Nanotechnology Perceptions
ISSN 1660-6795
www.nano-ntp.com

Sustainable Development Strategies In The Digital Economy: A Case Study Of Grameenphone Ltd

Dr. Mizanur Rahman Mizan[1], Rostoma Begum Chaudhury[2], Nudrat Fariha[3]

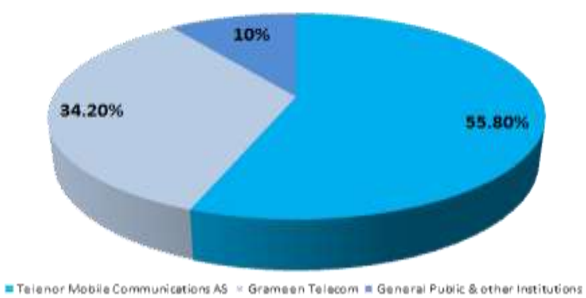
[1]Dean, Centre for Higher Studies and Research (CHSR), Bangladesh University of Professionals (BUP), Bangladesh
Email: mizan5083@gmail.com; dean.chsr@bup.edu.bd
[2]Assistant Professor, Law, American International University–Bangladesh
Email: rostoma5083@gmail.com, ORCID: https://orcid.org/0009-0009-1374-7991
[3]Business Analytics, University of Bridgeport, United States
Email: nfariha@my.bridgeport.edu, ORCID: https://orcid.org/0009-0004-4825-1500

Grameenphone (GP) Ltd. has the highest number of subscribers in Bangladesh telecommunication sector. Over the year, this organization has been able to spread its coverage almost 100% here and has become the largest telecom operator in Bangladesh. On 10 October 1996, the company was incorporated as a private limited company and later, on 25 June 2007, became a public limited company (GP, 2025a). On 16 November 2009, GP started trading its shares on the Chittagong and Dhaka Stock Exchanges. There are mainly two main shareholders named Telenor Mobile Communications AS (55.80%) and Grameen Telecom (34.20%). The rest of 10.00% is available for the general public and other institutions (GP, 2015).

Introduction

GP is operating a digital mobile network based on the GSM standard in the 900 MHz, 1800 MHz and 2100 MHz frequency bands, under the licenses granted by the Bangladesh Telecommunication Regulatory Commission (BTRC) (GP, 2025a).

Fig 1: GP share distribution



As Bangladesh moves toward a digital future, the digital economy has become a key driver of sustainable development. It creates new digital jobs, supports green innovations and promotes inclusive economic growth through improved connectivity (Z. Chen & Xing, 2025). Grameenphone has been contributing to this progress by expanding is digital service access across the country. Its network and services have been helping to reduce inequalities, empower small businesses and improve access to digital education and health solutions (Grameenphone, 2024b).

Grameenphone's digital expansion is aligned with national goals such as Smart Bangladesh and global frameworks like the UN Sustainable Development Goals (SDGs). The company integrates environmental responsibility through energy-efficient technologies, promotes social inclusion by connecting rural communities and drives economic empowerment through digital entrepreneurship (Grameenphone, 2025b). With its broad coverage, innovation and partnerships, Grameenphone is acting as a catalyst for sustainable digital transformation in Bangladesh (Grameenphone, 2025b).

Table 1: Spectrum and Bandwidth (MHz)

Spectrum	Bandwidth (MHz)	Expiry
900 MHz	2×7.4	2026
1800 MHz	2×7.2 + 2×7.4	2026
1800 MHz	2×5	2033
2100 MHz	2×10	2028

