JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue
JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)
An International Scholarly Open Access, Peer-reviewed, Refereed Journal

CSR in the Digital Age: Leveraging Technology for Social Good

Sheetal Singh Kharwar* Prof. R.S. Meena**

Research Scholar* Professor**

Banaras Hindu University, Varanasi

Abstract

This article examines the evolving landscape of Corporate Social Responsibility (CSR) in the digital age, focusing on how emerging technologies like Artificial Intelligence (AI), blockchain, and big data are transforming traditional CSR practices. It explores the shift from conventional approaches to digital CSR, highlighting how these technologies enhance transparency, efficiency, and stakeholder engagement. Through case studies, the article illustrates real-world applications, such as AI-driven environmental sustainability initiatives, blockchain-based ethical supply chains, and digital platforms for social innovation. The discussion also addresses the challenges and ethical considerations associated with digital CSR, including the risk of exacerbating the digital divide, concerns over data privacy and security, and the potential for greenwashing. It emphasizes the need for business leaders to strategically integrate digital technologies into their CSR efforts, ensuring that these initiatives are both impactful and ethically sound. Looking ahead, the article speculates on future trends in digital CSR, including the potential uses of the Internet of Things (IoT), augmented reality (AR), and virtual reality (VR) in CSR initiatives. It also considers the importance of collaboration between companies, governments, and NGOs in leveraging digital tools for large-scale social impact, as well as the role of regulation in ensuring transparency and accountability. Ultimately, the article argues that the future of CSR lies in the responsible and innovative use of digital technologies, offering new opportunities for businesses to contribute to a more sustainable and equitable world.

Keywords: Corporate Social Responsibility (CSR), Digital Transformation, AI-Powered Sustainability, Technology-Driven CSR, Digital Tools and Technologies

CSR in the Digital Age: Leveraging Technology for Social Good

Introduction

Definition and Overview of CSR

Corporate Social Responsibility (CSR) refers to the ethical framework within which businesses operate, encompassing a wide range of practices aimed at contributing to societal goals, particularly those related to sustainability, ethical business practices, and community engagement. CSR goes beyond mere compliance with legal obligations and focuses on voluntary actions that can positively impact society and the environment. These actions often include initiatives like reducing carbon footprints, improving labour policies, engaging in fair trade, and contributing to local communities.

In the modern business landscape, CSR has evolved from being a peripheral concern to a central component of corporate strategy. Companies today recognize that socially responsible practices can enhance their reputation, foster customer loyalty, and drive long-term profitability. Moreover, stakeholders—including consumers, investors, and employees—increasingly expect companies to act responsibly, making CSR a

critical element of business success and sustainability. Thus, CSR is not just about doing good; it's about integrating social and environmental considerations into the core of business operations to create value for both the company and society.

The Digital Transformation of Society

The advent of digital technologies has profoundly transformed every aspect of society, including how businesses operate and interact with their stakeholders. The rise of the internet, social media, big data, artificial intelligence, and blockchain technology has not only revolutionized traditional business processes but also opened new avenues for enhancing CSR initiatives.

Digital transformation allows companies to reach a broader audience, engage with stakeholders in real-time, and implement more effective, transparent, and scalable CSR strategies. For example, social media platforms enable companies to communicate their CSR efforts directly to consumers, fostering transparency and building trust. Big data and analytics provide insights into societal needs and the impact of CSR activities, allowing companies to tailor their initiatives more effectively. Meanwhile, technologies like blockchain ensure transparency and accountability in supply chains, addressing ethical concerns and enhancing corporate credibility.

In this digital age, the integration of technology into CSR efforts is not merely an option but a necessity for companies aiming to stay competitive and relevant. By leveraging digital tools, businesses can amplify their social impact, improve operational efficiency, and respond swiftly to societal challenges. As the digital landscape continues to evolve, so too will the opportunities for CSR, making it a dynamic and essential component of modern business strategy.

