Transforming Data Collection – Joint Transformation Programme

Data Standards Review

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Supported by

Ernst and Young (EY)

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Acronyms used in this report:

API	Application Programming Interfaces	**GLEIF**	The Global Legal Entity Identifier Foundation's
BoE	Bank of England	**HMRC**	HM Revenue & Customs
CCS	Clearing and Connectivity standard	**IASB**	International Accounting Standards Board
CFTC	Commodity Futures Trading Commission	**IFX**	International Foreign Exchange
CRE	Commercial Real Estate	**ICMA**	International Capital Market association
EBA	European Banking Authority	**ISO**	International Organization for Standardization
EDMC	Enterprise Data Management Council	**ISDA**	International Swaps and Derivatives association
EFRAG	Financial Reporting Advisory Group	**ISLA**	International Securities Lending Association
EMIR	European Market Infrastructure Reporting	**LEI**	Legal Entity Identifier
ESG	Environmental, Societal and Governance	**MDDL**	Market Data Definition Language
ESRS	EU Sustainability Reporting Standards	**MiFID**	Markets in Financial Instruments Directive
FASB	Financial Accounting Standards Board	**MISMO**	Mortgage Industry Standards Maintenance Organization
FCA	Financial Conduct Authority	**ONS**	Office for National Statistics
FIBO	Financial Industry Business Ontology	**OWL**	Ontology Web Language
FIRO	Financial Industry Regulatory Ontology	**PoC**	Proof of Concept
FIX	Financial Information Exchange	**SASB**	Sustainability Accounting Standards Board
FPML	Financial products Markup Language	**SFDR**	Sustainable Finance Disclosure Regulation
FRC	Financial Reporting Council	**SWIFT**	Society for Worldwide Interbank Financial Telecommunication
FSB	Financial Stability Board	**STP**	Straight Through Processing
FIX	Financial Information Exchange	**XBRL**	eXtensible Business Reporting Language

1. Executive summary

I. Background and aims

i. The joint programme, Transforming Data Collection (TDC), between the regulators and industry set out one of its key reforms as increasing development and adoption of common data standards throughout the financial sector. Continuing the extensive role industry has played in the programme to date, the Data Standards Committee established by the Bank of England (the Bank) and Financial Conduct Authority (FCA) commissioned EY to undertake this review of data standards.

ii. The TDC programme's phase one included a 'common data standards' workstream. This established the programme's Data Standards Committee who commissioned this review of data standards. The review aimed to inform the necessary next steps for TDC's work with industry to progress data standardisation. Engaging an independent third party to lead the dialogue with industry provides a space for open and honest input, on a topic which directly affects the financial services community. The methodology and tools used also supported diverse and wide-ranging inputs from anyone who wished to contribute to the discussion. EY have included in the report a conclusion to help the next practical steps for the DSC and regulators. The committee's response is published alongside the report.

iii. The approach taken included three key aspects:

   a. Directly engaging with firms and data standards specialists through a series of interviews (details of roles and organisations interviewed in Appendix 8.IV)
   b. Hosting an interactive discussion portal, EY Cognistreamer, open to all (% of contributions from industry in Appendix 8.II and by role and organisation listed in Appendix 8.III)
   c. Researching past and present standards initiatives across the globe to understand good practice and lessons learned (full list available in Appendix 8.I).

iv. As well as exploring data standards broadly, two use cases which form part of the joint transformation programme - Commercial Real Estate (CRE) data and Financial Derivatives reporting – were included as part of the review's investigations.

v. The structure and content of data standards can be a deep and complex topic. The technicalities can become extremely detailed. This is relevant in financial services where there is significant diversity in the regulated population who would need to comply with data standards – from small to large institutions, traditional firms to the new service providers. This report aims to balance the detail with the practical aspects. Readers without prior technical understanding wishing to engage with the subject should find this paper just as accessible as those who are experts in the field.

II. Key Findings & Recommendations

i. The review posed three key challenges:

    a. How do firms, regulators and consumers benefit from data standards?
    b. How should data standards for financial services be developed and managed?
    c. What drives adoption of data standards in financial services?

ii. Industry provided extensive feedback to these challenges through interviews and online engagement, whilst associated lessons learned were gathered from global standards initiatives. This report reflects **the key findings of this review, which were**:

    Benefits:
    a. All parties recognise a broad range of financial services data standards benefits including improved data quality, support for innovation, data and standard reuse or extension
    b. Definitions of data standards and metrics to measure their impact and benefits are foundations for data standards
    c. Benefits will clearly be optimised when implemented across regulations and by a cross-sector network of firms, but this requires an appropriate support mechanism to deliver and should not be expected to happen organically

    Management:
    d. A formal process to manage standards – existing and new, review, development, extension and retirement – should be agreed
    e. An industry representative committee should support this management
    f. Roles and responsibilities must be clearly defined for this process and committee

    New Standards:
    g. New standards, where appropriate, should build upon existing internationally accepted standards
    h. Implementation should always begin with an agile and iterative development approach with representative parties to work through a consistent set of development steps that validates the viability of the new or revised standard
    i. A clearly defined implementation roadmap should be maintained providing sufficient time for firms and regulators to prepare

iii. Industry is keen to engage in the development of data standards and progress in defining and implementing data standards. To support this, **the following recommendations are made by this review**:

    a. Agree a taxonomy of financial services data standards to support ongoing recognition of their application, usage and development requirements
    b. Agree a standard set of metrics associated with the use of data standards to support ongoing benefits quantification, prioritisation of effort required to iterate and develop
    c. Establish a Committee as the body responsible for monitoring and advising on data standards for UK financial services regulation, bringing together industry and the regulators; this Committee could be the existing TDC Data

        Standards Committee with new terms of reference or could be a new Committee formed for this purpose.

    d. Define the role of the regulators in financial services data standards

    e. Prove delivery of a new data standards development use case, accelerating progress through an iterative approach in a Lab environment

    f. Create and publish the roadmap for the strategic implementation of financial services data standards and an associated programme with budget to deliver

iv. This report is written in the context of the TDC programme. The principles remain consistent across other regulatory remits and beyond financial services. Given the regulator's progressive approach to Environmental, Social and Governance (ESG), it is intended that this report provides useful considerations and a framework to support the critical build out of such standards in support of effective collaboration, sharing of best practice across different key bodies developing policy and standards. This includes but is not limited to the UK - the FRC, HMRC, Treasury - and extended to international bodies, such as the FSB. It is recognised by international standards bodies that the approach that has been taken in developing ESG and specifically greenhouse gas and climate transition reporting standards has led to complexity and inefficiencies in data sharing between the wider economy and financial services. Financial services has a role to intervene early to prevent the complexity and inefficacy developing for the benefit of financial service institutions and the wider economy.

