



# **SAILING OUT INTO THE UNKNOWN:**

Transforming data  
collection post-Brexit

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## GET TO KNOW US, BR-AG

Technology has ruled today's lifestyle: from the smartphone, which is the hub of our daily activities, to the tools that enable us to work remotely. This trend has also affected financial market participants, such as financial institutions and insurance providers, that must keep up with the demanding regulatory reporting environment and the pressure to deliver high quality, granular data. On the other hand, both central banks and regulators are actively paving the way for more efficient use of the data they are being provided with. This is where we come in.



With over 70 members already on board, we are a multidisciplinary team of IT professionals, business analysts, designers, data engineers and product experts. Our areas of expertise are different, but we share one thing in common: a passion for discovering how business is reflected in data and the underlying relationships between them.

By collaborating with both sides of the data reporting ecosystem: financial institutions and regulators, and supporting digitisation at national and cross-national levels, our expertise contributes significantly to the development of data standards not only in Europe, but also in Asia, Africa, South America and Australia. We also engage in innovative projects and facilitate the use of open data standards in financial reporting. We use cutting-edge information technology to make recording, processing, and analysing data faster, safer and more transparent. By combining the business viewpoint with IT knowledge, we have also developed our own data solutions.

Our team also looks beyond just the commercial aspect of what we do, acting as internal drivers and brainstorming ideas beyond defined core functions of our products to encompass data technology and combat the most pressing issues of the financial markets.

Recently, we have successfully explored the potential of enhancing our existing data solutions with new approaches outside the commercial scope of our business: participating and becoming one of the shortlisted finalists in the G20 TechSprint (for two consecutive years- 2020 and 2021), the Digital Innovation Challenge and the BIS TechChallenge. This year, we continue to explore new ground for the use of our existing data solutions, such as the Global Financial Innovation Network (GFIN) cross-border testing initiative, with more groundbreaking initiatives ahead of us.





Sir Francis Bacon by Paul van Somer I (1617)

## FOREWORD

**“Knowledge is power”.**

When Francis Bacon wrote these words, Great Britain was thriving under the rule of Elisabeth I, marking a time of prosperity known as the “Golden Age”. Today, the words of the Elizabethan philosopher remain as accurate as ever, but perhaps it might be wiser to say *“Data is Power”*. As we enter yet another age of enlightenment, today it is not about acknowledging the sovereignty of reason, but the sovereignty of data and the power it brings us. The global economy has become a perpetual motion machine of data: it produces data

in large quantities, processes it, and then submits it wherever it is required. Since the fall of the Lehman Brothers in 2008, we have recognized time and time again that the data we already possess is still not enough, and each year introduces more reporting requirements for financial institutions. Supplementary to that, regulators now have a quench for not only exponential quantities of data, but also exponential quality of data. Conspicuously, better data means better supervision. And yet, even in a time where we land a rover on Mars and search for extra-terrestrial life, we still have not fully tackled the challenges of data collection and harnessed the power of data.

In 2019, on the verge of Brexit, the Bank of England (BoE) set out to transform data collection from the entities that it supervises, publishing a consultation paper on transforming data collection. The goal was to shape how reporting should change over the course of the next decade, engaging over 130 organisations in the discussion. As a way to address the challenges pinpointed in the course of consultations, BoE published the results of the consultation in a report *“Transforming data collection from the UK financial sector: a plan for 2021 and beyond”*, setting out into the unknown, a ten-year journey to explore even the deepest and most remote parts of the data universe. As more changes start to unravel, we take a brief dive into the plans for the future.

An underwater scene with a large school of small orange fish swimming over a coral reef. The water is a deep blue, and the coral is a mix of brown and blue. The fish are mostly concentrated in the upper half of the image, swimming towards the right. The coral is in the lower half, with some branching out towards the right.

# AN OCEAN OF DATA: OVERVIEW OF TRANSFORMING DATA COLLECTION IN THE UK

## What are the objectives of the data transformation?

The integration of reporting to include a more efficient approach to data collection, unifying the process across various sectors and jurisdictions of data reporting.

The adoption of common data standards that identify and describe data consistently across the financial sector. The common data standards should be made accessible to all entities that need them, reaping benefits that span beyond the data reporting processes themselves.

