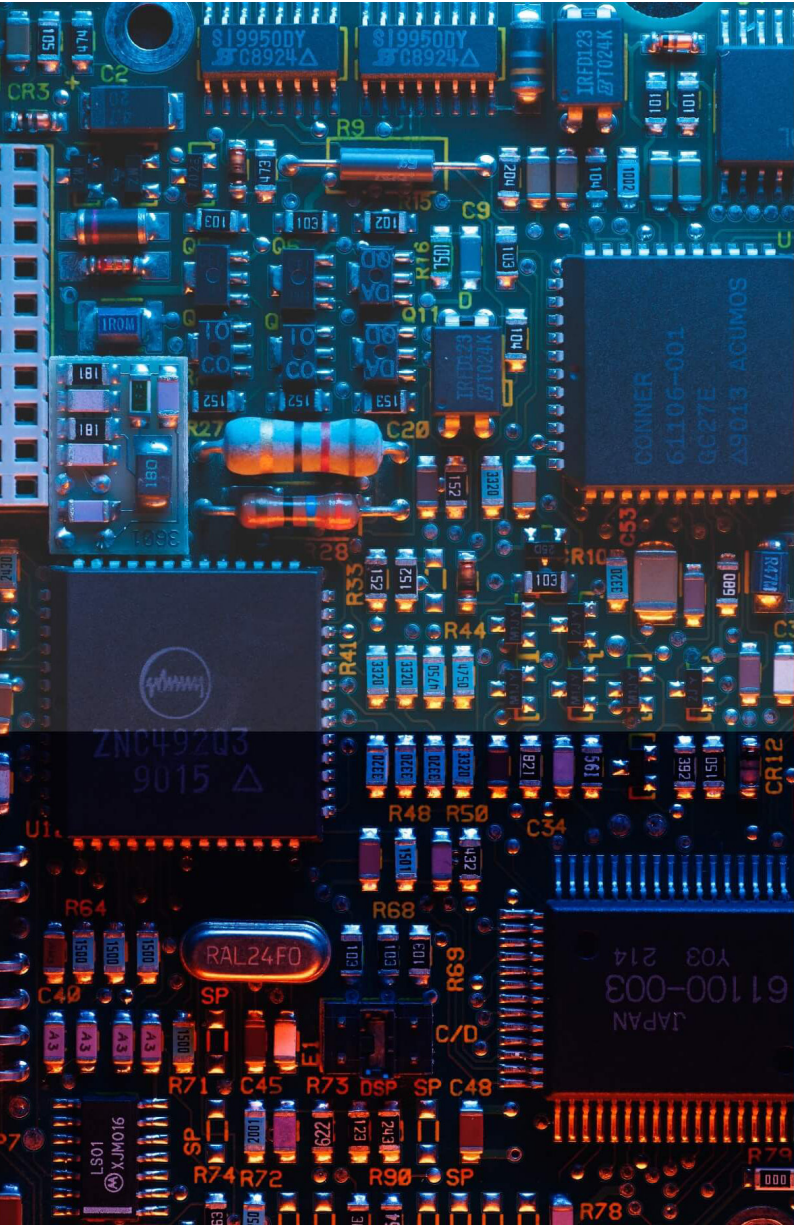verdantix

ESG & Sustainability

Smart Innovators: ESG Reporting And Data Management Software For Investors

By Lily Turnbull, Luke Gowland
With Kim Knickle

January 2024

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A growing number of investors are turning to ESG reporting and data management software because of increasing stakeholder and regulatory pressure, heightened public scrutiny of ESG claims, and concerns over data accuracy and reliability. Against this backdrop, this report provides buyers of investor-focused ESG reporting and data management software with a high-level benchmark of the capabilities of 23 software solutions. Investors across a range of different asset classes should use this report to compare the relative capabilities of vendors in 10 key functionality areas to inform their software purchasing decisions for 2024.

