

# ***Assessing the Integration of Environmental, Social, and Governance (ESG) Factors in Sustainable Strategies: A Review of Progress in the Communications Industry***

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**Abstract:** Environmental, social, and corporate governance (ESG) is a new standard that is gradually introduced into the sustainable development of enterprises in various industries. The purpose of this paper is to study the process of introducing ESG factors into the enterprise sustainable development strategy in the communication industry. The study found that the latest developments of ESG, sustainable development strategies (including the changes of industry horizontal and vertical structure, the Green ICT) and the Triple Bottom Line guidelines generally adopted by the communication industry enterprises, as well as the cases of ESG enterprise integration (including Samsung, Huawei, and Apple) and three ESG standardization schemes (including the Korean ESG model analysis, ESG disclosure under the laws and regulations, E pillar quantification) in the communication industry. The research conclusion showed that although ESG is linked with enterprise sustainable development strategies, it still needs to be more standardized and expanded to different industries and countries to get more practice.

**Keywords:** ESG Standardization, Corporate Sustainable Strategy, Communications industry, ESG Integration, ESG disclosure

## **1. Introduction**

As the world economic market changes, the driving factors that affect investors' investment decisions have become very important. According to data released by Statista, environmental, social, and corporate governance (ESG) ratings were the top influencing factors for investment decisions in 2023. The driver that had the least impact on institutional investors was the regional taxonomy alignment, which was less than 20% of those surveyed.[1] There is extensive literature investigating ESG factors, as well as their impact. However, there is still a lack of cases of enterprise ESG integration and the issues of blurred ESG boundaries leading investors to have differences in investment decisions and no standards for the company's ESG report, which leads to the problems of ESG investment and ESG disclosure. This paper is based on studying the process of introducing ESG standards into the enterprise sustainable development strategy in the communication industry, through the relevant case analysis of the three major enterprises in the communication industry (Apple, Huawei, and Samsung), it can supplement the case of ESG enterprise integration to provide experience for other enterprises

in the communication industry and contribute to the standardization development of ESG in different industries and different countries by the study of the standardization process of ESG.

The structure of this paper is as follows, the next section will introduce the latest progress of ESG, then introduce the main sustainable development strategy in the communication industry and the Triple Bottom Line principle, and the cases of the sustainable development strategy adopted by the three representative enterprises, and then the ESG supervision progress in communication industry, by showing the three companies ESG integration cases and the strategies of ESG standardization, finally give conclusions and suggestions.

## **2. Recent progress of ESG**

ESG is a new concept for today's society, and there is no general standard for assigning E, S, and G problems, but it can date back to the 17th, and 18th centuries. A brief history of ESG has developed since then, and negative screening was the most popular form of socially responsible investment (SRI), representing the early stage of ESG investing. With the development of SRI, by the 19th and 20th centuries, SRI introduced ESG factors into the traditional investment framework, marking the formation of modern responsible investment. The modern form of ESG investing began in January 2004, the UN Secretary-General Kofi Annan wrote to the chief executive officers of important financial institutions asking them to participate in an initiative to include ESG in the capital markets under the mandate of the UN Global Compact, with the support of the International Finance Corporation (IFC). This initiative produced a report entitled "Who Cares Wins", which effectively coined the term "ESG". The UN Environment Program Finance Initiative (UNEP FI) subsequently produces the Freshfields. The above two reports formed the pillars of the Principles for Responsible Investment (PRI) at the New York Stock Exchange in 2006 and the Sustainable Stock Exchange Initiative (SSEI) the following year.

