

ESG in Emerging Technologies and Corporate Governance

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ABSTRACT

Environmental, social and governance (ESG) is a framework used to assess an organization's business practices and performance on various sustainability and ethical issues. It also provides a way to measure business risks and opportunities in those areas. In capital markets, some investors use ESG criteria to evaluate companies and determine their investment plans, a practice known as ESG investing.

While sustainability, ethics and corporate governance are generally considered to be non-financial performance indicators, the role of ESG programme is to ensure accountability and the implementation of systems and processes to manage a company's impact. ESG initiatives also contribute to broader business sustainability efforts that aim to position companies for long-term success based on responsible corporate management and business strategies. The study includes comparative analysis, conceptual figures and tables to support understanding.

INTRODUCTION

As companies, organizations, consumers, and investors are seeking more accountability and transparency around the three main focus areas of ESG: Environmental, Social, and Governance issues, it is important that a set of ESG policies are developed to ensure that specific requirements are met. ESG can be implemented in small, medium, and large size businesses, companies, and organizations and is often a way to attract socially and environmentally conscious investors, consumers, and customers.

The objective of this paper is to explain the Key concepts of ESG, illustrate their applications and highlight the challenges that remain in adopting these technologies at scale.

Environmental

Environmental factors involve considerations of an organization's overall effect on the environment and the potential risks and opportunities it faces because of environmental issues, such as climate change and measures to protect natural resources. Examples of environmental categories are the following:

- Energy consumption and efficiency.
- Carbon footprint.

Social

Social factors address how a company treats different groups of people and its social impact, including employees, suppliers, customers and community members. The criteria used include the following examples:

- Fair pay for employees, including a living wage.
- Diversity, Equity and Inclusion programmes.

Governance

Governance factors examine how a company polices itself, focusing on internal controls and practices to maintain compliance with regulations, industry best practices and corporate policies. Examples include the following:.

- Ethical business practices.
- Rules on corruption, bribery, conflicts of interest, and political donations and lobbying.

Figure 1 Basic structure of ESG



ESG in Business

ESG has become an important aspect for businesses to pay attention to, as people are becoming increasingly concerned about environmental, social and governance-related issues.

- Transparency & long term sustainability
- Risk management & Regulatory compliance.

Pros & Cons of ESG

- Investment returns and sustainability can mix.
- ESG can attract new customers for additional growth.

ESG Goals

Establish ESG needs, Identify key areas for ESG frameworks & Set goals.

Deploying ESG in Corporate Governance



Applications of ESG in Corporate Systems

Investor Attraction: Meeting the demands of ESG-focused investors, with growing ESG assets globally.

Competitive Advantage: Gaining market share by differentiating from competitors with strong ESG performance.

Innovation: Driving new products and services that address societal needs or environmental challenges.

Regulatory Preparedness: Adapting proactively to expected stricter sustainability laws.

What types of industries can benefit from ESG initiatives?

For example, the following industries typically see benefits from implementing ESG initiatives:

- Energy.
- Financial.
- IT Reducing electronic waste or ensuring an increased level of data privacy and security
- Agriculture& ESG initiatives can be implemented in agriculture industries to improve yield.

Key Challenges

Data Gaps & Quality: Emerging markets often lack reliable data, centralized systems, and infrastructure for real-time tracking.

Lack of Standardization: No universal ESG framework exists, making data comparison difficult and increasing the potential for greenwashing.

Resource Intensity: Collecting and reporting comprehensive ESG data is expensive and complex.

Integration & Insight: ESG data is often siloed from financial data, making it hard to link sustainability performance to financial outcomes and strategic decisions.

Emerging Risks: New technologies introduce novel risks, such as AI-driven security threats and complex social impacts, requiring new expertise to manage.

Regulatory & Governance hurdles : Inconsistent regulations.

CONCLUSION

ESG (Environmental, Social, Governance) conclusion emphasizes that integrating these factors is crucial for long-term business success, risk management, and attracting investment, moving beyond short-term profits to create sustainable value for stakeholders and the planet, despite challenges like data consistency. Companies with strong ESG strategies benefit from enhanced reputation, regulatory alignment, innovation, and a stronger market position, making it a core component of modern business strategy, not just a trend.

Key Research Areas & Journals

Academic Journals: Technological Forecasting and Social Change, Journal of Cleaner Production, RSC Sustainability, Journal of ESG Technologies, International Journal of Sustainable Investing, ScienceDirect publications.

Authors : Sætra, 2023 (for AI-driven ESG assessment), [Mishra, 2022](#) (Blockchain for ESG Verification), [EY Insights \(2023\)](#) (CIO Imperative Report).