Review of Literature

Herden, C. J., Alliu, E., Cakici, A., & et al. (2021), this paper explores Corporate Digital Responsibility (CDR) through a multi-step approach. It begins with an opinion poll of 509 US respondents, highlighting perceived opportunities and risks of digitalization and the need for strategic CDR implementation. It then reviews existing definitions and uses of CDR, proposes a definition, and identifies twenty key CDR topics categorized into Environmental, Social, and Governance (ESG) frameworks. The paper concludes with a discussion on theoretical and managerial contributions and provides a practical guide for companies to implement effective CDR strategies.

Ashta, A. (2009), this article examines how the Information Age and its new technologies are reshaping work relations, focusing on connectivity, interdependence, and dynamism. It explores the evolution of ethical cultures and responsibilities across various levels—individual, corporate, governmental, NGO, and global. The article argues that corporate-centric CSR theories are shifting towards person-centric approaches and discusses the limitations and contradictions of this evolving theoretical perspective.

Korschun, D., & Du, S. (2013), this paper introduces a framework for understanding "virtual CSR dialogs," where social media enables stakeholders to collaborate with companies on CSR activities. It highlights how these dialogs generate value through stakeholders' identification with the dialog community and their heightened expectations. The framework also identifies key characteristics influencing the value of these dialogs, emphasizing both the benefits and risks associated with their implementation in CSR strategies.

Mirvis, P., Herrera, M. E. B., Googins, B., & Albareda, L. (2016), this research investigates how companies acquire tacit knowledge from external parties to enhance social innovation. Based on a five-year, multi-company study of over 70 firms, it finds that much of this knowledge is gained through shared interactions and experiences. The study introduces CSI relationship platforms, categorized by engagement distance and interaction intensity, and provides practical examples and guidance for managers. The findings are relevant to companies, social entrepreneurs, and researchers in CSR and shared value.

Jain, N., Thomas, A., Gupta, V., Ossorio, M., & Porcheddu, D. (2022), this research evaluates the effectiveness of digital tools and technologies (DT&Ts) used by mentor universities in India during the COVID-19 pandemic to enhance CSR learning outcomes for undergraduate students. Through structural equation modeling, it finds that IT infrastructure support, virtual collaborative tools, and future-oriented technologies significantly impact CSR learning outcomes. The study suggests a hybrid learning model post-pandemic and highlights the need for adequate CSR funding and infrastructure to maximize these resources.

Objectives

1. To analyze the impact of digital technologies on CSR
2. To identify the challenges and ethical considerations
3. To evaluate future directions and opportunities

Scope

This article explores the integration of digital technologies into Corporate Social Responsibility (CSR), examining how advancements like Artificial Intelligence (AI), blockchain, big data, and social media are reshaping traditional CSR practices. It covers the application of these technologies in areas such as environmental sustainability, social innovation, and ethical supply chains. The scope includes a discussion of the benefits and opportunities presented by digital tools, as well as the challenges and ethical considerations, including the digital divide, data privacy, and greenwashing risks. The article also delves into future directions, highlighting emerging technologies, collaborative approaches between various stakeholders, and the potential impact of future regulations on digital CSR practices. Through case studies and theoretical analysis, it aims to provide a comprehensive understanding of how digital transformation is influencing CSR and to offer practical insights for business leaders and policymakers.

The Evolution of CSR in the Digital Era

A. Traditional CSR vs. Digital CSR

Traditional CSR approaches have historically focused on activities such as philanthropy, community engagement, and environmental stewardship, often implemented through direct financial contributions, employee volunteer programs, and sustainability initiatives. These activities, while impactful, were generally limited in scale and reach, often relying on physical presence and direct interaction with communities. Traditional CSR also tended to be reactive, addressing social issues as they arose rather than anticipating them through proactive strategies.