Table of contents

Table of figures

Organizations mentioned

Active Super, Apex Group, Apiday, Atominvest, Australian Securities and Investments Commission (ASIC), CDP, Celsia, Clarity AI, Cority, Dasseti, DWS, Dynamo Software, ESG Book, ESG Data Convergence Initiative (EDCI), European Financial Reporting Advisory Group (EFRAG), Global Reporting Initiative (GRI), Greenomy, Hamilton Lane, impak Analytics, Integrum ESG, Japan Financial Services Agency (FSA), Mercatus, Nasdaq, Novata, Novisto, Position Green, PRI, Pulsora, Reorg, Reporting21, S&P Global, Seneca, Sphera, Sustain.Life, Sweep, Task Force on Climate-related Financial Disclosures (TCFD), UN, US Securities and Exchange Commission (SEC), Worldfavor.

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Investor demand for ESG reporting and data management software is increasing

ESG investing is on the rise. Despite significant challenges, such as pockets of political resistance in the US and the backdrop of an economic downturn, research published by Morningstar in October 2023 highlights an upward trajectory in the integration of ESG considerations into investment decisions. Between 2006 and 2021, the number of signatories to the UN's PRI (Principles for Responsible Investment), a network of investors committed to promoting sustainable investments, rose from 63 to 3,826 — evidence of the growing emphasis on ESG integration within public markets. Furthermore, in recent years ESG investing has begun to take hold in private markets, where until now a historically strong focus on governance had prevailed over social and environmental considerations. As of December 2023, 350 limited partners (LPs) and general partners (GPs) representing $27 trillion of assets under management (AUM) worldwide had joined the ESG Data Convergence Initiative (EDCI), a partnership network established in 2021 to increase transparency and standardize ESG reporting in private markets. Against a backdrop of increasing ESG engagement from investors, this report provides a benchmark of the capabilities of 23 investor-focused software solutions for ESG reporting and data management, which can be used to support buyers' purchasing decisions in 2024.

Developments in the sustainable finance landscape

Investors are using ESG reporting and data management software throughout the investment life cycle to manage a variety of different use cases (see **Figure 1**). In the 2023 global market size and forecast report, we projected that financial services firms will significantly increase spend on ESG reporting and data management software, growing at a CAGR of 32% to reach $470 million in 2027 (see Verdantix Market Size And Forecast: ESG Reporting Software Solutions 2021-2027 (Global)). This rising demand for ESG reporting and data management software is being driven by:

- **A growing emphasis on data transparency and fines for misleading ESG claims.**
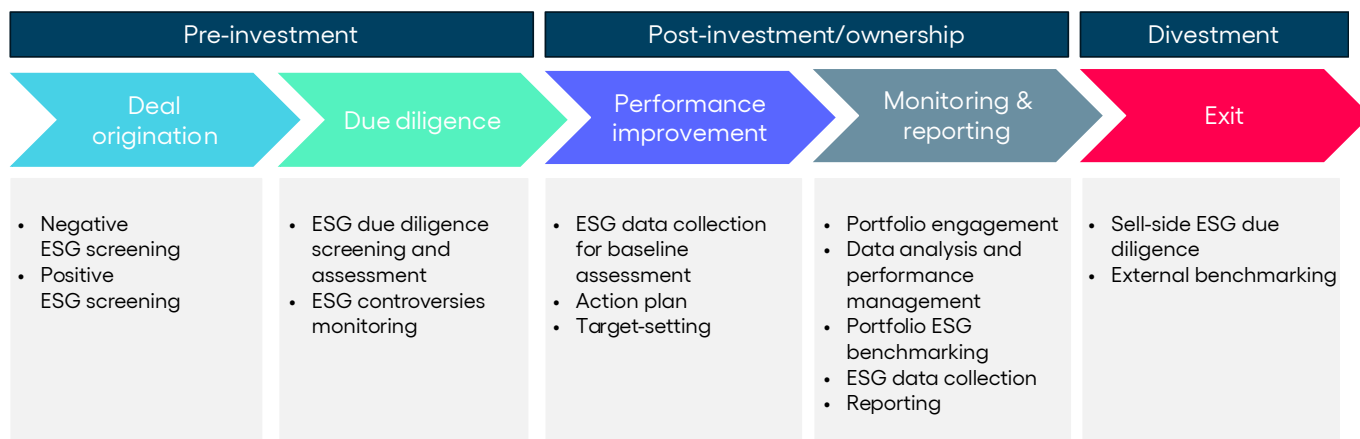 In September 2023, the US Securities and Exchange Commission (SEC) announced that it had fined German asset manager DWS $19 million over misleading statements made by the firm regarding its ESG investment process. Similarly, in August 2023, the Australian Securities and Investments Commission (ASIC) announced that it had launched a court action against superannuation fund Active Super over alleged misleading ESG investment claims. These examples highlight the importance of ESG data transparency and reliability against a backdrop of increasing public scrutiny and litigation. Yet, despite growing concerns, the Verdantix 2023 global corporate survey revealed that 40% of financial institutions do not have the data management capabilities to provide financial-grade data for ESG reporting and disclosures (see Verdantix Global Corporate Survey 2023: ESG & Sustainability Budgets, Priorities And Tech Preferences and for more information see Verdantix Strategic Focus: Delivering Investor-Grade ESG Data).

