MAP INSIGHTS

New Era in Sustainability Reporting: **Artificial Intelligence Supported Solutions**

As we complete the tenth anniversary of the signing of the Paris Agreement, sustainability has become a priority for companies of all sizes and sectors. Especially new sustainability regulations and data-driven reporting expectations from the market increase the need for sustainability reporting day by day. Regulations such as the European Green Deal, European Sustainability Reporting Standards (ESRS), and TSRS (IFRS S1-S2) not only make sustainability reporting mandatory in many sectors, but also provide very specific guidelines on the information that these reports should contain and the sources of this information. In the light of all these developments, companies working both nationally and globally need to put sustainability at the centre of their strategies.

In many sectors, large companies and conglomerates that have made efficient use of the transition period in recent years have largely completed their preparations for the new era focused on sustainability reporting, but especially small and medium-sized enterprises that have not yet invested or cannot invest in reporting may find themselves in a disadvantageous position in the coming period. In the global market, SMEs accounted for 70% of all GRI reporters, but it is possible to say that this rate is much lower for SMEs in Türkiye and similar markets. According to a survey conducted by the Istanbul Chamber of Industry (ISO) in 2024 with 717 companies representing industrial organisations in Turkey, sustainability awareness in industry is 49%, while the total rate of companies publishing public reports on sustainability is only 6%. It is of great importance for all companies, including SMEs, to take action today in order not to be disadvantaged against competitors and to make strategic sustainability decisions.

In recent years, artificial intelligence and the expansion in its areas of use have attracted as much attention as the regulations in the field of sustainability. Artificial intelligence tools, which change the data processing, communication and information gathering practices of both organisations and individuals, also promise to facilitate sustainability reporting. Reporting processes, which are traditionally time-consuming, complex and based on intensive human resources, become easily manageable with the contribution of artificial intelligence. But what makes the real difference here is not only the technology, but also the feeding of this technology with sustainability expertise. Structures that not only process, but also make sense of data piles; that not only comply with regulations, but also guide them, offer a powerful opportunity for companies to achieve real transformation in sustainability. In the rest of this article, we will closely examine the relationship between sustainability and artificial intelligence and talk about how developments in this field can help companies.

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Challenges That May Be Encountered in the Sustainability Reporting Process

While swift action is crucial when it comes to sustainability, there are several factors that may hinder companies' progress in this process. Key challenges include limited budgets and resources, conceptual confusion, and the size and complexity of data sets.