In contrast, **Digital CSR** leverages modern digital technologies to enhance the scope, efficiency, and transparency of CSR efforts. With digital tools, companies can engage in real-time communication with stakeholders, monitor and measure the impact of their CSR initiatives through data analytics, and scale their efforts globally. For instance, social media allows companies to share their CSR stories widely, fostering greater awareness and engagement. Technologies like blockchain can ensure transparency and traceability in supply chains, addressing ethical concerns more effectively than traditional methods. Furthermore, digital CSR enables predictive approaches, using big data to identify potential social issues before they escalate, allowing for more strategic and proactive interventions.

In essence, while traditional CSR was often limited by physical and logistical constraints, digital CSR transcends these boundaries, offering more dynamic, scalable, and integrated solutions to social and environmental challenges.

B. Drivers of Digital CSR

The adoption of digital technologies in CSR is driven by several key factors:

1. **Increased Connectivity**: The widespread availability of the internet and mobile technology has connected billions of people worldwide, enabling companies to reach and engage with a global audience. This connectivity allows for more inclusive and participatory CSR initiatives, where stakeholders can contribute ideas, feedback, and even co-create solutions.
2. **Data Availability and Analytics**: The explosion of data, combined with advanced analytics tools, enables companies to gain deep insights into social and environmental issues, stakeholder needs, and the effectiveness of their CSR initiatives. This data-driven approach allows for more targeted and impactful CSR activities, maximizing the benefits for both the company and society.
3. **Rise of Digital Consumers**: Today's consumers are increasingly digital-savvy and socially conscious, expecting companies to not only provide high-quality products but also to contribute positively to society. This shift in consumer behavior drives companies to adopt digital CSR strategies that resonate

with their audience, such as transparent communication of sustainability practices or digital platforms for charitable giving.

4. **Technological Innovation**: The rapid advancement of technologies like AI, blockchain, and the Internet of Things (IoT) provides new tools and methods for implementing CSR initiatives. These technologies offer innovative ways to address complex social issues, improve operational efficiency, and ensure accountability in CSR practices.

These drivers collectively push companies to evolve their CSR strategies, integrating digital technologies to meet the demands of a connected, data-rich, and socially conscious world.

C. The Role of Corporate Strategy

In the digital era, integrating CSR into corporate strategy is not just about enhancing reputation or fulfilling ethical obligations; it's a strategic imperative that can drive innovation, stakeholder engagement, and competitive advantage.

1. **Innovation**: Digital CSR encourages companies to innovate not only in their products and services but also in their approach to social and environmental issues. By adopting technologies like AI for predictive analysis or blockchain for transparency, companies can develop cutting-edge solutions that address societal challenges more effectively than traditional methods.
2. **Stakeholder Engagement**: Digital tools allow companies to engage with stakeholders in more meaningful and interactive ways. Social media platforms, for instance, enable real-time communication and feedback, fostering a sense of community and shared purpose. Additionally, digital CSR platforms can facilitate collaboration with NGOs, governments, and other partners, amplifying the impact of CSR initiatives.
3. **Competitive Advantage**: In an increasingly competitive market, companies that effectively integrate digital CSR into their business strategy can differentiate themselves from their competitors. A strong digital CSR presence can enhance brand reputation, attract socially conscious consumers, and build loyalty among employees and other stakeholders. Moreover, companies that lead in digital CSR can position themselves as industry leaders in innovation and social responsibility, giving them a significant edge in the marketplace.

By embedding digital CSR into their corporate strategy, companies can not only contribute to social good but also drive business success, demonstrating that profitability and social responsibility are not mutually exclusive but rather complementary goals in the digital age.