- **ESG regulatory compliance and reporting targeting the financial market.**
  Since 2020, several ESG and sustainability disclosure regulations targeted at financial market participants (FMPs) have emerged. The EU's Sustainable Finance Disclosure Regulation (SFDR), which came into effect in 2021, requires FMPs to disclose climate risks and other sustainability information embedded in their financial products and firm-wide policies (see Verdantix Market Insight: New SFDR Requirements And The Supplier Landscape). It also introduces fund classifications based on alignment with the EU Taxonomy regulation (see **Figure 2**). Beyond the EU, other jurisdictions are introducing ESG fund labelling requirements, such as the UK's Sustainable Disclosure Requirements (SDR) and the ESG Public Funds guidelines from the Japan Financial Services Agency (FSA) (see Verdantix Strategic Focus: Climate And ESG Disclosures For Financial Institutions).

Figure 1

The ESG investment life cycle

Pre-investment		Post-investment/ownership		Divestment
Deal origination	Due diligence	Performance improvement	Monitoring & reporting	Exit
• Negative ESG screening • Positive ESG screening	• ESG due diligence screening and assessment • ESG controversies monitoring	• ESG data collection for baseline assessment • Action plan • Target-setting	• Portfolio engagement • Data analysis and performance management • Portfolio ESG benchmarking • ESG data collection • Reporting	• Sell-side ESG due diligence • External benchmarking

Source: Verdantix analysis

- **Voluntary and mandatory external assurance of investors' ESG disclosures.**
  As concerns over data accuracy and reliability intensify, investors are seeking external assurance over their ESG disclosures to build trust and credibility (see Verdantix Market Size and Forecast: ESG Assurance Services 2022-2028 (Global)). Under the EU's Corporate Sustainability Reporting Directive (CSRD), large and listed European firms – as well as non-EU firms with significant operations in the EU – will need to report their sustainability impacts, including in their value chains, and obtain external assurance over disclosures. This will require the collection of accurate, reliable ESG data from portfolio companies. Although the SFDR does not explicitly mandate external assurance, given the interoperability between the CSRD, the EU Taxonomy and the SFDR, we can expect external assurance to become a prerequisite for confident SFDR reporting.

- **ESG portfolio management to achieve long-term value creation.**
  Investors increasingly recognize that ESG management of portfolio companies can create long-term value. Higher exit multiples due to enhanced risk mitigation, higher employee engagement, and competitive differentiation are all hallmarks of effective ESG management. Research from PwC suggests that private equity investors often incorporate ESG topics into the post-acquisition plans for their new holdings, thereby taking a more proactive role in portfolio ESG engagement and management. Accordingly, ESG reporting and data management software is being used by investors to engage with their portfolio companies, track ESG performance and monitor progress towards sustainability targets (see Verdantix Strategic Focus: ESG Reporting Tools For Private Equity Firms).