Changing and improving regulatory reporting instructions: how they are drafted, interpreted, and implemented, including setting up better quality Q&A's or entirely rewriting the instructions as a code.

## Fact no. 1

- The annual compliance spending of financial institutions amounts to 270 billion \$
- 7,000- that's the number of compliance staff employed by a global bank in 2014- and it's four times more than before the financial crisis
- Around 10-15% of financial institutions' staff work on governance, risk management and compliance

## ■ Clearing the way for data collection transformation

After the somewhat postponed Brexit and parting ways with the European Union (EU), the United Kingdom gained more flexibility in shaping their regulatory framework and the processes reporting entails. Although still a vision of the future, the recently published report of the Taskforce on Innovation, Growth and Regulatory Reform does convey a desire to move away from the complex regulatory framework of the EU. The focus is very much on creating a flexible and adaptive regulatory system in the UK to encourage innovation and growth, and the data collection processes are an integral part of that. Amongst many recommendations, the Taskforce suggests restoring a principles-based approach to financial services regulation, including proportionality, digitalization, and simplification of the reporting burdens.

We do not know yet how many of the suggested changes (and to what extent) will find their way into the UK financial landscape. In order to address those challenges, the BoE and the FCA are already laying out the way forward. Bearing in mind the impact each change brings to the financial sector, the changes will be long-lasting, value-focused and use-case driven.

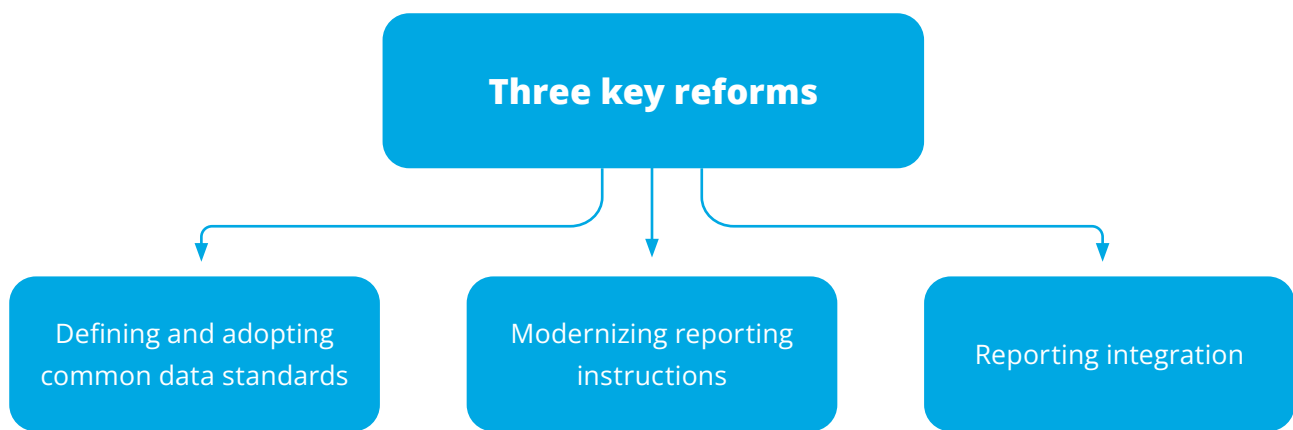
## ■ The Bank of England's Data Collection Transformation Plan

As an important first step, the transformation plan has already been established in the BoE's report, "Transforming data collection from the UK financial sector: a plan for 2021 and beyond", published in February 2021. With the transformation plan already published, first discoveries are planned to be presented by the end of 2021 leading to the planned implementations by the financial industry in the first quarter of 2023 .

The report focuses on a vision for the future of data collection and the steps to get there. With rising compliance costs in mind, the BoE focuses on fulfilling its mission at the lowest possible cost to the industry, outlining several key areas:

- Data collection should be lean and easily adjustable whether there is a need of reporting or not;
- Data collection must be reliable and used accurately and appropriately;
- The process and purpose of data collection is clear to the industry and to the bank itself.