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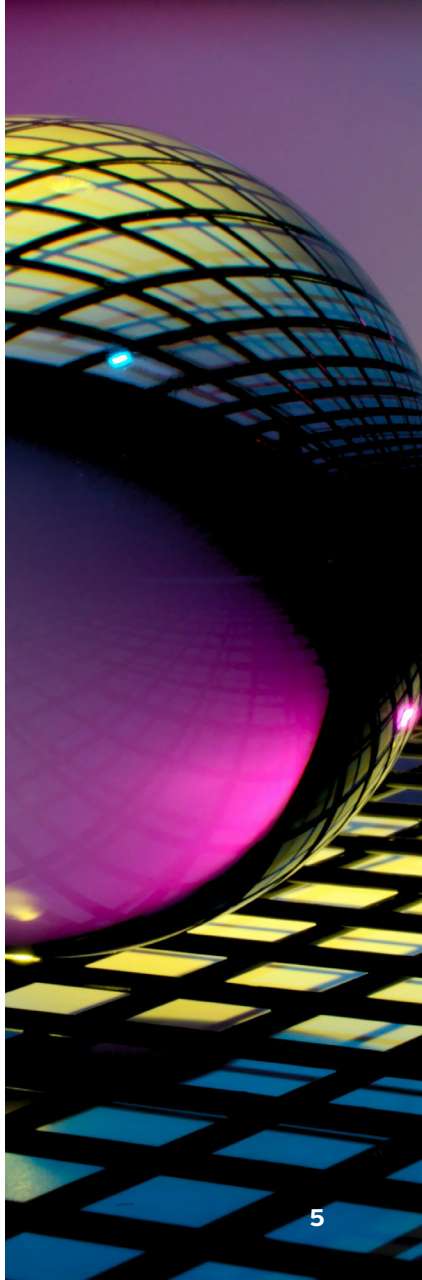
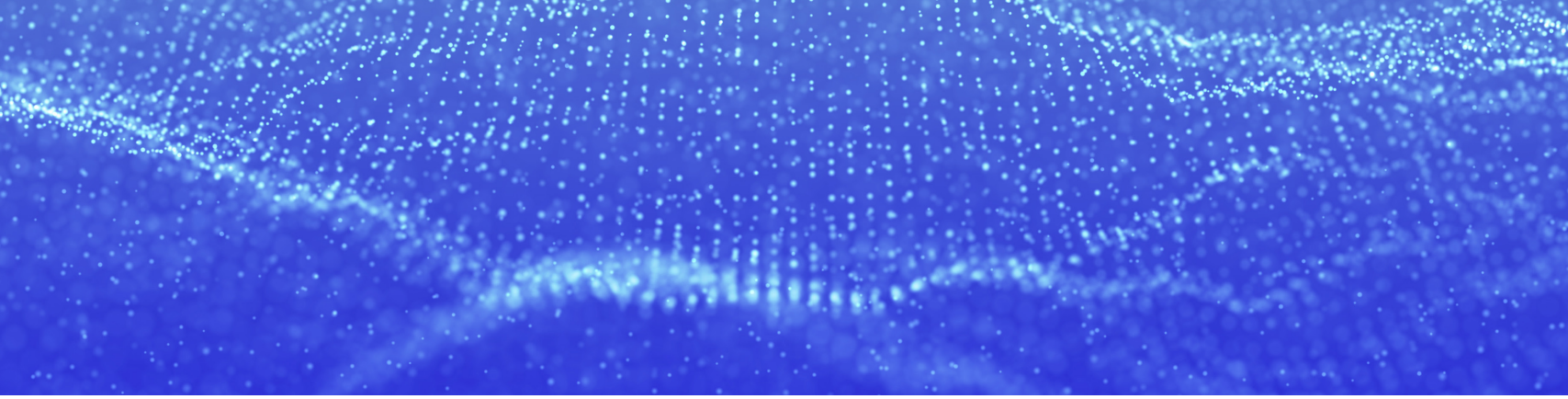
Cost and Resource Inadequacy

Even preparing a basic-level sustainability report today can incur significant costs. For instance, in the United States, the cost for an SME to produce a report ranges between $5,000 and $20,000. Reports that follow more comprehensive frameworks such as the Global Reporting Initiative (GRI) or Integrated Reporting (IR) can exceed $50,000. In addition to the financial burden, sustainability reporting is also labor-intensive. Under the CSRD framework, it is estimated that an SME aligning its report with the European Sustainability Reporting Standards (ESRS) will spend an average of 650 working hours in the first year. For large companies, this number can rise to 1,500–1,700 hours. These unforeseen costs often cause companies to fall behind in their reporting processes or produce low-quality outputs.





Framework Confusion

There are numerous standards and frameworks that organizations can refer to for sustainability reporting, including the Global Reporting Initiative (GRI), the Task Force on Climate-related Financial Disclosures (TCFD), the European Sustainability Reporting Standards (ESRS), and the Türkiye Sustainability Reporting Standards (TSRS – IFRS S1 and S2). Each framework has its own technical requirements and thematic focus. Many companies are required to comply with multiple standards simultaneously, which adds a significant burden on internal teams and necessitates continuous expertise development within the organization. Keeping up with updates across various frameworks and adapting reporting structures accordingly is also a time-consuming task. For companies lacking in-house expertise, understanding how to align with each framework can be overwhelming.

Recognizing that many companies are lagging in their sustainability reporting preparations and struggling with alignment across different frameworks, the European Union recently introduced the Omnibus Directive. This new guideline offers a temporary reprieve by postponing the requirement to report under multiple frameworks and simplifying the overall process. However, this additional time should be viewed as an opportunity for companies to strengthen their reporting capabilities. Those that use this grace period effectively to build readiness will face fewer challenges in the future when reporting becomes mandatory across these frameworks.

Data Collection and Verification Processes

The credibility of sustainability reports largely depends on the accuracy and reliability of the underlying data. However, for many companies, collecting data and transforming it into meaningful insights remains a major challenge. According to a 2024 Deloitte survey, 88% of participating companies identified gathering meaningful and verifiable data as one the top three most difficult aspect of sustainability reporting. The same study revealed that only 15% of companies had a solid grasp of their Scope 3 emissions data. Data collection and verification become particularly problematic when dealing with complex metrics such as suppliers' carbon footprints, energy and water consumption, workforce diversity, and human rights practices.