On the latest developments in corporate ESG reports, ESG reports are designed to achieve increasingly comprehensive and comparable sustainability disclosure, which will help improve investor assessment of the company and will also greatly facilitate financial service providers to integrate ESG preferences and risks. In the last quarter of 2022, Switzerland and the European Union made two significant advances in their ESG reporting. In Switzerland, the Federal Council adopted an Ordinance on Climate Disclosures to supplement the non-financial reporting rules applicable for the first time for the financial year 2023. In the EU, lawmakers have adopted the new Corporate Sustainability Reporting Directive, which is a major reform of the existing non-financial reporting rules (Menoud, 2023).[2]

## **3. Major sustainable strategies and guidelines for the current communications industry**

As the concept of sustainable development spreads in the communications industry, many companies have launched sustainable development strategies. Increasing sustainability requirements means achieving value goals without compromising the future generation's ability to meet their own needs. The Triple Bottom Line model, as the criterion of sustainable development strategy, is to evaluate companies according to social, economic, and environmental standards. This section focuses on the Triple Bottom Line (TBL) model and the case of how to maximize it in the communication industry, as well as the vertical and horizontal structure change strategy for the future communication market environment, and the green ICT strategy for environmental issues. Finally, the sustainable development strategies launched by Huawei, Apple, and Samsung, the three leading companies in the communication industry, are analyzed.

### 3.1. Triple Bottom Line principle

The idea of the Triple Bottom Line" (3BL) was developed in the 1990s, consists of three dimensions: Economic, Environmental, and Social, and gained attention in both academia and business. The financial part of 3BL focuses on the company's obligation to compensate shareholders who provide capital, and the environmental dimension focuses on the impact of the company on the environment and social responsibility which involves fair and beneficial business practices for labor, communities, and the areas where the business operates its business. Although the "bottom line" that a company might have something other than a financial measure seems counterintuitive, as sustainability issues become increasingly important throughout the supply chain, future strategic planning is likely to view 3BL opportunities as a complementary rather than a trade-off of innovation, productivity, quality, performance, and enterprise image (Schulz, 2016).[3] Malaysia's telecommunications industry provides experience on how to maximize the triple bottom line principle in the telecommunications industry. Spiritual leadership (SL) inspires employees through the vision and corporate culture based on the altruistic values generated in the heart of its leaders and can influence their spiritual well-being through a sense of mission and membership (Fry, 2003).[4] It helps to foster a highly motivated, loyal, and productive workforce (Fry, 2003; Fry and Altman, 2013). [5] In a word, excellent leaders with good values can help employees develop happiness and affect their attitude and commitment. The study successfully demonstrated that SL substantially contributed to TBL in the Malaysian telecommunications industry in terms of organizational commitment, productivity, and life satisfaction (Wahid, 2007).[6]

### 3.2. Horizontal and vertical structure for the future market environment

To solve the problem of blurred boundaries at the enterprise level within the communication industry, technological innovation promotes the transformation of the integration structure from vertical to horizontal. Currently, the main players are vertically integrated, managing three activities, namely, the customer relationship business, the product innovation and commercialization business, and the infrastructure management business. For operators in a vertical structure, it is necessary to re-examine the four business areas: customer, business, technology, and management infrastructure. To enhance customer value, operators should provide innovative services (i.e., implement differentiated strategies). For the business area, it needs to develop innovative markets to transfer value. To develop services and compete effectively in new areas, appropriate strategies must be adopted to ensure the security of new technologies such as Radio Frequency Identification (RFID), Artificial Intelligence (AI), and broadband mobile. Out-sourcing Research and Development (R & D) is a useful strategy for providing innovative services using the latest technology. Electronic culture is the best solution for managing the infrastructure. British Telecom (BT) has identified these potential opportunities and restructured its structure by classifying its activities into BT Whole Sale, BT Openreach, BT Retail, and BT Global services. Structural changes in the communications industry are also being implemented in other countries (Shahid et al., 2007).[7]