Leveraging Digital Technologies for CSR Initiatives

A. Artificial Intelligence and Machine Learning

Artificial Intelligence (AI) and Machine Learning (ML) are revolutionizing the way companies approach CSR by enabling more precise and proactive interventions. These technologies can be harnessed in various aspects of CSR, particularly in:

1. **Predictive Analysis in Environmental Sustainability**: AI and ML can analyze vast datasets to predict environmental trends, such as climate change impacts, resource depletion, and pollution levels. Companies can use these predictions to develop more sustainable business practices, such as optimizing energy usage, reducing waste, or improving supply chain efficiency. For example, AI-powered systems can monitor and manage energy consumption in real-time, automatically adjusting to reduce the carbon footprint.
2. **Social Impact Assessment**: AI and ML can process and analyze large volumes of social data to assess the impact of CSR initiatives. By evaluating factors like public sentiment, demographic shifts, and economic indicators, AI can help companies understand the effectiveness of their CSR programs and adjust them to maximize social benefits. For instance, AI-driven sentiment analysis on social media can provide insights into how communities perceive a company's CSR efforts.
3. **Ethical Decision-Making**: AI can be integrated into decision-making processes to ensure that CSR activities align with ethical standards. By setting parameters that reflect a company's values and societal expectations, AI can assist in making decisions that are not only profitable but also socially responsible.

For example, AI algorithms can help identify suppliers who meet ethical labour practices, ensuring that companies do not inadvertently support exploitative operations.

These applications of AI and ML enable companies to move beyond reactive CSR strategies and adopt a more predictive and strategic approach, leading to more effective and impactful CSR initiatives.

B. Blockchain Technology

Blockchain Technology offers a transformative potential for CSR by enhancing transparency, traceability, and accountability in global supply chains and CSR reporting:

1. **Enhancing Transparency and Traceability**: Blockchain's decentralized ledger system ensures that every transaction or movement of goods within a supply chain is recorded and immutable. This transparency is particularly valuable in ensuring that products are ethically sourced and produced. For instance, companies can use blockchain to trace the origins of raw materials, ensuring that they are not associated with environmental degradation or unethical labour practices. This traceability can be extended to consumers, who can verify the ethical origins of the products they purchase.
2. **Accountability in CSR Reporting**: Blockchain can revolutionize CSR reporting by providing verifiable and tamper-proof records of a company's CSR activities. This ensures that companies are held accountable for their claims, reducing the risk of greenwashing or misrepresentation of CSR efforts. For example, a company's carbon offset initiatives can be recorded on a blockchain, providing transparent proof of their environmental impact, which can be easily audited by external stakeholders.
3. **Smart Contracts for Ethical Compliance**: Blockchain enables the use of smart contracts—self-executing contracts with the terms of the agreement directly written into code. These can be used to enforce ethical standards in supply chains automatically. For instance, a smart contract could release payments to suppliers only upon verification that they comply with certain environmental or labour standards, as recorded on the blockchain.

Blockchain thus provides a powerful tool for companies to build trust with stakeholders by ensuring that their CSR practices are transparent, verifiable, and aligned with global ethical standards.

C. Social Media and Digital Engagement

Social media plays a crucial role in CSR communication, stakeholder engagement, and real-time feedback loops, enabling companies to build stronger connections with their audiences:

1. **CSR Communication**: Social media platforms allow companies to communicate their CSR initiatives directly to a global audience, bypassing traditional media channels. This direct communication helps companies share their stories, successes, and challenges in a more authentic and engaging manner. For example, companies can use platforms like Instagram or Twitter to showcase their sustainability efforts, charitable contributions, or community projects, reaching a wide and diverse audience.
2. **Stakeholder Engagement**: Social media facilitates two-way communication between companies and their stakeholders, including customers, employees, and communities. This interaction allows companies to engage in meaningful dialogues, gather feedback, and understand the concerns and expectations of their stakeholders. For example, companies can host live Q&A sessions, polls, or surveys on platforms like Facebook or LinkedIn to involve their audience in CSR-related decisions.
3. **Real-Time Feedback Loops**: Social media enables companies to receive immediate feedback on their CSR activities, allowing them to adjust strategies in real-time. This responsiveness is crucial for addressing any negative perceptions or concerns quickly and effectively. For instance, if a company's environmental campaign receives criticism on social media, it can immediately address the issue, clarify its intentions, and make necessary adjustments to its approach.