Potential areas of improvement and steps toward better and more efficient regulatory reporting have also been indicated:

- **Establishing a framework for open collaboration** – meaning deeper collaboration between regulators, firms, and their service providers.
- **Utilizing common data standards** – intended as a first step in helping industry tackle the complexity they face within firms. Enabling improvements all the way within the data collection process.
- **Combining solutions** – combining various areas, for example industry data standards and instructions as code, in addition to an improved industry and bank engagement process.
- **Merging external reporting with internal reporting** – reporting will be fully consolidated within everyday operating processes.
- **Agile reporting** – focusing on the ability to rapidly deliver reports. Today, the lines between setting up a new regular report and ad-hoc reporting become blurred, and more flexibility will be required.
- **Modernised reporting instructions** – a focus on clearer and easier to implement reporting instructions, resulting in less discrepancies between reporting interpretations.

## ■ How will the BoE get there?

During Phase 1, two separate workstreams will be formed:

- **Workstream on common data standards** – with the purpose to identify and address issues relating to the consistent development and adoption of common data standards. In the long-term, the BoE along with other UK authorities plans to act as a leader in implementing common data standards for reporting.
- **Workstream on reporting** – aimed to identify issues with reporting and deliver solutions as well as work on modernising reporting instructions. The workstream will be focused on creating a common, detailed understanding of the problems faced by users in reporting processes.

## ■ What is the vision for the future?

BoE has also briefly identified the key areas of development after the first phase of the data collection transformation.

Phase two will focus on scaling the transformation into new areas, potentially commencing the process of integrating reports and data – a crucial factor in the “integrated reporting” reform. Phase three will focus on expanding the work to more complex collections, further building results already delivered – eventually delivering long-awaited value to the entire industry.







# COMPASS FOR SMOOTHER SAILING: COMMON DATA STANDARDS

## What are data standards?

Data standards are documented agreements on the representation, format, definition, structuring, tagging and management of data.

The goal of established data standards is to enable organisations to publish, access, share and use better quality data across various areas of financial reporting.

## Fact no. 2

Central banks, financial supervisors and financial institutions overall operate at least several data standards and identifiers across various areas of reporting. The perspective of the central banks is to gain datasets that are more interoperable across various domains of reporting and better explain what data is required. For financial institutions, common data standards help grasp a better understanding of data reporting requirements.

## ■ Voyage, voyage: preparing the journey with common data standards

To say that data is crucial for ensuring the resilience of the financial sector would be to say nothing. Even the simplest of transactions, such as paying by a credit card or securing a mortgage can generate rows upon rows of financial data that is extensively reported across its lifecycle, mounting up to bytes, megabytes and gigabytes of data that finally lands in a report submission. Whereas the grisly image of endless shelves filled with foot-thick folders has been long outdated, the abundance of data to be stored and processed is still overwhelming. And this is only one side of the problem. Envision these rows upon rows of folders without any filing system or structure to them, a disarray of files and papers. Now, imagine the same scene, just in a virtual setting, with rows upon rows of data flowing from organisation to organisation without any pre-set agreement on how to file and understand it. And this brings us to the concept of data standards. But first, we need to take a short travel in time.



"The Wolf of Wall Street"

Red Granite Pictures; Appian Way Productions; Sikelia Productions; EMJAG Productions

Anyone who has seen the iconic "The Wolf of Wall Street" is probably familiarised with the hectic image of trading circa 1980 and 1990, with brokers almost permanently glued to their phones and pink sheets stacked on desks. Trade data was ubiquitous, exchanged over the phone and stored on paper, with processing costs much higher than they are today. And because of this, one of the first standardization ideas was born. Established in 1997 as a project by JPMorgan, Financial Products Markup Language (FpML) is a standard which is even now still used in derivatives trading. Today, data standards are more commonly adopted across global financial markets and include standards such as the widely used XBRL, SDMX or ISO 20022.

