
**Working Paper 2024.2.3.1**
**- Vol 2, No 3**

# PHÂN TÍCH VỀ THỰC HÀNH BỀN VỮNG TRONG VIỆC THU MUA NGUYÊN VẬT LIỆU THÔ CỦA SAMSUNG

**Phạm Thị Thu Hà[1], Nguyễn Thanh An, Nguyễn Thị Tố Như, Đoàn Thị Thúy Quỳnh, Khuất Thùy Nhi, Đỗ Mai Khanh**

Sinh viên K60 – CLC Kinh tế đối ngoại – Viện kinh tế và kinh doanh quốc tế

*Đại học Ngoại thương, Hà Nội, Việt Nam*

**Nguyễn Thị Yến; Phạm Thị Hiền Minh**

Giảng viên Viện Kinh tế & Kinh doanh quốc tế

*Đại học Ngoại thương, Hà Nội, Việt Nam*

**Tóm tắt**

Trong nỗ lực bảo tồn tài nguyên cho thế hệ tương lai, phát triển bền vững ngày càng trở thành ưu tiên hàng đầu của nhiều doanh nghiệp. Do đó, nhiều công ty đã thực hiện những biện pháp tích cực trong việc mua nguyên liệu thô, nhằm đạt được mục tiêu bền vững này. Nghiên cứu của chúng tôi đã tiến hành một phân tích chi tiết về các phương pháp bền vững mà Samsung áp dụng trong quá trình mua nguyên liệu đầu vào, bao gồm chính sách bền vững để lựa chọn nhà cung cấp và tìm kiếm nguồn cung ứng nguyên liệu thô có trách nhiệm. Qua việc thực hiện phân tích chi tiết, nghiên cứu của chúng tôi nhằm đánh giá những điểm mạnh và điểm yếu của Samsung trong việc thực hiện mục tiêu bền vững. Cuối cùng, chúng tôi sẽ đưa ra những khuyến nghị cụ thể về việc mua nguyên liệu đầu vào không chỉ dành cho Samsung mà còn cho các công ty sản xuất điện tử khác tại Việt Nam, nhằm khuyến khích tiếp tục thực hiện các biện pháp bền vững và đảm bảo sự phát triển có trách nhiệm trong ngành công nghiệp này.

**Từ khóa:** Samsung, sản phẩm điện tử, thu mua nguyên liệu thô, tính bền vững.

# ANALYSIS OF SAMSUNG'S SUSTAINABILITY PRACTICES IN RAW MATERIAL PROCUREMENT

**Abstract**

[1] Tác giả liên hệ, Email: k60.2112150063@ftu.edu.vn

In the pursuit of preserving resources for future generations, sustainable development has become a paramount objective for numerous global enterprises. Hence, many businesses have taken proactive measures in the procurement of raw materials, a part of attaining this goal of sustainability. Our research undertakes a meticulous analysis of Samsung's sustainable methods used in raw material procurement, which encompasses the sustainable policies for choosing suppliers and the responsible sourcing of raw materials. After leveraging this in-depth analysis, this study also evaluates to explore the strengths and weaknesses of Samsung in the pursuit of sustainability. From this, recommendations are concluded for both Samsung and other Vietnamese electronic manufacturing companies.

**Key words:** electronic products, raw material procurement, Samsung, sustainability

## 1. Introduction

Together with the development of the global economy, problems related to society, the environment gradually become the concerns of many businesses to pursue intergenerational equity, contributing to sustainable development. As a part of obtaining this goal, many companies are implementing sustainable practices within their supply chain management, particularly regarding raw material procurement. Samsung, guided by its mission of "People - Future toward," exemplifies this commitment by actively working to create a better life for future generations and society.

Samsung, a leading player in the electronics industry, has established itself as a frontrunner in sustainable supply chain management, particularly concerning raw material procurement. The company adheres to stringent global ethical guidelines in its purchasing practices and enforces a comprehensive sustainable code of conduct among its suppliers. Furthermore, Samsung fosters collaboration with suppliers to implement responsible and sustainable procurement strategies. Additionally, the company takes a proactive approach to sourcing minerals from conflict-affected and high-risk areas, mitigating concerns related to child labor, human rights violations, and environmental degradation.

Earlier research, such as the 2012 study "Extending the Efficient and Responsive Supply Chain Framework to the Green Context" by Sunhee Youn, Ma Ga (Mark) Yang, and James Jungbae Roh, has identified Samsung as a case of an "eco-responsive supply chain." Similarly, the 2018 research by Donghyun Choi and Taewon Hwang on "The Impact of Green Supply Chain Management Practices on Firm Performance" highlights Samsung as an exemplary company that develops effective green strategies to address global environmental issues. Another study by Yazan Khalid Abed-Allah Migdadi in 2019 focuses on the practices of Samsung's green supply chain management in reducing pollution, specifically in the context of mobile phone production. However, the majority of existing studies concentrate on Samsung's green practices throughout the entire supply chain. There is a notable research gap where limited attention has been given to exploring sustainability practices solely in the raw materials procurement phase of Samsung.

Therefore, our research, by using a case-study method, aims to fill this gap by investigating the intricate strategies Samsung employs in raw material procurement practices. Through a comprehensive analysis, the research sheds light on the strengths and weaknesses

of Samsung's sustainable practices within this framework. Subsequently, the paper formulates targeted recommendations for improvement within Samsung itself and extends its scope by exploring the applicability of these valuable lessons to other Vietnamese electronic manufacturing companies.

