

# MiFID II

## THE IMPORTANCE OF DATA QUALITY AND LINEAGE

The Markets in Financial Instruments Directive, MiFID II, is one of the most talked about regulations in the financial services sector. Its impacts are far-reaching in terms of the macrostructure of the overall financial markets and the internal functional areas within the financial institutions themselves.

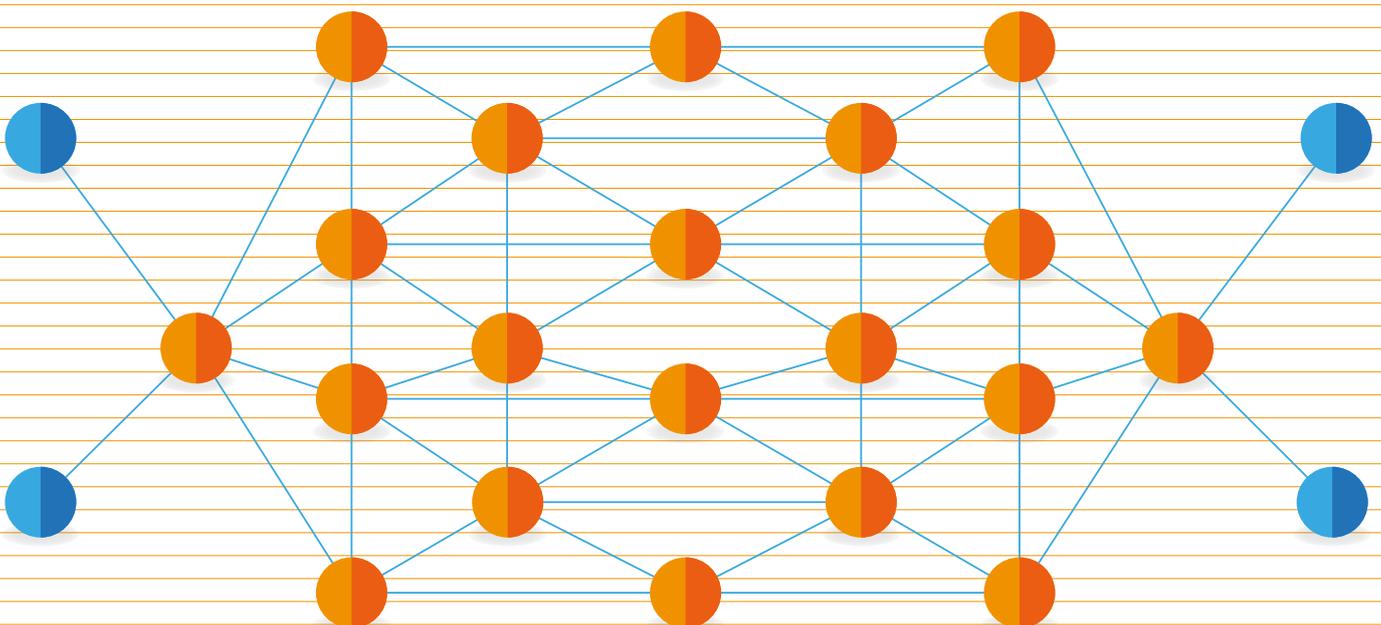
As discussed in our previous paper, entitled MiFID II Documenting a Target Operating Model (TOM), the main things to consider in order to achieve compliance are data quality, rigorous and efficient end-to-end testing, and the impact on existing processes and models across a firm's operating models.

In this paper, we look at why data quality is so important for MiFID II compliance.

The issues associated with data quality and lineage have become increasingly complicated in recent years thanks to a spate of organisational consolidation and increasing system complexity.

In order to comply with the MiFID II legislation by the deadline of January 2018, organisations must ensure all their data is clear and complete. To help this process, firms need:

- A globally consistent approach to managing data across all business units, acknowledging that transaction reporting data is gathered and used in many different parts of the organisation (European Economic Area (EEA) firms, non-EEA-based branches and firms).
- A strategic and holistic approach to sourcing and populating data that aligns the requirements of not just MiFID II but also a range of other regulations, including Dodd Frank, EMIR, FRTB and MiFID II, thus reducing future costs and aiding compliance.