2. Structure of the review

i. This report summarises the input received from industry on key data standards topics and learnings from other standards initiatives. Recommended next steps for industry and the regulators are outlined. The report is written with the intention of being accessible to all, leveraging images where possible to represent data points. Readers wishing to gain an overall understanding of the review can refer to sections 1 and 2. The subsequent sections of the report provide further detail behind the context, activities and findings across the review. The appendix includes references from the research undertaken as part of the review.

ii. Section 3 provides a snapshot of the review, its findings and recommendations in an accessible manner.

iii. Section 4 explains the focus areas of the Data Standards Review and activities undertaken. This section includes details on the approach to engaging industry through interviews and the online EY Cognistreamer portal, and research into global standards initiatives past and present.

iv. Section 5 describes the key themes uncovered in the online discussion and interviews, and findings from the research. Recommendations are provided for the next steps.

v. Section 6 looks to the future opportunities to support progression of data standards.

vi. Section 7 provides EY's conclusions including what the engagement and research has identified as way of a criteria for successful data standards. Priority next steps are also listed, for consideration by the TDC Data Standards Committee.

3. Review on a page

Figure 1 – Data standards review summary:

Consultation with industry

>100 people signed up to Cognistreamer portal and 46 contributions were posted

Interviews conducted with 35 representatives of banks, regulators, financial service industries and SMEs

>20 global data standards initiatives researched

Our review found that Data Standards in Financial Services

Need a commonly agreed definition of what a data standard is and metrics to measure the impacts of implementing data standards

Present multiple benefits for firms and regulators, including innovation, data quality and opportunities for greater use of data

Will provide greatest benefit when implemented widely, with support

Development and maintenance of data standards should

Be based on an agreed approach to developing new standards, reviewing and retiring existing

Have an overarching Data Standards Committee with industry and regulatory representation

Define the roles and responsibilities of the Data Standards Committee and regulators

To successfully implement data standards will require

New standards to leverage existing standards

Managed on an ongoing basis including review and iteration of data standards

A roadmap for implementation with appropriate timelines which starts with a Proof of Concept with industry

The recommended next steps are

Specify a definition for data standards and define metrics to measure its impacts

Formalize the role of a Data Standards Committee and define the role of the regulator in data standards

Deliver a data standards use case applying an agile, iterative approach with rigorous testing

4. Review and background activities

i.   The TDC programme vision is that 'Regulators get the data they need to fulfil their mission, at the lowest possible cost to industry'. This review concerns one of the three key programme reforms, the definition and adoption of 'common data standards that identify and describe data in a consistent way throughout the financial sector'. The vision also stated that such standards 'should be open and accessible for use by all who need them' and would 'bring benefits well beyond reporting'.

ii.   The review was undertaken between October and December 2022. To support gathering input and creating dialogue across the full breadth of financial services, EY utilised the EY Cognistreamer online platform. This was promoted through the Bank website and across networks via social media posts. Launching in October 2022, three challenges were posed, each running for two weeks:

   a. How do firms, regulators and consumers benefit from data standards?
   b. How should data standards for financial services be developed and managed?
   c. What drives adoption of data standards in financial services?

iii. 108 individuals signed up on EY Cognistreamer, and contributions were received from 25 participants from across consultancies, FinTech firms, financial services organisations and technology providers. More details on those who contributed via EY Cognistreamer are available in Appendix 8.II and 8.III of this report. In parallel, interviews were held with 35 individuals across industry, the Data Standards Committee, the Bank, FCA, and subject matter resources from across EY's global network.

iv.   Data standards are not a new topic, and there are many previous and current initiatives. EY researched data standards on a global scale to understand the lessons that can be learnt, such as what inhibits the adoption and progression of data standards. It is important to recognise that as well as building on the data standards use case from phase one of the TDC programme, this report is well informed by many data standards initiatives, examples, and the reflections from industry. Next steps for financial services data standards can therefore be laid out based upon solid foundations.

5. Topics explored

i.   Three topics were identified by the Bank and FCA to structure the investigation into data standards. These were:

   a. How do firms, regulators and consumers benefit from data standards?
   b. How should data standards for financial services be developed and managed?
   c. What drives adoption of data standards in financial services?

ii.   These topics were used to structure both the discussion points set out on the EY Cognistreamer platform and the questions used in interviews. The following section details key discussion points from both aspects of the industry engagement, and the research into data standards initiatives across 22 organisations. Details on these research subjects can be found in the Appendix. Within each section, recommendations have been made to support next steps.

I.   Data standards and their benefits

Data standards definitions:

i.   A clear and commonly agreed definition of data standards provides a consistent understanding of what is included in a financial services data standard and therefore shapes what the TDC programme will deliver against. Participants provided a broad range of **definitions for data standards** and the global research undertaken also found differing articulations. Common elements of data standards shared were that they can define the meaning as to what data is required and how it should be captured, recorded, transmitted and stored, as well as quality expectations. This aligns to the ONS definition of data standards as 'a set of well-defined rules by which data are described, recorded and shared in order to ensure common understanding among data users and to maintain data quality (integrity, consistency, format and meaning).' There are a significant number of established global data standards. Participants were conscious of this and were keen to build on existing standards to form a commonly agreed financial services data standard definition removing ambiguity in what is required from firms.

ii.   Industry participants recognised that there may be various categories of data standards or categories within an overall standard. Critically, **these standards should interact with one another, with existing and future standards.** This will support firms in implementing and managing compliance with standards on an ongoing basis. These categories were found applied on a global scale across data standards. Examples of categories included:

    a. Data content standards: Described as definition as to the data which should be entered at a field level (i.e. ISO 20022) including the format of these fields (e.g. ISO 8601 - date and time).
    b. Data quality standards: Such as thresholds/tolerances for data entries.
    c. Data communication/transfer/transmission standards: How data is to be transferred, encrypted, the way in which data is exchanged between data producers and consumers (e.g. eXtensible Business Reporting Language (XBRL), FixProtocol, Financial Industry Business Ontology (FIBO), Financial Industry Regulatory Ontology (FIRO), Clearing and Connectivity Standard (CCS), Financial products Markup Language (FPML), Market Data Definition Language (MDDL), ISO 20022, International Foreign Exchange (IFX)).
    d. Data governance standards
    e. Data storage/recordkeeping standards.

iii.   Reflecting on the range of definitions and categories, an important step for TDC in the progression of data standards should be a commonly agreed definition of what data standards in financial services mean and cover. This can then move down through respective levels of definition as appropriate to include the respective data element

quality expectations, formatting, validations within and across fields, amongst other considerations.

Benefits of data standards:

iv.   Interviewees were unanimous in their agreement that **data standards provided multiple benefits.** Below the key benefits are summarised:

Figure 2 – Data standards benefits:

Reduced time	Improved data quality	Enhanced trust	Cost reductions	Detect inaccuracies
Reduced time interpreting legal text and resubmitting data - key pain points for regulatory reporting	Improvements in data quality for all concerned, especially the accuracy of data reported. Enables improved supervisory decisions and reduced resubmissions	Enhanced trust in and greater reuse of data for all, with the ability to make broader connections across data	Potential cost reductions for firms through reduced interpretation of requests, review and sign off of data before submission to the regulator	Greater potential for firms to identify potential inaccuracies between data held in different systems or discrepancies in calculations
Reduced duplicative efforts	Reduction in queries to the regulator	Wider data source range	Greater innovation	End-to-end process efficiency
Reduce need to reproduce data many times to meet a similar ask	Reduce calls to the regulatory contact center with data submission related questions	Consistency in data driven by standards generates opportunities to confidently source more data from external providers	More innovative technologies leveraging the consistent definitions and structure of reporting instructions, for example enabling the advancement of machine-readable and executable rules	New regulatory reports based on standards could be delivered to the regulator more quickly, more cheaply and more reliably than at present.