## 2. Theoretical Framework

### *2.1. Overview about the procurement management of electronic products*

#### *2.1.1. Current procurement process of electronic products*

Procurement encompasses the acquisition of goods and services, typically intended for business purposes. The procurement process entails various stages, starting with the identification of needs and the subsequent processing of a demand, leading to the ultimate receipt and approval of payment. This comprehensive process includes elements such as purchase planning, setting standards and specifications, conducting supplier research, selection, financing, price negotiation, and maintaining inventory control. Normally, the procurement process involves four primary steps. Initially, companies identify the goods and services required, initiating the process by submitting a purchase request and soliciting quotes from different suppliers. Subsequently, they engage in price negotiations and establish a contractual agreement with the selected vendor, culminating in the creation of a purchase order. The final steps involve receiving the shipment and settling the payment (Julie Young, 2024).

In the realm of the electronics industry, the procurement process adheres to the fundamental principles observed in other sectors, although it occasionally incorporates distinct characteristics that differentiate it from conventional practices. In the past, many companies in the electronics industry did not aim to build close relationships with their suppliers. Instead, they typically dealt with each contract separately, inviting bids from multiple potential suppliers. Following the receipt of quotations, a meticulous evaluation ensued, and the contract was awarded to the supplier deemed most compliant with the stipulated criteria. The drawback was that it was a short-term approach and hinder the development of long-term, cost-effective relationships. Therefore, currently by recognizing the benefits of collaboration with suppliers, companies in this industry have changed their strategy in the procurement process by using some unique sourcing strategies: sole sourcing, single sourcing, dual sourcing and partnership sourcing.

In the context of single sourcing, an enterprise opts to engage exclusively with a solitary supplier for a specific component, thereby leveraging numerous advantages, with the principal benefit being the strategic reduction of total overall costs. Concurrently, sole sourcing entails a scenario wherein a singular supplier holds a monopoly on a particular product or material. Nevertheless, the inherent drawback of both these sourcing strategies lies in the dependence on a sole supplier. In recognition of the vulnerabilities associated with such singular relationships, many companies seek to mitigate risks by adopting a dual sourcing approach, wherein procurement occurs from two distinct sources. However, this strategy is not without limitations in terms of diversifying the supply base. Consequently, contemporary business practices

increasingly gravitate towards partnership sourcing, characterized by the engagement of a select number of suppliers for specific components, thereby fostering robust and enduring relationships (D. Berry, D.R. Towill and N. Wadsley, 1994).

*2.1.2. Challenges with current procurement process of electronic products*

The current procurement process of electronic products still has to face some obstacles:

*a. Components shortage*

Electronics manufacturers heavily rely on complex global supplier networks for essential components like processors, cameras, and batteries. Consequently, any shortage of these components can significantly disrupt production. The period spanning from 2020 to 2023 witnessed a worldwide shortage of components in the electronics industry, primarily attributed to the scarcity of semiconductors.

In early 2020, COVID-19 lockdowns spurred a surge in electronic product demand, intensifying the need for components (Graham Scott, 2023). Concurrently, US restrictions on China's chip manufacturing sector in September 2020 led to companies seeking alternative production facilities like TSMC and Samsung. However, global demand still outstripped their maximum capacities (Sujai Shivakumar; Charles Wessner and Thomas Howell, 2024). Additionally, The Russian invasion of Ukraine further compounded challenges by severely limiting the neon supply, crucial for semiconductors, and risking disruptions in the export of palladium, a vital chip component, due to Western sanctions. These factors collectively posed the pressures contributing to the ongoing global components shortage (Alexandra Alper, 2022)

*b. Quality management of parts provided by suppliers*

Electronic products often integrate components sourced from a network of global suppliers, presenting difficulties in ensuring consistent quality throughout the entire manufacturing sequence. The notable concern lies in the potential introduction of counterfeit components into the supply chain, resulting in product failures and posing risks to end-users. An illustrative case is the 2016 worldwide recall of Samsung's Galaxy Note 7 smartphones, which was attributed to flawed batteries acquired from a questionable supplier (Jethro Mullen and K.J. Kwon, 2016).

*c. Sustainability concerns*

Certain concerns regarding the ethical sourcing of minerals and materials utilized in the electronics industry, notably in relation to issues such as child labor and environmental degradation, are exerting pressure on manufacturers to transition towards more sustainable practices. This evolution introduces a layer of complexity to the procurement process, demanding a thorough and discerning approach to due diligence. For instance, the extraction of cobalt, a crucial component in battery production, predominantly originates from mines in the Congo, where problems of using child labor are prevalent (Daniel Krummel, Patrick Siegfried, 2021).

***2.2. The concept of sustainability practices in raw material procurement***

*2.2.1. Theoretical framework of sustainability*

When we discuss a development model that can satisfy current demands without endangering the capacity of future generations to satisfy their own, we are discussing sustainability. It's a comprehensive strategy that takes into account the economic, social, and environmental effects of decisions and actions made today (Purvis, Mao & Robinson, 2019).

