



CREATING NEW BUSINESS OPPORTUNITIES AROUND ESG WITH BLOCKCHAIN TECHNOLOGY

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ESG IS MORE CRITICAL THAN EVER

In today's business landscape, environmental, social and governance (ESG) principles are now as central to evaluating a company's overall performance and impact as any financial metric. ESG principles reflect an evolving societal expectation for businesses to not only generate profits, but also actively contribute to sustainability, ethical practices, and social well-being.

Clients and investors too are increasingly focused on the longevity of businesses and are avoiding speculative investments that only favor economic profits in the short term and are conflicting with environmental and societal concerns. However, trust in the traditional methods of communicating these efforts are insufficient and these actors are now demanding a new bar for transparency end to end.

Unfortunately, the integration of ESG principles into business practices and reporting isn't without challenges. Many traditional reporting setups struggle to adequately capture and communicate a company's complex ESG-related initiatives and impacts. This often leads to issues of incomplete or inconsistent data, making it difficult for stakeholders to assess a company's true ESG performance accurately.

In response to the growing importance of ESG, regulatory bodies are beginning to establish guidelines and deadlines for reporting. These regulations seek to standardize reporting practices, enhance data security, and ensure transparency. Companies are now faced with the task of adapting to these regulatory frameworks and meeting reporting deadlines while navigating the complexities of gathering, verifying and disclosing ESG-related information.

Reporting and ESG frameworks make up a completely blue ocean for businesses, demanding different rules for operating. But at the same time, it is a unique opportunity to grow and position any brand in the field of ethical and sustainable business models, beyond just reporting on their initiatives.

Overall, the adoption of ESG principles signifies a paradigm shift in how companies are evaluated and how they operate within a broader social and environmental context. While challenges persist, the integration of ESG considerations into business strategies and reporting frameworks holds the potential to drive positive change and foster new sustainable business models.

GOING GREEN: A MATTER OF TRANSPARENCY

The credibility of ESG reporting hinges significantly on the quality of its underlying data sources. Companies face substantial risks, ranging from reputational damage to brand erosion, and in severe cases, even potential legal consequences, all based on the accuracy and integrity of their ESG reports. Indeed, ESG issues are likely to be at the forefront of stakeholders' minds when conducting evaluations on a firm's health. In tandem with the increasing significance of ESG metrics, there is a growing demand for trustworthy data that effectively quantifies these metrics.

Despite this demand, a significant proportion of public companies - with percentages rising above 55%, according to Ernst & Young - continue to manage their ESG data within spreadsheets and opt for outdated, unreliable techniques. This approach leaves the data vulnerable to manipulation, which can be exploited for the purpose of greenwashing - presenting a misleadingly positive environmental or social image. Despite this, a noteworthy number of companies opt for non-transparent ESG data packages to construct their reports, and over 50% do not publish ESG metrics of any kind.

Another study examining almost 1,500 executives from various sectors across the world revealed that internationally, up to 58% of companies were guilty of exaggerating their sustainable progress or involvement - the figure rising up to 68% in the United States.

Given these circumstances, it becomes evident that a robust and reliable foundation of data is imperative for ESG reporting to maintain its integrity and fulfill its intended purpose of providing accurate insights into a company's environmental, social and governance performance.

Amidst the challenges of data security, traceability and tamper-proof requirements that ESG reporting faces today, it is crucial to explore solutions that can address these issues effectively. Blockchain technology offers a disruptive force with a remarkable potential to revolutionize ESG practices. At its core, blockchain presents an innovative digital ledger system that can fundamentally reshape the way ESG initiatives are approached, executed, and reported on. Central to this alignment are similarities such as the shared values and principles of blockchain, as well as those inherent to robust ESG reporting: decentralization and transparency.

While not all companies are currently obliged to report their ESG action plan, those who do not will be increasingly scrutinized for failing to do so. Blockchain technology provides an opportunity for them to seamlessly integrate ESG practices such as reporting into their models and show their partners, clients and customers that they are addressing this increasingly important matter.

CONSIDERING THE CHALLENGES

Existing inefficiencies associated with ESG reporting can be attributed to several key factors:

1. CUMBERSOME DATA GATHERING:

The current processes for collecting data involve navigating through various isolated systems, leading to inefficiencies due to the lack of integration and access.