Implementation considerations:

v.   For the benefits to be fully realised, participants felt a financial services sector data standard should be **implemented across the reporting population**. Feedback was that this should be regardless of firm size and complexity, but that implementation should be supported to ensure the standards can be successfully adopted by all firms. Opportunities for standards to serve more than just reporting purposes, for example simplified internal reconciliation processes and increased data sharing, would likely increase the buy in and uptake from firms. There was strong support for the reuse of existing standards and avoiding the creation of multiple standard regimes. There are many examples of existing standards which could provide a platform to be built upon. The European Banking Authority's (EBA) Data Point Model (DPM) Data Dictionary provides one such approach. This is an example of a well-defined and established approach applied to banking regulation, which has proven the opportunity to leverage technology to generate machine readable entries and could therefore provide a useful reference for the future of UK financial services data standards.

vi. Perspectives on the **costs and benefits of implementing data standards**, for both firms and the regulators, focused on the technology changes required and training for staff on the standards and downstream impacts. Firms stressed the importance of an agile, iterative introduction of data standards to support better planning and management of costs. Building standards into existing reporting was cited as likely more costly than building into new reporting, largely driven by the costs of changing existing technology platforms that support current reporting. Whilst it is challenging to accurately estimate the costs of implementation for data standards in advance, it is important to understand these costs as part of the post-implementation review process. This is an existing process followed by the International Financial Reporting Standards (IFRS) Foundation, in their cost and benefit analysis typically 2 years after implementation.

vii. In addition to the other inputs provided by participants, specialists in the CRE and financial derivatives fields reflected that it was important standards were defined which **provided consistency across reporting**, rather than being built for specific reporting on products/services. Participants cited the number of new requirements and updates being made to existing reporting (examples included Commodity Futures Trading Commission (CFTC); European Market Infrastructure Reporting (EMIR); Markets in Financial Instruments Directive II (MiFIDII)) which provide a range of impacts for firms to manage. A single set of standards would be beneficial in enhancing clarity of requirements and supporting consistency across reporting regimes. Specifically for CRE the opportunities for building commercially available databases leveraging data standards were called out by participants.

viii. Clear metrics **to measure the impacts** of data standards was an area which industry felt was challenging, but vital to put in place at the point of implementation as a baseline and to measure on a regular basis thereafter. Participants felt that ultimately the success of a standard is measured by the extent and quality of adoption. Other metrics suggested were the impacts on quality of data, its use and regulatory decision making. The FSB's assessment process includes evaluation of the implementation levels and takes into consideration whether specific powers or authorities support the standard's uptake, the sufficiency of resources to implement, and whether the standard is enforced. Furthermore, the post-implementation reviews of both the Financial Accounting Standards Board (FASB) and IFRS measure whether the objectives and benefits are as expected when considering the success of a standard. This openness to understand and iterate accordingly keeps the standard appropriate and current.

Recommended next steps:

i. **Agree a taxonomy of financial services data standards to support ongoing recognition of their usage and development requirement**. Based on the feedback from industry and other standards seen elsewhere, a proposed definition is: 'financial services data standards are statements of the data element meaning, including the data entry and submission requirements'. This provides a starting point from which to define more granular categories as appropriate (i.e. the standards for data transfer).

ii. **Agree a standard set of metrics associated with the use of data standards to support ongoing benefits identification and prioritisation of effort required to iterate and develop.** These should cover the point of implementation, at an agreed period after implementation and at an ongoing measurement frequency. These should

be owned by the new Data Standards Committee, who should review these metrics and provide ongoing review and input from the perspective of the regulated community, including the feasibility of assessing the baseline and ongoing measurement assessments. Based on input through this review, metrics should include:
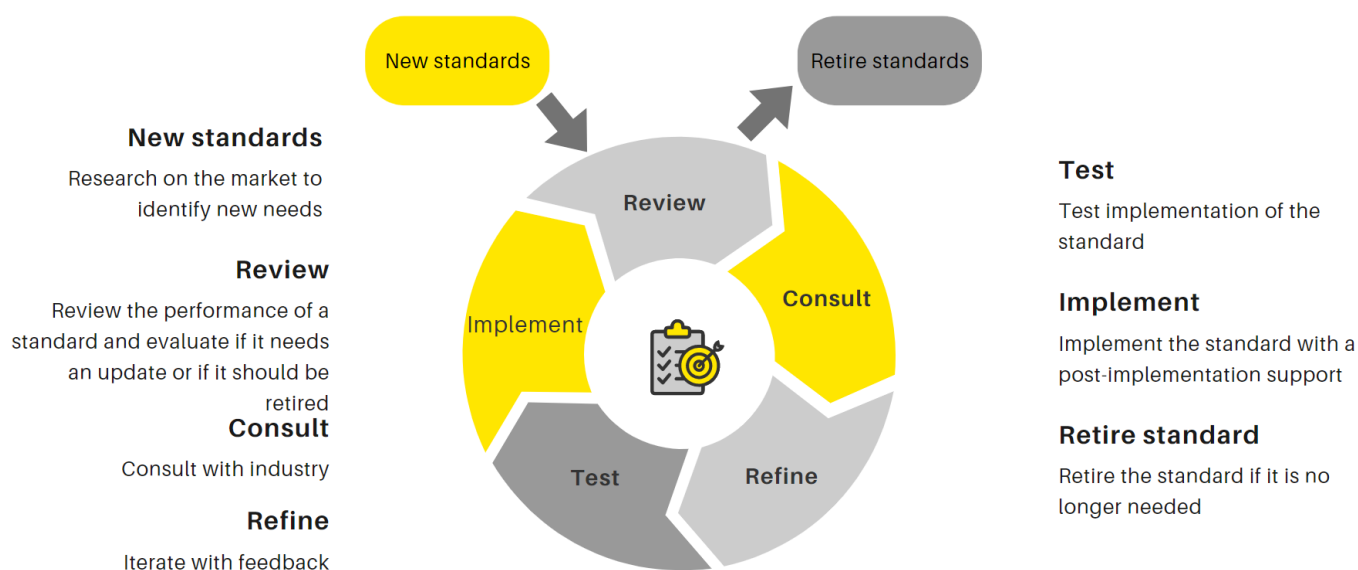
a. Reductions in cost and time spent collating, checking and submitting regulatory data
b. Reduction in the number of resubmissions required due to quality issues related to interpretation of data requests
c. Reduced cost of meeting new regulatory reporting requirements for firms
d. Reduction in call volumes received by regulators related to data element definitions
e. Increased value of data, as data reported to regulators can be repurposed by firms and regulators for other uses
f. Increased data quality scores on submitted data
g. Consideration as to the extent to which benefits and costs to users have been as expected (as per the IFRS model)

II. Data standards development and maintenance

Data standards lifecycle:

i. The overall **lifecycle of data standards** generated significant dialogue amongst industry, in both interviews and online discussion though EY's Cognistreamer portal. The input from interviewees on the types of activities which form the lifecycle of a data standard aligned to the good practice seen in other standards initiatives, specifically IASB, SASB, ISO, XBRL, GSSB and FASB. A suggested data standards lifecycle is outlined below:

Figure 3 – Data standards lifecycle:

New standards

Research on the market to identify new needs

Review

Review the performance of a standard and evaluate if it needs an update or if it should be retired

Consult

Consult with industry

Refine

Iterate with feedback

Test

Test implementation of the standard

Implement

Implement the standard with a post-implementation support

Retire standard

Retire the standard if it is no longer needed

ii. Participants expressed the need for standards to be managed on an ongoing basis and were adamant that they must be kept current and relevant. The strongest feedback here was regarding the need to establish a **maintenance approach** for data standards at the outset. This included:

    a. processes for new standards
    b. regular review of existing (including their ongoing relevance and measurement of appropriateness of use)
    c. retirement of existing standards as appropriate
    d. respective supporting governance.

iii. Multiple global standards initiatives have employed this process successfully, particularly with regards to **ensuring standards remain current**. Both the International Accounting Standards Board (IASB) and ISO complete a full review every 5 years. This is critical for the ever evolving and innovative financial services landscape, where standards need to reflect new products/services as they emerge, for example digital assets, with definitions and reporting specifications that reflect such changes. The FASB's post-implementation review runs for the 3-year period from the point of a standard's implementation. As noted, the costs and benefits for firms, data providers and consumers are assessed, to make sure the standard is achieving its initial goals and is cost-effective.

Industry engagement:

iv. Industry feedback requested **consultation on any new standards, or changes to standards already implemented**. Participants generally favoured a public consultation, where input is requested from industry in business language before iteration and final definition published in a statement. This tried and tested approach is successfully used today by regulators for new and changing policy, and indeed for standards engagement by the IFRS Foundation, European Financial Reporting Advisory Group (EFRAG), and European Securities and Markets Authority (ESMA). IFRS seek public consultation to inform priorities and then issue the proposed standards via a discussion paper, the latter also being an approach used by EFRA), and ESMA undertake consultations with authorities and European Central Banks before draft technical standards are published.

v. The general consensus from participants was that **industry should actively participate** in the definition and management of standards. This would ensure standards are well informed by the needs of users, were not overly complex but fit for purpose and easy to use. It would also support the regulators in understanding, at a practical level, how firms could best meet any new standards set and iterate accordingly. This point was called out by those participants with regards to CRE, with a particular emphasis on involving both firms and those vendors supporting on data reporting to regulators. As well as consultation, an example of active participation can be found in Swift's MyStandards platform that allows users to share and test in a single space.

vi. Industry feedback (nearly 80% of those interviewed) consistently expressed the need for a **Data Standards Committee** to provide monitoring of standards on an ongoing basis. The committee should provide informed views and recommendations on the experiences of data standards, the need for new standards and potential standards to be retired, as well ongoing data standards management. The committee would be

responsible for those data standards they have created and making recommendations to regulators on the priority of standards for implementation. The scope of the committee's role, and clarity as to where the committee would handoff and interact with other bodies needs to be clear from the outset. Where existing standards have been leveraged, careful consideration would need to be given to the impact of modifications and divergence from those existing and accepted standards. This group should have appropriate representation from regulators, firms (of all sizes and complexities), financial services industry groups and associations and technology providers.

Figure 4 – Membership of new Committee

vii. Participants were conscious of the need to manage the number of organisations on the committee to support effective decision making. The committee should however be **sufficiently representative of industry and be positioned to interact with similar standards committees internationally**. Multiple global standards have similar committees (such as BSI and ISO), providing ongoing management and implementation support. Of particular note is the Global Sustainability Standards Board (GSSB) which is responsible for the Global Reporting Initiative (GRI) standards.

Role of the regulators:

viii. There were significantly diverse views on the **role of regulators** in data standards. These ranged from:

     a. A purely facilitative role, to gather input from industry and promote cooperation as to potential standards which could be implemented. Standards would be owned by an industry committee, and the regulators would encourage the use in their reporting guidance and provide feedback on performance against the standards.

     b. A driving role, in setting standards, engaging with industry through a consultation process and implementing in reporting, without directly enforcing the standards.

     c. An enforcing role, where standards are developed by industry with the regulators, and then implemented into reporting requirements. Compliance would then be assessed against these standards and failure to meet the standards would be managed as a reporting issue.

ix.   Responses from firms largely favoured a partnership model, where **industry drove standards, collaborating with regulators who would then implement**. Differing views were expressed in respect of regulators explicitly mandating and enforcing against standards. Considerations included whether **by incorporating standards in reporting forms, the regulators would be de facto mandating standards** (i.e. it would not be possible to submit data without the standards being met). There were views that this would be key to increasing adoption across industry. This is a model well tested through the Legal Entity Identifier (LEI) which has been adopted by more than 2 million organisations worldwide, supported by inclusion as a regulatory reporting requirement across over 116 global regulatory requirements for reporting of financial transactions. Its widespread adoption facilitated the use of this standard outside the regulatory reporting framework and has brought further benefits in international trade and cross-border payments. This model, whereby regulators are fully engaged in the development of standards, and support implementation by including into reporting requirements and systems, is the most consistently applied in existing standards initiatives. By only accepting submission via a regulatory reporting platform regulators are requiring the use of the standards to meet reporting requirements, however the research was unable to find any examples where a regulator took enforcement action for a firm who failed to comply explicitly with the standards.

x.   Certainly, there is a need for a **joint approach to standards across the UK financial services regulators, to support onwards international cohesion**. This is a key facilitatory role the regulators can play in collaboration with relevant standard-setting bodies and associations to foster cohesion and co-ordination across the US, Europe and Asia-Pacific regulatory family. The Regulatory Oversight Committee for the Global Legal Entity Identifier Foundation provides effective oversight for the LEI and enables representation across in that example regulatory institutions globally. The burden of regulatory reporting should be reduced by interoperable standards, but this will not be the case if there is not a co-ordinated effort and if multiple, conflicting standards are built. A good example of the former, is the global adoption of the Unique Product Identifier (UPI) for global OTC derivatives reporting. Whilst the more limited adoption of OTC ISINs in the same space, by EU regulators, is an example of the latter and lacks harmonisation across regions. This is especially challenging for those firms who operate globally, and therefore need to manage different reporting regimes, from regulators in different jurisdictions, each with their own standards in place.

xi.   The UK model needs to first **focus on building commonly agreed and implemented data standards, leveraging the existing global standards** to build upon, and not

rebuild. There are examples of this approach through, for example, the International Capital Market Association's (ICMA) Bond Data Taxonomy which itself leveraged existing standards, for example those from ISO. This broader consideration will help those firms who already need to manage multiple global standards. The Common Domain Model is an example of providing the basis for firms to develop automated, scalable solutions, and supports the development of a machine readable and executable data model for derivatives, bonds, repurchase transactions (repos) and securities lending. Following the implementation and a post implementation review, the international scale of standards should be considered. This international cohesion is possible and was seen in research across ISO (161 jurisdictions involved), XBRL (50 countries), ISDA (79 countries), and ICMA (65 jurisdictions).

xii.   Whilst differing views were expressed by those participating in this report, the research found that **regulatory involvement in the full lifecycle of standards supported positive outcomes**. The collaboration between industry and the regulators to shape standards, informed by existing standards, is key to managing the implications of implementation for firms. Regulators have been seen to be the fulcrum across the global standards landscape, bringing together existing standards good practice and enabling reuse. It should also be noted that there are implications for regulators to manage, especially where regulatory reporting platforms can support firms in meeting the new standards but require technical changes which must be budgeted for by the regulators.