### 3.3. Green ICT

With the continuous development of the information and communication technology (ICT) industry, serious pollution problems and environmental challenges appear in different stages of the life cycle of ICT products. Green ICT is the combination of ICT products and environmentally friendly concepts throughout the product life cycle, including from design to disposal, aiming to achieve green and sustainable development of communication technologies and the target of reducing current global carbon dioxide emissions by 2%. Most countries in the world have responded positively to this strategy and applied it to practice. The Energy Star program, launched by the US government and

working with the European Union, aims to achieve energy-saving goals by promoting specially designed energy-efficient office ICT devices (such as personal computers, personal computer monitors, printers, fax machines, copiers, and scanners). In recent years, many EU member states have also established relevant laws and regulations around Green ICT, which are designed to improve energy efficiency and reduce emissions. For example, the UK government launched the Carbon Reduction Commitment (CRC) Energy Efficiency Programme in 2008. China's central government has also acted under the Green ICT. In particular, China's Ministry of Environmental Protection (MEP) has been working with the U. S. Environmental Protection Agency (EPA) on several projects to help China improve its energy efficiency. Drawing on the EPA's experience with its Energy Star program, a list of domestic standards has labeled 10 key ICT product categories, including personal computers, monitors, televisions, office copiers, and fax machines (Guo, 2007).[8]

### **3.4. Sustainable development strategy of specific enterprises (Huawei, Apple, Samsung)**

Huawei, Apple, and Samsung, as the leaders in the communication field, have respectively formulated a series of sustainable development strategies. As a responsible technology enterprise, Huawei takes sustainable development as part of the company's overall strategy and continues to promote the four sustainable development strategies: digital inclusion, security and trustworthiness, environmental protection, and a healthy and harmonious ecosystem to contribute to the realization of the United Nations Sustainable Development Goals (UN SDGs). According to the Huawei Company 2022 sustainable development report, in the environmental protection part[P10-11], Huawei company is committed to reducing the environmental impact of production, operation, and other processes as well as the full life cycle of products and services, through innovative products and solutions to promote industry energy conservation and emissions reduction and circular economy development, continuous traction industry chain parties to build a low carbon society. For example, the electronic waste landfill rate of ICT business is 0.63%, and the electronic waste of intelligent terminal business is zero landfill. [9] In the Apple 2023 Environmental Progress Report[P5], in response to the huge challenges posed by environmental problems, Apple has developed an environmental strategy to work on strategic pillars of climate change, resources, and smarter chemistry. In the climate change segment, Apple has achieved carbon-neutral emissions from its operations and set a goal of carbon neutrality for its full product footprint by 2030.[10] According to Samsung's 2023 Sustainability Report[P9], in the Approach to Sustainability, Samsung mentions the pursuit of sustainability throughout the product's life cycle, from design and development to manufacturing, use, and recycling. For example, at the Device Experience (DX) Division, the company develops environmentally friendly materials and energy-saving solutions and collects and recycles e-waste worldwide.[11]

## **4. Progress of ESG supervision in the communications industry**

As a new standard, ESG lacks examples of enterprise ESG integration, and due to its blurred boundaries, there is no unified standard for enterprises to publish ESG reports, and investors do not have a unified standard reference for investment. This section begins with three companies' cases of ESG integration. Then, it provides three methods for the setting of the ESG model under specific national conditions, the disclosure of ESG under laws and regulations, and E pillar quantification to promote the implementation of ESG standardization.

### **4.1. Case study of enterprise ESG integration (Apple, Samsung, Huawei)**

Apple has released a dedicated ESG company report and an ESG index. The ESG report fulfills the company's commitment to transparency by bringing together existing and new disclosures. The ESG index maps ESG disclosure based on the indicators outlined in the Global Reporting Initiative (GRI),