2. RELIANCE ON "GUESSTIMATES":

Important data points are often estimated through guesswork rather than precise calculations, and averages are frequently used instead of accurate figures, undermining the reliability of reported information.

3. YEARLY REPORTING CYCLES AND UNPREDICTABLE FINANCIAL LIABILITIES:

The reliance on annual reporting cycles results in a lack of predictability concerning financial liabilities, hindering effective planning and decision-making.

4. LACK OF DATA TRANSPARENCY:

The origin of the data used in reports is not clearly transparent, which can lead to questions about data integrity and accuracy.

5. LIMITED TRUST AND RISK OF GREENWASHING:

The data provided for reporting is self-reported within editable systems, raising concerns about the authenticity and reliability of the information shared. This leaves room for greenwashing practices, where the reported data might be misleading or falsely favorable.

6. INADEQUATE ACCESS TO SCOPE THREE DATA:

Accurate data related to scope three impacts, or emissions that are not produced by the company itself, but that it is indirectly responsible for, is not readily accessible, which limits the ability to comprehensively assess and manage the full extent of environmental and social impacts.

Addressing these inefficiencies is crucial for enhancing the accuracy and reliability of reporting processes.

EXPLORING THE POTENTIAL OF BLOCKCHAIN TO ADDRESS CHALLENGES WITHIN ESG REPORTING

Blockchain's decentralized nature, which eliminates the need for intermediaries, resonates with ESG's emphasis on equitable distribution and decision-making. Transparency, a hallmark of both blockchain

and ESG, ensures that actions and data remain accessible and visible, fostering accountability and trust within these initiatives.

Delving deeper into the mechanics of blockchain, its ability to provide verifiable evidence and credibility to ESG reporting becomes strikingly evident. Blockchain's inherent immutability ensures that once data is recorded, it cannot be tampered with, generating a trail of evidence that can be audited and verified by anyone, including those outside the organization. This quality introduces a new level of assurance and authenticity to ESG reporting, instilling greater confidence in the accuracy of the information presented. This reliability is crucial for maintaining accurate historical records for audits and accountability. Further, ESG managers can accurately track and verify the origin of environmental and social impact data, fostering greater trust among stakeholders and enhancing the credibility of sustainability claims.

Blockchain is also ideally suited to address or bypass certain aspects of inefficient ESG reporting: specifically, a lack of recurrence, reliability and regularity. Presently, ESG reporting operates on an annual cycle, leading to a lack of predictability in terms of financial liabilities, such as those associated with offsetting efforts. The reporting process itself proves to be complex, involving the task of collecting data from various isolated systems. Ensuring the authenticity of the data origin becomes problematic, as companies often resort to approximations for critical points, relying on averages rather than accurate figures.

Additionally, blockchain's smart contract technology can be programmed to automatically enforce ESG-related agreements, incentives, and penalties, streamlining compliance with sustainability goals and reducing the risk of non-compliance.

Employing blockchain technology offers a powerful solution to address the lack of recurrence, reliability and regularity. Through the use of timestamping, data becomes tamper-resistant, ensuring its integrity over time. Furthermore, blockchain's immutable nature guarantees an auditable trail, allowing for easy verification of data at its source. This fortified infrastructure renders reported data incorruptible and establishes a high level of security through real-time finalization. The immutable data collection is auditable in real-time, making it very simple to integrate third parties around supervision, auditing and process improvement.

MAKING BLOCKCHAIN'S GREEN POTENTIAL A REALITY WITH CONCORDIUM

Concordium's science-based, permissionless blockchain technology was designed in such a way that it enhances ESG reporting thanks to its transparency, verifiability, immutability, and auditability. As with other layer 1s, Concordium supports time-stamped, tamper-resistant data recording. Where Concordium is truly unique is in its digital identity framework and its focus on privacy.

