

ESG Data for Financial Services in an Operational Environment

October 2023



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1. Introduction

In the rapidly evolving landscape of the financial services industry, ESG factors have emerged as powerful drivers shaping investment decisions and business practices. As sustainability and responsible investing gain prominence, the requirements and expectations for data supporting ESG-driven investments and processes have risen significantly. ESG reporting is no longer a qualitative, subjective activity. Firms are now compelled to meet the growing demand for accurate, comprehensive, quantitative, and reliable ESG information to inform decision-making and meet the needs of regulators, third-party partners and other stakeholders. Understanding the ESG drivers and effectively navigating the landscape of ESG data have become essential for sustainable growth and long-term success.

With increasing technological and market challenges, it is crucial for financial services organisations to consider their data operations as they strive to meet to ESG data requirements. Ensuring appropriate data operations is a foundational key to the success of a data-driven enterprise.

Data operations (DataOps), which refers to the practices and processes for managing and manipulating data throughout its lifecycle, will have a dynamic exchange with ESG data, where ESG standards will shape DataOps, as well as where emerging technologies change DataOps in a way that will have implications for ESG.

This paper looks at the operational consequences from ESG regulatory reporting requirements. It sets out:

- A. How financial institutions (irrespective of size or operational maturity of DataOps) should manage ESG data across the data lifecycle;**
- B. The challenges operationally in satisfying the evolving nature of ESG regulations; and**
- C. Where there are opportunities for new technology to exist within this exchange despite the challenges.**

2. ESG How financial institutions should manage ESG data across the data lifecycle

DataOps is a set of processes, practices and technology that shape the data lifecycle of an organisation. Technical and non-technical components within the operational framework are put in place to determine how data is:

- collected or created,
- stored, processed, and integrated,
- used and shared,
- archived/retained,
- deleted.

ESG standards and regulations have implications for what, why, where, and how data flows through its lifecycle and, therefore, dictate the parameters of the DataOps that sit on top of the data lifecycle. This relationship, however, will evolve as ESG standards mature and present new implications for DataOps. Also, as emerging technologies become a part of the data lifecycle, new measures will be required to adapt to the way the technology is used to create or process data; as a result, these new measures can be expected to influence ESG developments.

Ways that ESG and DataOps are related:

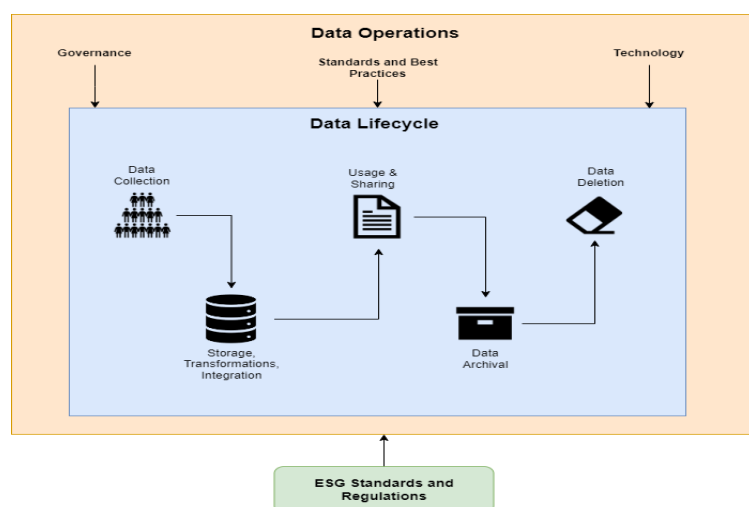


Fig. 1. A schematic conceptual relationship between DataOps, Data lifecycle and ESG.

Data Collection

The complex regulatory landscape in ESG inevitably requires different data classification methods due to the large variety of data categories and formats (quantitative, qualitative, etc.) required to meet different ESG needs. Thus, there is a need to collect or generate the right type of data that can be used for ESG reporting, while also abstaining from collecting the wrong kind of data that does not adhere to ESG standards (breach of privacy, for example). Financial institutions have expressed their preference to work back from use cases to identify regulatory needs, sectorial alignment indicators, business opportunities and commercial pushes to assess what ESG data to collect for a given use case. The term “ESG data” is widely used to identify any data required for ESG reporting, whether it is external or internally sourced.