Incomplete, inaccurate, or context-free data not only compromises the quality of the report but also exposes companies to accusations of greenwashing. As a result, verifying data has become just as essential as collecting it. Reporting frameworks such as the CSRD and TSRS now require assurance or verification steps as part of the reporting process, emphasizing the importance of data reliability. To avoid greenwashing allegations and to ensure the production of trustworthy, globally aligned reports, data assurance is emerging as a critical and growing trend in sustainability reporting.

Evolving Stakeholder Expectation

Sustainability reports are no longer prepared solely for investors; they may also target customers, employees, regulatory bodies, and civil society organizations. Since each stakeholder group is interested in different aspects of a company's sustainability performance, the reporting process requires careful attention to both content and presentation. For instance, while investors may focus on carbon emissions, employees might prioritize diversity policies, and NGOs may be more concerned with ethical practices in the supply chain. Accordingly, providing clear, comprehensive explanations and presenting data in an accessible format becomes a critical responsibility for reporting teams.

A New Ally: Artificial Intelligence

Over the past decade, sustainability reporting has become a vital tool for companies to assess their environmental and social impacts. In recent years, the widespread use of artificial intelligence (AI) has transformed the way we work across many domains. Today, 82% of global companies report that they are either actively using or trying to adopt AI in their daily operations.

Given the growing prevalence of AI tools and the ongoing challenges in sustainability reporting highlighted above, AI is emerging as a practical solution. In particular, AI-driven tools are increasingly valued for their ease of use and their ability to save time in complex data processing tasks. These capabilities position AI as a key enabler for the future of sustainability reporting.

Although artificial intelligence presents a new opportunity in the field of sustainability, many companies have yet to fully leverage it for this purpose. While 30% of companies report using AI in supply chain planning, it remains unclear how much of this use is truly focused on sustainability goals.

So, in what areas—and how—can AI contribute to sustainability reporting processes?

Data Collection and Processing

AI can automatically collect, clean, and analyze data from multiple sources. Compared to manual methods, this significantly speeds up data processing and reduces the likelihood of human error. Currently, around 40% of companies use AI for data analysis across various domains. When it comes to data, AI-based tools can process not only numerical data but also text-based information. Natural Language Processing (NLP), a branch of machine learning, is particularly effective in analyzing qualitative and unstructured text data.

Compliance with Reporting Standards

AI can be used to generate reports aligned with different frameworks—such as GRI, CSRD, and TSRS—using the same data set. This enables companies to more easily adapt to varying regulatory requirements. AI can also identify overlapping indicators across different standards, reducing the workload during the data entry and mapping process.

Strategic Insights and Forecasting

AI can analyze historical data to identify trends and generate forecasts, offering valuable insights for strategic decision-making. This supports companies in achieving their long-term sustainability goals.

Cost and Time Efficiency

By automating large parts of the reporting process, AI saves both time and financial resources. This is especially beneficial for SMEs with limited capacity and budgets.

Despite its many benefits, it's important not to overlook the limitations of artificial intelligence. While technological progress is impressive, AI tools that are not shaped by sustainability expertise may fall short in meeting all the nuanced requirements of sustainability reporting. In fact, 35% of companies currently using AI believe their teams lack the technical knowledge needed to fully utilize these tools.

To effectively leverage AI in sustainability, it is essential to invest in tools designed by teams with field experience, a solid understanding of regulations, and deep institutional knowledge. In short, while AI offers notable advantages in terms of efficiency and cost, it cannot fully replace a dedicated sustainability team. AI solutions must be guided and supported by experts in the field, and tailored to the specific needs of the organization.

Artificial Intelligence: The Key to Next-Generation Sustainability Reporting

Sustainability reporting is no longer merely a symbol of goodwill—it has become a strategic necessity and a competitive advantage. In an era marked by tightening regulations, investors prioritizing transparency, and rising consumer expectations, companies can no longer simply claim their sustainability performance—they must prove it.

Meeting these growing demands, however, is not equally easy for all companies. SMEs often struggle with limited budgets, a lack of in-house expertise, and the complexity of data requirements. This is where artificial intelligence (AI) emerges not just as a technical tool, but as a strategic equalizer—helping smaller players stay in the game. Meanwhile, large corporations are turning to AI to make sense of vast data sets and fragmented knowledge spread across departments and operations.