## ■ Old and new acquaintances: the BoE and data standards

The Bank of England's plan to transform data collection may be laid out for the next decade, but the importance of data standards had been already recognized almost twenty one years ago. In a speech given in September of 2000, Bob Hills of the BoE recognized the power of common message standards for electronic commerce in wholesale financial markets , stating that:

*"Where a common standard is used by a number of participants in a market, the trade details can be passed between participants without having to be re-input to conform to a different standard."*

And that is precisely what lies behind using common data standards for data collection: interoperability, recognized long before the widespread discussion on leveraging Big Data or Artificial Intelligence. Today, the adoption of common data standards plays into the data collection transformation plan, carving the path for a smooth transformation.

## ■ Get on board: the BoE's plan for common data standards

In its data collection transformation plan, the BoE laid out several key points for fostering the adoption of common data standards:

- Tackling the internal data complexities that firms face in sourcing data
- Improvements in operational efficiency
- Greater clarity for firm management and investors (notably, common data standards will also play a significant role in rolling out sustainability reporting)
- Providing a baseline for adopting innovative solutions based on AI, blockchain and machine learning.

Along with recognising that common data standards will play a vital part in shaping the new data collection environment, the BoE has also recognised that the future considerations will also take a leaf from the already existing book of data standards, considering developments that include the Common Domain Model (CDM) developed by ISDA and the BoE's ongoing involvement in adopting XBRL.

## ■ **On the right track: recent developments in common data standards**

### ● **XBRL: Statistics reporting**

Similarly to Solvency II reporting, the BoE is moving statistical data reporting from XML to XBRL in order to harmonise data collection. The move of statistical data to the BEEDS portal is also supported by the release of the Public Working Drafts of the XBRL taxonomy and Data Point Model (DPM), published in April and May 2021. The final version of both the taxonomy and DPM will be released in July or early August.

### ● ***Why XBRL?***

From a technical standpoint, XBRL implements XML but also other standards to reflect multiple relationships and hierarchies between the data. XML is more general than XBRL, and because of this, it cannot handle the complexity of financial reporting purposes. Whereas the benefits of adopting XBRL would most likely span over more than one page of this paper, at the core of XBRL is that in XBRL, reporting terms can be authoritatively defined and used to reflect contents of required reports. The shift to XBRL reporting is similar to the change from using a traditional compass to GPS- both can indicate a direction, but a GPS can provide information more accurately.

### ● **ISO 20022: a new messaging standard for UK payments**

The Bank of England is also implementing the ISO 20022 standard in the UK payments industry. More specifically, the shift to ISO 20022 will include the BoE's sterling high value payment system CHAPS . As of today, the BoE has completed Phase 1 (out of 4 overall), providing details on the ISO 20022 revised approach and final schemas document and published the policy statement in implementing ISO 20022 Enhanced Data in CHAPS. The next steps include:





## Phase 1

Preparation

October  
2020

## Phase 2

Like-for-Like

June  
2022

## Phase 2.1

Enhanced

February  
2023

## Phase 3

RTGS core  
ledger live

September  
2023

## Phase 4

Further  
changes

2024  
& onwards

## Why ISO 20022?

ISO 20022 is a standard used by the financial industry to create consistent message standards. The key characteristic of the ISO 20022 methodology is the separation between the business layer of data and how it is represented. Overall, ISO 20022 for payments is intended to ensure:

1. Greater adaptability and flexibility, making it the “go-to” standard as the economy and technology tools change and advance;
2. The ISO 20022 standards has already been adopted by over 70 countries around the world. European countries have been classified as mature ISO 20022 adopters and growing adopters include for example Japan, Singapore and India. By using the ISO 20022 standard, UK payments data will be harmonised with payment systems in many developed economies around the world;
3. Enhanced compliance processes, providing more detailed and better structured data for easier detection of potential frauds and suspicious transactions.

A full-page background image showing a sailboat on a calm body of water during sunset or sunrise. The sky is a gradient of orange and blue, and the water is still, reflecting the boat and the sky. The sailboat is a white sloop with a single mast and is positioned in the center-right of the frame. A small inflatable boat is visible in the distance to the right.

# SMOOTHING THE WATERS: SIMPLIFYING DATA COLLECTION THROUGH TECHNOLOGY

## **What determines reporting complexity?**

The reporting burden companies face is not solely determined by the number of forms it is required to complete and submit, but also by the number of data points required and the complexity of these data points.