Financial institutions require ESG data for several purposes, including developing sustainable financing products, driving investment and financing decisions, risk management, transition planning, and for their own sustainability disclosures. (Regarding this last purpose, please see AFME’s 2023 report on [Sustainable Finance in Europe: Regulatory State of Play](#) for a full overview of the regulatory expectations¹.)

While use cases may differ, it is important for reporting standards to be consistent for comparison. Significant efforts are underway to enhance the availability, comparability, and reliability of ESG data. Examples include work to develop a global baseline for sustainability reporting through the International Sustainability Standards Board (ISSB) and the European Sustainability Reporting Standards (ESRS) under the EU Corporate Sustainability Reporting Directive (CSRD), alongside other initiatives such as the Financial Stability Board’s Task Force on Climate-Related Disclosures (TCFD), Global Reporting Initiative (GRI), and Taskforce on Nature-related Financial Disclosures (TNFD). While progress is being made, firms face a complex environment for sourcing and reporting of ESG data.

Key considerations in DataOps:

- Where and who to collect the data from
- Adopting appropriate vendor and data assessments prior to engaging with vendors
- Reviewing the numerous data vendors and data services platforms which are available

¹ AFME, Sustainable Finance in Europe: Regulatory State of Play, 2nd Edition, March 2023

- Tackling variations in data sources when using third-party vendors and/or public sources
- Monitoring emerging gaps from lack of availability of data
- Addressing inconsistencies from internal handling/manipulation of the data
- The provision of appropriate tools and infrastructure to connect to multiple data sources to collect and ingest the data

Storage, Processing, and Integration

A plethora of calculations for metrics makes the problem of meaningful comparison between firms and progress towards their ESG goals a challenging task. Inconsistencies arise due to multiple factors, but one that is associated with how data is stored and processed comes down to methodologies or calculation methods for a given metric even under the same classification or taxonomy system.

For instance, the EU Taxonomy technical screening criteria (TSCs) generally consist of quantitative science-based metrics/targets; however, the taxonomy prescribes different TSCs for different economic activities/industries. Where the TSCs do not comprehensively cover the economic area in question, the calculations may be derived without a standardised methodology and, therefore, result in varying metric values for similar data. These types of inconsistencies make the task of comparing ESG results across firms extremely challenging.

AFME has also previously flagged how crucial it is for financial institutions to obtain more complete and accurate data from customers and rely less on estimates. Expansion to a data-driven framework leveraging current data gathering and processing practices is a crucial step for the integration of ESG data into IT operations.

Such integration is currently at times lacking. The recent climate change risk stress tests conducted by the European Central Bank (ECB) found that climate risk transmission channels and portfolios were often lacking ESG-relevant data which could have been integrated from existing processes, such as the credit risk models, especially where there had been data-intensive techniques, such as machine learning (ML).

Usage and Sharing

ESG reporting is an important mechanism for sharing data to hold businesses accountable for their ESG targets. This requires firms to be transparent and proactive in their reporting and ensure data is not deliberately altered or omitted. Without adequate governance procedures and ownership structure within DataOps, a system of accountability cannot be deemed reliable. This is especially relevant for the prevention of greenwashing; an issue which the European Commission directly raised in its June 2022 request to the European supervisory authorities (ESAs) to collect data on the most frequent greenwashing occurrences and complaints.

Implementing and monitoring ESG standards successfully not only promotes accountability through reporting, but also embeds within operations the mechanisms to monitor data lineage, access, and transfer by leveraging technologies such as cloud platforms and associated managed services for auditing, logging, and alerting. Thus, data traceability, use and governance becomes part of a streamlined process while also helping the organization achieve its ESG goals.

Data Archival

Data archival provides a practical step at a technical level for handling data that is not in active use but is retained for non-production operations, such as for potential future requirements. Archiving is important for demonstrating responsible data management and stewardship and for enabling long-term auditing processes compliant with ESG standards, as set out in the ISO Standards for Digital Archives, for example. The topic of data availability is also pertinent in the archival process precisely for making in-depth and data-driven IT auditing possible. However, there is a need for precision in balancing archiving data to supplement data-driven operations with retaining data that could breach privacy concerns, which are clearly highlighted within the General Data Protection Regulation (GDPR). The GDPR lays out principles that have become the

de facto benchmark for privacy and data protection with almost 120 countries adopting similar rulesets in local laws and legislations. This has obvious links to the next stage of the lifecycle within DataOps – data deletion.