Recommended next steps:

i.   **Establish a formal Data Standards Committee to become the body responsible for the ongoing oversight of data standards for financial services regulation.** An option would be to expand the current TDC Data Standards Committee's role to formally manage the full lifecycle of financial services data standards (see Figure 3) – facilitating consideration of new standards, governing their entry to the implementation pipeline, and ongoing oversight of standards (review, retire). This would include making recommendations to the regulators on the priority of implementing standards for reporting. To support this:

   a.   Applications for membership should be opened, in light of a more formal and ongoing role, and membership encouraged to represent the key sectors and diversity of financial services
   b.   A Terms of Reference should be established, possibly leveraging and revising that of the current TDC Data Standards Committee, with clear roles and responsibilities of the committee, and supporting positions, such as those of the regulators
   c.   Agreement on engagement with national, regional and international standards setting bodies agreed

ii.   **Define the role of the regulators in data standards**. The regulators should hold seats on the Data Standards Committee, aligned to good practice seen where standards setters and regulators collaborate to support a successful standards implementation. The evidence suggests a facilitatory role of the regulators is key. They would have a vote, provide input from their own interests and a perspective on the interests of the broader financial services industry, from a regulatory and industry perspective. Clearly the regulators would also be required to make the relevant changes to their regulatory reporting platforms used by firms to submit data, and so

budget for this should be allocated accordingly. There may be opportunities for supporting the costs borne by firms through engagement with the FinTech and RegTech community as part of the Data Standards Committee.

III.   Data standard adoption

Roles in data standards adoption:

i.   There was general support for the **regulators working with industry** on the implementation and ongoing management of data standards. Interviewees shared a mix of perspectives between regulators taking a driving role (45% of interviewees), a more enforcing role (32%) and one of facilitation (23%). Participants encouraged regulators to provide an ongoing commitment through dedicating resources to standards adoption through implementation and supporting their management on an ongoing basis. Firms were keen to see tangible progress in data standards. The current use case approach provides structure and focus on the topic. The approach and extent of progress to date has however not delivered the more hands-on and tangible progress which will ultimately see data standards implemented.

ii.   Industry saw the regulators as key to data standards adoption and there was general support for the **regulators working with industry** on the implementation and ongoing management of data standards. Participants encouraged regulators to provide an ongoing commitment through dedicating resources to standards adoption through implementation and supporting their management on an ongoing basis. This will be essential as standards are incorporated into reporting and firms work through the impacts to meet these changes.

iii.   The **role of technology innovation in standards adoption** was well recognised. This is especially important where firms require support to overcome legacy technology challenges, called out by a number of participants as a significant concern. For the smaller firms, solutions which enable understanding of new standards requirements are key. Sharing standards in machine readable format could in the medium term allow incorporation of standards into data management tools used by firms. Participants recognised the longer term potential to enhance regulatory reporting processes through machine readable reporting instructions which allow the use of machine executable models to automate reporting processes. Competition and useful innovation in the technology market can be enhanced through regulatory direction and investment in standards, which would be an enabler for standards implementation and unlock potential future benefits of more automated regulatory reporting.

iv.   **The role of larger sized firms** in driving adoption across industry was called out as a key influencer in standards adoption. Views were shared on the market influence that large financial services organisations could have through their adoption of standards. Some participants believed that this would drive engagement for firms who may be seeking to avoid falling behind competitors.

Implementation steps:

v.   Building on the momentum of this industry engagement, there was support for moving on from the technical discussion of data standards to a repeatable set of **practical design and implementation steps**. Industry welcomed doing this on selected use

cases, in an inclusive manner bringing together firms, regulators and technology suppliers. Tackling the challenge with an agile, iterative 'lab' based approach, would leverage this collaborative willingness to learn together and build standards which provide early value but also are tested rigorously and take into account user needs and recognised challenges around technology and people. This is intended to be an approach to initiate progressive action at pace and be reviewed and built upon thereafter to inform the longer-term programme of work on data standards.

vi. **Supporting an accelerated rate of progress, the approach would consist of**:

    a. A series of hosted sprints of work (2-3 days per week, held over successive 2-3 weeks) each with specific outcomes, focused on a selected new regulatory reporting requirement use case

    b. Attendees including Data Standards Committee members, the regulators, firms (of differing sizes and complexities), industry representatives with reporting expertise (compliance consultants, trade bodies) and technology suppliers (FinTech and RegTech firms, Independent Software Vendors), all with the required expertise and/or tools to constructively address the challenge

    c. A 'lab' environment, potentially hosted by a third party consultant, with collaborative tooling and test/anonymised data with which to develop, iterate and test standards on a practical level (including existing standards which can be re-used/purposed), leveraging user input from the future standard adopters to influence design thinking and approach

    d. An agreed set of parameters which all sign up to providing absolute openness and transparency between attendees with a goal of achieving an agreed set of standards for the selected regulatory reporting use case

vii. This cycle of collaborative iteration would result in a proposal for progressing data standards for the selected use case. It would also critically generate network momentum to the adoption of data standards in financial services, which would otherwise take many months before reaching a point of maturity for wider industry engagement. It builds on the current use case model of TDC where Agile and sprints are leveraged, adding a faster pace of progress and visible change deliveries.

viii. Following this, a **roadmap for implementation** should be created, including consideration of:

    a. The data firms currently hold, its respective quality and where gaps exist in respect of the selected use case

    b. Data and analytics requirements (existing metadata, granularity, calculations, transformations, reviews) and the ability to test these to the level necessary, seeking opportunities to reduce and de-duplicate

    c. The definitions of data elements, using agreed language consistently understood by participants

Recommended next steps:

i. **Prove delivery of a new data standards development use case applying a collaborative, iterative approach in a Lab environment** (as outlined in the 'Implementation steps' section). This would take a new regulatory reporting

requirement, such as the IOREP TDC use case, and work through the various steps to build out data standards.

ii. **Create and publish the roadmap for strategic implementation of financial services data standards and an associated programme with budget to deliver.** Following completion of the use case, the roadmap for strategic implementation of data standards should be created and published, via the Data Standards Committee. A programme of work will be required to deliver on this roadmap, funding for which should be secured and appropriate management and accountability assigned. The programme should cover the build and iterative implementation of data standards into regulatory reporting, exploring ways to support firms in overcoming their legacy technology challenges. The priority order for reporting should be informed by an industry consultation to understand which reports would benefit most from application of standards, as well as where risk can be managed for regulators. Different options exist between leveraging new reporting requirements (eg Commercial Real Estate or Retail Business Banking) or an existing reporting regime (ieg Financial Derivatives) and applying the lab approach to work through the challenges and future approach for implementing standards across reporting.

6. The future of data standards

i. Following completion of the data standards use case and published strategic implementation roadmap, the future of data standards would have a clear path for progression. This should provide an approach which leverages the co-input and global data standards learnings highlighted in this paper, and defines a new model for data standards.