Figure 2

Definitions and disclosure obligations under SFDR Articles 6, 8 and 9: product classifications

SFDR Article	Definition	Disclosure obligations on a product level
Article 6	• Products that do not integrate ESG considerations into the investment decision-making process	• The manner in which sustainability risks are incorporated in the product's investment decisions and strategy • The outcome of an assessment into the likely impacts of sustainability risks • The return of the financial products made available *To be included in pre-contractual disclosures.*
Article 8	• Funds with sustainability characteristics • A range between non-ESG products and products that rank highly on ESG-scoring assets	• The extent to which (if at all) the funds include environmentally sustainable investments, or investments that uphold social objectives, mirroring the EU Taxonomy • How the environmental and social characteristics are met *To be included on the website.*
Article 9	• Financial products that have sustainable investment as their objective	• How the designated benchmark is aligned with the investment objective • Why and how the designated index differs from a broad market index • Where information can be found and accessed for the methodology used for the calculation of the benchmark • When no benchmark is assigned, how the objective will be achieved • If the financial product has a reduction in carbon emissions as its objective, information to be included in pre-contractual disclosures on that objective and how it is aligned with achieving the long-term global warming objectives of the Paris Agreement *To be included on the website.*

Source: Verdantix analysis

Investor-specific functionality emerges as a distinct software category

ESG reporting and data management software for investors is one of the fastest growing software segments, driven by compliance with ESG disclosure regulations, ESG data complexities and mounting public pressure to demonstrate transparency. Verdantix defines ESG reporting and data management software as:

> *"ESG software solutions that allow businesses to collect, analyse and manage ESG information to drive sustainability performance and report to mandatory ESG regulations and voluntary standards and frameworks. This encompasses ESG financial reporting (including double materiality), ESG risk management, impact assessment and sustainability reporting across environmental, social and governance issues, within an enterprise and across the value chain."*

Our definition covers software vendors from a range of backgrounds, encompassing solutions targeted at investment firms looking to prioritize their reporting and at organizations looking to collect, analyse and manage data to drive performance and reporting.

Evaluated firms and selection criteria

Verdantix reviewed the capabilities of over 100 vendors to produce a shortlist of 23 ESG reporting and data management software providers targeted to investors' needs (see **Figure 3**). To be included in this report, vendors had to:

- **Possess reporting capabilities across E, S and G metrics.**
  To fall within scope of this study, vendors were required to demonstrate functionality to allow users to track and report the full spectrum of ESG metrics required by the major reporting frameworks. This inclusion criteria automatically excluded vendors primarily focused on environmental factors, without provisions for social and governance issues. Similarly, the inclusion criteria ruled out firms whose business model is centred around ESG data collection and management but lacks capabilities to conduct reporting in line with globally recognized frameworks.

- **Demonstrate a clear go-to-market strategy aimed at investor needs.**
 Given the distinct data management and reporting needs of investment firms, this report only focuses on vendors offering dedicated functionality for investors to collect, manage and report ESG and sustainability data. Vendors that also offer corporate reporting software were required to provide a differentiated platform targeting investors' ESG needs.

- **Provide reporting capabilities for large enterprises with at least $1 billion in revenue.**
  This report is intended to focus on vendors with the organizational, financial and technological resources to meet the needs of large investment firms. As a result, all vendors included within the scope of this study were required to have at least 20 full-time employees to support their solution delivery.