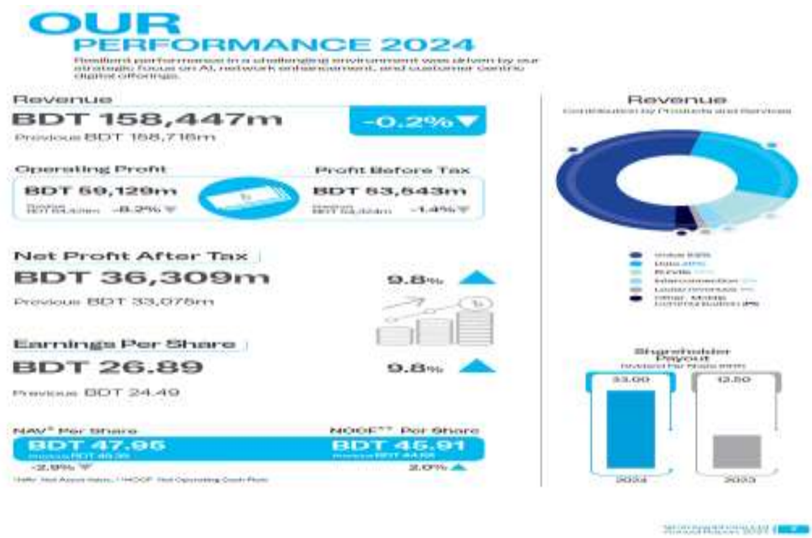
Source : (GP, 2025a)

Analysis of Current Situation

Key Issues Facing Grameenphone Ltd.

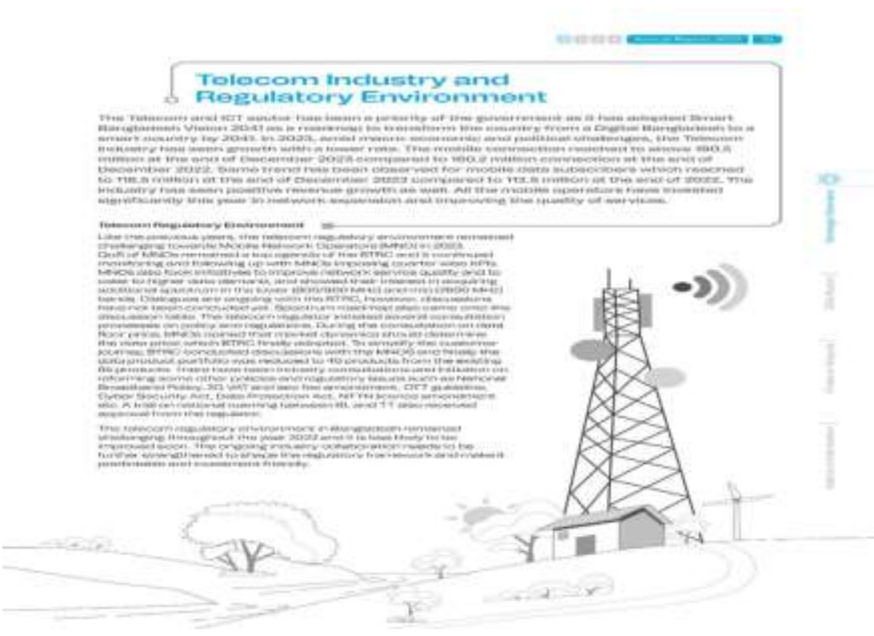
Market Competition: Grameenphone operates in a highly competitive market with other telecom giants vying for market share. Rivalry from competitors such as Robi Axiata, Banglalink, and state-owned Teletalk are challenging GP in terms of pricing, service differentiation and customer acquisition (Hasan, 2025).

Fig 2: Performance (Source: (GP, 2024))



Regulatory Environment: The telecom industry in Bangladesh is subject to stringent regulations and policies that impact operations, spectrum allocation, and tariff structures. Compliance with regulatory requirements while maintaining profitability and innovation is showing a significant challenge for Grameenphone.

Fig 2: Regulatory Environment (Source: (GP, 2023))



Technological Advancements: With rapid advancements in technology, particularly in areas like 5G, IoT and digital transformation, Grameenphone must continually invest in upgrading its infrastructure and capabilities to remain competitive and meet evolving customer demands.

Digital Inclusion: Despite significant progress in expanding network coverage and connectivity, digital inclusion remains a challenge, especially in rural and underserved areas. Grameenphone must address barriers to access, affordability and digital literacy to bridge the digital divide and reach untapped market segments.

Customer Experience: As consumer preferences evolve and expectations for seamless, personalized experiences increase, Grameenphone faces the challenge of delivering exceptional customer service across various touchpoints, including digital channels, retail outlets and customer care centers (A et al., 2017).