*Environmental sustainability*

Environmental sustainability is the capacity to meet current requirements without sacrificing the availability of resources for future generations while preserving and protecting the natural environment throughout time through proper practices and regulations (Sarkis & Zhu, 2018).

To maintain the planet's ecological balance and the availability of natural resources for future generations, conservation and sustainable management of natural resources such as water, soil, forests, wildlife, and natural habitats are among the practices that are crucial to sustainability.

*Economic sustainability*

The goal of economic sustainability is to conduct economic activity in a way that maintains and advances long-term economic well-being. Its practical goal is to strike a balance between financial stability, social equality, resource efficiency, and economic growth.

Encouragement of energy generation from renewable sources, adoption of energy-efficient policies and regulations, and promotion of circular economy-based economic models, which can limit resource exploitation and reduce waste, are all necessary to create a sustainable economic system (Goerner et al., 2009).

*Social sustainability*

Social sustainability involves an emphasis on the welfare of individuals and communities. Human rights, fairness, access to healthcare and education, and decent jobs are all important causes to support.

The goal of social sustainability is to maintain social justice and cohesion while fostering inclusive societies, reducing inequality, and ensuring everyone's long-term well-being.

In the process of achieving social sustainability, policies and systems that can lessen social and economic inequality are crucial for guaranteeing that everyone in society has equitable access to opportunities and resources (Eizenberg & Jabareen, 2017).

*2.2.2. Theoretical framework of sustainability in raw material procurement*

Purchasing raw materials is the cornerstone of many sectors, including building and manufacturing. Therefore, sustainable procurement methods for raw materials are essential to promoting economic expansion and protecting the environment.

The importance of Sustainable raw materials procurement includes three main points (Bizongo, 2023):

- *Environmental Preservation*: Deforestation, habitat damage, and the depletion of natural resources can result from careless raw material procurement. In contrast, sustainable sourcing guarantees the preservation of ecosystems, thereby promoting biodiversity and climate resilience.

- *Economic Stability*: Unpredictable price swings for raw materials have the potential to cause economic instability. Sustainable procurement practices can result in a supply chain that is more stable, which lowers price volatility and boosts economic resilience.

- *Social Responsibility*: Ethical sourcing, community involvement, and fair labor conditions are all facilitated by responsible procurement processes. This promotes societal well-being and improves a country's reputation.

## 3. Analysis of Samsung's Sustainable Procurement

### *3.1. Overview of Samsung*

Samsung is a South Korean firm that ranks among the biggest manufacturers of electrical devices worldwide. Electronics for the consumer and business markets are all areas of expertise for Samsung. Samsung Electronics creates innovative concepts and cutting-edge technology that excite people worldwide and change the future. The company is revolutionizing the markets for digital appliances, network systems, smartphones, wearable technology, tablets, TVs, memory, system LSI, foundry, and LED solutions. Samsung now ranks among the most well-known brands in technology and contributes almost one-fifth of all exports from South Korea (Bondarenko, 2024).

Samsung is dedicated to ethical and sustainable corporate practices. In order to improve the earth and make it healthier for everyone, Samsung has pledged to use more renewable energy sources, achieve net zero emissions across the board by 2050, and make strategic investments in cutting-edge sustainable technology. In line with its corporate social responsibility (CSR) mission of "Together for Tomorrow! Enabling People," Samsung is dedicated to helping the next generation realize their full potential and drive constructive social change (Samsung, 2021).

### *3.2. Samsung's raw materials procurement process*

Samsung's vast product portfolio necessitates a complex and multifaceted approach to raw materials procurement. Balancing cost-effectiveness, quality, reliability, and ethical practices while minimizing environmental impact forms the core of their process. This strategic approach is further bolstered by a vast global network of suppliers and partners, guaranteeing stable supply, competitive pricing, and access to a vibrant spectrum of materials. In this process, advanced software and data analytics platforms track material flow, optimize logistics, and monitor supplier performance, ensuring data-driven decision-making (Drewry, 2023).

*Stage 1: Planning and Demand Forecasting*. Samsung utilizes advanced models and market research to predict future component and material needs, guiding the entire procurement strategy (Benchmark Mineral Intelligence, 2024). Based on the forecast, product development

teams and engineers collaborate to identify required raw materials. Then, a meticulous evaluation of price, geographical factors, political stability, and supplier reliability helps determine the most viable sourcing options (Ozsevim, 2023). Samsung prioritizes responsible sourcing, adhering to international standards like the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas (OECD, 2016). Transparency and supplier collaboration, as emphasized in are key (Samsung Electronics Sustainability Reports, 2023).

*Stage 2: Procurement*. The first part is Supplier Scoring and Assessment. Samsung implements a rigorous qualification process to ensure that chosen suppliers meet high standards according to the Samsung Electronics Supplier Code of Conduct (2017). Price, quality, reliability, sustainability practices, and geographical diversification are rigorously assessed to ensure every chosen supplier meets their high standards.

After careful selection, Samsung negotiates contracts that lock in competitive prices, consistent supply, and strict adherence to both quality and sustainability standards. This win-win approach ensures reliable materials and long-term partnerships.

Recognizing the inherent vulnerabilities posed by natural disasters and political instability, Samsung proactively addresses these challenges by implementing robust risk management strategies. This proactive stance ensures the mitigation of potential disruptions and the maintenance of uninterrupted supply chains.