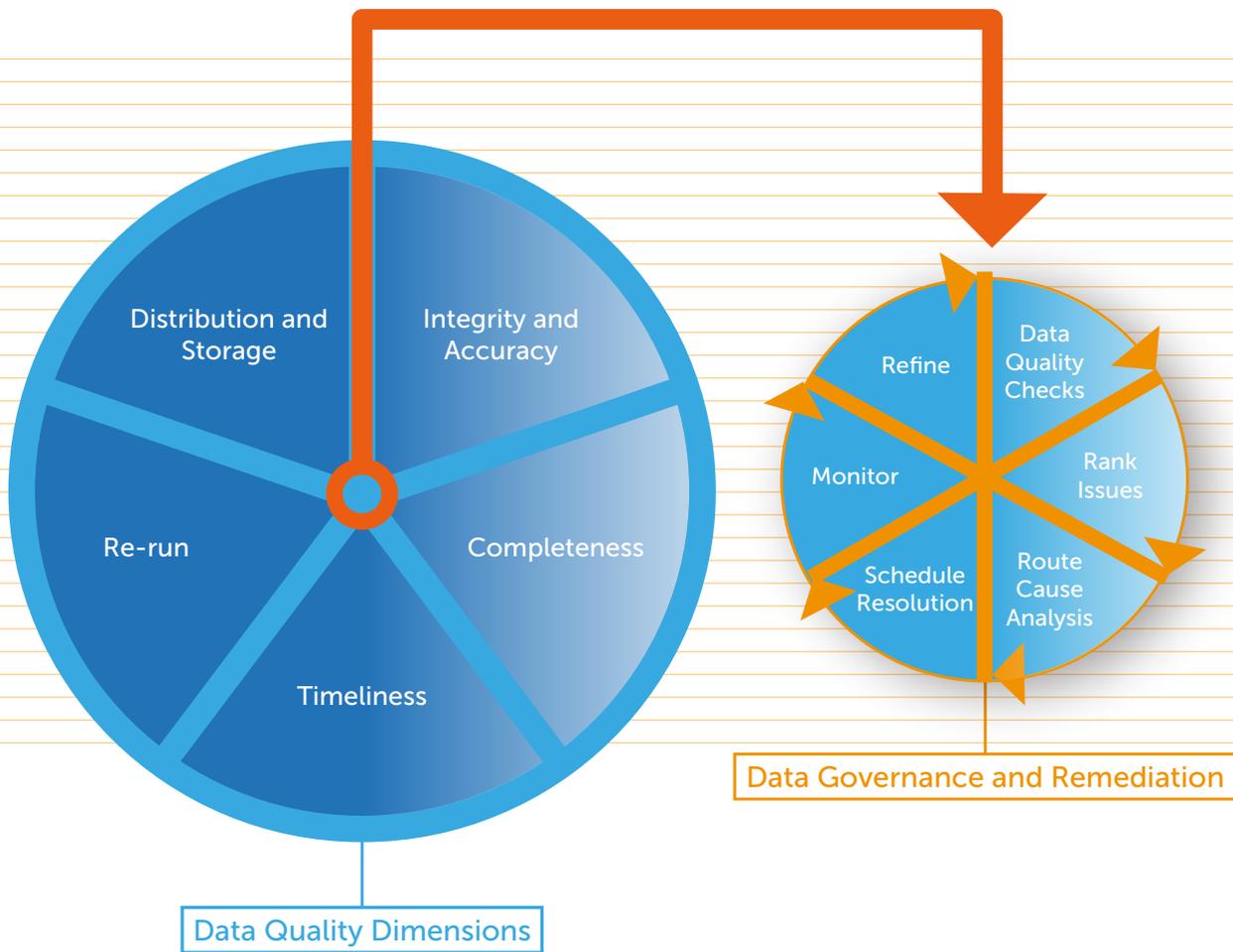


# DEFINING DATA QUALITY

Data quality has multiple dimensions in MiFID II (see diagram below), with the overall sentiment that the better the quality at all stages, the more efficient the analytics process and in turn the smoother the path to compliance. Improving quality of these dimensions along

with meeting new MiFID II data requirements requires a systemic data governance and remediation process. The data governance and remediation ensures that the data is 'correct' and 'timely' throughout the whole lifecycle, from generation to consumption.