Figure 3
Selection process for identifying smart innovators
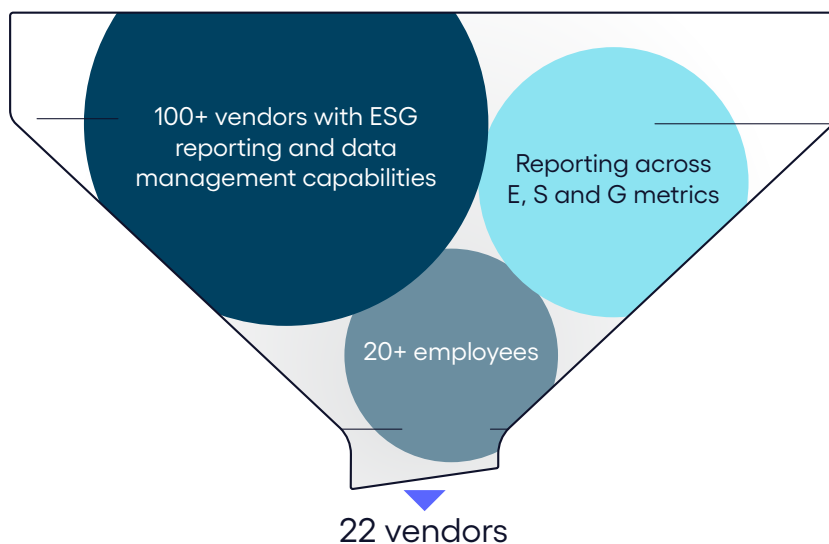
Source: Verdantix analysis

Vendors from a range of backgrounds target the investor reporting market

As the market for ESG reporting and data management software matures, investors are faced with an overwhelming number of different options — ranging from well-established players to new market entrants. Our research finds that the vendors entering the market have varied value propositions and go-to-market strategies that reflect their diverse heritages. Players in the investor-focused sustainability reporting market have three main backgrounds:

- **Drawing on a history in the financial services market.**
  In recent years, vendors with offerings tailored to the financial services sector have been building out their ESG data management and reporting capabilities. Examples of providers covered in this report encompass Apex Group, Dynamo Software, ESG Book, Nasdaq and S&P Global. These vendors benefit from deep sector expertise, which Verdantix research finds to be the most important factor when selecting a software vendor (see Verdantix Global Corporate Survey 2023: ESG & Sustainability Budgets, Priorities And Tech Preferences). A number of these providers offer extensive data repositories for public market investors, with strong analytics tools to help investors contextualize and report portfolio ESG data.

- **Possessing a mature EHS offering and a dedicated investor offering.**
  Cority and Sphera both fall within the scope of this research. Traditionally recognized as environment, health and safety (EHS) vendors, both providers have introduced dedicated reporting tools for investors. Cority entered the financial services market through its acquisition of Reporting21, which was targeted on this sector. Cority made further inroads into the financial services sector through its acquisition of Greenstone in the first half of 2023. Successful vendors from an EHS background offer a solid foundation to build out sustainability disclosure capabilities, providing users with significant ESG data coverage as well as strong workflow and analytics capabilities.

- **Emerging from an ESG background with a dedicated investor offering.**
  Numerous software vendors in the market provide ESG and sustainability reporting platforms that streamline the data collection process and facilitate disclosures of ESG data against global frameworks and ad-hoc investor data requests. This is the largest category of vendors within this report, including Apiday, Celsia, Clarity AI, Dasseti, Greenomy, Novata, Position Green, Pulsora, Seneca, Sweep and Worldfavor. With the ESG software market showing continued growth since 2021, there has been significant investment within this segment (see Verdantix Market Size And Forecast: ESG Reporting Software Solutions 2021-2027 (Global)). In March 2023, Novata announced a $30 million Series B funding round led by Hamilton Lane, and in September 2023 Pulsora announced a $20 million Series A funding round.

Core capabilities essential for ESG reporting software providers

A recent report from the European Central Bank (ECB) found that banks in the EU are not yet meeting their full ESG reporting requirements, with only 6% assessed as providing "broadly adequate" quantitative disclosures across all categories under review. To overcome data management complexities and streamline the reporting process, software vendors have developed offerings centred on four core capability areas (see **Figure 4**). As investors consolidate their ESG information architecture and focus on enhancing reporting processes, they will seek solutions with functionality to:

- **Aggregate external data through a combination of data integrations and surveys.**
  Approaches to collecting and managing ESG data vary greatly across a portfolio. Accordingly, investors require software with functionality to centralize large quantities of structured and unstructured data. Vendors covered within this report offer functionality to distribute surveys – either following established reporting frameworks or on a custom basis – to collect data from across the portfolio. Providers are further streamlining the data collection process through application programming interface (API) integrations to data sources, bulk CSV uploads and manual data upload. Heading into 2024, vendors are looking to incorporate eXtensible Business Reporting Language (XBRL) into their offerings to tag ESG data in a machine-readable

format. The European Financial Reporting Advisory Group (EFRAG) plans to release a draft XBRL taxonomy in the first quarter of 2024, which will be subject to a 60-day consultation.

