprietary Starmine quantitative models. As a result, DataScope now brings together reference data such as legal entity identifiers and evaluated pricing of 2.5 million securities; core ratings data from 388 agencies; and analytics, such as news sentiment analysis.

"A number of entities and companies don't have ratings, so clients are using this platform for that," says Kate Toumazi, global head of risk data services at Thomson Reuters.

Mizuho Moves To GoldenSource EDM Platform For Risk Functions

Mizuho International, a subsidiary of Mizuho Financial Group, one of Japan's largest financial institutions, has gone live with GoldenSource's Enterprise Data Management (EDM) platform.

It is using GoldenSource's solution for client and counterparty management to support the trading, risk and compliance functions of its investment banking business across its London operations.

Virtual Roundtable

Managing Risk: Steering the Data Quality Ship

Inside Reference Data gathers together leading data management professionals to discuss how unified and higher-quality risk data, well-defined models and a change of approach can serve the needs of the business

What is the most effective data management or operations approach to better support managing risk, and why?

Ed Hida, partner, Deloitte & Touche: Use of consistent reference data across the organization is a well-regarded approach to support managing risk. This reference data should include identifiers for customers and counterparties, products and transactions. While the concept of reference data sounds simple, many institutions still have much work to do to apply this data across all their business units.

In addition, the use of the legal entity identifier (LEI) has made substantial progress, but should be further applied within firms, and by others such as regulators and other users. To be truly effective, a consistent global LEI should be used by all relevant parties. Product identifiers pose additional challenges, although work is occurring on this issue as well. These identifiers can be made more effective through the use of data-exchange standards, and semantic and ontology approaches.

Michael McMorrow, principal, MMM Data Perspectives: In my experience, data management and risk management prove to be most effective when they are passionate allies. Data management professionals need to bring "risk-based-thinking" to everything they do—how

their work can minimize and mitigate risk, and how they can partner with risk to co-sponsor projects. There are so many opportunities for data management to support better risk management, either by reducing risks related to data or by utilizing data to more effectively monitor other risks.

As data management and risk management generally report up through different wings of the organizational structure, these opportunities can be missed unless actively sought out. I frequently come across "risk registers" at clients, which refer to data-centric risks with no formal hook into data management to do anything about them.

I frequently come across data quality initiatives at clients, such as suites of scorecards, with no reference to the risks they are mitigating. Why bother spending time and money monitoring the quality of data if imperfect data quality carries inconsequential business risk?

Kate Toumazi, global head of risk data services, Thomson Reuters: Any risk management approach needs to serve the needs of the underlying business, ensuring risk exposure and counterparty risk calculations truly reflect the state of play in the real world. By extension, the data management systems and processes supporting the risk management operation need to deliver consistent, timely and accurate data to risk managers so they can rely on the data they use in their risk calculations.

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The Basel Committee's BCBS 239 risk data aggregation principles and the "spot check" *ad hoc* queries being introduced by regulators are together setting the best practices standard for risk data management. Firms that can execute these directives should be able to provide their business heads with superior data quality, enabling them to identify and exploit new opportunities.

Many risk management systems have been implemented to suit the purposes of the specific line of business, whether it is defined by asset class, geographical region or some other parameter. However, risk calculations will only be as good as the input used, which creates a need for a robust approach to data and

Ed Hida, Deloitte & Touche

data management. The complexity and scope of financial institutions introduce data-quality parameters, including normalization, validation, orchestration and timeliness. Therefore, a successful data management approach for risk management functions needs to meet the requirements of the emerging risk-related regulations, and provide the business side with flexible access to accurate and timely data to deliver opportunity.

How would you compare and contrast different risk management data approaches?

Hida: There are many components to data management programs and many approaches can be used. Often, systems efforts spur risk data management remediation and enrichment activities once the underlying data is assessed. These efforts usually only treat the symptoms of weak underlying data infrastructures.

The use of well-defined business models with associated data ontologies and related semantic models is seen by some as the starting point for constructing a robust data environment. To operationalize semantic models, institutions need to develop and implement a corresponding data-sourcing strategy for both reference and transactional data. Establishing strong governance and consistent data standards and approaches across organizational units is also key. Organizations have employed a variety of data management tools for tasks such as identifying, documenting and managing data traceability, from its source to its usage, and to evaluate and rate data quality across different products or systems.