AI-powered solutions offer the potential to produce high-quality reports at a lower cost, in less time, and with fewer human resources. Of course, these tools are not miracle workers on their own—the real value lies in combining them with domain knowledge and strategic guidance.

Today, AI tools are rapidly evolving and becoming more accessible across industries. However, caution is essential—especially in highly dynamic areas like sustainability reporting, where standards and regulations are constantly changing.

In such a critical process, companies must aim to minimize error margins. Therefore, blindly adopting generic AI tools for sustainability reporting is not a strategic move. The true benefit will come from using AI solutions that are developed with deep expertise and deployed within a well-defined strategic framework.

In the near future, the winners in sustainability reporting will not only be those who comply with regulations—but those who smartly embrace digital transformation. For organizations, the next crucial step is clear: integrate innovative digital tools into their core operations.

Thank you

We would like to thank all our team members and valued business partners who contributed to the preparation of this report.

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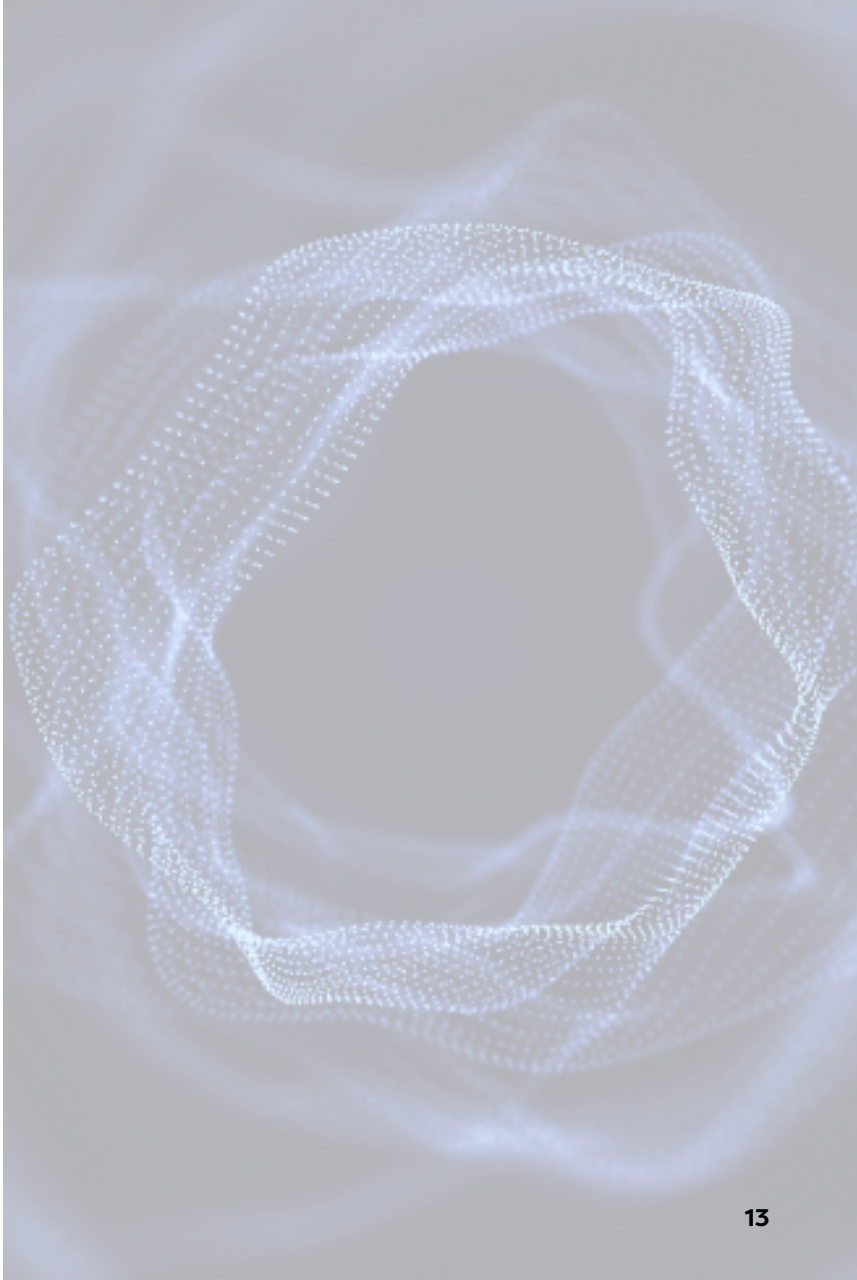


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