Central to Samsung's success is the cultivation of strong relationships with its suppliers. Samsung fosters this through collaboration and investment in supplier development programs. This not only increases efficiency but also helps their suppliers continuously improve, creating a mutually beneficial ecosystem.

*Stage 3: Design Collaboration.* Collaborative efforts between design and engineering teams are pivotal as they jointly strive to incorporate materials with reduced environmental impact without compromising performance. Additionally, a core aspect of the design philosophy involves creating products strategically engineered for disassembly and recycling, thereby minimizing waste and optimizing the utilization of resources. This integrated approach underscores the commitment to environmentally conscious practices and resource efficiency in the product development lifecycle.

### *3.3. Samsung's procurement sustainability practices in raw materials procurement*

#### *3.3.2. Samsung's responsibility in sourcing minerals*

Recognizing the critical global challenges stemming from human rights violations and environmental degradation linked to mineral mining in Indonesia and conflict-affected regions in Africa, Samsung has implemented the Responsible Sourcing of Minerals policy. This policy seeks to ensure that sourced minerals from its various supply chains get purchased from supportable origins. This policy includes a stringent adherence to the 'OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas,' (OECD, 2016) ensuring that the minerals integrated into our products meet internationally recognized standards. Samsung mandates that their supplier companies align

with Samsung's Supplier Code of Conduct (Samsung, 2023), which reflects their commitment to international guidelines and ethical business practices. Through initiatives such as the Responsible Business Alliance (RBA), the Responsible Minerals Initiative (RMI), and GeSI (Global e-Sustainability Initiative), Samsung contributes to the advocacy and promotion of responsible mineral sourcing practices within the larger industry landscape.

*Conflict Minerals*

Samsung acknowledges that in certain regions of 10 African countries, including the Democratic Republic of the Congo, insufficient environmental and human rights standards pose challenges. Consequently, Samsung has strictly prohibited the use of conflict minerals like tantalum, tin, tungsten, and gold sourced from illegal mining in conflict regions. To uphold high standards for suppliers, Samsung conducts comprehensive reviews of minerals used in its products within the supply chain management process.

To establish a conflict-free mineral sourcing system, Samsung aligns with the OECD Due Diligence Guidance (OECD, 2016). It mandates suppliers to work exclusively with RMAP-certified smelters, halting transactions involving non-RMAP-conformant smelters. By adhering to RMAP-certified smelters, Samsung ensures ethical mining practices regardless of origin. While Samsung refrains from outrightly banning sourcing from specific regions, including Africa, it supports progress in responsible mining. Clear guidelines, training, and education are provided to suppliers, and regular inspections are conducted to ensure compliance with Samsung's conflict-free mineral policies.

*Responsible Minerals*

In addition to Samsung's commitment to conflict-free minerals, they rigorously manage their supply chain to monitor mineral mining activities for potential human rights violations or environmental harm. Specifically addressing the issue of underage workers in cobalt mines in the Democratic Republic of the Congo, Samsung ensures compliance with the OECD Due Diligence Guidance (OECD, 2016). They actively collaborate with global organizations, conducting continuous monitoring and responding as needed. Samsung works diligently to ensure that mining in their supply chain avoids funding conflicts and adheres to practices that respect human rights and the environment, all while fulfilling their social responsibilities.

This policy demonstrates Samsung's commitment to going beyond simply meeting minimum compliance standards. It represents a proactive approach to ethical and sustainable sourcing, aiming to minimize environmental and social risks associated with mineral extraction and contribute to a more responsible electronics industry.

*3.3.3. Samsung's supplier selection*

Choosing the right suppliers is crucial for Samsung's success. Samsung Electronics' sustainable procurement practices begin with a meticulous selection process aimed at fostering a network of suppliers aligned with its commitment to sustainability and ethical business conduct. The company places paramount importance on the competitiveness and mindset of potential suppliers, evaluating them based on several key criteria:

*Eco-Partner Status Evaluation*

Samsung prioritizes collaboration with suppliers who are committed to environmental sustainability. Central to this commitment is the Eco-Partner certification, which serves as a testament to a supplier's adherence to Samsung's stringent environmental policies and standards. Suppliers undergo rigorous assessments of their environmental practices, including resource management, waste reduction, and energy efficiency measures.

*Environmental Assessment*

Environmental sustainability is a cornerstone of Samsung's supplier selection process. Suppliers are evaluated on their environmental management practices, including the handling of hazardous substances, waste management procedures, and compliance with environmental regulations. Samsung seeks partners who demonstrate a proactive approach to environmental stewardship and exhibit a commitment to minimizing their ecological footprint.

*Health and Safety Compliance*

Samsung places a strong emphasis on the health and safety of workers within supplier facilities. Suppliers undergo comprehensive evaluations of their occupational health and safety practices, including the adequacy of safety protocols, emergency preparedness measures, and compliance with occupational health regulations. Samsung is unwavering in its commitment to ensuring a safe and healthy working environment for all individuals involved in its supply chain operations.