Fig. 1: Key focus areas for MiFID II compliance



The below table decomposes these data quality requirements and identifies, where appropriate, controls and tools that can be implemented to aid MiFID II regulatory compliance.

Data Quality Focus	Data Quality	Control(s)	Tool(s)/Analysis	Why is this required in MiFID II
Is data correct?	<b>Integrity and Accuracy</b> <ul style="list-style-type: none"> <li>- Critical field population and accurate referencing</li> <li>- Attribute validation</li> </ul>	<ul style="list-style-type: none"> <li>- Input/output data validation</li> <li>- Golden source and copy validation</li> <li>- Format checks</li> <li>- System synergy</li> </ul>	<ul style="list-style-type: none"> <li>- Front-to-back data flow analysis</li> <li>- Access control analysis</li> <li>- Data backup</li> <li>- Database design</li> <li>- Automated reconciliation</li> <li>- Enterprise solutions</li> <li>- Version control</li> </ul>	<ul style="list-style-type: none"> <li>- Transaction and trade reporting</li> <li>- Best execution</li> <li>- Algo trading</li> <li>- Transparency across reference data and lifecycle processing</li> </ul>
	<b>Completeness</b> <ul style="list-style-type: none"> <li>- Missing data resolution</li> <li>- Null/inconsistent values</li> </ul>	<ul style="list-style-type: none"> <li>- Population counts</li> <li>- Lifecycle event checks</li> <li>- Attribute coverage</li> <li>- Format checks</li> </ul>	<ul style="list-style-type: none"> <li>- Automated reconciliation</li> <li>- System owner engagement</li> <li>- Management Information (MI) reporting engine</li> <li>- Checkpointing</li> </ul>	<ul style="list-style-type: none"> <li>- Increased data points; quotes, orders, transactions for derivation</li> <li>- Approved Regulatory Mechanisms (ARMs) and Approved Publication Arrangement (APA)-attribute requirements</li> <li>- New APIs eg: ANNA DSB requiring enhanced and complete data sets</li> </ul>
	<b>Distribution and Storage</b> <ul style="list-style-type: none"> <li>- Ensuring successful receipt</li> </ul>	<ul style="list-style-type: none"> <li>- Security on a "Need-to-Know" basis</li> <li>- MI</li> </ul>	<ul style="list-style-type: none"> <li>- Access portal</li> <li>- Consumer configurations</li> <li>- Access control</li> <li>- De-duplication</li> <li>- Environment management</li> <li>- MI reporting engine</li> <li>- Encryption</li> <li>- Data storage</li> </ul>	<ul style="list-style-type: none"> <li>- Under-and-over reporting challenges (products/regions/business units)</li> <li>- Trading book disclosures</li> <li>- APA/ARM</li> <li>- Data records of all mediums; mails, faxes, emails, meetings, phone calls</li> <li>- Retention periods</li> </ul>
Is data timely?	<b>Timeliness</b> <ul style="list-style-type: none"> <li>- Efficient generation and population</li> </ul>	<ul style="list-style-type: none"> <li>- Frequency</li> <li>- Punctuality</li> <li>- Version management</li> </ul>	<ul style="list-style-type: none"> <li>- Environment analysis</li> <li>- Environment monitoring</li> <li>- Checkpoint gauge</li> <li>- SLA definition</li> <li>- Cloud-based solutioning</li> </ul>	<ul style="list-style-type: none"> <li>- Trading venue; Near real-time reporting requirements</li> <li>- Trade and transaction reporting</li> <li>- Trade reporting diagnostics</li> <li>- Time-stamping</li> </ul>
	<b>Re-run</b> <ul style="list-style-type: none"> <li>- Repopulation of data correction</li> </ul>	<ul style="list-style-type: none"> <li>- Recreation of data</li> <li>- Back-loading</li> </ul>	<ul style="list-style-type: none"> <li>- Request management tooling</li> <li>- Scheduling</li> <li>- Test case and lifecycle management</li> </ul>	<ul style="list-style-type: none"> <li>- 12th Feb 2019 backloading requirement</li> <li>- Legal Entity Identifier (LEI) population (LEI must be known prior to trading!)</li> <li>- Data amendments following possible regulatory body rejection</li> <li>- Bug fixing</li> </ul>

