

REPRINT

R&C risk & compliance

# FINANCIAL INSTITUTIONS DATA QUALITY, ANALYTICS AND REPORTING

REPRINTED FROM:  
RISK & COMPLIANCE MAGAZINE  
JAN-MAR 2018 ISSUE



[www.riskandcompliancemagazine.com](http://www.riskandcompliancemagazine.com)

Visit the website to request  
a free copy of the full e-magazine



R&C risk &  
compliance

[www.riskandcompliancemagazine.com](http://www.riskandcompliancemagazine.com)

MINI-ROUNDTABLE

# FINANCIAL INSTITUTIONS DATA QUALITY, ANALYTICS AND REPORTING



**PANEL EXPERTS**

**Simon Wong**  
Director, Anti-Financial Crime  
Deutsche Bank AG  
T: +44 (0)20 7547 5675  
E: [simon-c.wong@db.com](mailto:simon-c.wong@db.com)

**Simon Wong** is a director at Deutsche Bank AG based in London. In his current role he leads the designing of solution strategy for anti-financial crime unit and investigation, setting the global standards on anti-financial crime (AFC) model management and leading the tuning and optimisation efforts of the investigation process.



**Darryl Twiggs**  
SVP Strategic Initiatives  
SmartStream  
E: [info@smartstream-stp.com](mailto:info@smartstream-stp.com)

**Dr Darryl Twiggs** is responsible for the innovation and business direction of new strategic solutions from inception to delivery. Mr Twiggs joined SmartStream in 1999 as product manager for reconciliations and delivered the first version of TLM Reconciliations in 2001. By 2002 he was instrumental in setting up and managing the global customer base of SmartStream's corporate actions business, running the operation from the development centre in Phoenix, Arizona.



**Robert L. Brunner**  
Senior Managing Director, Global Practice  
Leader – Data & Analytics  
FTI Consulting  
T: +1 (213) 452 6075  
E: [robert.brunner@fticonsulting.com](mailto:robert.brunner@fticonsulting.com)

**Robert L. Brunner** is a senior managing director at FTI Consulting and is based in San Francisco. Mr Brunner leads both the FTI Consulting residential mortgage-backed securities litigation practice group and the company's global data and analytics practice. He is a nationally recognised expert in the areas of collection and analysis of financial, transactional and operational data. He specialises in complex, data-intensive cases, including class action suits, government and regulatory inquiries, financial and accounting investigations, bankruptcies and other cases requiring complex modelling or sharing of information.

**R&C: How extensive is the use of data analytics within financial institutions (FIs)? How does this compare to other industries?**

**Wong:** FIs have been using data analytics for many years in different areas of the organisation. Traditionally, data analytics have been applied to marketing, pricing, customer behaviour, financial crime and other risk management models. However, in recent years, areas such as compliance and back office operations have started adopting the use of data analytics to improve process efficiency, and many FIs continue to invest further on enhancing data management and data analytics capabilities. I do not think the approach of FIs is any different than other industries, other than the fact that they are applying more data analytics into decision making because large FIs have collected a lot more data than other industries. This data includes income, spending behaviour, location, travel behaviour, customer risk appetite and much more. Obviously, this would require customer consent, but this would allow the FI to improve its products and services and tailor them to a customer's needs, and improve overall efficiency and effectiveness by accessing data that the FIs already have simply by 'joining the dots'.

**Twiggs:** Data analytics has had a long and storied presence across the financial services industry. What

has changed in more recent times is the inclusion of unstructured data from a disparate and softer set of sources, including online search trends, interest following patterns and social media that contains financial information of markets and consumers. Once associated, the data provides greater insight and intelligence in understanding market activity and, in particular, the consequences of market volatility. Data analytics requires the collection of Big Data on an immense scale. The huge increase in computational power, against dropping unit costs, supported by the increased interconnectivity of data services with cloud computing architecture, has only now enabled data analytics to be more widely used. This has only been possible by divesting traditional software architectures with closely coupled databases and introducing high performance real-time processing tools using cloud architectures with distributed data models. Industries outside of financial services have largely led the way, notably in the retail and consumer space.