- **Report in line with voluntary frameworks such as the EDCI and PRI.**
  Findings from our recent global corporate survey suggest that support for voluntary reporting standards remains high despite the influx of regulated disclosures (see Verdantix Global Corporate Survey 2023: ESG & Sustainability Budgets, Priorities And Tech Preferences). For the next three years, investors will continue to report in line with industry-recognized reporting frameworks – such as the CDP, EDCI, Global Reporting Initiative (GRI) and PRI – alongside regulated ESG disclosures. Given the growing emphasis on interoperability, vendors are simplifying the process for complying with multiple different data requests through standards and framework mapping to automatically populate data that are common across frameworks, avoiding the duplication of efforts.

Figure 4
ESG reporting and data management capabilities and definitions

Category	Sub-category	Functionality definition
Pre-investment due diligence	Due diligence screening	Conduct pre-investment ESG due diligence screening, including ESG risk and opportunity identification and ESG controversies monitoring.
Data acquisition	Data acquisition and tagging	Facilitate data acquisition from a variety of sources across an investment portfolio (i.e. organization questionnaires, firm websites and API integration) and tagging (i.e. XBRL).
	Data quality enhancement	Offers functionality aimed at improving data quality through AI and other estimation enhancement tools. Contains in-platform guidance for portfolio companies (PortCos) on ESG data collection to enhance data quality.
Data management	Portfolio configuration	Configure and visualize portfolio structure – including by asset class, sector or geography –, integrate new investments and separate divestments. Ability to create individual profiles for PortCos.
	Performance management	Visualize ESG performance of PortCos, and implement and monitor performance improvement initiatives.
	Benchmarking	Benchmark and visualize ESG performance across investment portfolios, and benchmark ESG performance against equivalent public firms using external data sets.
	Engagement tools	Provide internal and external stakeholders who do not regularly use the software with access to metrics in real time (i.e. through an investor portal). Contains in-platform guidance for PortCos and others on analysis and insights.
Reporting	Voluntary frameworks	Support voluntary reporting in alignment with standards such as the ESG Data Convergence Initiative (EDCI), PRI and TCFD. Allow users to create custom metrics and weightings to align with specific investment strategies and to manage data requests from investors.
	Regulated and mandated frameworks	Simplify and manage the processes for complying with regulated disclosure frameworks such as CSRD, EU Taxonomy and SFDR.
	Workflows and auditability	Configure workflows for different user groups and ensure the auditability of records, such as disclosure approvals, timestamping and tracking historical inputs.

Source: Verdantix analysis

- **Comply with regulated and mandated frameworks such as the SFDR and EU Taxonomy.**
  Intensifying ESG regulatory pressure seeks to hold sustainability disclosures to the same standard as financial disclosures. In preparation, investors will need to formalize their data management systems and improve ESG reporting processes. Software vendors included within the scope of this report were expected to demonstrate functionality to meet regulatory reporting requirements such as the EU SFDR, the EU Taxonomy, and climate disclosure rules based on Task Force on Climate-related Financial Disclosures (TCFD) recommendations.

- **Create records for the audit and assurance of disclosures.**
  In response to evolving requirements for data auditability, vendors offer a range of tools designed to ensure the auditability of records within their platforms. Emerging ESG and sustainability disclosure regulations will call for investor-grade ESG data — which we define as automated, auditable, timely and accurate (see Verdantix Strategic Focus: Delivering Investor-Grade ESG Data). One key facet of this is the integration of granular role-based permissions management functionality as well as user, time and activity logs, providing a transparent historic record of data inputs and modifications.