## KEY FOCUS AREAS OF DATA QUALITY IN MiFID II

MiFID will require significantly enhanced standards of data quality across all functions and processes. In order to aid compliance, organisations should adopt an holistic approach, looking at the underlying data across the

institution, rather than focusing on one individual part of the regulation. This will help ensure an efficient and robust framework, which will in turn enhance cost savings and encourage future efficiency and growth.

Fig 2: Areas impacted by data quality requirements

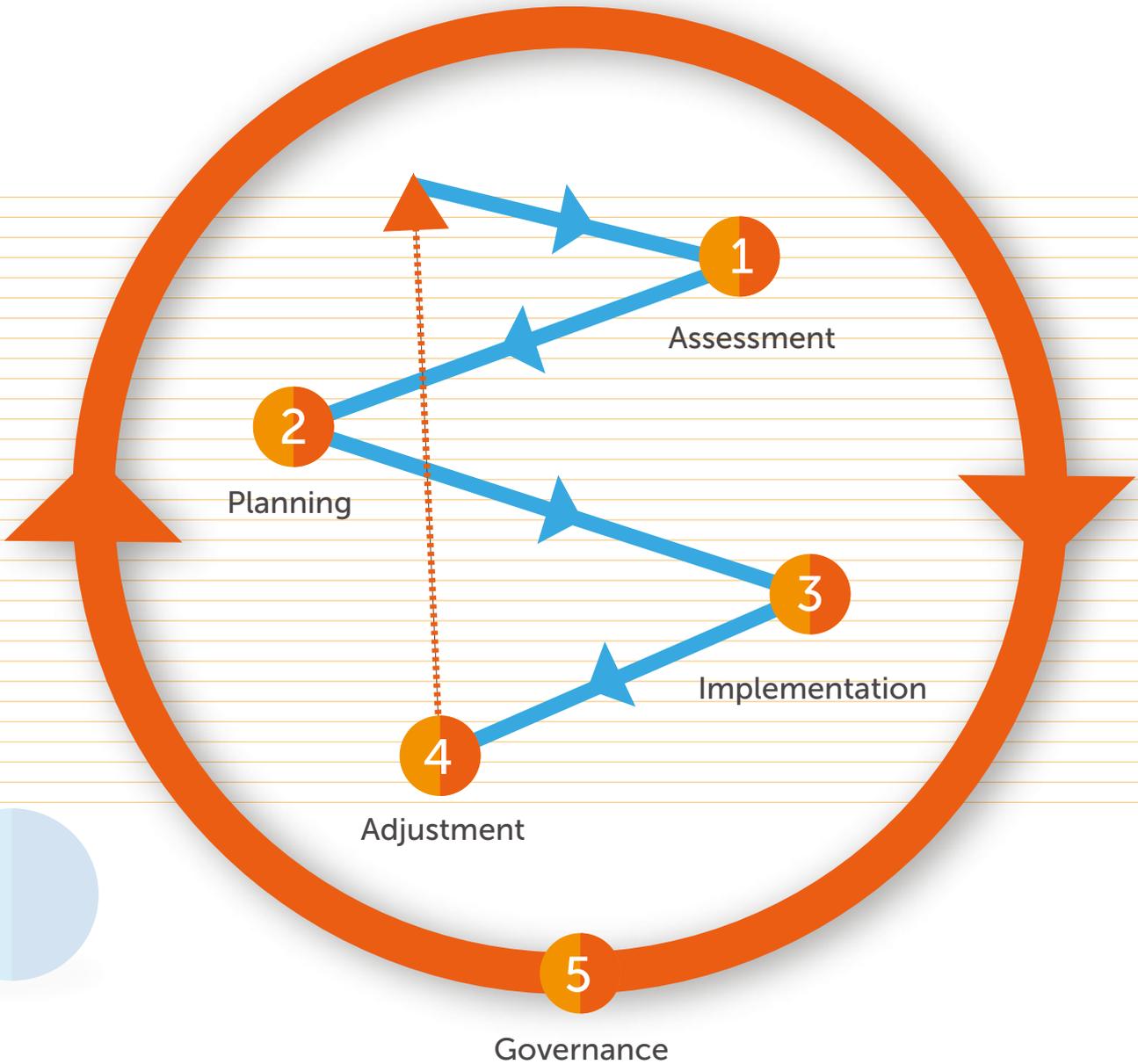
Type of requirement		Sales & trading	Legal & compliance	Client onboarding	Instrument onboarding	Operations	Technology	Research
New requirements	Instrument data	●	●	●	●	●	●	●
	Client data	●	●	●	●	●	●	●
Timeliness		●	●	●	●	●	●	●
Data correctness		●	●	●	●	●	●	●