Data Deletion

The GDPR states that organizations should establish appropriate retention periods for archived data and regularly review to ensure that personal data is not held for longer than is necessary or is not processed for purposes beyond the purpose for which it was collected. With the emergence of new data-driven algorithms, most notably machine learning algorithms, the potential use of data becomes multi-purposeful. To curb the temptation to use data for nefarious purposes, especially in cases of data breach enabled by smart technologies, data deletion represents a more important stage of the data life cycle than is usually emphasized. A sustainability concern related to retaining data that is not actively used, is the resulting need to provision resources (hardware, compute, etc.) to manage this data that the organization may not require but which comes with an environmental cost.

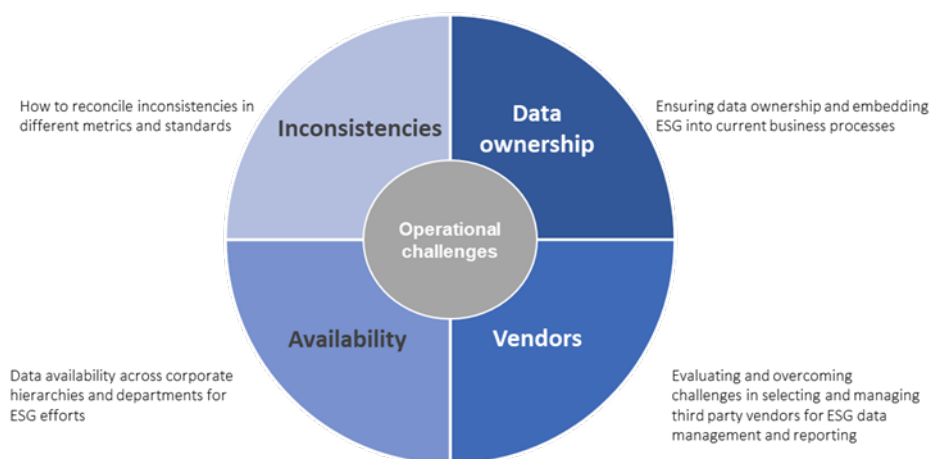


Fig. 2. Overview of the main operational challenges facing financial services firms from ESG data operational perspective

3. The challenges operationally in satisfying the evolving nature of ESG regulations

The financial sector has so far taken up technology more rapidly than other industries and competition has become ever fiercer with large technology businesses and fintechs having entered the market. When we consider a major benefit of modern DataOps, we think of *data-driven, efficient, automated, agile processes* (DEAP) and operations that make effective use of data to inform sound business decisions. While the reconciliation or alignment with ESG can be a significant challenge, a modern DataOps will provide everything needed to make this a successful marriage.

In fact, DataOps is a multidisciplinary approach (with professionals ranging from sysadmins, business subject-matter experts, and product owners to data scientists) aimed at getting the most value out of data. It is, by its very nature, built on collaboration and transparency across teams, dissolving data silos and improving accountability. Transparency in how data moves within an organization is key to implementing ESG standards across the data lifecycle and business in general. Proactive monitoring and alerts (e.g., through artificial intelligence or native cloud services) embedded within systems throughout the data lifecycle with a modern

DataOps can better meet the need to embed, govern, store, integrate, use, transfer, and report on ESG data for compliance because they provide what is required for DEAP. Proactive monitoring and alerts, once incorporated within a modern DataOps, would prevent concerns around, for example, errors in investment or making loans due to miscommunication across teams in handling, sharing, or understanding data, as it would be intercepted early on. A modern DataOps would also ensure consistent application of business rules and controls across business divisions due to tracking, governance, monitoring and agile teams.

Speed and reliability are added benefits of improved automation – which can form a core part of meeting ESG requirements in a timely manner with room to adjust quickly when needed. Modern DataOps would enable the tracking and tagging of where data is coming from and any changes this has downstream, rather than have ad hoc procedures as the need arises. A modern DataOps is built on practices and technologies that make meeting ESG goals a reality.

In consideration of the previous sections, there are two major factors that are important for financial institutions with respect to any DataOps and ESG initiatives: (i) size of the business, and (ii) global region, both of which have different interactional effects depending on the maturity of DataOps.

Size

Large financial institutions tend to operate with numerous legacy systems, several divisions or teams within data silos, and many layers of hierarchy. Another impact of the technical debt issue that the industry is dealing with. As a result, there can be multiple delays and bottlenecks within the organisation's communication channels that make dissemination of information and decisions required to make changes to DataOps a challenge, despite having the resources to do so. However, large financial services institutions also have the largest volumes of data and customer bases to understand what and where changes need to happen regarding ESG. They also have the resources to invest in onboarding expertise and technologies to make the decision that best aligns their business goals with ESG goals.