McMorrow: One way to compare and contrast risk management data approaches is to consider "active" versus "passive" approaches by quantitative analysts within the risk function. In the passive approach, analysts were just handed data to work with. In the active approach, analysts had to source the data for themselves.

The strength of the passive approach is the speed with which a newly hired analyst can be productive as they need very little knowledge of the organization and its systems. The strength of the active approach is the greater business knowledge developed by the analysts, which enables them to creatively identify scenarios to explore.

The main consideration here is the resourcing model within risk management—if there is a sufficiently large pool of quantitative analysts, then the

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Michael McMorrow, MMM Data Perspectives

active approach based on amassing business data expertise is feasible. If the pool is too small, then attrition risk means the passive approach is most feasible.

Toumazi: For the buy side, the traditional stress on market risk as a potential for financial loss has been compounded by a long series of market failures and scandals. Asset managers are now proactively building risk assessments into their portfolio construction and management in the belief that better understanding between risk and return on investment can improve overall results.

While there is considerable overlap in requirements, sell-side firms may place a greater emphasis on credit and counterparty risk, seeking to minimize potential loss from an increasingly complex execution process. For these firms, assessing the risk of default among counterparties, issuers and indeed clients is paramount to getting a firm grip on the risk exposures of their business.

Both sides of the fence share a common hurdle to instituting a holistic approach to risk management: the fact they are often organized by vertical lines of business, creating a series of "siloes," which do not or cannot communicate with each other effectively.

Many established financial institutions have grown to their current size through acquisition and, along with the business of the companies they've purchased, the acquirer is often saddled with a legacy highly vertical risk-management infrastructure. The more acquisitions over time, the more such legacy silos. And, even where growth has been organic, many firms continue to maintain highly autonomous business lines. As a result, many firms have numerous risk data repositories based around these siloed risk management structures, and this can make it difficult, if not impossible, to get a truly holistic view of risk across the enterprise.

BCBS 239 and other emerging regulations are attempting to break through these silos by enforcing a new approach to risk data management. BCBS 239's risk aggregation requirements will force firms to ensure consistency of their "workings" and data behind risk management systems, allowing the aggregation of risk measures to form a more comprehensive view.

Firms will need to be able to respond rapidly to *ad hoc* regulatory inquiries. This requires highly flexible access to highly granular underlying data sets. This, in itself, requires a more sophis-

ticated and responsive approach to data management.

How important to risk management are efforts to improve data quality?

Hida: The quality of the data underlying risk management information is of huge importance. The challenges with risk data quality became apparent during the financial crisis due to the inability to provide timely information on counter-party exposures or to easily aggregate exposures across different business units. As a result, institutions resorted to significant manual review and reconciliation, remediation and enrichment of this data to provide needed information on risk exposures to senior management and regulators. These data challenges were due to the fragmented internal infrastructures in many institutions. As a result, after several years of effort, the programs to improve data quality continue, while regulators keep the focus on this area.

The BCBS 239 principles have an imminent compliance deadline in January. US regulators have emphasized "qualitative factors" in assessing bank stress-test results, with a focus on the underlying infrastructure and reliability of risk and capital measures, and data.

McMorrow: Data quality must be a key concern of risk management. More and more, data is either a core business risk in itself or critical to policing other business risks. The impact of deficient data quality is ever increasing. Risk-related regulations such as Basel III and Solvency II demand evidence of data accuracy. Risk models, either for external or internal stakeholders, are fundamentally dependent on reliable input data.

Having said all that, I am still surprised by the often haphazard data quality focus —disconnected pockets of activity rather than a clear enterprise strategy. As part of one client engagement, I surfaced some materially risky data quality issues, prepared an executive summary, and shared it with the CTO, asking, "Who should I give this to?", and he didn't know!

If nobody is steering the data quality ship, it's a certainty, rather than a risk, that it will hit the rocks. Data quality improvement will not happen by accident. It needs sustained effort and budget, and risk management is the most influential sponsor.

Toumazi: It has never been more important, in part because regulators across the board are shifting from an emphasis on risk models to an emphasis on "the workings" behind risk calculations and their results.

This is placing great emphasis on the underlying data, and by extension to what is required to ensure it's of sufficient quality to meet the bank's needs.