**Brunner:** Data analytics is – or certainly should be – at the forefront of any company's strategic planning and should be an ingrained part of companies' daily operations and decision-making processes. Data and analytics are the engine for digital transformation across all industries and regions. While facing challenges, such as competition from the FinTech sector, FIs must handle pressure from regulators across the world to have the correct mechanisms in

place to stay compliant in an increasingly complex business environment. Often, FIs need to respond to varied and urgent regulatory requests. During these critical situations, disorganised financial and operational data can create disruptions that result in unnecessary expenditure and increased effort for the business. We encounter widely varying levels of maturity in data and analytics, with discrepancies between industries, countries, organisations of different sizes and types. Some companies have forward-thinking data strategies and master data management in place, which enables a relatively straightforward data collection, filtering and analysing process. On the other hand, other organisations have large, disorganised and disparate data sets that require collection from various different sources located all over the world, which means a more complex and time-consuming process is required to respond to regulatory requests. Substantial data reconciliation efforts are often required to ensure the data is accurate and comprehensive.

**R&C: In a world of increasing complexity and demand, to what extent does the quality of data and data analytics serve the risk management requirements of FIs? How does this feed into their reporting requirements?**

**Twiggs:** In any software solution, data quality is of paramount importance; the old adage 'garbage in, garbage out' still applies. The challenge in risk

**"Ensuring that companies have good data management programmes and good data from the start will help FIs to cope with the avalanche of information being created now and in the future."**

*Simon Wong,  
Deutsche Bank AG*

management and stress testing models is the scarcity of historical data, particularly around abnormal market events. These are the very events these models are trying to predict and mitigate against. Data analytics brings together vast amounts of data from a wide range of associated sources in order to build sensitive models with a degree of predictability and probability of assurance of accuracy. However, the very theory of data analytics, artificial intelligence and machine learning is based on associating structured and unstructured data with a degree of probability in the resulting analytics. These models are self-compensating, taking into account the possibility of poor or inaccurate data. One challenge though is the systematic lack of

auditability in models' results which could become a macro-level risk.

**Brunner:** Given the active regulatory oversight and data-driven risk management requirements of the FI industry, FIs have a strong incentive to maintain high data quality and have high quality and impactful data analytics in place to measure, analyse and, ultimately, prevent risk. In addition, initiatives in areas such as automation and AI require meaningful, reliable data if they are to be worthwhile.

**Wong:** Regulators have started focusing on risk or compliance reporting regulations that would require FIs to attest and conform to certain data quality standards and follow certain frameworks, from a data analytics approach perspective. Examples, including BCBS 239 and NYDFS 504, bring data quality and data analytics frameworks under the spotlight of many FIs' senior management, who must ensure that the banks are applying proper governance and controls and are adhering to certain standards when it comes to risk management reporting and monitoring. Although this puts an extra burden on FIs when conducting financial or risk management reports, it will drive higher quality standards for reporting, and forces banks to invest in data management programmes that will benefit other areas of the organisation as well.

**R&C: With 90 percent of global data said to have been created over the past two years, to what extent does a robust data quality, analytics and reporting programme assist an FI to cope with the avalanche of information it handles?**

**Wong:** Many banks are still struggling with data quality issues on the data that they have been accumulating over many years. Remediation programmes are being initiated to improve 'know your customer' (KYC) systems, enhance data validation rules, document data lineage, fix data or fix derived data logic. Due to significant efforts to remediate data quality issues, many FIs have been proactively setting up centralised data governance groups to support their data programmes, ensuring that data is being applied using certain standards and frameworks from the onset in order to avoid heavy remediation efforts down the road. Ensuring that companies have good data management programmes and good data from the start will help FIs to cope with the avalanche of information being created now and in the future.

**Brunner:** Whatever the form, be it onsite or offsite, internally managed or externally managed on the cloud, data centres have become increasingly powerful and secure, and can host the vast quantities of data generated and processed by large FIs on a

daily basis. This massive increase in data volumes however requires ever-stronger data management to enable more insight. FIs need to focus on systems and reporting that get the right information to the right person at the right time in order to combat information overload and supply decision makers with the best and most complete information available. For example, 'red flags' generated by applying algorithms to historic data can provide early warnings of problems that can then be addressed proactively. An informed business strategy, with technology and processes to match, is essential for any organisation that wants to use data to drive results by quickly and frequently identifying opportunities to exploit and issues to resolve. Additionally, data not required or needed, or not permitted to be retained due to data privacy laws, such as GDPR, should be purged from core systems. Removing superfluous data will further streamline the data management process.