Fintech institutions that run on the cloud adopt modern DataOps practices and technologies, where, for instance, ML forms a core part of their services to prevent financial crime. The principles of autonomy, flexibility, and reuse over rebuild guide their DataOps practices and decisions. These principles have allowed them to embrace business agility fully as a core strategy. Given the considerations detailed in the previous section, agility is an important asset that an effective DataOps can provide a business to adapt to evolving ESG standards as well as technologies while also embedding it as a part of their overall DataOps.

While Fintechs build their business model on top of emerging technologies and therefore are flexible in handling scale while remaining agile, small financial businesses that do not have the investment or resources to follow a similar pattern may not be able to make use of emerging technologies to mature their DataOps, at least in the near term. Businesses of this nature, however, have the advantages of a small-scale operation that makes managing their DataOps a simpler problem. While they may lack DEAP, they do not have to deal with legacy issues and therefore can implement their DataOps with ESG embedded within their systems from the very start.

Regional

Large financial institutions that have a global presence must deal with regulatory compliance and varying reporting requirements and standards across multiple jurisdictions. This leads to inconsistency issues, as discussed earlier in this paper. Full adoption and compliance across all fronts will require the same company to meet region-specific ESG regulation standards, which will not always be well-aligned. Additionally, while smaller institutions could have the advantage of complying only with local standards, one of the greatest challenges for multi-national corporates is that requirements are often at the group-level, and therefore impeded by the lack of necessary data from clients in certain jurisdictions. DataOps can be an effective solution to these challenges in understanding the data lifecycle. The more modern the DataOps, the better they will be able to analyze the gaps across all relevant markets.

Third-party risk management is also an important consideration where there is cross-regional business presence. This could mean financial institutions have better outreach to important clients and stakeholders to

scale and expand their markets globally. On the other hand, different countries have different standards for an organization's ESG practices that add a layer of complexity in keeping track of third-party ESG-related risk. For example, when contracting with third-party organizations from a country where unfair labor conditions are more normatively accepted, these organizations may be violating standards of another country.

In all cases, the monitoring, tracking, and reporting on the ESG data can be aggregated, consolidated, used, and shared where there are mature DataOps in place.

4. Where are the opportunities for new technologies to exist within this exchange

In the previous sections, we highlighted how ESG interacts and shapes DataOps across the data lifecycle. This provides ideas on how an organization can make decisions when embedding ESG as a core part of their DataOps, as stages of the lifecycle will persist into the future. But a question remains - where and how should a business invest when implementing their DataOps for a future when both ESG standards and technology evolves?

Firstly, it is worth noting that gaps within ESG standards or regulations present current challenges in this decision-making process. For instance, firms may adopt different standards or classification/taxonomy systems, all of which have multiple and differing reporting requirements. This can play out at the product level, such as from the Sustainable Finance Disclosure Regulation (SFDR), which sets out a particular set of calculation methods, while proposed calculation methodologies from the Financial Conduct Authority (FCA) for similar metrics differ in some regards. As a result, firms will need to prepare separate SFDR and FCA product-level disclosures. This type of inconsistency can also arise due to differences in jurisdiction, for example how the development of the UK Taxonomy differs from the EU Taxonomy. This reinforces the importance of maximizing international interoperability of requirements in this field.

A bigger concern for the near future is the evolving nature of technology. The need for DataOps is, among other things, driven by the growth of digital reach, where an ever-growing volume of data of all types (structured, semi-structured, unstructured) can be captured. Big data (or lack thereof) – the 3 Vs of data volume, velocity, and variety - present problems for financial services in many ways. For small or new businesses, it is the scarcity of data or the capability to refine publicly available data into something of quality that presents challenges for starting their journey with DataOps and maturing it once they are on the journey. On the other hand, larger established businesses that rely on legacy systems, and do not have modernized DataOps to become agile and adapt to changing technological and customer needs may lose opportunities on which they otherwise could capitalize. The advent of one or more of the 3 Vs of big data remains a primary driver of the evolution in DataOps and ESG.