By leveraging social media, companies can enhance the visibility of their CSR efforts, foster deeper stakeholder relationships, and maintain a dynamic and responsive approach to corporate responsibility.

D. Big Data and Analytics

Big Data and Analytics are powerful tools for monitoring and evaluating the effectiveness of CSR initiatives, identifying emerging social issues, and driving data-driven decision-making:

1. **Monitoring and Evaluation**: Big data analytics enables companies to continuously monitor the performance of their CSR initiatives by analyzing a wide range of data sources, including social media, financial reports, and environmental sensors. This ongoing analysis helps companies assess the impact of their initiatives, identify areas for improvement, and ensure that their CSR activities are achieving the desired outcomes. For example, data analytics can track the reduction in carbon emissions resulting from a company's sustainability efforts, providing a clear measure of success.
2. **Identifying Emerging Social Issues**: By analyzing trends in social media, news articles, and other public data, big data analytics can help companies identify emerging social issues before they become widespread concerns. This proactive approach allows companies to address these issues early, aligning their CSR strategies with evolving societal needs. For instance, big data can reveal increasing public concern about water scarcity, prompting a company to prioritize water conservation in its CSR activities.
3. **Data-Driven Decision-Making**: The insights gained from big data analytics empower companies to make informed decisions about their CSR strategies. By understanding patterns, correlations, and predictive trends, companies can allocate resources more effectively, prioritize high-impact initiatives, and avoid potential risks. For example, data-driven analysis might reveal that investments in renewable energy provide the highest return in terms of both environmental impact and public perception, guiding a company's sustainability strategy.

Big data and analytics thus provide a foundation for more strategic, effective, and responsive CSR initiatives, enabling companies to maximize their social impact while aligning with business objectives.

Case Studies: Digital CSR in Action

A. Technology-Driven Environmental Sustainability

Case Study: Google's AI-Powered Data Centres Google has implemented AI technology developed by its subsidiary, DeepMind, to optimize energy usage in its data centres. By analyzing vast amounts of operational data, the AI system continuously adjusts cooling and energy usage, resulting in a significant reduction in energy consumption. This initiative has reduced Google's carbon footprint and set a precedent for using AI to drive environmental sustainability in large-scale operations.

B. Digital Platforms for Social Innovation

Case Study: Microsoft's AI for Good Initiative Microsoft's AI for Good program leverages AI to tackle global challenges in areas such as healthcare, education, and environmental conservation. One notable project is the use of AI to analyze environmental data and predict deforestation patterns, allowing for timely interventions. Additionally, Microsoft has developed digital platforms to support education in underserved communities, providing access to learning resources and bridging the digital divide.

C. Blockchain for Ethical Supply Chains

Case Study: IBM's Food Trust Blockchain IBM's Food Trust blockchain platform enhances transparency and traceability in the food supply chain. By recording every transaction on a secure, immutable ledger, the platform ensures that food products are ethically sourced and traceable from farm to table. Companies like Walmart and Nestlé have adopted this technology to verify the authenticity and ethical sourcing of their products, ensuring compliance with fair trade practices and reducing the risk of fraud.

Challenges and Ethical Considerations

A. Digital Divide and Inclusivity

The **Digital Divide** refers to the gap between those who have access to modern information and communication technologies and those who do not. As companies increasingly leverage digital tools for CSR, there is a risk that these initiatives may inadvertently exacerbate inequalities, particularly in regions with limited access to technology. For example, digital platforms for education or healthcare may not reach marginalized communities without reliable internet access or digital literacy, leaving them further behind. Companies must consider inclusivity in their digital CSR strategies, ensuring that their efforts do not widen the gap but instead work to bridge it by investing in infrastructure, education, and access in underserved areas.