Assessment of Current Market Position, Technological Capabilities, and Customer Trends

Grameenphone boasts a strong market presence by holding the largest market share in Bangladesh's telecom industry (GP, 2025a). With extensive network coverage spanning urban and rural areas, the company has established itself as a reliable provider of voice and data services to millions of subscribers (Grameenphone, 2024b).

Technologically, Grameenphone has made significant investments in upgrading its infrastructure, including the rollout of 4G LTE networks, enhancing network capacity and speed (GP, 2018). The company's focus on innovation is evident through initiatives such as introducing IoT devices and exploring emerging technologies to enhance service offerings and improve operational efficiency.

In terms of customer trends, there is a growing demand for digital services and content consumption which is driven by smartphone penetration, increased internet usage and changing consumer lifestyles (Hoang & Le Tan, 2023). Grameenphone has responded by diversifying its product portfolio through offering value-added services, content partnerships and digital platforms to cater to evolving customer needs and preferences (Grameenphone, 2025a).

However, the company faces challenges in maintaining customer loyalty amidst intense competition and rising expectations for quality, reliability and affordability. Addressing these challenges requires Grameenphone to leverage its market leadership, technological prowess and customer insights to innovate and differentiate its offerings while prioritizing customer-centricity and operational excellence (Rahman, 2024).

Selection of Relevant Digital Strategy

Enhanced Connectivity Infrastructure: Grameenphone should prioritize investments in expanding network coverage and improving internet accessibility, particularly in rural and underserved areas. This includes deploying advanced technologies like 5G and expanding high-speed broadband services to bridge the digital divide (GSMA Intelligence, 2024). In addition, the company can adopt green ICT initiatives such as energy-efficient network equipment and sustainable infrastructure to reduce environmental impact. Expanding connectivity not only empowers communities but also supports inclusive economic growth and social sustainability (Goel et al., 2024).

Customer-Centric Innovation: Fostering a culture of innovation remains key, with a focus on placing customers at the center of product and service development (Tenney, 2024). Using data analytics, artificial intelligence (AI), and machine learning (ML), Grameenphone can gain insights into customer preferences, behavior, and usage patterns (Zulaikha et al., 2025). Tailored offerings, such as digital content, IoT solutions and value-added services, enhance engagement while integrating sustainability (Khan et al., 2025). For example, promoting digital solutions reduces the need for paper-based services and supports environmentally responsible practices (X. Chen et al., 2023).

Digital Literacy and Skills Development: Grameenphone should continue initiatives that promote digital skills among its subscribers. Collaborations with educational institutions, government agencies, and NGOs can deliver training programs, workshops, and online resources (WPAB, 2025) to foster inclusive and equitable growth by enabling rural and underserved populations to participate fully in the digital economy. Improved digital literacy also enhances access to education, health, and financial services, supporting social sustainability (Arif et al., 2024)

Partnerships and Ecosystem Collaboration: Strategic alliances with content providers, e-commerce platforms, fintech companies, and other stakeholders can create a comprehensive digital ecosystem (Cosma & Pennetta, 2024). Integrating complementary services enriches the customer experience, drives ecosystem growth, and fosters sustainable business practices. Partnering with organizations that prioritize environmental responsibility, such as e-waste management and energy-efficient solutions, reinforces Grameenphone's commitment to sustainability (GP, 2025b).

Agile Operations and Service Delivery: By adopting agile methodologies and digital technologies, Grameenphone can streamline operations and service delivery. Automation, digital self-service options, and omnichannel support improve efficiency, reduce operational costs, and lower carbon footprints. These practices ensure seamless customer interaction while aligning business processes with environmental and social goals (Ali & Maelah, 2025).

Sustainable Digital Practices: Grameenphone's strategies collectively contribute to environmental and social sustainability. Green ICT initiatives, energy-efficient networks, and responsible e-waste management reduce environmental impact. Digital literacy and connectivity programs empower marginalized populations, fostering economic inclusion and social well-being (Grameenphone, 2024a). By integrating sustainability into innovation and operations, Grameenphone positions itself as a catalyst for both digital transformation and sustainable development in Bangladesh.

This sustainability-focused strategy reinforces Grameenphone's objectives of inclusive digital growth, superior customer experiences, and positive socio-economic impact. By aligning technology adoption with environmental and social goals, the company can differentiate itself, attract new customers, and support Bangladesh's broader digital economy and SDG commitments.