● Highly impacted   
 ● Moderately impacted   
 ● Slightly impacted

# BRICKENDON APPROACH

In order to improve data quality and lineage to the required MiFID II-compliant levels, Brickendon advocates a structured approach deployed across five key stages:

Fig. 3: The Brickendon five-stage approach



## 1 Assessment: Understanding the current data enterprise

- Identify and prioritise data across asset classes and compliance requirements for both existing and required critical data elements (CDEs)
- Define data usage and user types, including developers, business intelligence analysts, data stewards, auditors etc.
- Identify the critical data paths, golden sources, data transformations and enrichment processes and provide the business with traceability
- Document both the current and future states based on the five Ws of data lineage (who, what, where, when, and why) to allow visibility on the data provenance, look at:
  - Inputs
  - Entities
  - Systems
  - Processes
  - Dependencies
- Focus on the metadata requirements for the CDEs and the Master Data Management (MDM) documentation and availability

## 4 Adjustment and Control

- Ensure refinements to the process are audited and electronic documentation and reports updated with scheduled dissemination to users and governance teams
- Ensure the full change process is auditable and linked to MI reports
- Make adjustments in parallel with the implementation
- Provide dashboards with warnings to highlight process issues
- Reconfigure business rules in parallel to analyse impact
- Use iterative upgrades to further reduce manual workarounds

## 2 Planning: Outline the critical path for data elements, both in terms of provision and remediation

- Coordinate system-upgrade, decommission and implementation plans
- Create roadmaps for business functions and stakeholders
- Provide a clear view on data availability at source and destination for both initial feeds and remediation

## 3 Implementation

- Ensure the right tools are used to extract data from the golden sources and transform systems so that reconciliations can be performed on the existing data. Once installed, these reconciliations can help identify gaps and inaccuracies when compared with the meta data and defined business principles
- Apply specialist knowledge to implement the business intelligence architecture
- Customise the tools used to process key data so they can focus on specific products and critical data sets
- Send automated reports to key functional areas, as well as the governance team, to highlight areas of concern as close to real-time as possible. This helps identify gaps and areas for remediation

## 5 Governance

- Ensure close involvement with the organisation's chief data officer to aid the effective rollout and acceptance of governance strategies that promote the required data standards and changes in culture
- Empower the organisation's data stewards, owners and custodians to embrace the importance of data quality and lineage
- Provide training to use the tools implemented and ensure full transparency on the processes and formats through the use of data quality dashboards
- Publish statistics and summary information to highlight both improvements and degradations to management