B. Data Privacy and Security

The use of **Big Data and AI** in CSR raises significant ethical concerns around data privacy and security. Collecting and analyzing large amounts of personal data can lead to potential breaches of privacy, especially if sensitive information is not adequately protected. Additionally, AI algorithms may inadvertently reinforce biases if they are based on biased data, leading to unfair or discriminatory outcomes. Companies must ensure robust data protection measures, transparency in data use, and continuous monitoring of AI systems to prevent unintended ethical violations. Moreover, they should engage with stakeholders to address concerns and build trust in their digital CSR initiatives.

C. Greenwashing in the Digital Age

Greenwashing refers to the practice of misleading consumers into believing that a company's products or practices are more environmentally friendly than they actually are. In the digital age, the risk of greenwashing is heightened as companies can easily use digital tools to create a positive image of their CSR efforts without substantial action behind it. For instance, a company might highlight minor environmental initiatives on social media while ignoring or downplaying more significant negative impacts. To combat greenwashing, companies must commit to transparency, ensuring that their digital communications accurately reflect their CSR activities. They should provide verifiable data and third-party audits to back up their claims, fostering genuine trust with stakeholders.

Future Directions and Opportunities

A. Emerging Technologies in CSR

Emerging Technologies such as the Internet of Things (IoT), augmented reality (AR), and virtual reality (VR) hold significant potential for future CSR initiatives:

1. **IoT**: The IoT can revolutionize CSR by enabling real-time monitoring and management of environmental resources. For example, IoT sensors can track energy usage, water consumption, and pollution levels, allowing companies to optimize their operations for sustainability. IoT can also be used in smart cities to improve infrastructure efficiency and reduce environmental impact, contributing to broader societal benefits.
2. **Augmented Reality (AR)**: AR can enhance CSR by offering immersive experiences that raise awareness about social and environmental issues. For instance, companies could use AR to create interactive campaigns that educate consumers about the impact of their purchasing choices on the environment. AR can also be used in employee training programs to simulate scenarios involving ethical dilemmas, helping to install a culture of responsibility.
3. **Virtual Reality (VR)**: VR offers the possibility of creating powerful, immersive experiences that bring social issues to life. Companies could use VR to transport stakeholders to areas affected by their operations, such as communities impacted by environmental degradation, to foster empathy and drive more responsible decision-making. Additionally, VR can be used to showcase CSR initiatives, giving stakeholders a firsthand look at the positive impacts being made.

B. Collaborative Approaches

Collaborative Approaches between companies, governments, and NGOs offer a path to achieving large-scale social impact through digital tools:

1. **Public-Private Partnerships**: By collaborating with governments, companies can help develop and implement digital solutions that address societal challenges at scale. For example, partnerships could focus on using digital platforms to improve access to education, healthcare, or clean energy in underserved regions.
2. **NGO Collaborations**: NGOs bring expertise and credibility in addressing social issues, while companies can provide the resources and technology needed to scale solutions. Collaborative initiatives might include co-developing digital platforms for social innovation or using AI and big data to track progress toward global sustainability goals.
3. **Multi-Stakeholder Initiatives**: Digital technologies enable new forms of multi-stakeholder collaboration, where companies, governments, NGOs, and communities work together on shared

platforms. These collaborations can pool resources, knowledge, and technology to tackle complex issues like climate change, poverty, and inequality more effectively.

C. The Role of Regulation

Future Regulations will likely play a critical role in shaping the use of digital technologies in CSR, focusing on transparency, accountability, and ethical practices:

1. **Transparency and Reporting**: As digital CSR becomes more widespread, regulations may require companies to provide transparent and verifiable reports on their digital CSR activities. This could include mandating the use of blockchain for CSR reporting or setting standards for the accuracy of AI-driven impact assessments.
2. **Ethical AI and Data Use**: Governments might introduce regulations to ensure that AI and big data used in CSR comply with ethical standards, including fairness, privacy, and non-discrimination. This could involve setting guidelines for AI development and deployment in CSR, as well as enforcing data protection laws to safeguard personal information.
3. **Accountability for Digital Impact**: Regulations could also hold companies accountable for the social and environmental impacts of their digital CSR initiatives. This might include requiring third-party audits of digital CSR practices or imposing penalties for greenwashing or other deceptive practices.