Critical Innovation Perspectives

Analysis of Innovation Perspectives

1. **Product Innovation:** Product innovation involves developing new offerings or enhancing existing ones to meet evolving customer needs. For Grameenphone's Digital Inclusion 360 strategy, product innovation is key for delivering differentiated, value-added services (GrameenPhone Annual Report, 2023). This includes innovative mobile plans, digital content packages, IoT solutions, and fintech services tailored to diverse customer needs (GrameenPhone Annual Report, 2023). Additionally, Grameenphone can promote eco-friendly and low-carbon solutions, such as digital billing, e-wallets, and paperless services, reducing environmental impact (Grameenphone, 2009). By integrating sustainability into product innovation, the company can maintain competitiveness, drive customer acquisition and retention, and support green digital transformation (Dellyana & Aldianto, 2025).

2. **Planning Innovation:** Planning innovation encompasses strategic foresight, agile decision-making and adaptive resource allocation. Grameenphone must adopt innovative planning approaches that prioritize agility, flexibility, and responsiveness to market dynamics. Leveraging data analytics, scenario planning, and agile methodologies can help anticipate changing customer needs, technology trends, and competitive pressures. Planning innovation can also integrate sustainability by prioritizing green investments, energy-efficient infrastructure, and initiatives that enhance social inclusion. This ensures strategic alignment while advancing both business and sustainable development objectives (Alamandi, 2025).

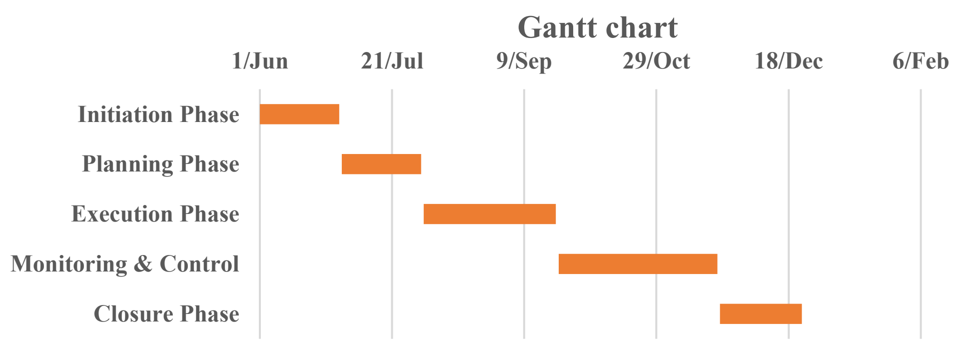
3. **People Innovation:** People innovation focuses on nurturing a culture of creativity, collaboration, and continuous learning. Grameenphone should build an innovation-driven workforce that embraces diversity, experimentation, and knowledge sharing. Initiatives like innovation labs, cross-functional teams, and training programs can empower employees with the skills and mindset to drive innovation. Incorporating workforce sustainability, gender inclusion, and equitable opportunities in the digital workforce strengthens social responsibility. By fostering people innovation with sustainability in mind, Grameenphone enhances employee engagement, retention, and creates a long-term innovation ecosystem (Ahmad et al., 2024).

4. **Potential Innovation:** Potential innovation involves exploring new growth opportunities, business models, and partnerships to unlock future value. Grameenphone should monitor emerging trends, disruptive technologies, and untapped markets. Strategic alliances with startups, technology providers, and industry stakeholders can co-create solutions that address societal and environmental challenges. This includes green partnerships and digital solutions for climate resilience, such as energy-efficient IoT applications or digital tools supporting disaster management. Potential innovation with a sustainability lens helps

diversify revenue streams, expand market reach, and position Grameenphone as a pioneer in digital inclusion and sustainable development (Khan et al., 2025).

Project Plan Implementation

Fig3: Gantt chart



	Closure Phase	*Monitoring & Control*	*Execution Phase*	*Planning Phase*	*Initiation Phase*
Start Date	*22/Nov*	*22/Sep*	*2/Aug*	*2/Jul*	*1/Jun*
Duration (days)	*31*	*60*	*50*	*30*	*30*

1. **Initiation Phase (Month 1-2):**

- Establish project team and governance structure.
- Conduct stakeholder analysis and engagement.
- Define project scope, objectives, and success criteria.
- Finalize budget and resource allocation.