## HOW DO OUR CLIENTS BENEFIT?

Implementing Brickendon's five-stage approach provides significant structural and compliance-related benefits to an organisation. The details are shown in the table below:

High Level benefits to the bank	Business benefits
Improved client servicing	<ul style="list-style-type: none"> <li>• Big data view on clients               <ul style="list-style-type: none"> <li>- Standardised data</li> <li>- Across all asset classes</li> <li>- Across all products</li> </ul> </li> <li>• Ease of metric collation</li> <li>• Analysis of efficiency gains</li> <li>• Target services</li> <li>• Holistic view               <ul style="list-style-type: none"> <li>- Costs and charges</li> </ul> </li> </ul>
Increased efficiencies	<ul style="list-style-type: none"> <li>• Mapping data lineage               <ul style="list-style-type: none"> <li>- Lean engineering</li> <li>- Automation opportunities</li> <li>- Redundant processes</li> <li>- System consolidation</li> <li>- Risk minimisation</li> </ul> </li> </ul>
Trade reporting	<ul style="list-style-type: none"> <li>• Accuracy of data and collection               <ul style="list-style-type: none"> <li>- Clients, regulation, internal functions and stakeholders</li> <li>- Framework for identification of DQ issues and remediation</li> </ul> </li> <li>• Prioritisation of current and future regulation requirements               <ul style="list-style-type: none"> <li>- Prior to deadline compliance</li> </ul> </li> </ul>
Golden sources/copy	<ul style="list-style-type: none"> <li>• Data repositories acting as single golden copy for all systems</li> <li>• Consolidation of regional golden sources</li> </ul>
Front-to-back coordination	<ul style="list-style-type: none"> <li>• Full documentation               <ul style="list-style-type: none"> <li>- Business and IT transparency</li> <li>- Facilitate decision making</li> <li>- Minimise data quality reversals and disruption</li> </ul> </li> <li>• Enterprise transparency</li> </ul>
Implementation of governance teams	<ul style="list-style-type: none"> <li>• Ensures and highlights ownership</li> <li>• Full recordkeeping</li> <li>• Auditable change history               <ul style="list-style-type: none"> <li>- System upgrades</li> <li>- Regulatory change</li> </ul> </li> </ul>

A structured approach to data quality is vital to regulatory compliance. Implementation of a remediation framework and governance team ensures that the organisation can respond to a variety of business and regulatory demands whilst continuing to enhance data quality.

### And finally ●●●

With the MiFID II deadline approaching fast – January 2018 – now is the time to address these issues and ensure your business is in the right position to ensure compliance. Approaching data challenges in a holistic way will enable not only regulatory compliance, but also help your business to thrive in what is becoming an increasingly data-orientated marketplace.



**BRICKENDON**  
transformational consulting

## WE SOLVE YOUR CHALLENGES

### Why choose Brickendon?

Brickendon is an award-winning transformational consultancy specialising in innovative solutions that solve our clients' challenges quickly and efficiently. We are experts in digital, data and automation, with a particular focus on DevOps and agile methodologies, digital transformation, rapid prototyping, product development and the automation of support and business/IT processes. Our aim is to disrupt the market with the latest machine learning, automation, data analytics advisory and programme delivery. We do this in weeks and not months, saving our clients time, money and protecting their reputation.



**Our track record:** We have demonstrated a long, proven track record of transforming our clients through our innovative bespoke solutions.



**Our innovative approach:** No one client is the same therefore our intelligent, experienced and focused consultants use their domain experience to address each challenge in an innovative way, using skills from their past and knowledge from Brickendon's continual learning hub.



**Our resources:** Our onshore, offshore and nearshore capabilities mean we are well placed to cater for all our clients' needs, making the best use of our consultants' 10 years-plus domain experience.



**Our passion:** We love what we do and thrive on improving our clients' profitability, efficiency and increasing their competitive edge. We are driven to develop the most innovative solutions and take pride in seeing the tangible benefits of a project come to fruition.



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