Figure 5 – Future data standards Model:
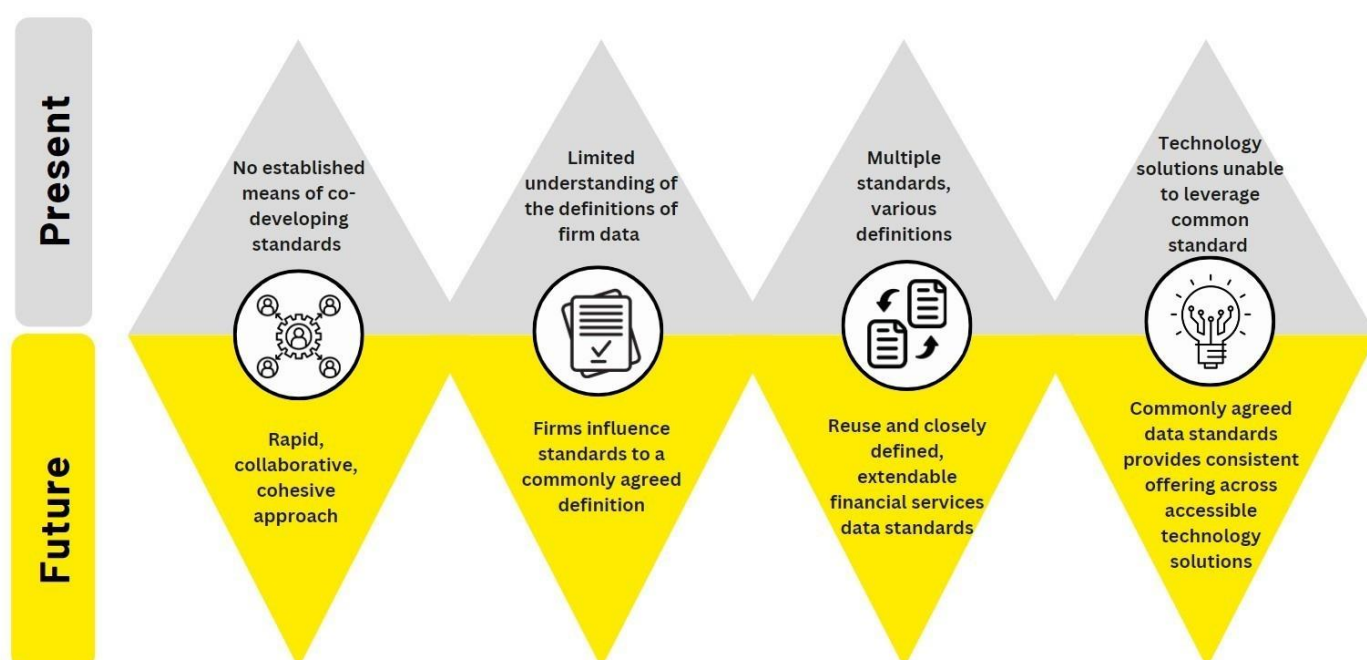
ii. The role of technology in moving data standards forward would aid such an agile and fast paced approach:

a. Understanding: Consistent application of standards in platforms means that different technologies can employ the same definitions, **opening up use of systems across industry and increasing the use of data across technology**. Smart Data Dictionaries such as those being developed by the Digitalization of Sustainability Data Project support mapping of terms based upon their semantic meaning. These define a conceptual way of organising data including definitions, the relationships between them, the controls required – all of which can then be pointed at data sets for rapid and direct application. This should be brought to the recommended lab and used as a direct accelerator.

b. Approach to implementation: **Firms felt strongly that the approach to adoption was key in managing their costs**, notably providing a sufficient implementation period and support of testing. Providing standards upon which competitive and efficient platforms can be built to support the full diversity of firms in adopting and managing data standard compliance, especially smaller firms, is critical to the successful adoption of data standards. In a lab, the technology providers would have access to real Firm users to understand possible implementation challenges and iterate solutions accordingly. Noting the extent of change for firms, a contingency provision was suggested, should firms experience initial issues in submitting reporting against new standards. Cloud architectures present efficient ways to support parallel running in a modular build approach (i.e. a module supporting the previous version of reporting and resubmissions, and another the new). These could be tested in the lab, applying different options and modelling the estimated costs for developers, firms and regulators.

c. Impact of change: Technology advances such as connections through Application Programming Interfaces (API) can reduce the scale of implementing and changing standards. **Standards can also unblock issues which in the past have inhibited progress.** Digital regulatory reporting would benefit from the consistency of definitions, enabling machine readable technologies to remove manual interventions in regulatory reporting processes, which again longer term would reduce impact of new and changing reporting requirements. Change impacts could be worked through in the lab, and collectively a roadmap for managing these constructed.

iii. Participants suggested that **standards could be developed in an open-source manner**, providing free access to those who wish to access but also provide comment on possible iterations of the standards. This is a model seen across IFRS, SASB, XBRL, ISDA, ICMA, ISLA, FIX, FpML, and Object Management Group financial standards such as the US accredited Financial Instrument Global Identifier (FIGI) and FIBO. The latter is hosted by the Enterprise Data Management Council (EDMC) with contributions from their members, and provides a description of contractual obligations of financial instruments, legal entities and financial processes. The former (FIGI) is hosted by Bloomberg LP, and all identifiers are available via an open-source website. Those interviewed also expressed interest in incremental prototypes being made available to support development of standards. Appropriate supporting technology would need to be in place to provide a safe platform for iteration and testing, with initial and ongoing costs to build and maintain such technology. These could be implemented either for a lab approach, or on an ongoing basis to support continual standard development and management. The longer-term benefits of this collaboration and

the standard is achieving its objectives and justifies the cost of implementation over a 3 year period, engaging industry to evaluate costs (interpretation and implementation) and benefits derived.

c. **Establishing ongoing management and governance through sustained collaboration between industry, standards setters and regulators** – Establishing processes carried out by a body who oversee implementation, management and iteration of standards, with representative membership from across industry. This is a well proven approach through the bodies such as the British Standards Institute, the ECB's BIRD steering group, FIX, FpML, FSB, GLEIF's Regulatory Oversight Committee and ISO. An agreed role of the regulator is also vital, with the LEI an example of where including the standard in regulatory reporting requirements/systems means firms will adopt and realise further benefits over time which support further adoption freely.

d. **Standards which are accessible** – An open model for development supporting contributions from across industry, and flexible to change. This open source model has been successfully applied by the OMG/EDMC's FIBO and FIGI, FIX, FpML, and in ISDA, ICMA's and ISLA's Common Domain Model. Leveraging existing internationally accepted standards and formats, building upon and iterating, has also worked well in the cases of ICMA, ISDA and ISO.

iii. EY has proposed a series of recommendations in this report. Priority should be given to publishing this report with agreement on the next steps between the Data Standards Committee, the Bank of England and the FCA. EY would suggest that subsequent priority actions should be:

a. Establish a Data Standards Committee to monitor and advise on data standards for financial services regulation. This should be made up of a diverse range of industry representatives, with the regulators facilitating the development and adoption of standards through the committee and adopting the standards into reporting systems through their own change budgets. Firms would be asked to commit member resources to the Committee without charge, noting the long-term benefits which would likely be derived from data standard implementation for industry.

b. Identify a reporting use case with which to run as an active development exercise for the first set of standards in a lab environment to mitigate blockers and run at pace. This should be structured to produce:

   i. A documented and tested process for a standard's lifecycle
   ii. Clarity as to the engagement between the DSC (and other touchpoints required, such as with industry) for implementing a standard
   iii. A documented approach to defining the technological aspects (i.e. a scheme) and how a standard interacts
   iv. Metrics to measure the standard's impact in industry

   It may prove beneficial to select a new reporting requirement for the use case for example the Commercial Real Estate or Retail Business Banking use cases being progressed by the TDC programme, given these will have no associated legacy policy and IT established for the regulators and firms to revise/redevelop.

c.   Using the output of the use case, iterate the approach and generate the strategic roadmap for implementation of financial services data standards. This roadmap should be built with input from the Data Standards Committee representing the challenges and opportunities for industry, to ensure it is well informed to support a successful progressive implementation plan.

iv.   Responses to this report will be published by the TDC Data Standards Committee, as well as the Bank of England and FCA. This will provide clarity on next steps to industry and expected ways in which interested parties can engage.