This points to the need for a standardized set of rules and procedures for sourcing, validating, normalizing and delivering data in support of regulatory risk reporting. But innovative firms are finding this approach to data quality (in short, data governance) has material benefits for risk management operations.

Practitioners are finding that better underlying data can result in higher quality originations in the front office, and fewer exceptions and failures as the trade cycle works through downstream systems. This can translate into substantial performance improvements, particularly for larger firms, where expensive corrections may have to be made multiple times across multiple systems and platforms.

Is data governance still a factor, or even a pre-requisite, for any data plans aimed at managing risk?

Hida: A well developed and effective data governance model is key to an effective data management plan. One of the more visible elements of data governance has been the establishment of chief data officers (CDOs) in major banks in the last several years, and their role is very important. CDOs help to establish the overall data governance program, and the standards, approaches, tools and reporting for data management across the enterprise.

> "The data steward's domain is where the rubber meets the road for actually managing the data a business unit, function or risk stripe uses… which the broader organization relies on"
>
> *Ed Hida, Deloitte & Touche*

In some ways, however, data stewards assigned to individual business units, functions and risk stripes are more important. The data steward's domain is where the rubber meets the road for actually managing the data that a business unit, function or risk stripe uses within its infrastructure, and which the broader organization relies on.

McMorrow: A formal data governance framework with explicit individual accountabilities is essential to satisfy the rigorous data requirements of risk management. Again, regulations such as Solvency II explicitly call this out. While data governance as a topic has been widely discussed for decades, implementation in practice in many organizations is, at best, still patchy.

I support the principle that data governance is business driven, and that data owner and data steward are business rather than IT roles. Done well, this delivers the deepest business under-

standing of the data you have, how good it is, and what you can or should use it for. The flipside is that data governance duties need a sustained, enterprise-wide business commitment, and without strong senior steering can degrade over time with increased scale and/or decreased will. For risk management to be able to rely on data, it must be able to trust data governance.

Toumazi: Data governance is increasingly a prerequisite. As the industry's approach to risk management starts to take the form of a regulatory response, firms find they need to apply strict rules and processes to their data management activities. As well as looking under the hood of firms' risk models, regulators are requiring financial institutions to perform due diligence on their risk information sources.

For instance, insurance firms impacted by the European Union's Solvency II regulation need not only demonstrate robust data governance procedures—featuring the usual emphasis on consistent sourcing and data validation, and ongoing engagement with stakeholders—but also do due diligence on their data suppliers, who may be asset managers, asset services firms or commercial data vendors.

The industry's improvements to data-governance procedures perhaps culminated in the hiring of CDOs at many major firms in recent years, signaling more seriousness about governing data practices in response to new regulation or past enforcement.

Data governance best practices are being adopted everywhere. It is no longer unusual to involve business users in discussions of data ownership, sourcing or validation. Many, if not most, major firms have well-documented processes for data used within the organization, with hierarchies of ownership, identified data stewards and defined processes for dealing with infractions or bad data.

What aspects of data management are most ripe for change and what should be changed about these areas?

Hida: The use of industry-wide data standards offers opportunities on many fronts: to improve efficiency, reduce operational risk, and provide more timely and useful risk management information during times of crisis to management and regulators. Imagine institutions could easily identify all of their counterparts, and regulators could quickly compare and assess exposures across the entire marketplace.

Regulators are emphasizing the importance of the LEI by requiring its use in reporting. Product and transaction identifiers can yield similar benefits of standardization, reducing operational risk and providing greater risk transparency. While some progress has been made on developing product ontologies, much work remains to develop actual standards and

gain acceptance across the industry.

All these efforts represent an attempt to develop industry-wide golden sources of data. At individual institutions, these golden data sources represent both the biggest opportunity and biggest challenge for improved data management. A golden source strategy can help focus the data strategies and sources relied on by a wide range of users downstream.

McMorrow: The biggest challenge is efficiently integrating data from the myriad internal and external data sources available to an organization. This integration demands standardization, but many organizations struggle with idiosyncratic data definitions and content in legacy systems. This inhibits links to newer data sources. One approach is categorizing data as "public domain" or "business private".

As data is increasingly available from trusted sources in the public domain, why try to capture and maintain that same data internally? Data management should identify data that can now—or soon—be reliably sourced externally and start the architectural journey towards that. Systems reduced to managing leaner internal "business private" data linked to reliable "public domain" data will be more agile, accurate and open to easily incorporate data-as-a-service offerings.