Vendors differentiate their offerings through innovative functionality

To gain competitive advantage in an increasingly crowded market of digital solution providers, vendors are differentiating their product offerings with innovative functionality. Alongside fuelling geographic expansion, large funding rounds are also feeding into product innovation, with many vendors incorporating AI into their product roadmaps. Our research identified several capability areas where providers are focusing on product innovation:

- **Sustainability performance forecasting and benchmarking.**
  Functionality to visualize and manage portfolio ESG performance is a key capability for investors, particularly for investments with a longer time horizon like private equity. For example, Sweep provides investors with performance forecasting functionality and tools to simulate carbon reduction pathways. Another example is ESG Book, which provides investors with an implied temperature score for 6,000 public corporations based on publicly disclosed emissions data. Internal and external benchmarking is also emerging as a critical functionality area for both public and private markets investors, particularly during divestment or when launching an initial public offering (IPO).

- **Engagement tools for internal and external stakeholder groups.**
  As investors focus on improving transparency and building trust, engaging with a range of stakeholders will be key. Throughout the investment life cycle, tools embedded within software can facilitate engagement with key stakeholders such as LPs, asset owners and portfolio companies (PortCos). Vendors are providing a range of inbuilt functionality to streamline these interactions. For instance, Apiday's dedicated LP reporting tool helps GPs manage LP data requests through the provision of microsites that can be customized and frequently updated. Our research also found that several vendors, such as Greenomy, Position Green and Sweep, offer dedicated online training and certification courses to educate employees on reporting standards.

- **Data quality enhancement.**
  Investors must collect vast quantities of structured and unstructured ESG data with varying levels of quality, consistency and standardization. Manually verifying ESG disclosures is a seemingly impossible task for internal analyst teams. In response to this, vendors offer a range of tools aimed at improving data quality with varying levels of automation for quality controls. Clarity AI leads the market in this space – the New York-headquartered vendor uses machine learning (ML) to estimate missing quantitative metrics and provides confidence levels for all estimated data (see **Figure 5**).