8. Appendix

I.   Data standards research – Organisations and initiatives included

Organisation	Summary of data standards related work
Alternative Investment Management Association (AIMA)	The Alternative Investment Management Association (AIMA) is the global representative of the alternative investment industry. The AIMA Data Regulation working group makes recommendations on data guidance and on the implementation of data privacy laws to engage with international setting bodies. They engage in open consultations about standards such as those on the IASB and ISSB. Home (aima.org)
British Standard Institute (BSI)	It is the UK national standards body formed in 1901. Their aim is to represent the UK economic and social interests across all European and international data standards organizations. They publish around 3,100 standards annually on a range of different topics and sectors. Their standard setting process includes a Steering Group formed by experts to advise on the technical aspects of the standard and a range of stakeholders for public consultation. BSI runs many standards committees which feed into the international standards setting process in ISO and elsewhere. This includes committees focused on digital assets and ESG, as well as general financial services standards. The BSI IST/12 committee is the one which oversees UK input to key financial services standards such as ISO 20022, LEI and ISIN. BSI also offer a range of educational services to small and large firms Standards, Training, Testing, Assessment and Certification	BSI (bsigroup.com)

DSD Labs	The Digital Sustainability Disclosure Project is overseen by XBRL international and aims to promote consistency in sustainability disclosures around the world. Since 2021, XBRL International has been hosting regular meetings between the technical staff of the main standards setters and some of the regulators working on the digital aspects of sustainability disclosures. They identify potential challenges in sustainability disclosure and propose potential solutions. In many markets these disclosures will be digital, so they will be prepared in the Inline XBRL format. Digital Sustainability Disclosures – Making the case for better reporting (xbrl.org)
European Banking Authority (EBA)	Data dictionary encompassing the harmonised data requirements developed by the EBA (European Banking Authority) and included in its Technical Standards and Guidelines. It provides a clear interpretation of data exchange requirements which enables the harmonisation of the banking regulatory framework. It also provides metadata support to fully automate the production of data exchange specifications. To create this dictionary, a systematic modelling process with embedded automated checks is used in order to generate computable readable entries. DPM data dictionary	European Banking Authority (europa.eu)
Enterprise Data Management Council (EDMC)	The EDMC is a global association created in 2005 to elevate the practice of Data Management as a business priority. They created an open-source semantic standard platform, Financial Industry Business Ontology (FIBO), which provides a description of contractual obligations of financial instruments, legal entities and financial processes. The FIBO standard is an Object Management Group standard, hosted and sponsored by the FIBO Steering Group, FIBO Community Group and 4 standing committees. EDM Council
European Central Bank (ECB)	The ECB is an official EU institution that belongs to the Eurosystem. It is responsible for conducting monetary policy in the European area to ensure the stability of the financial system within the EU. The ECB produced a Banks' Integrated Reporting Dictionary (BIRD) initiative to improve the quality of standards reported to authorities. BIRD aims to cover any statistical, prudential and resolution reporting requirements. BIRD specifies how the data can be extracted from the bank IT system to generate regulatory reports. This dictionary was created in 2013 and it was lastly updated in 2021 with the aim to introduce a new set of components. It is free to download and available to banks and any interested parties. It is managed by the BIRD Steering Group and overseen by the BIRD expert group. European Central Bank (europa.eu)
European Financial Reporting Advisory Group (EFRAG)	EFRAG is a private association established in 2001 with the encouragement of the European Commission. They ensure that European views are properly considered in the IASB's standard-setting process and in related international debates. In addition, they aim to develop EU Sustainability Reporting Standards (ESRS). Home - EFRAG

European Fund and Asset Management Association (EFAMA)	EFAMA is the representative trade association for the European investment management industry. Their aim is to promote optimal conditions for the European fund and asset management industry. As part of their work, they engage with international standard setters on a wide range of issues. Their Sustainable Finance workstream has supported the work of EFRAG's to develop mandatory sustainability reporting standards and they have encouraged international cooperation to IFRS consultations. 	EFAMA
European Leveraged Finance Association (ELFA)	The ELFA is a professional trade association that seeks to support the growth and resilience of the financial market. Home - European Leveraged Finance Association (elfainvestors.com)
European Securities and Market Authority (ESMA)	ESMA is an independent European Union Authority that contributes to safeguarding the stability of the EU's financial system. One of the main activities of ESMA is to complete a single rulebook for EU financial markets. They provide a set of recommendations and guidelines on how to implement technical standards. ESMA (europa.eu)
Financial Accounting Standards Board (FASB)	FASB is an independent, private-sector, not-for-profit organisation based in the US with the aim to establish financial accounting and reporting standards that follow Generally Accepted Accounting Principles (GAAP) FASB Home
Financial Stability Board (FSB)	The Financial Stability Board (FSB) is an international body that monitors and makes recommendations about the global financial system. One of its duties is to monitor and advise on best practice in meeting regulatory standards. FSB has developed the Compendium of Standards which aim to provide a list of internationally accepted standards that represent the minimum requirements for good practice that countries are encouraged to meet to ensure the stability of the financial system. It was first issued in 1999, but it is reviewed periodically. This compendium is managed by the Financial Stability Board which encompasses the Plenary, steering bodies and standing committees. Financial Stability Board (fsb.org)
Global Legal Entity Identifier Foundation (GLEIF)	GLEIF supports the implementation and use of the Legal Entity Identifier (LEI). LEI connects to key reference information that enables clear and unique identification of legal entities participating in financial transactions. Home – GLEIF
Global Derivative Digital Regulatory Reporting Programme	The Joint Working Group (JWX) together with trade and standards bodies have launched a collaborative project to elaborate on existing reporting best practice. The aim of the program is to promote digitalisation of reporting processes. Global Derivatives Digital Regulatory Reporting Programme - JWG (jwg-it.eu)