Toumazi: Innovative firms are starting to align their risk measures to business performance, to take true advantage of the accurate and timely risk data they are now able to generate. By mapping risk measures to performance metrics, risk operations can start delivering risk-adjusted performance assessments, giving an even more powerful input into business decision-making.

Fund managers are beginning to recognize that a better understanding of the relationship between risk and return can improve performance. This is translating into greater due diligence on holdings and issuers, pointing to the need for a standardized way of sourcing and analyzing intelligence data on their investments. As one risk data executive at a major European sell-side institution told an industry conference recently: "The next frontier is the ability to align risk and performance to provide risk-adjusted performance measures."

In what ways has risk management changed that might affect the data needs it creates?

Hida: The scope of risk management continues to expand. Capital stress testing programs have become established and remain a significant focus of risk management programs, with liquidity as a newer focus, given the LCR and NSFR requirements, as well as expectations for

"As one risk data executive told an industry conference recently: 'The next frontier is the ability to align risk and performance to provide risk-adjusted performance measures'"

Kate Toumazi, Thomson Reuters

liquidity stress testing. The data-intensive nature of these programs and the importance to the institution of passing have put greater pressure on institutions' data.

Processing and review cycles are becoming faster. The availability of real time or at least on-demand intraday information is becoming an expectation in areas such as risk exposure from payments processing, where end-of-day exposure analysis is insufficient.

McMorrow: As mentioned in an earlier answer, there is an increasing need for risk management to access a combination of internal and external data. If risk management processes are limited to a narrow set of data captured internally, then risk assessments will be correspondingly hampered by the constrained view provided by that data. Regulators expect organizations to inform risk management processes with the richest data possible, which entails enhancing internal data with suitably certified external data. This outward-looking trend makes risk management one of the main organizational drivers for the acquisition of external data.

Toumazi: Regulators have been clear in their desire to improve transparency to prevent another crisis. Many of the emerging new rules add substantial due diligence requirements for financial institutions. This is also translating into a changing data requirement. To address this, many firms are recognizing the need to unify data sets and provide headline numbers, as well as the ability to drill down to portfolio data and calculations. This extends to reference data, historical data, position data, derived data, and to more complex data sets such as curves and surfaces.

These can be used to drive analytics, minimizing the use of manual and spreadsheet processes in risk data management and supporting dependencies between data. A unified approach also provides an audit trail that can track back to the source of data used in calculations.

Data integration for a unified approach can be complex, particularly where numerous data silos and asset classes are involved. But, driven by the stick of regulation and the carrot of improved business processes, many institutions have embarked on projects to unify their risk data.

Q&A

Data Process Challenges

Collecting and managing data for risk management is still rife with clashing and diverse methods and sourcing, says Virginie O'Shea, senior analyst at Aite Group

Virginie O'Shea

What are the most important aspects of managing risk to consider for managing data operations?

One of the main challenges is understanding where the problems are in getting data right to input into risk management calculations. Many risk managers cannot see where the data is coming from because the fields they pull information from may be filled with dummy codes.

When trying to run a new risk analytics report, the set-up is not always from the same sources. So teams sometimes have to put together workarounds to patch that data together, but inaccuracies may then go into those data fields. That's where we see a lot of process changes and challenges. The bigger challenge is understanding the data you have, where it comes from and where the problems are, because it might not be immediately obvious.

What is the best way to handle data to support risk management?

There tends to be a disparity between how you approach data and the way that data is managed. Risk calculations vary as well, so there are different focuses. It's very hard to develop best practices when there is such a lack of standardization.

In an operational and cultural sense, end-users giving input on what they want data to look like at the end of the process means you need consistency in ownership of that data.

How are stress-testing regimens and requirements affecting risk data management?

People pay lip service to BCBS 239. They're probably struggling because it's quite a big project to take on. Risk is pulled from all types of different data sets, so it's not an easy project by any stretch of the imagination. Anyone trying to do a six-month project to get information right ... is never going to get it completely right the first time. It would have to be an ongoing program to try and proof risk data.

A lot of firms are trying to address risk management issues post-crisis. They don't have massive budgets and most are trying to make do with what they have.

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