*Labor and Human Rights Standards*

Upholding labor rights and human dignity is a fundamental principle guiding Samsung's supplier selection process. Suppliers are expected to adhere to strict labor standards, including the prohibition of child labor, compliance with fair labor practices, and the elimination of discriminatory practices. Samsung conducts thorough audits to verify compliance with labor regulations and ensures that its suppliers uphold the highest ethical standards in their workforce management practices. During the 2022 New Supplier Selection process, Samsung implemented additional measures to assess potential suppliers' adherence to labor and human rights standards. This involved conducting extensive surveys and interviews to scrutinize aspects such as forced labor, treatment of workers, and discriminatory practices. These evaluations aimed to ensure compliance with key criteria including recruitment processes, payment of recruitment fees, dormitory arrangements, non-discrimination policies, and working hours. Out of the 116 companies evaluated, all demonstrated adherence to fundamental labor and human rights standards. However, two companies were disqualified due to their failure to meet environmental and safety standards, particularly regarding hazardous chemical management (Samsung Electronics, 2023).

Samsung's commitment to ethical workplace management is exemplified in its efforts in Malaysia, particularly concerning migrant workers at its first-tier suppliers (Lawrence, 2019). In a significant initiative in 2019, Samsung organized the Ethical Recruitment and Fair Labour Practice Training Session in Malaysia, in collaboration with the International Organisation for Migration. This session brought together 80 managers from the company's Malaysian supply

chain to emphasize the importance of ethical recruitment practices, due diligence, and methods to rectify any unethical practices, thereby demonstrating Samsung's dedication to fostering ethically managed workplaces.

Samsung's supplier selection process encompasses thorough on-site assessments, validation of regulatory compliance, and confirmation of human rights practices. This commitment to transparency is underscored by Samsung's publication of its Supplier List, demonstrating a dedication to partnering with ethically responsible organizations.

Furthermore, Samsung provides extensive training and support to its suppliers, empowering them to enhance their operational capabilities and contribute to sustainable practices. This collaborative approach extends to first-, second-, and third-tier suppliers, ensuring that best practices are transmitted down throughout the supply chain. By establishing strategic partnerships with suppliers who share its values, Samsung strengthens its supply chain resilience and fosters a culture of sustainability from production to end-user consumption. The process begins with preliminary screenings and progresses to in-depth on-site evaluations conducted by qualified assessors. These evaluations cover environmental and safety practices, labor standards compliance, and competitive analysis within suppliers' operational regions. Upon successful completion, Samsung transparently publishes its list of approved suppliers, reaffirming its commitment to accountability and ethical sourcing practices. This publication serves as a testament to Samsung's dedication to partnering only with organizations that uphold high ethical standards and demonstrate a commitment to sustainability, thereby reinforcing confidence in its supply chain and responsible business practices.

*3.3.4. Samsung's supplier management*

Samsung Electronics keeps a strong system for managing its suppliers. This system aims to cultivate trust, foster mutual growth, and drive continuous improvement within its supply chain. Key elements of Samsung's supplier management approach include:

*Annual Supplier Evaluation Process*

Suppliers undergo rigorous evaluation on an ongoing basis, with performance assessments conducted annually based on predefined criteria related to business competitiveness, sustainability, and ethical conduct. Through self-assessment processes, suppliers identify areas for improvement and develop action plans to address identified gaps. Samsung provides feedback and support to suppliers throughout this process, facilitating continuous improvement and driving excellence in supplier performance.

*Shared Growth Initiatives*

Samsung is committed to fostering collaborative relationships with its suppliers, characterized by mutual respect, transparency, and shared objectives. In accordance with Lee et al. (2015), Samsung Electronics initiated Shared Growth Day in 2011 as a means of fostering relationships. This annual event involves the company's CEOs visiting suppliers to actively engage with their concerns and challenges. Moreover, Samsung Electronics maintains open lines of communication with suppliers through conferences and a cyber petition system (Samsung Electronics Partner Collaboration Center, 2011). This

collaborative approach to supplier relations has allowed Samsung Electronics to enhance its manufacturing competitiveness and achieve greater efficiency and adaptability by identifying and nurturing innovative suppliers and their ideas.

*Supplier Partnership Strategy*

Samsung adopts a proactive approach to supplier engagement, encouraging suppliers to actively participate in procurement processes and contribute to value creation initiatives. By promoting transparency, fairness, and mutual respect, Samsung aims to build strong, long-lasting partnerships with its suppliers that drive innovation, enhance efficiency, and deliver superior value to customers.

*Integrated Purchase System (G-SRM)*

Samsung leverages an integrated purchase system, known as G-SRM, to streamline supply chain management processes, optimize procurement activities, and mitigate risks. The G-SRM platform facilitates efficient communication and collaboration between Samsung and its suppliers, enabling seamless order management, inventory tracking, and performance monitoring.

Through the G-SRM system, Samsung automates various purchase-related tasks, from supply chain management to risk management and integrated work environment management. Orders for parts are submitted to suppliers through an automated system, with delivery dates set based on agreed lead times. The system ensures that delivery dates cannot be arbitrarily readjusted without the respective supplier's approval, and even with approval, restrictions are in place to limit changes. As of 2022, only 4.8% of all supplier contracts were subject to delivery date changes based on mutual consent after order placement (Samsung Electronics, 2023). Samsung continually strives to improve demand projection accuracy and minimize delivery date readjustment.

Furthermore, to minimize risks related to business continuity, Samsung operates a supply chain risk management system integrated within G-SRM. This system can obtain disaster information from specialized institutions for automatic analysis and response, enhancing the company's ability to proactively manage risks and ensure supply chain resilience.