the Sustainable Accounting Standards Board (SASB), and the Task Force on Climate-Related Financial Disclosures (TCFD) voluntary disclosure framework.[12] For example, the ESG report[P6] mentioned that the priority of ESG is managed by Apple, and Apple's senior leadership plays an important role in integrating ESG into the functions of the entire company. Companies listen to stakeholders including opinions from our employees, suppliers, communities, shareholders, and other outside groups to understand their concerns. Companies measure ESG progress so that they can try to be more transparent each year.[13] In terms of ESG audit, to ensure compliance, according to the ESG Audit section of Samsung's official website, the company has implemented a comprehensive working environment management process composed of self-assessments, on-site audits, and third-party audits. The company reflects the results of on-site audits and third-party audits in the annual comprehensive evaluation and policy improvement of the next year and provides additional points for comprehensive evaluation, cash rewards, and other benefits for those rated as excellent suppliers. For example, in 2023, the company created an award program to recognize suppliers with outstanding ESG performance. It has been awarded to two suppliers who have made significant efforts in the areas of labor, human rights, and the environment throughout 2022.[14] Although Huawei has not published any specific ESG information on its website, the 2022 Sustainability Report shows that the company's sustainability strategy is based on ESG standards. For example, the Environmental Protection part of the catalog[P8] corresponds to the E-pillar in the ESG, while the Healthy and Harmonious Ecosystem part involves the S-pillar and the G-pillar respectively. In the field of community responsibility[P83] (the S-pillar), Huawei is committed to creating value for the communities where it operates, such as providing various social donations to the countries and regions, including providing educational resources, cultivating ICT talents, etc. to promote social and economic recovery and local community development. The part of Caring for Employees[P65-67] belongs to the G-pillar, Huawei always puts staff health and safety work first and pursues the policy of "safety first, care for employees", in 2022, Huawei strengthened on-campus health assurance resources, established 28 health centers in the world, more than 100 medical on-site, provided daily health guidance and emergency response services. It guided the employees to take an active part in the physical examination and the participation rate of the annual physical examination reached 92.3%.[15]

## **4.2. The process of ESG standardization**

At present, there are many studies on ESG standardization, which are divided into three categories according to the existing literature: the setting of the ESG model in specific cases, ESG disclosure under the guidance of laws and regulations, and the quantification of the E pillar. This section first introduces the analysis of the Korean ESG model, which adds additional country-specific factors to the existing standards to make the ESG standard more consistent with the national conditions. Then, ESG disclosure is combined with laws and regulations, and enterprises are required to make ESG reports mandatory or voluntary under policy requirements. Finally, pillar E in ESG is analyzed separately to associate it with the decarbonization problem and make it quantified.

### **4.2.1. The analysis of Korean ESG model**

A unified ESG framework promotes common development among stakeholders. Investors, businesses, regulators, consultants, and other stakeholders are all connected by ESG standards. Companies operate according to ESG standards, while investors invest in companies that meet the standards, regulators develop new laws and regulations based on existing standards, and consultants develop appropriate ESG models according to the actual situation in different countries. The problem is that there is no consensus on a common ESG framework. A recent study proposed a new ESG

model for the specific national conditions of South Korea, which will have an impact on the in-depth research and practice of ESG standards and will be seen as a model case for other emerging markets (including different industries and different countries). Park and Jang (2021) say the model is designed by identifying the common factors from five leading global information providers with high ESG leadership and industry recognition and then adding two South Korea-based specific factors (including CEO reputation and partnerships with subcontractors) to reflect South Korean particularities. The model takes environmental, social, and governance factors as its primary criteria. Through the proposed model, the expectation will have the following impact on business management and stakeholders. First of all, for corporate management, managers can make decisions for companies to solve sustainability problems through theoretical models. In addition, enterprises actively comply with laws and regulations according to the framework. Second, country-specific models will make it easier for companies to adopt ESG disclosure and practices which will lead to companies being more attractive to the stock and bond markets and clients through good ESG disclosure practices. Country-specific factors also have a positive impact on stakeholders, such as participants and customers in the supply chain. The reason is that companies can pay more attention to upcoming problems within the country whose resolution will benefit the relevant stakeholders. Finally, the shared factors identified by the model integrate the commonality of information about ESG provided by five information providers, which not only captures the core of ESG philosophy but also has a global dimension. Through this model, ESG-related issues can be addressed from a global perspective, including supply chain management, human rights, and other stakeholder-related issues.[16]