**Twiggs:** Today's data analytics have turned the Big Data problem on its head. Models that are able to consume vast data quantities from the widest range of sources, including unstructured data, are able to identify patterns that a human counterpart cannot. Traditionally, software solutions were totally dependent on structured data; the major headache and cost for data officers was to engineer the data models and provide database warehouses for storage. Data modelling in this manner is

complex and requires careful management of data taxonomy and symbology, together with intersystem validations, to ensure consistency of data before it can be passed for processing. Today, data analytics engines are managing the data and identifying the data associations. Wider industry standard toolsets are available to manage and investigate the data, replacing essential bespoke and expensive tools needed over proprietary data models.

**R&C: In your opinion, are FIs yet to fully harness the power of data and data analytics in their day-to-day decision making? To what extent does the ability to capture, assess and utilise data determine the ultimate success of their financial reporting obligations?**

**Brunner:** The opportunities that data provide seem to be endless, and so does the growth in data volumes. Making the most of data and data analytics depends on having the right technologies and processes in place; those technologies can only be fully used when they are sourced and applied by experts working in consultation with companies to ensure alignment with strategic objectives. With those two factors in place, FIs will more easily meet financial reporting obligations, delivering more timely and accurate results.

**Twiggs:** FIs are highly competitive. They need to retain a loyal customer base and attract new customers through the provision of new services and products, which will only be achieved by employing the latest technologies. Competition will drive the uptake of data analytics across the industry. Similarly, cost constrained firms need to look to data analytics to solve their complex operational models and drive down costs. The profitable analysis of complex data can only be achieved by new data analytical models and tools. The challenge to financial institutions is how to access and harness these technologies. Internal initiatives can be costly, consuming limited resources and requiring new skilled resources to deliver. And then there is time to market. We expect that larger firms will invest and drive their own initiatives in areas that they perceive to be of competitive advantage.

**Wong:** I believe there is still long way to go for many FIs to fully harness the power of data and data analytics. From a data management perspective, many FIs are still struggling with data quality and data lineage information. Many FIs' data is still scattered. Furthermore, data privacy still looms large in many jurisdictions, preventing FIs from using data from different regions effectively. Utilising master data management programmes would allow companies

to generate significant savings, especially with the increased use and sophistication of machine learning

**“Today’s data analytics have turned the Big Data problem on its head.”**

*Darryl Twiggs,  
SmartStream*

and artificial intelligence (AI). Failure to maintain a good set of data will lead to incorrect outcomes, as the adage goes – ‘garbage in, garbage out’. It is crucial that FIs have a successful data management programme to handle the increased use of data for decision making.

**R&C: Could you describe the extent of cost savings available to FIs when data analytics is deployed as part of an overall risk management and reporting strategy?**

**Twiggs:** In our experience, we have seen savings in operational costs gained through the deployment of data analytics to operations users. Incorporating data analytics into daily operational tools has



enabled business users, who know their data context, to proactively participate in cost reduction programmes. The identification of root causes and behavioural patterns has only been made possible through the graphical presentation of complex data patterns, enabling solutions to identify trends rather than numerous individual, but repetitive, issues. These analytical tools have enabled customers to achieve better than 40 percent improvements in

operational costs. In other areas, such as intraday liquidity, real-time data analytics help to identify unexpected events and market volatility which would have otherwise had an adverse impact on the firm's liquidity. Integrating data analytics into an operational tool enhances the business decision process, enabling firms to make better business critical decisions. We have also seen this within the cash management operation. Providing real-time

information enables agile response to events as they happen and to make better funding decisions, maximising business opportunities and returns.

**Wong:** From an anti-financial crime department perspective, FIs can leverage data analytics to proactively conduct financial crime threat analyses to identify financial crime threats that can potentially cause the FIs to incur regulatory fines, reputational damage and financial losses. By applying data analytics in KYC systems, FIs can prevent criminals from being 'onboarded' as a customer. Criminals are using sophisticated methods to conduct financial crime and hide their true intentions; however, by applying data analytics to link the transactions, and network and harness the power of publicly available data, data analytics can help FIs prevent financial cost and reputational damage, which can run into the millions. From an operational perspective, FIs can also apply data analytics and machine learning to eliminate tedious and straightforward decision making in many operational areas and potentially reduce human error.