*Dedicated Organizational Support*

Samsung maintains a dedicated organizational unit tasked with supporting and empowering its suppliers to achieve excellence in their operations. This unit conducts on-site audits of supplier facilities, provides training and development programs, and offers technical assistance and guidance to suppliers as needed. By investing in the capabilities and capacity-building of its suppliers, Samsung strengthens its supply chain resilience and fosters a culture of continuous improvement and innovation.

An example of Samsung's commitment to supplier empowerment is showcased in its Corporate Social Responsibility endeavors within its home country, South Korea. In a notable initiative, Samsung initiated its Smart Factory Construction program in 2015, aimed at sharing its expertise in smart manufacturing with companies across Korea. The program garnered participation from 1,086 SMEs between 2015 and 2017, with Samsung attributing

a 54% increase in quality and a 58% increase in productivity among these firms to the efficacy of its program. Looking ahead, Samsung has identified 2,500 additional Korean SMEs for assistance between 2018 and 2022, with the goal of catalyzing the sustainable expansion of Industry 4.0 across Korea (Adam Munir, 2019).

In addition to formal evaluation processes, Samsung prioritizes relationship-building with its suppliers through initiatives such as Shared Growth Day, where company leaders engage directly with suppliers to address concerns and foster dialogue. Open communication channels, including conferences and online platforms, further facilitate collaboration between Samsung and its suppliers.

As part of its commitment to ethical procurement practices, Samsung adheres to a Global Purchasing Code of Conduct and Supplier Code of Conduct, which outline principles for fair and transparent business dealings. Through its integrated purchase system (G-SRM), Samsung streamlines supply chain management tasks and minimizes risks associated with delivery delays and business continuity.

Overall, Samsung's supplier management practices emphasize partnership, transparency, and continuous improvement, underscoring the company's commitment to responsible sourcing and sustainable supply chain management. The company strives to create shared value for all stakeholders while driving positive social and environmental impact across its global operations, meeting the three criterias in the sustainable raw materials procurement framework.

### *3.4. Ealuation of the Sustainable Procurement of Samsung*

Conducting a SWOT analysis is essential for evaluating the internal and external factors that can impact a company or project. Assessing Samsung's sustainable procurement methods using the SWOT model provides valuable insights into its effectiveness in today's dynamic business environment.

#### *3.4.1. Strengths*

Samsung possesses a strong global presence and reputation, offering a wide range of popular and innovative products. This affords them the ability to leverage their market position when working with suppliers to establish sustainable procurement practices. Moreover, Samsung has dedicated notable endeavors towards integrating sustainability into its business operations by establishing ambitious sustainability targets and engaging actively in industry collaborations aimed at implementing environmentally beneficial sustainable procurement approaches.

Samsung utilizes its global presence and enforced stringent guidelines for its suppliers and is actively involved in ensuring the responsible sourcing of these minerals. Leveraging its market position and credibility, Samsung influences its suppliers to comply with internationally recognized standards such as the Responsible Minerals Initiative. Specifically, according to Samsung Electronics Sustainability Report 2023, Samsung is committed to promoting awareness of ethical mineral issues, carrying out assessments on the utilization of ethical minerals, and pinpointing as well as addressing potential risk factors concerning all its suppliers

who provide materials for mass production. Samsung also prevents non-compliant materials from entering their supply chain right from the start of procurement. In addition, they required the suppliers to extend the ban on conflict minerals to their own suppliers in accordance with the conflict minerals policy. Samsung also monitors minerals that are associated with human rights abuses and environmental harm during the extraction process. The company collaborates with global organizations to take appropriate actions in response to these issues. Particularly, the key operations of Samsung together with Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), Samsung SDI, BMW Group, and BASF as of 2021 were performing safety training for over 1,000 miners from 14 cooperatives; providing protective gear including helmets; conducting agricultural and financial training for more than 3,000 local residents, supporting the foundation of 72 microbusinesses such as bakeries and tailors (Samsung, 2023).

*3.4.2. Weaknesses*

One limitation of Samsung's sustainable procurement endeavors is the possible vulnerability to supply chain interruptions. Given that Samsung depends on a widespread network of suppliers and manufacturers worldwide, any disturbances in the supply chain could result in delays or scarcities in obtaining sustainable materials or components. The vulnerability to supply chain interruptions for Samsung's sustainable procurement can be seen during the COVID-19 pandemic. These interruptions could impede the company's procurement of environmentally friendly materials, potentially impacting its sustainability objectives and commitments.

Additionally, there is a deficiency of openness in Samsung's management practices related to their supply chain. Although Samsung has taken steps to supervise and assess suppliers' sustainability performance, there is restricted public knowledge about their precise criteria for supplier selection or the thoroughness of their scrutiny processes. The lack of transparency regarding Samsung's scrutiny processes raises questions about the thoroughness and comprehensiveness of their sustainability assessments. While Samsung may conduct audits or assessments of their suppliers, the specific details of these processes, such as frequency, scope, and methodology used, are not readily available to the public. As a result, stakeholders have limited insight into how accountable Samsung's suppliers are for sustainable practices.