#### **4.2.2. The ESG disclosure under policies and regulations**

The development of legal policies based on ESG contributes to the advancement of ESG standardization. At present, countries have formulated a series of policy measures for ESG development (Kumar, 2023).[17] One of the most common policies is to disclose the ESG in company reports. ESG disclosure belongs to the three key links of the ESG system: ESG disclosure, ESG evaluation, and ESG investment. Enterprises shall disclose the corresponding information according to the disclosure requirements. There are usually two types of ESG disclosures, namely mandatory and voluntary disclosure. The government administrative or regulatory departments generally require compulsory disclosure for enterprises to disclose information to the public. The government's attitude towards ESG issues determines the development of ESG. Voluntary disclosure points out that based on voluntary disclosure of environmental protection, social responsibility performance, and general corporate governance information, enterprises should further disclose personalized information on environmental protection, social responsibility, and corporate governance according to the industry, business characteristics, and governance structure of the enterprises. Sharma and Thurkal (2015) say that in India, corporate governance must be disclosed in the annual and sustainability reports. However, the disclosure of environmental and social activities is voluntary.[18] Camilleri (2015) conducted a similar study of ESG disclosure in Europe. The study concluded that most EU countries chose to combine mandatory and voluntary regulations to facilitate ESG disclosure.[19] Schumacher et al. (2020) highlighted Japan's increasing emphasis on stringent disclosure standards.[20] Harper and Park (2020) put forward that the practice in the United States, China, and other countries shows the inevitable trend of public-private joint venture ESG disclosure.[21] In Hong Kong, China in particular, the government is committed to putting ESG on the economic agenda, such as making ESG one of the priority listing requirements (KPMG, 2020).[22]

Recently, the EU has adopted the long-awaited mandatory ESG reporting standards. On 31 July 2023, the European Commission adopted the first set of ESRS, which is known for breadth and granularity, far exceeding the reporting requirements in the currently existing ESG reporting framework. The standard is divided into three parts: General Requirements, General Disclosures, and

Topical ESRS. In the Topical ESRS part, the company must conduct a self-assessment of the 10 existing ESG topics and selectively report based on its financial situation, but it still needs to gather sustainability information from the value chain. (Sasfai et al., 2023, p. 13-16).[23]

### 4.2.3. E pillar quantification

The Quantitative Analysis E pillar enables a more precise definition of ESG. Trahan and Jantz (2023) say that the vagueness of the definition of ESG poses great political and regulatory risks, and also makes ESG investment face certain problems. To make the definition of ESG more definitive and rigorous, the study's recommendation is to separate the three components of ESG and focus on the only quantifiable environmental pillar, the "E" pillar in ESG, by quantifying it to give ESG a more precise meaning. This study re-examines the "E" pillar, narrowing the scope to the issue of climate change and linking it to research in the field of emission reduction and decarbonization.[24]

## 5. Conclusion

This paper aimed to collect cases of representative enterprise ESG integration, and explore the ESG standardization process, to solve the lack of enterprise ESG integration cases and the issues of existing differences of ESG investment and ESG reporting reference standards caused by blurred ESG boundaries and explore the process of communication industry introducing ESG standard enterprise into sustainable development strategy. However, there are still some problems in this study that have not been solved, for example, the ESG standardization process is not carried out for the characteristics of the communication industry itself which means the range is still relatively large, and the lack of more cases to prove the three methods. To better understand the implementation of these methods, future studies could combine these three methods with the communication industry characteristics and expand those methods to different industries and even different countries to discuss. This paper collects the cases of ESG integration of three responsible companies (Apple, Huawei, Samsung), providing experience for ESG integration of other enterprises in the communication industry and according to the existing literature on ESG standardization, summarizes three methods to promote ESG standardization. At the same time, connect ESG with the sustainable development strategy, and take some case studies focusing on the communication industry. To sum up, it has taken an important step in the research process of introducing ESG standards into the sustainable strategy of enterprises in the communication industry, and there is still a long way to go in the future.

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