**Brunner:** We predict that corporations will rethink their traditional departmental structures. Increasingly, data scientists and technologists will work alongside industry specialists instead of inhabiting separate worlds as is often the case today. Technology will be part of any skill set for the workforce of the future, regardless of whether you are the general counsel,

the chief executive or the chief medical officer. Implemented and managed correctly, data analytics will result in increased accuracy and speed, and will optimise work streams and functions. However, it is difficult to predict whether and to what extent the bottom line of a corporation will improve as a result in the near future. Technology, the related expertise needed, and the whole process of digital transformation may require a huge financial investment, depending on the company's current data and systems landscape – it may take years to fully implement and recover a complete solution. FIs should be prepared to capture the cost savings that result from streamlined financial reporting, improved decision making and reduction in costly redundant and manual work tasks to calculate the cost benefits.

### **R&C: What do you see as the likely consequences for those FIs that resist or are unable to fully integrate data quality and analytics into their existing financial reporting policies and procedures?**

**Brunner:** Data quality and analytics procedures are essential for any aspect of a business. Missing links or missing data arising from inefficient management will result in a never-ending loop of unnecessary costs and exposure to threats, including cyber security issues. Ultimately, poor data quality and analytics will make it impossible to build an informed strategy and stay on top in a

highly competitive marketplace. Unfortunately, we have seen examples over the recent past of FIs not adequately leveraging the data and technology available to uncover improper behaviours, either by customers or employees.

**Wong:** Regulators have started incorporating minimum standards and frameworks to existing data analytics, data quality and models used in risk management and financial crime areas of the banks. FIs that fail to integrate these minimum standards will face potential regulatory fines or increases in regulatory scrutiny. Without putting proper data standards and frameworks in place, the FI will potentially fall behind as the higher cost of data remediation will make data analytics even more challenging in the future. Machine learning and AI will require better data management programmes. Without such programmes, the organisation will fall behind others in the race to leverage machine learning and AI technology.

**Twiggs:** Regulators are requesting wider data sets when reporting trading activity. These data sets bring together information from an increasingly wide number of systems, which is a challenge for many firms; large firms because of the number of different systems they have acquired over time and smaller firms are challenged with funding. Beyond the

requirement to report a wider set of data, regulators are imposing systematic analysis of the reported data to identify errors and omissions and to put in place

**“Because of the constant development of new technologies, there are ample opportunities for lagging FIs to catch up to competitors.”**

*Robert L. Brunner,  
FTI Consulting*

mechanisms to correct data issues. In order to satisfy the need to make fundamental corrections in data sources, firms need data analytics not only to identify individual errors but to identify trends. Trend analysis across the complete trade lifecycle and an analysis of the interaction of their resources with the variety of systems will lead to identification of the inefficiencies and bottlenecks to achieve operation efficiency gains and lower operating costs.

**R&C: Looking ahead, what trends and developments do you expect to see in this space in the coming years? Will the way FIs store, handle, process and**

## analyse data eventually separate market leaders from the rest of the pack?

**Wong:** FIs will continue to focus on investing in data programmes by centralising data, improving the overall data quality, improving technology that can provide insights into decision making and adding machine learning and AI to provide additional insight, reduce the time required to conduct analyses and reduce potential human error. FIs with proper data management programmes will thrive as data analytics driven programmes are much faster and cheaper when the data is available, information is documented and clear, and the quality of data is high. A proper data management programme is a strong pillar for implementing machine learning and AI, which will further increase the speed of conducting data analysis and decision making, providing hidden insights, and reducing the risk of human error. Those which lack data management programmes will be stuck remediating data issues and preventing them from moving forward, or will incur significant cost relating to ramping up any data analytic driven projects.

**Twiggs:** We anticipate that regulators will accept and approve the widespread use of cloud technologies, opening current restrictions on data storage and data regionalisation. The migration to cloud architectures brings with it the opportunity

to support unstructured data, moving away from the high cost maintenance of traditional database architected data models, and away from proprietary system data models to share data across multiple processing solutions. Real-time access to data will bring with it the opportunity for real-time data analysis and in-line risk management utilising a wider data set without the performance constraints imposed by database architected solutions. In the cloud, there is also opportunity to take advantage of a greater degree of mutualisation of data and data services.

**Brunner:** Because of the constant development of new technologies, there are ample opportunities for lagging FIs to catch up to competitors. Companies that are behind technology trends must upgrade to stay competitive and may be positioned to leverage the latest tech that can accelerate the process of remaining competitive with peers. It is essential to build an internal infrastructure that can quickly adapt to new technologies. To keep up to date, it might be advisable – if possible – to engage external providers instead of buying into new technologies. We also expect that FIs will utilise the latest tech advancements, for example AI, in a controlled and focused manner to improve predictive capabilities and continually automate and refine inefficient processes. **RC**