*3.4.3. Opportunities*

Samsung has a significant prospect for advancing its sustainable procurement efforts through the increasing interest in eco-friendly products. The increasing inclination among consumers toward environmentally sustainable products is supported by various studies and surveys. Notably, a survey by Nielsen reveals that 73% of global consumers are willing to modify their consumption habits in order to minimize their environmental footprint, suggesting a promising market opportunity for eco-friendly goods such as electronics and technological devices (Insights – NIQ, 2023). This growing demand for environmentally friendly products presents a valuable opportunity for Samsung to integrate sustainable procurement practices and meet market needs. By integrating sustainability into its supply chain and providing eco-friendly goods, Samsung can appeal to conscientious consumers and establish itself as an industry leader in green electronics.

Samsung can leverage the increasing availability of sustainable materials and technologies to improve its procurement practices. By integrating these options into its products, such as recycled plastics and eco-friendly materials, Samsung can enhance its sustainability initiatives and promote a circular economy. According to the Sustainability Report of Samsung (2023), Samsung is increasing the utilization of recycled resin in plastic components utilized in their products. By 2030, half of their plastic parts will incorporate recycled resin, with a target for all plastic parts to contain it by 2050. Additionally, they are broadening the incorporation of plastics recycled from discarded fishing nets. Samsung has set up the Circular Economy Lab with a focus on advancing material recycling technology and integrating recycled materials into its products. The lab seeks to substitute important materials used in their products with more environmentally friendly alternatives through initiatives like developing recycled materials and researching resource recovery from waste streams.

*3.4.4. Threats*

Sustainable procurement requires ensuring that the entire supply chain follows ethical and sustainable practices. However, supply chains can be complex, involving multiple tiers of suppliers and sourcing locations. This complexity creates challenges in monitoring and verifying the sustainability performance of each supplier and ensuring compliance with environmental and social standards. This encompasses problems such as insufficient transparency, failure to adhere to labor standards, unsustainable sourcing of raw materials, and other associated difficulties. If not addressed promptly and effectively, these issues can negatively impact Samsung's products' sustainability credentials and tarnish the company's reputation.

As consumer concern for sustainability grows, businesses in the electronic sector are giving greater emphasis to sustainable procurement practices. Competition in the electronics sector is intensifying, making it crucial for Samsung to effectively demonstrate its commitment to sustainability to maintain its market share.

## 4. Recommendations

### *4.1. Recommendations for Samsung*

*4.1.2. Optimize strengths and opportunities*

*Create a worldwide sustainable image.* An increase in global concern of the environment has affected the customer’s view of manufacturing and created a demand for purchasing products manufactured in a sustainable manner. The experiment of Elizabeth, C. and Osayuwamen, O. (2018) indicates that sustainable procurement practices lead to a higher level of customer relationship management as they feel good about their purchases. Therefore, it is most favorable for Samsung if they incorporate sustainable procurements for all of their electronics products to further leverage their sustainable image in the customers’ eyes and become the number 1 symbol of sustainability in the electronics manufacturing industry.

*Gain advantage over suppliers in sustainable requirements.* In 2021, Samsung production volume of only semiconductors reached 1,756.01 billion units (Statista, 2024).

This represents Samsung's large production and consumption power in the electronics market. Because of the large supply volume, any company that has a supply contract for Samsung will have high revenue and open for them a lot more opportunities. Samsung can utilize this position to choose the best strategic suppliers who offer differentiated technological capability to the table and fulfill all the requirements set by Samsung.

*Support suppliers to build a comprehensive sustainable procurement system.* Even though Samsung arranges annual supplier evaluation in order to evaluate the performance and cross out the under-performing suppliers, it is important for Samsung to provide necessary feedback and support for their suppliers to continuously meet the sustainable standards. Removing a supplier is easy but the process of recruiting and selecting new suppliers is time consuming. With its huge resources, Samsung can provide support through employee training, technological transfer or assisting them in the process of obtaining Third-party certification for sustainability.

*4.1.3. Overcome weaknesses and threats*

*Tackle supply chain interruptions*. Samsung has a network of 2500 suppliers providing different materials for the manufacturing process in order to keep up with the production demand. However, being dependent on external suppliers brings the risks of having interruptions in the supply chain due to major reasons such as war, market unpredictability, labor strikes, security threats, etc. To tackle this, Samsung should together with their suppliers create a risk management plan identifying both internal and external risks following the prevention, preparedness, response, and recovery model. In addition, Samsung should monitor supplier performance continuously and increase the supply chain visibility to track the overall components from different suppliers throughout the supply chain and react better to market demand.

*Be completely transparent.* Electrical products are typically complex global products with extended, often unclear, global supply chains. Although Samsung provides a very clear Code of conducts and establishes the annual Responsible Mineral Report, the criterias for evaluating the suppliers are kept non-public. In order to gain customer trust and avoid other issues or disputes between suppliers, Samsung should make the criterias for assessment and sustainable certificates needed public for all suppliers and customers. Customers can track back the source of information to see if Samsung really does what they committed or not.

### *4.2. Recommendations for applying sustainable procurement for other Vietnamese electronic manufacturing companies*

For long-term development, electronic production companies in Vietnam should adopt sustainable procurement practices. Vietnamese electronic manufacturing firms should put SamSung sustainability efforts such as commitment to conflict materials and monitoring mining activities into consideration as a role model in raw material procurement. In Vietnam, with its low labor costs and mineral resource challenges, it's vital for companies to promote and implement sustainable procurement. This benefits workers' safety, human rights, and the environment, while enhancing the reputation of Vietnamese electronic

products in global markets. Here are suggestions for Vietnamese companies to improve their procurement practices.