2. **Planning Phase (Month 3-4):**

- Develop detailed project plan, including work breakdown structure (WBS) and Gantt Chart.
- Identify and assess project risks, and develop mitigation strategies.
- Define key performance indicators (KPIs) such as carbon footprint reduction, digital inclusion rate, or green energy use for monitoring progress and success.
- Procure necessary resources and technology infrastructure.

3. **Execution Phase (Month 5-10):**

- Execute product innovation initiatives, including development and launch of new services.
- Implement planning innovations, such as agile methodologies and adaptive decision-making processes.
- Foster people innovation through training, workshops, and culture-building activities.
- Explore potential innovation opportunities, such as strategic partnerships and market expansions.

4. **Monitoring & Control Phase (Month 11-12):**
- Monitor project progress against planned milestones and KPIs.
- Conduct regular performance reviews and status updates.
- Address any deviations from the project plan through corrective actions.
- Communicate progress and achievements to stakeholders.

5. **Closure Phase (Month 13):**
- Evaluate project outcomes and lessons learned.
- Document best practices and recommendations for future initiatives.
- Celebrate project success and recognize team contributions.
- Transition deliverables to operational teams for ongoing management.

Key Performance Measures

To effectively monitor the success of the strategy implemented by Grameenphone Ltd. in the digital economy, several key performance measures need to be identified and regularly assessed. These measures should align closely with the company's strategic objectives to ensure that progress is tracked in line with overarching goals.

One crucial performance measure is Customer Satisfaction Index (CSI), which reflects the level of satisfaction among Grameenphone's customers regarding the quality of services, network coverage, and overall customer experience. As Grameenphone aims to adopt a customer-centric philosophy, monitoring CSI allows the company to gauge whether its digital initiatives are positively impacting customer satisfaction, aligning with its strategic objective of delivering superior customer experience.

Another important metric is Market Share Growth, which indicates the extent to which Grameenphone is expanding its market presence in the digital landscape. By continuously monitoring market share growth, the company can evaluate the effectiveness of its digital strategy in gaining a competitive edge and capturing a larger share of the market, aligning with its strategic objective of sustainable business growth.

Furthermore, Digital Adoption Rate serves as a vital measure to assess the uptake of digital services and products offered by Grameenphone. This metric reflects the extent to which customers are embracing digital solutions, indicating the success of the company's efforts in driving digital transformation and innovation. Aligning with the strategic objective of advancing technology service provision, a high digital adoption rate signifies progress towards becoming the leading technology service provider in Bangladesh.

Moreover, Return on Investment (ROI) is essential for evaluating the financial performance and efficiency of Grameenphone's digital initiatives. By measuring the ROI of various digital projects and investments, the company can assess their profitability and determine whether resources are being optimally allocated. This measure aligns with the strategic objective of sustainable growth and strong cash generation, ensuring that digital investments contribute to the company's financial objectives.

Sustainable Performance Measures

Digital Inclusion Index: This metric evaluates the extent of connectivity in rural and underserved areas. It measures how effectively Grameenphone’s digital services reach marginalized communities, supporting social sustainability and inclusive growth. Higher scores indicate improved access to education, health, and financial services through digital channels.

Environmental Efficiency Score: This indicator tracks the energy efficiency of Grameenphone's network operations. It includes metrics such as energy consumption per user, use of renewable energy sources, and implementation of green ICT practices. A higher score reflects reduced carbon footprint and alignment with environmental sustainability goals.

Contribution to SDG Progress Indicators: This measure assesses Grameenphone's impact on relevant United Nations Sustainable Development Goals (SDGs), such as quality education, gender equality, economic growth, and industry innovation. It quantifies the company's role in promoting social, economic, and environmental development through digital initiatives.