Figure 5

ESG reporting and data management software capabilities assessment

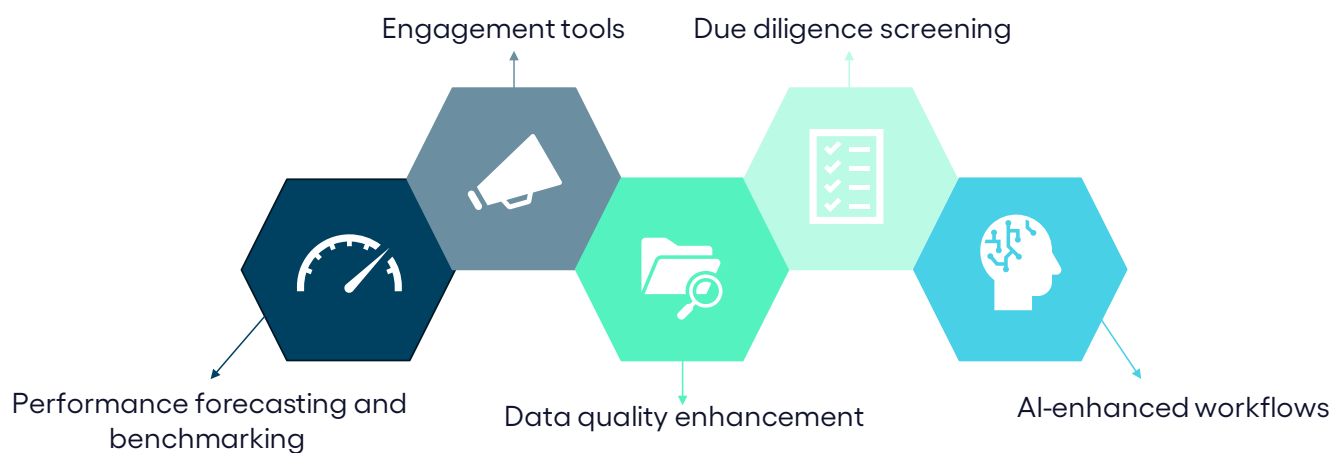|	Pre-investment due diligence	Data acquisition		Data management				Reporting		
	Due diligence screening	Data acquisition & tagging	Data quality enhancement	Portfolio configuration	Performance management	Benchmarking	Engagement tools	Voluntary frameworks	Regulated & mandated frameworks	Workflows & auditability
Apex Group	◕	◕	◕	●	◐	◕	◕	●	◕	◕
Apiday	◔	●	◕	●	◐	◐	●	●	●	◐
Atominvest	◕	◕	◐	◕	◐	◐	◕	◕	◕	◕
Celsia	○	◕	◐	◐	◕	○	◕	○	●	◔
Clarity AI	●	◕	●	●	◕	●	◐	◐	●	◔
Cority	◐	◕	◐	◕	◕	◐	◐	●	●	◕
Dasseti	◕	◕	◕	●	◕	◐	◕	◐	◕	◐
ESG Book	◕	◕	◕	◕	●	◐	◐	●	●	◕
Greenomy	◐	●	◕	◐	◕	◕	◕	◐	●	◕
impak Analytics	◐	◕	◐	◐	◕	◕	◕	●	◕	◔
Integrum ESG*	◐	◕	◐	◕	◐	◕	◐	◐	○	◔
Mercatus*	○	◔	○	◐	◔	○	◐	◔	○	◐
Nasdaq	◐	●	◕	●	◕	◐	◕	●	◔	◐
Novata	◕	◕	◕	◕	◔	◕	◕	●	◐	◔
Novisto	◔	●	◐	◐	◕	◕	◐	●	●	●
Position Green	◕	◕	◕	◕	◕	◕	◕	●	◕	◕
Pulsora	◐	●	◕	◕	◕	●	◕	●	◕	◕
S&P Global	◕	●	◕	●	●	●	◕	◔	●	◐
Seneca	◕	◕	◐	◕	◕	◐	◐	◕	●	◕
Sphera	○	◕	◕	◕	●	◕	◐	●	●	◕
Sustain.Life	◐	◕	◕	◐	◐	◕	◕	◐	○	●
Sweep	◐	◕	◕	◐	●	◕	●	◕	◕	◕
Worldfavor	◐	◕	◕	◕	◕	◐	◐	●	●	◐

Market-leading functionality, with differentiated offering	●
Out-of-the-box functionality	◕
Some evidence of functionality	◐
Some product marketing	◔
No demonstrated evidence	○

Note: *scoring based on publicly available information, rather than software briefing

Source: Verdantix analysis

Figure 6

Product innovations in the market

Source: Verdantix analysis

- **Due diligence screening.**
  Pre-investment due diligence provides investors with the prerequisite information to align individual investment decisions with the overall investment strategy and foster regulatory compliance. Novata, Position Green and Seneca are examples of vendors that offer functionality to conduct ESG due diligence assessments and visualize how a potential investment will impact the overall portfolio performance. Other examples include Dasseti, which allows investors to create customizable scorecards based on survey findings, and Clarity AI, which uses natural language processing (NLP) algorithms to conduct pre-investment ESG controversies screening for public companies, helping investors to identify potential risks associated with an organization's ESG practices.

- **Incorporation of AI into workflow management.**
  Generative AI (otherwise known as GenAI) — a class of ML algorithms that generate new data samples based on input patterns — soared in popularity throughout 2023. GenAI's ability to create new data samples has broad applications across a range of ESG workflows, automating processes to optimize efficiency (see **Figure 6**). The vendor landscape reflects a spectrum of perspectives on AI adoption, with some taking a cautious approach and others incorporating GenAI tools into ESG workflows. For example, Position Green incorporates AI analysis into its performance management module to synthesize the key findings and insights from charts, and pinpoint topics that need improvement. Belgium-headquartered Greenomy has launched three AI tools, with the most innovative being its Best Practices Advisor, which scans ESG reports to help firms identify relevant best practices.

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Contact

Verdantix Ltd, 30 Stamford Street, London
SE1 9LQ, United Kingdom

contact@verdantix.com
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