Companies should carry out the impact assessment. While applying sustainable practices, Vietnamese firms can find trouble in the shortage of sustainable raw materials suppliers that can meet the standards, or the high cost of investment in high technology machines and infrastructures. Because of this, companies should do research and calculate carefully before making decisions to reduce risk, optimize cost and choose the best sustainable practices that are suitable within the budget. Using this assessment, firms would have a clearer picture of the costs and benefits that they will encounter when carrying out sustainable practices. Companies should consider the long-term benefit over the current cost.

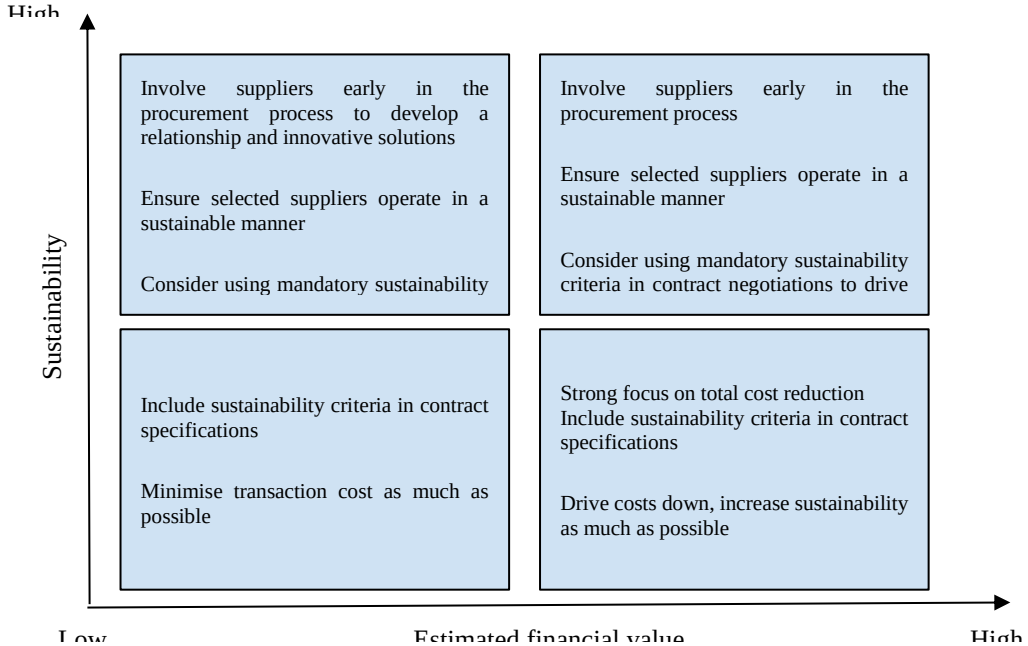


**Figure 1:** Approaches to include sustainability in procurement based on impact and value

**Source:** Authors

Companies would need to determine the sustainability procurement policies and specifications for employees and third-party raw materials suppliers to comply with. These specifications and policies have to at least meet the baseline of the government's requirements. The more specific and stricter the policies and specifications, the more complete the sustainable procurement process will be. These practices raise awareness and build capacity both internally and externally. Following the case of Samsung, a clear code of conduct and guide has to be established and followed strictly by both the manufacturers and the suppliers in order for the sustainable efforts turn into success.

In sustainable procurement practices, as well as considering how products are made and where they come from, consideration needs to be extended to how these raw materials will be used and what happens to them at end of life. On the ground of this, it is important to implement control and monitoring performance. Strict control has to start at the period of supplier selection. Annual assessments have to be carried out in order to make sure that suppliers always

meet the sustainable requirements. Areas where the supplier has not met the contracted requirements should be addressed in accordance with the contract. Companies can provide additional training and advice as to how to address underperformance and non-compliance should be dealt with by legal teams.

## 5. Conclusion

In conclusion, the assessment of Samsung's sustainable approaches to raw material procurement underscores the critical importance of adopting environmentally responsible and sustainable procurement strategies in today's interconnected global market. Samsung's steadfast commitment to integrating eco-friendly considerations into its raw material sourcing not only contributes positively to society and the environment but also significantly bolsters its brand reputation and fosters enduring customer loyalty. These insights offer valuable recommendations for other Vietnamese electronic manufacturing companies to prioritize sustainable practices in their own procurement processes.

Embracing comparable sustainable practices offer substantial advantages for Vietnam, an economy experiencing rapid development characterized by an expanding consumer base and a burgeoning manufacturing sector. This endeavor can elevate the global standing of electronic products manufactured in Vietnam and concurrently contribute to environmental preservation.

Nevertheless, Vietnam electronics manufacturing companies are confronted with challenges in the adoption of sustainable practices in raw material procurements, including potential initial cost escalations, a limited presence of local eco-friendly suppliers, and the necessity for employee training. Consequently, there exists an imperative for Vietnam to conduct a thorough assessment to gain a comprehensive understanding of the associated costs and benefits, and to carefully weigh the long-term advantages against the present expenses.

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