Processes for Successful Implementation

1. **Cross-Functional Collaboration**: Collaboration across departments is essential to ensure seamless execution of the implementation plan. This involves aligning objectives, coordinating efforts, and fostering communication among teams. By promoting cross-functional collaboration, Grameenphone can leverage diverse expertise and resources to effectively implement the digital strategy (GP, 2024).
2. **Agile Project Management**: Adopting agile project management methodologies allows for iterative development, rapid adaptation to changes, and continuous improvement. Agile practices enable Grameenphone to respond swiftly to evolving market dynamics and customer needs, ensuring that the implementation plan remains flexible and responsive (GP, 2024).
3. **Change Management**: Implementing a digital strategy often entails organizational change, including new processes, technologies, and ways of working. Effective change management involves engaging employees, providing adequate training and support, and addressing resistance to change. By managing change proactively, Grameenphone can minimize disruptions and facilitate smoother adoption of digital initiatives (GP, 2024).
4. **Risk Management**: Identifying potential risks and developing mitigation strategies is crucial for mitigating disruptions and ensuring project success. Risks such as technological challenges, regulatory changes, and competitive pressures need to be assessed and addressed proactively. By implementing robust risk management practices, Grameenphone can anticipate challenges and implement contingency plans to mitigate their impact (GP, 2024).
5. **Continuous Monitoring and Evaluation**: Regular monitoring and evaluation of project progress are essential for tracking performance against objectives, identifying bottlenecks, and making timely adjustments. By establishing key performance indicators (KPIs) and feedback mechanisms, Grameenphone can assess the effectiveness of the implementation plan and take corrective actions as needed (GP, 2024).
6. **Sustainability Integration:** Every digital project should align with environmental, social, and governance (ESG) principles. This involves embedding sustainability considerations into project design, execution, and evaluation. By integrating ESG goals, Grameenphone ensures that digital initiatives contribute to environmental responsibility, social inclusion, and ethical governance, supporting long-term sustainable development (GP, 2024).

Digital Technologies for Strategy Success

1. **5G Technology:** Investing in 5G technology enables Grameenphone to deliver faster data speeds, lower latency, and higher network capacity. It supports emerging technologies like IoT and augmented reality (AR) applications. Additionally, 5G facilitates energy-efficient network operations and reduces the need for physical infrastructure expansion, ensuring environmental sustainability and inclusive digital participation (Imam-Fulani et al., 2023).
2. **Internet of Things (IoT):** IoT integration allows Grameenphone to offer smart solutions for agriculture, healthcare, and transportation. For instance, IoT-enabled smart agriculture helps farmers monitor crops, optimise water and fertilizer use, and reduce resource wastage. These solutions promote productivity while supporting environmental sustainability and inclusive access to digital services in rural areas (Thilakarathne et al., 2025).
3. **Artificial Intelligence (AI) and Machine Learning (ML):** AI and ML enhance customer experiences and operational efficiency by analysing large datasets to provide personalised recommendations, predict equipment failures, and optimise network performance. These technologies also enable energy management systems and resource-efficient operations, reducing environmental impact and ensuring sustainable digital participation (X. Chen et al., 2023).
4. **Cloud Computing:** Cloud platforms allow scalable infrastructure, rapid service deployment, and cost-effective innovation. Cloud computing reduces the need for physical servers, lowering hardware waste and energy consumption. This supports green ICT practices and allows inclusive access to digital tools like cloud storage, collaboration software, and SaaS applications, ensuring environmental sustainability and equitable digital participation (Google Cloud, 2025)
5. **Data Analytics and Business Intelligence (BI):** Data analytics and BI provide insights into customer behaviour, market trends, and operational performance. Advanced analytics, such as predictive and prescriptive techniques, help optimise resource allocation, reduce energy consumption, and plan environmentally sustainable operations. Data-driven decision-making also enables targeted digital literacy initiatives, promoting inclusive and equitable digital growth (X. Chen et al., 2023).

Strategic Benefits with Sustainability Integration:

- **Enhanced Customer Experience:** AI, IoT, and analytics personalise services and improve accessibility, supporting inclusive digital participation.
- **Operational Efficiency:** Cloud computing and automation streamline processes, reduce energy use, and lower carbon footprints.
- **Innovation and Differentiation:** 5G, IoT, and AI enable environmentally friendly innovations and sustainable service offerings, positioning Grameenphone as a technology and sustainability leader.