As the ESG and technology landscape evolves, the question of tooling will become increasingly important: should the existing set of tools be kept, or changed? While licenses, skillset, tech stack, tech debt and infrastructure will impact decisions around tooling, when considering the evolving nature of the ESG and technology spaces, two major options will likely play a role for DataOps and ESG within financial services: (i) the availability of new tools specifically for ESG, that use emerging technologies like AI to scan, process and explain regulations to help with compliance; and (ii) creating modern data platforms with tools that have the added benefit of putting in place systems that facilitate integration and embedding of ESG data within the lifecycle for DataOps while improving efficiencies with data within the business.

Cloud computing and AI/ML, now mature technological innovations, developed by the 3 Vs, have increasingly (and in the coming years will to an even greater extent) continue to test the ESG and DataOps interplay, forcing it to adapt and evolve. Massive amounts of data and computation needed for the effective use of ML algorithms have shown businesses how they can become an integral part of their services and DataOps. More than anything else, the impact has been enabled by cloud platforms that provide scalability, flexibility, and cost-effectiveness for storing and processing high-quality data that these algorithms need to learn from and become of value. According to the IMARC group, the global finance cloud market size reached US \$33.6 billion in 2022, and diverse sources predict that AI will add anywhere from \$15-\$200 trillion to the economy by 2030. Over the years, DataOps has seen variations such as MLOps (machine learning operations) and more recently LLMops (Large Language Model Operations), underscored by releases such as ChatGPT.

Considering the disruptive impact these emerging and maturing technologies will have on the market, the interaction between AI/ML and ESG presents a particularly salient area of evolution for DataOps and ESG. As highlighted in Fig.3, their interplay is also likely to be one of exchange.

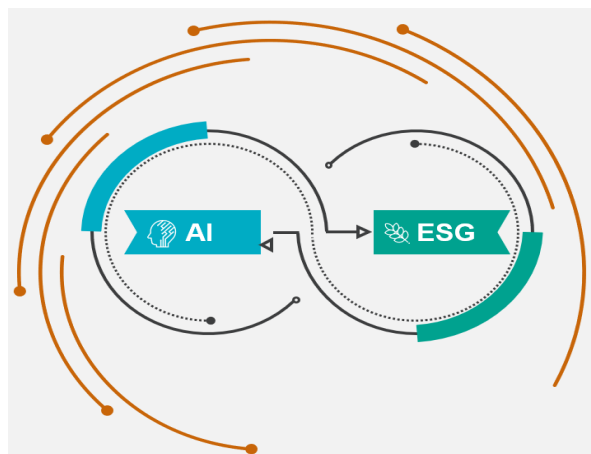


Fig. 3. The interplay between AI and ESG. AI will create ESG related consequences. On the other hand, AI embedded within DataOps can solve ESG related problems.

As a result, the EU AI Act has garnered much attention in 2023. A reaction to current developments in AI, the EU AI Act presents a pyramid/hierarchical risk scoring-based system where different acceptability bands exist for different risk levels. For instance, the use of AI/ML for cognitive behavioral manipulation and social scoring are unacceptable, while AI systems used in products such as medical devices or used for biometric identification are deemed high-risk.

AI/ML paired with cloud computing will impact business ESG strategy if embedded as part of its DataOps. Among other functions, it could be used to quantify the fiscal impact of climate change and integration with an ESG scorecard to develop climate risk modeling, enable better market surveillance and feedback analysis of business services/products on the organization's customers or workforce, and develop sophisticated fraud detection systems to counteract more advanced AI-based cybersecurity threats or breaches.

The evolution of technology used within financial services, which will increasingly become a competitive differentiator, will impact business decisions around tooling and adapting their DataOps. This has clear ESG considerations, which will also be evolving.

5. Closing Remarks

ESG and DataOps integrate throughout the data lifecycle, which holds true for financial and non-financial institutions. However, there are specific concerns and regulations for financial institutions, which we have highlighted throughout this paper. This covers scenarios in the coming years where ESG and DataOps will continue to evolve rapidly due to emerging technologies that inject new types of competition and even create new markets. Businesses of varying sizes and maturity in their DataOps have different conditions to work with and therefore have different courses of actions to take when they are required to embed ESG into their DataOps while meeting their business KPIs. However, one trend that seems to hold true regardless of an organization's unique circumstances is that *ESG is an increasingly important factor that customers, regulators, shareholders, and broader stakeholders deeply care about. From a DataOps perspective, the ideal solution is to adopt the modern practices and technologies which can have ESG data embedded as part of its core operations, rather than something separate run in parallel, if at all.*

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