

Technology in ESG reporting for sustainable impact

ESG principles encapsulate a company's commitment to sustainability and ethical practices. To what extent can automation technologies, such as AI and blockchain, be integrated into ESG practices to ensure long-term sustainable impact?

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Embracing automation in ESG

On 31 July 2023, the European Commission adopted the European Sustainability Reporting Standards (ESRS) for use by all companies subject to the Corporate Sustainability Reporting Directive (CSRD). This adds to the latest set of European ESG frameworks, such as the SFDR and the EU Taxonomy, and reinforces the economic transition towards a more sustainable and responsible approach to conducting business. These ongoing developments reflect the societal

expectations from businesses and governments to adequately address global issues in ESG by appealing to responsibility and accountability.

In recent years, we have also witnessed rapid and profound technological advancements reshaping industries and societies. In particular, artificial intelligence (AI) and blockchain have made headlines as strategic resources to enable the digital transition. These developments, like ESG, align with values aimed at mitigating risks and unlocking potential opportunities. How do these technologies support the Green Agenda in management processes and reporting capabilities?

Technological potential for ESG reporting

The growth in technology will pave the way towards a greener future. With the introduction of new data streams, new tools are needed to help organizations deal with different

types of data that will have to be collected, consolidated, and analyzed. Also, new technologies will benefit the methodological rigor of the calculations of sustainability metrics. It even deals, albeit partially, with the human capital risk of talent shortages.

Advanced analytics techniques, including machine learning and AI, support the analysis and management of large volumes of data effectively. Novel climate models offer enhanced prediction accuracy, which helps policy-makers to craft more effective strategies for mitigating climate change impacts.

For instance, climate forecasts derived from models, based on machine learning methods, can support regulatory requirements, such as ORSA. This then can provide insights into the future vitality of financial institutions. In document-heavy

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industries, where extracting the right information can become challenging, natural language processing (NLP) can be leveraged. This enables automating manual tasks and adequate distillation of new insights from unstructured data sources. Think of sentiment analysis, document summarization and information standardization. As such, AI can track sustainability risks and opportunities otherwise left untouched.

Blockchain technology also offers solutions in the ESG framework. As ESG reporting matures, so does the need for the verification of information. Blockchain’s immutability supports this by making it difficult for users to manipulate ESG data and engage in greenwashing. Furthermore, it enhances supply chain transparency by tracking ethically sourced materials, enabling proactive identification of ESG risks and opportunities throughout the supply chain.

To give a practical example, consider the management of electricity grids. With IBM’s blockchain, Dutch energy company Vandebron and grid operator TenneT enable electric vehicle owners to securely supply grid power from their car batteries onto the grid.

Addressing hurdles

Every new advancement faces its own challenges. Here, there are general regulatory and operational risks to consider in applying these technologies. When AI tools are trained on inaccurate or biased data, they can produce misleading or prejudiced insights and content. Those who have experience in using ChatGPT may already have first-hand experience with these AI hallucinations.

To counter this, human oversight and rigorous data governance are essential for minimizing incidents arising from erroneous or unverified training data, which can sometimes yield believable yet incorrect information. Ensuring the privacy and security of sensitive data during training and deployment remains a paramount challenge. Furthermore, maintaining user trust necessitates the prevention of unauthorized access to generative AI systems.

On the other hand, blockchain’s immutability poses challenges under the EU’s ‘right to be forgotten’ rule, which grants Europeans the right to erase their online data. GDPR, in effect since May 2018, extends this, allowing data deletion and blocking third-party processing.

Additionally, blockchain’s energy use can be a concern, as it may require an expanding network of energy-intensive servers and data centres. This energy use can in turn even counter achieving ESG goals.

Beyond technology towards global standards

Of course, technology is merely a tool and not the way to solve challenges within sustainability and ESG reporting. As new insights are distilled, standards will have to be revised to keep up with technical and societal innovation. Furthermore, different global regions apply different reporting standards for different companies. This leads to complexities and adversely affects the comparability of reports across countries and companies.

Ultimately, ESG goes beyond mere reporting and disclosure. It involves aligning corporate practices and operations with innovative approaches and sustainable methods for generating business value. As AI and blockchain technologies progress, we expect use cases to emerge in multiple places in the value chain. Establishing stronger links between metrics and disclosures, operational enhancements as well as strategy and risk management fosters a constructive business transformation and paves the way for sustainable value generation. ■



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SUMMARY

Automation technologies such as AI and blockchain are being integrated into ESG practices.

Such technologies can enhance sustainability reporting and management and support existing standards like the ESRS.

However, they also pose challenges, to veracity and to existing regulations and sustainability goals.

A holistic approach is needed to best use technology for ESG reporting, for long-term sustainable impact.