Conclusion

In summary, the proposed strategy for Grameenphone Ltd. involves leveraging advanced digital technologies such as 5G, IoT, AI, cloud computing, and data analytics to drive innovation, enhance customer experiences, and improve operational efficiency. By aligning these technologies with strategic objectives, Grameenphone strengthens its competitive position, drives growth, and delivers long-term value to stakeholders (Goel et al., 2024). Continuous innovation and adaptation remain essential in the digital era. Organisations must embrace change, anticipate market trends, and proactively innovate to meet evolving customer and stakeholder needs (Z. Chen & Xing, 2025). By integrating sustainability into its digital strategies, Grameenphone contributes not only to Bangladesh's digital economy but also to its long-term sustainable development vision. The company's initiatives support economic growth, environmental protection through energy-efficient and low-carbon solutions, and social inclusion by expanding digital access and literacy. Through these efforts, Grameenphone fosters a digitally empowered, socially inclusive, and environmentally responsible future for Bangladesh (X. Chen et al., 2023).

References

1. A, U., T, I., & M, R. (2017). Consumer's Satisfaction Level about Grameen Phone's (GP) Service in Bangladesh: A Case Study on Perception Analysis. Journal of Business & Financial Affairs, 06(02). https://doi.org/10.4172/2167-0234.1000258
2. Ahmad, N., Samad, S., & Han, H. (2024). Charting new terrains: How CSR initiatives shape employee creativity and contribute to UN-SDGs in a knowledge-driven world. Journal of Innovation & Knowledge, 9(4), 100557. https://doi.org/10.1016/j.jik.2024.100557
3. Alamandi, M. (2025). Sustainable Innovation Management: Balancing Economic Growth and Environmental Responsibility. https://doi.org/10.3390/su17104362
4. Ali, A. S., & Maelah, R. (2025). Technological innovation and sustainability of shared service: Insights from industry players. Heliyon, 11(4), e42915. https://doi.org/10.1016/j.heliyon.2025.e42915
5. Arif, A., Batool, H., & Asgher, S. (2024). Digital Literacy and Inclusive Growth: Examining Digital Empowerment of Female Students in Lahore. Journal of Economic Impact, 6(1), 81–93. https://doi.org/10.52223/econimpact.2024.6110
6. Chen, X., Kurdve, M., Johansson, B., & Despeisse, M. (2023). Enabling the twin transitions: Digital technologies support environmental sustainability through lean principles. Sustainable Production and Consumption, 38, 13–27. https://doi.org/10.1016/j.spc.2023.03.020
7. Chen, Z., & Xing, R. (2025). Digital economy, green innovation and high-quality economic development. International Review of Economics & Finance, 99, 104029. https://doi.org/10.1016/j.iref.2025.104029
8. Cosma, S., & Pennetta, D. (2024). Enhancing online visibility through strategic alliances: The case of bank-FinTech relationships. International Journal of Bank Marketing, Emerald Publishing, 42(5), 947–980. https://www.emerald.com/ijbm/article/42/5/947/1224071/Enhancing-online-visibility-through-strategic
9. Dellyana, D., & Aldianto, L. (2025). Innovative Marketing Strategy for Green Products in Search of Better Customer Acquisition. SpringerLink, 77–99. https://link.springer.com/chapter/10.1007/978-3-031-78361-6_4
10. Goel, A., Masurkar, S., & Pathade, G. R. (2024). An Overview of Digital Transformation and Environmental Sustainability: Threats, Opportunities, and Solutions. Sustainability, 16(24), 11079. https://doi.org/10.3390/su162411079
11. Google Cloud. (2025). Advantages Of Cloud Computing. https://cloud.google.com/learn/advantages-of-cloud-computing
12. GP. (2015). Grameen Phone Annual Report. https://cdn01da.grameenphone.com/sites/default/files/2024-07/The_Shareholders.pdf