Concordium's ID framework ensures that all parties contributing data are identifiable, significantly enhancing overall accountability. By integrating blockchain's evidence layer into existing ESG reporting tools, the technology establishes a foundation for secure data sharing by utilizing zero-knowledge (ZK) proofs, which enable organizations to prove their data is accurate without needing to disclose confidential information. This synergistic approach offers impenetrable security, transparency and traceability, effectively revolutionizing the landscape of ESG reporting and fostering a more reliable and consistent reporting system.

Concordium also provides the optimal foundation for ESG reporting processes because of its emphasis on privacy. Indeed, the blockchain employs advanced encryption and permission-based access, enabling ESG managers to securely share sensitive data with partners, regulators, and auditors. This facilitates collaboration while safeguarding confidential information.

As Marcos Carrera confirms “We are commanded by data and today, many companies are data-driven. But we are experiencing a second wave of the data revolution, in which trusted data reigns supreme. We need objective, accurate and immutable data to inform, measure and improve our decisions so that we pursue the right actions and measure their impact. We can’t achieve this without a trusted data log. Fujitsu's vision is to drive this new era of data, one that is more sustainable and more impactful.”

SOLUTIONS THAT ENHANCED ESG REPORTING ON CONCORDIUM BLOCKCHAIN

Two partnerships that illustrate Concordium’s prominent role in the ESG reporting sector are the work with [Arivu](#) and [2021.ai](#). Thanks to Concordium’s infrastructure, Arivu’s platform provides verified ESG data, evidence, and assurance, all while reducing costs associated with and streamlining auditing and compliance. Arivu is able to achieve this by providing off-chain companies with a seamless ability to secure their ESG data on Concordium blockchain.

2021.ai, a development house supporting projects in artificial intelligence (AI) and machine learning, has integrated Concordium’s technology into its newly launched platform, GRACE. GRACE enhances data validation and audit trails for AI, enabling tamper-proof ESG data validation.

In these ways and many others, Concordium has been able to position itself as the leading blockchain for sustainability efforts that truly drive change in the global fight against climate change.

MORE NEW BLOCKCHAIN TRENDS ADDING VALUE TO ESG

Blockchain technology has the potential to transform the way businesses and organizations address ESG challenges - and it’s not just in using blockchain for ESG reporting purposes. There are many other strong use cases for blockchain adoption within the ESG sector, such as the development of sustainable products, enhanced traceability of natural resources, and accurate tracking and management of carbon credits. These in turn present companies with opportunities to drive greater client and customer engagement.

The concrete use cases of blockchain for ESG include:

SUPPLY CHAIN TRACKING

Using blockchain to track products throughout their supply chain, from raw materials to the end consumer. This can help ensure that products are sustainable and that human rights are respected.

WASTE MANAGEMENT

Blockchain can be leveraged to manage waste more efficiently and sustainably. Blockchain can be used to track recycling and repurposing efforts, which can include the use of cooking oil as a renewable biofuel.

TRACEABILITY OF NATURAL RESOURCES

Blockchain can be used to track the use of natural resources, such as water, energy, and forests. This can help businesses visualize and thereby reduce their environmental impact.

SUSTAINABLE FINANCE

Blockchain can be tapped to develop new sustainable financial products and services, such as green bonds and carbon credits. There are many possibilities for documenting the impact of water, biodiversity and carbon sequestration using blockchain technology.

Within the Concordium's ecosystem, these solutions are actively being developed by partners. For instance, the Danish state-owned transmission company Energinet has a platform that provides green energy certificates to companies, in turn enabling them to track and prove how much of their power consumption is derived from renewable energy sources. With respect to carbon markets, the Concordium blockchain provides the optimal rails for transparency, combatting greenwashing, which has become a major issue in the ESG realm. Concordium is also collaborating with [ClimaFi](#), [Carbotanix](#), and [Aqualibre](#), to bring transparency and reliability to carbon markets.

Blockchain technology has the potential to play a major role in the transition to a more sustainable economy. In 2023, new trends are expected to showcase the potency of blockchain for ESG purposes, ultimately adding value to businesses, clients and customers. The technology is expected to gain even broader adoption by businesses in the development of new ESG products to improve the transparency of the supply chain and to enhance trust in ESG reporting.

If you want to explore how these solutions can bring value to your business, contact Marcos Carrera and [Maria Eisner Pelch](#) to learn more.