Global Sustainability reporting Standards Board (GSSB)	The GSSB is an independent operating entity with the aim to set the world's first globally accepted standards for sustainability reporting – the GRI Standards (Global Reporting Initiative). GRI - Global Sustainability Standards Board (globalreporting.org)
International Capital Market Association (ICMA)	ICMA is an industry association that provides industry-driven standards and recommendations in cross-border capital markets, prioritising three core fixed income market areas: primary, secondary and repo and collateral, with cross-cutting themes of sustainable finance and FinTech and digitalisation. ICMA developed the Bond Data Taxonomy (BDT). ICMA also extended the Common Domain Model (CDM), a standardised, machine-readable and machine-executable process model for how financial products are traded and managed across the transaction lifecycle, to repos and bonds in collaboration with ISDA and ISLA. This is an open source data model for derivatives, bonds, repo and securities lending in order to drive automation and interoperability. The International Capital Market Association » ICMA (icmagroup.org)
International Financial Reporting Standards (IFRS)	Non-profit, public interest organization established to develop standards in accounting (by the International Accounting Standards Board (IASB)) and Sustainability Disclosure (by the Sustainability Standards Board (ISSB)). Their aim is to develop standards that bring transparency, accountability and efficiency to financial markets in order to provide investors with reliable information about a company's financial position. IFRS - Home
International Swaps and Derivatives association (ISDA)	ISDA is an industry association which aims to promote an efficient derivative market that facilitates risk management for all derivatives products. They have developed a *Common Domain Model (CDM)*, a standardised, machine-readable and machine-executable process model for how financial products are traded and managed across the transaction lifecycle, in collaboration with ICMA and ISLA. This is an open source data model for derivatives, bonds, repo and securities lending in order to drive automation and interoperability. International Swaps and Derivatives Association (isda.org)
International Securities Lending Association (ISLA)	ISLA is an industry association which aims to stimulate best practices for securities lending and financing. This includes the maintenance of legal framework for securities lending. ISLA also extended the Common Domain Model (CDM), a standardised, machine-readable and machine-executable process model for how financial products are traded and managed across the transaction lifecycle, to securities lending in collaboration with ISDA and ISLA. This is an open source data model for derivatives, bonds, repo and securities lending in order to drive automation and interoperability. Regulation & Policy - International Securities Lending Association (ISLA) (islaemea.org)

International Organization for Standardization (ISO)	ISO is an independent, non-governmental international organisation with the aim to develop market-relevant international standards that support innovation and provide solutions to global challenges. So far, they have developed nearly 25,000 standards covering technology and manufacturing areas. These can be found in the ISO Standards Catalogue. The process to develop new standards involves experts, ISO members, (161 national standard bodies) and ISO staff (150 full-time members of staff). There is only 1 member per country. The standard must achieve consensus among its members through a voting process before it becomes an official recommendation. Specifically, ISO 20022 is an XML-based methodology used by financial industry to create consistent message standards across all the business process of the industry. It enables interoperability by defining maps between existing standards. ISO - International Organization for Standardization
Personal Investment Management & Financial Advice Association (PIMFA)	PIMFA is an association that aims to prove an optimal operating environment for firms to facilitate their services to clients. PIMFA collaborates on the debate on regulatory recommendations for firms. PIMFA - Building Personal Financial Futures
Sustainability Accounting Standards Board (SASB)	SASB is designed to help companies disclose financially-material sustainability information to investors. The SASB standards have been developed for 77 industries, including financial services. The SASB standards will transition IFRS Sustainability Disclosure Standards. Standards Overview - SASB
Society for Worldwide Interbank Financial Telecommunication (SWIFT)	SWIFT aims to create and maintain standards for financial messaging. They aim to promote automation and reduce risk by creating a framework to exchange unambiguous, machine-friendly data. SWIFT standards act as Registration Authority (RA) for several standards that define universal codes for reference data and also they act as RA for ISO 20022 Homepage	Swift
UK Finance	UK Finance is a trade association for the UK banking and financial services sector that promotes innovation in the banking and finance industry. It has a membership of over 300 firms. It brings together industry and creates policy, working with regulators and government to increase efficiency and improved customer outcomes. Homepage	UK Finance
World Economic Forum (WEF) International Business Council (IBC)	The WEF is the international organisation for Public-Private Cooperation. Their aim is to bring people together to promote innovation and to make positive change. After the World Economic Forum in 2020, a set of 21 core metrics and 34 expanded ones was

published in order to support the reporting Sustainable Value Creation.
The World Economic Forum (weforum.org)

Initiative	Summary of data standards related work
eXtensible Business Reporting Language (XBRL)	XBRL is the international standard for digital business reporting. This includes reporting of financial, performance, risk and compliance information. It is managed by a global and non-profit organisation (XBRL International). This is supported by more than 600 members and is used in more than 50 countries. It aims to provide definitions to ambiguous terms and includes ways to deal with multi-dimensional data and complex interrelated forms, which allows the information of the report to be analysed more accurately. XBRL
Financial Information Exchange (FIX)	FIX is an industry-driven standards body that develops messaging protocols. FIX has become the language of the global financial markets used extensively by buy and sell-side firms, trading platforms and even regulators to communicate trade information. FIX Standards • FIX Trading Community
Financial Products Markup Language (FpML)	FpML is the open-source XML standard for electronic dealing and processing of derivatives. The FpML specification describes the data that needs to be exchanged within these processes, as well as the message flows. This standard is developed under ISDA, using the ISDA derivatives documentation as the basis. FpML – Financial products Markup Language

II. Data standards review – Engagement via EY's Cognistreamer portal

Engagement on the EY Cognistreamer portal came from across industry, as outlined below:

Other (11%)

Consulting (11%)

Technology (15%)

Financial Services (30%)

FinTech (33%)

III. Data standards review – Contributors via EY's Cognistreamer portal

Organisation	Role
Belmont Green Finance	Risk
Bird Software Solutions	Founder
Bloomberg LP	Industry Relations
Bloomberg LP	Open Data and Standards
BMC Software Limited	Product Account Manager
CoreFiling Ltd.	Strategic Markets and Innovation Director
Deutsche bank AG	Market Initiatives, Regulatory Transformation & Strategy
Digital Token Identifier Foundation	Product Owner
DTCC	Managing Partner
Encompass Corp	Functional Authority, Head of Regulatory Product EMEA
EY	Director
FST Network	Chief Regional Director
Investec Bank plc	Data
Just Group plc	Senior Financial Data Scientist
Model Drivers	Director
NatWest	Services
No firm name provided	Consultant
Nth Exception	Payments
Open Ownership	Head of technology
Radley Associates	CEO
Regnology	Presales

Regnology	Executive Director
Teradata	Industry Consultant
Vermeg	Regulatory & Industry Affairs
Wolters Kluwer	Product Manager
Yorkshire Building Society	Data Design Lead

IV.   Data standards review – Engagement via interviews

Organisation	Role
Bank of America	Director, Regulatory Reporting Technology
Belmont Green	Director Prudential Risk
BISISH	Head for the Nordic Centre of the BIS Innovation Hub
Bloomberg	Head of Data Business in Bloomberg
Bank of England	Various SMEs across data collections, data science, data strategy, and policy
CREFC	CEO of CREFC
DEUTSCHE BANK	Regulatory Transformation
DTCC	Chair of the DSC
EDM	President EDM Council
EY	Various experts across EY's global network
FCA	Various SMEs across business analysis, data collections and governance
ICMA	Director, FinTech and Digitalisation
Investec	Business Chief Data officer
ISDA	Senior advisor in data digital solutions
ISDA	Head of Data Digital Solution Team
ISLA	Director
JWG	Business Architecture
JWG	Regulatory Reporting Transactions
Santander	Head of Data Governance-Data Controls
Vermeg	Head of Regulatory Capital