13. GP. (2018). Grameenphone launches first ever 4G/LTE in Dhaka & Chittagong | Grameenphone. https://www.grameenphone.com/about/media-center/press-release/grameenphone-launches-first-ever-4glte-dhaka-chittagong
14. GP. (2023). GP Annual_Report. https://cdn01da.grameenphone.com/sites/default/files/2024-07/GP_Annual_Report_2023.pdf
15. GP. (2024). GP Annual Report. https://cdn01da.grameenphone.com/sites/default/files/2025-04/GP%20Annual%20Report%202024.pdf
16. GP. (2025a). Company Profile | Grameenphone. https://www.grameenphone.com/about/discover-gp/about-grameenphone/company-profile
17. GP. (2025b). Environmental Efforts | Grameenphone. Grameenphone. https://www.grameenphone.com/about/discover-gp/sustainability/social-sustainability/environmental-efforts
18. Grameenphone. (2009, June 4). Grameenphone launches its environment and climate change campaign. https://www.grameenphone.com/about/media-center/press-release/grameenphone-launches-its-environment-and-climate-change-campaign
19. Grameenphone. (2024a, July 14). Climate & Environment. https://www.grameenphone.com/about/our-commitment/climate-environment
20. Grameenphone. (2024b, July 14). Digital Inclusion | Grameenphone. https://www.grameenphone.com/about/digital-inlcusion
21. Grameenphone. (2025a). Our Business and Strategy. https://cdn01da.grameenphone.com/sites/default/files/2024-07/Our%20Business%20and%20Strategy_0.pdf
22. Grameenphone. (2025b). Sustainability | Grameenphone. https://www.grameenphone.com/about/discover-gp/sustainability
23. GrameenPhone Annual Report. (2023). https://cdn01da.grameenphone.com/sites/default/files/2024-07/GP_Annual_Report_2023_1.pdf
24. GSMA Intelligence. (2024). GSMA Intelligence. https://www.gsmaintelligence.com
25. Hasan, M. (2025, August 7). GP facing predatory pricing investigation over Robi's complaint. The Daily Star. https://www.thedailystar.net/business/news/gp-facing-predatory-pricing-investigation-over-robis-complaint-3957976
26. Hoang, H., & Le Tan, T. (2023). Unveiling digital transformation: Investigating technology adoption in Vietnam's food delivery industry for enhanced customer experience. Heliyon, 9(9), e19719. https://doi.org/10.1016/j.heliyon.2023.e19719
27. Imam-Fulani, Y. O., Faruk, N., Sowande, O. A., Abdulkarim, A., Alozie, E., Usman, A. D., Adewole, K. S., Oloyede, A. A., Chiroma, H., Garba, S., Imoize, A. L., Baba, B. A., Musa, A., Adediran, Y. A., & Taura, L. S. (2023). 5G Frequency Standardization, Technologies, Channel Models, and Network Deployment: Advances, Challenges, and Future Directions. Sustainability, 15(6), 5173. https://doi.org/10.3390/su15065173
28. Khan, M. I., Yasmeen, T., Khan, M., Hadi, N. U., Asif, M., Farooq, M., & Al-Ghamdi, S. G. (2025). Integrating industry 4.0 for enhanced sustainability: Pathways and prospects. Sustainable Production and Consumption, 54, 149–189. https://doi.org/10.1016/j.spc.2024.12.012
29. Rahman, S. M. (2024). Brand Positioning and Consumer Perception: A Study of Grameenphone. https://dspace.bracu.ac.bd/xmlui/bitstream/handle/10361/24888/22264047_BBS.pdf?sequence=1&isAllowed=y
30. Tenney, M. (2024, October 31). Fostering Innovation: The Key to Thriving in the Modern Business Landscape - PeopleThriver. https://peoplethriver.com/what-is-a-culture-of-innovation/
31. Thilakarathne, N. N., Abu Bakar, M. S., Abas, P. E., & Yassin, H. (2025). Internet of things enabled smart agriculture: Current status, latest advancements, challenges and countermeasures. Heliyon, 11(3), e42136. https://doi.org/10.1016/j.heliyon.2025.e42136

32. WPAB. (2025, February 13). How NGOs Can Build Partnerships for Sustainable Women's Workforce Inclusion—fundsforNGOs. https://www2.fundsforngos.org/articles-searching-grants-and-donors/how-ngos-can-build-partnerships-for-sustainable-womens-workforce-inclusion/
33. Zulaikha, S., Mohamed, H., Kurniawati, M., Rusgianto, S., & Rusmita, S. A. (2025). Customer predictive analytics using artificial intelligence. The Singapore Economic Review, 70(04), 1009–1020. https://doi.org/10.1142/S0217590820480021