## **Fact no. 3**

In a 2017 report, the European Commission indicated that the major cost drivers for supervisory reporting were unclear requirements, lack of technical guidance and insufficient automation of reporting.

A 2019 study by McKinsey and Company estimated that regulatory reporting by UK banks costs them £2 billion–£4.5 billion per year.

Data is the world's most valuable resource. Endless streams of data are circulating today between the financial market and regulatory authorities. mean that more data than ever before is being created and captured. At the same time, regulators expect more high-quality, timely data to guide them in their decision-making and supervision.

These changes have put pressure on the Technological advances and automation current **data collection processes**. They have increased costs and put a never-before envisioned strain on internal processes and systems.

Digitization and technology tools may offer solutions to these problems. Technology could transform how the data collection process works, with benefits for the regulators and the industry as a whole.

Technology could reduce the regulatory burden on firms while delivering greater standards of compliance. That is why technology is put in the forefront to facilitate data collection – having a huge potential that has yet to be fully explored.

One of the Bank of England's key reforms is the move to a more streamlined, efficient approach to data collection. This reform includes making data collection more consistent across domains, sectors, and jurisdictions, and designing each step in the data collection process with the end-to-end process in mind.

#### **Data users need:**

- timely, good quality data- posing challenges for filers in terms of their internal data collection processes;
- flexible datasets that can be repurposed when required- providing a case in point for adopting common data standards;
- efficient processes to collect and store data- emphasizing the need for standardized data and a deepened understanding of how reporting requirements are mapped into data concepts.

## ■ Choppy waters: data and the market

Whereas today the hype is centered around many buzzwords such as AI, Machine Learning and deploying solutions based on Distributed Ledger Technology (DLT) or even blockchain, data remains at the heart of the matter.

Buzzwords aside, companies still struggle to keep up with the data reporting requirements and their magnitude at all steps of the way:



As the **financial services sector** is probably the most data-intensive sector in the global economy, the impact of technology on the sector is hard to overestimate.

The financial services industry has been investing heavily for more than a decade in data tools and given the recent developments in both the regulatory and data collection fields, it will continue to do so over the next years.

Regulatory pressure forces the industry to disclose more diverse and granular data to central banks and regulators.

Technological evolutions to support the collection and processing of huge amounts of complex and diverse data at sufficiently low cost and in a reasonable time, provide evident benefits to the industry.

New technologies are increasingly being used to improve the quality and quantity of different data, as well as collecting entirely new kinds of data for reporting purposes.

Benefits of the use and implementation of new technologies for market participants are evident: reduce costs, streamline business processes and improve efficiency. New technology solutions facilitate collecting, aggregating, consolidating enormous amounts of data, for further analysis and reporting.



## ■ Choppy waters: data and the regulator

**For the regulator**, receiving high-quality data at the lowest possible cost for the industry is the main facilitator to use and promote innovative technologies.

In order to reduce the regulatory risks, improve effective collecting, processing, and analysing massive sets of financial market data, it's crucial to invest in tools that facilitate the understanding of the data journey across the entire reporting cycle.

Regulatory technology will save costs and resources going forward, will help to collect quantitative and qualitative data quickly, and therefore will help to monitor and supervise the market promptly and more efficiently.

Data collection is one of the core processes within data management - required to prepare the data for analysis. Facilitating, simplifying, and improving data collection is the main challenge for the market to be solved by using technological solutions.

# CONCLUSION

## 1. Data standards are here to stay, and their use will continue to grow.

With Brexit already “said and done”, the United Kingdom is (for the most extent) free to shape regulatory reporting in accordance with its own needs and specific market obstacles, aiming for a responsive regulatory reporting system focused on fostering innovation. The data transformation collection is a part of a larger puzzle, where the goal will be to streamline and simplify reporting as a whole.

As the use of common data standards guarantee interoperability of data and easy exchange of data between systems, government entities and all interested parties, they are already a crucial part of meeting the innovation roadmap. Employing the use of these data standards will also play a vital role in the operational perspective of many businesses post-Brexit, making it easier to exchange data regardless of any cross-border constraints.

## 2. The increasing demand for high-quality data will change how businesses operate.

With regulators expecting more high-quality, timely data for decision-making and supervision purposes, the current data collection processes have increased both costs and pressure on the internal systems of the filers. One of the BoE’s key reforms is the move to a more streamlined, efficient approach to data collection. Technology is put at the forefront to facilitate data collection, because it can reduce the regulatory burden on firms while delivering greater standards of compliance. However, in order to achieve this- businesses will also need to adapt to these changes and grasp a better understanding of what this means for their operations from a reporting perspective. This will especially be crucial to those teams that not only deal with stricte reporting, but those that oversee the data lifecycle from beginning to end.

### 3. Regulators will continue to put emphasis on technology tools for data quality and collection.

The collection of data, its analysis and understanding are the key factors in ensuring robust supervision of the financial sector. Facilitating, simplifying, and improving data collection is the main challenge for the market to be solved by using technology solutions. The use of common data standards coupled with the demand to deliver high-quality, granular data will play well into putting emphasis on supporting data collection processes through technology. Thinking far ahead, the thirst for standardized data sets and streamlined data collection will eventually also serve as the baseline for introducing advanced solutions, such as those powered by AI.

## SMOOTH SAILING NEEDS THE RIGHT TOOLS: OUR SOLUTIONS

We combined our expertise and experience in regulatory data and the technology space and developed two platforms: for collaborative creation of data models and for preparation and validation of data. These tools have been used by central banks and other supervisory authorities as standalone applications for data validation and modelling purposes but also leveraged in more complex data management and integration projects as components of the designed data flow and orchestration solutions.

# ΔTOME iMatter

ATOME Matter is a metadata management platform designed to map data reporting requirements into precise and clear data concepts and enable teams to define data dictionaries, reporting forms and validation rules. The aim of the platform's functions is to provide data management teams and analysts with a collaborative environment to develop and deploy data models and taxonomies, by creating a common platform for collaboration between the market: financial institutions and consultancy firms and the regulator. Through this collaboration, the goal of ATOME Matter is to build common understanding of data requirements and facilitate automation and machine-readability in data exchange. The platform serves several key purposes such as defining data management principles with regards to data collection scope and granularity, single data dictionaries and transformation rules that may cover multiple domains of financial and non-financial data in banking and insurance sectors, securities, capital markets and investment.

The platform supports the digital transformation projects of financial market entities enabling to turn regulatory requirements into machine readable instructions and standardized dictionaries to build common knowledge of data across organizations, stakeholders and markets.

ATOME Matter enables further integration of the data models, dictionaries and rules with the organization's IT environments or datasets via multiple formats (Excel, XBRL format, JSON, SQL) by using API functions.

The ATOME: Matter platform is available as an on-premise or cloud-based platform.



# ΔTOME Particles



ATOME Particles is an intuitive, easy to use software designed to create, validate, import and export financial reports from/to Excel and XBRL formats. The tool helps you gain better compliance control and data quality of filings and keep pace with regulatory changes to minimise the risk of non-compliance, improve data quality for more insights and reusability.

It supports multiple reporting frameworks (European CRD IV/V, Solvency II, IORP, Resolution reporting, ECB SFRDP, as well as national specific requirements for the BoE, CBI, Bank of Spain, National Bank of Belgium, Dutch National Bank, others can also be available upon request).

Particles is a desktop application, easy to install on a local workstation without the need to involve the IT department and export sensitive financial data outside of the workstation.

An intuitive interface facilitates comparing and editing data in views resembling reporting templates published by supervisors, and supports multiple formats such as XBRL, CSV, DPL and Visual spreadsheets. The data can be input into the tool in two ways: either manually or by uploading a file.

Overall, the tool adds a reliable layer of quality assurance to submissions, running quality checks against proven and tested validation rules to detect and correct errors on a high-velocity engine that allows for quicker validation than most market-available tools.

One of the prominent features is the possibility of tracing validation errors visually: it displays in which QRT the error is located and the lines of the QRT itself where the errors are. The user has a clear view of validation rules and is able to manage them as needed. The tool facilitates navigation through errors detected and eases corrections – with error messages and identification of errors displayed clearly, for easy import and export when needed.

The tool provides multiple reporting packages, with the latest taxonomy versions readily accessible.