Conclusion

This article explored the transformation of Corporate Social Responsibility (CSR) in the digital age, highlighting how emerging technologies such as AI, blockchain, and big data are reshaping traditional CSR practices. The discussion covered the advantages of digital CSR, including enhanced transparency, efficiency, and stakeholder engagement, while also acknowledging the associated challenges, such as the digital divide, data privacy concerns, and the risk of greenwashing. Case studies illustrated how companies are already leveraging these technologies to address environmental sustainability, promote social innovation, and ensure ethical supply chains. The future of CSR appears increasingly intertwined with digital innovation, offering both new opportunities and ethical dilemmas for businesses. For business leaders, the integration of digital technologies into CSR is no longer optional but a strategic necessity. To remain competitive and socially responsible, leaders must embrace innovation, using tools like AI and blockchain to enhance the effectiveness of their CSR initiatives. However, this also requires a careful balancing act, as they must navigate ethical considerations related to data privacy, inclusivity, and the potential misuse of digital tools. Leaders must ensure that their digital CSR efforts are not only impactful but also transparent and aligned with broader corporate strategies, positioning CSR as a core component of business success.

As we move further into the digital age, technology will play an increasingly pivotal role in shaping the future of CSR. The potential for digital tools to drive meaningful social change is immense, offering companies new ways to address complex global challenges. However, this potential will only be realized if companies approach digital CSR with a commitment to ethical practices, inclusivity, and strategic alignment. The future of CSR lies in the ability of businesses to leverage technology not just for profit but for the greater good, creating a more sustainable and equitable world through innovation and responsibility.

References

Acar, O. A., & Puntoni, S. (2016). Customer empowerment in the digital age. *Journal of Advertising Research*, *56*(1), 4-8.

Amaladoss, M. X., & Manohar, H. L. (2013). Communicating corporate social responsibility–A case of CSR communication in emerging economies. *Corporate Social Responsibility and Environmental Management*, *20*(2), 65-80.

Ashta, A. (2009). Corporate social responsibility in the dynamic information age of Inter-Systems connectivity. *Journal of Electronic Commerce in Organizations (JECO)*, *7*(1), 18-34.

Bhattacharya, C. B., Sen, S., & Korschun, D. (2008). Using corporate social responsibility to win the war for talent. *MIT Sloan management review*, *49*(2).

Brown, I., & Marsden, C. T. (2023). *Regulating code: Good governance and better regulation in the information age*. MIT Press.

Bui, M. T., & Le, H. L. (2023). Digital capability and creative capability to boost firm performance and formulate differentiated CSR-based strategy. *Heliyon*, *9*(3).

Camilleri, M. A. (2019). The SMEs' technology acceptance of digital media for stakeholder engagement. *Journal of Small Business and Enterprise Development*, *26*(4), 504-521.

Cezarino, L. O., Liboni, L. B., Hunter, T., Pacheco, L. M., & Martins, F. P. (2022). Corporate social responsibility in emerging markets: Opportunities and challenges for sustainability integration. *Journal of Cleaner Production*, *362*, 132224.

D'Cruz, P., Du, S., Noronha, E., Parboteeah, K. P., Trittin-Ulbrich, H., & Whelan, G. (2022). Technology, megatrends and work: Thoughts on the future of business ethics. *Journal of business ethics*, *180*(3), 879-902.

Fallah Shayan, N., Mohabbati-Kalejahi, N., Alavi, S., & Zahed, M. A. (2022). Sustainable development goals (SDGs) as a framework for corporate social responsibility (CSR). *Sustainability*, *14*(3), 1222.

Gond, J. P., & Nyberg, D. (2017). Materializing power to recover corporate social responsibility. *Organization Studies*, *38*(8), 1127-1148.

Herden, C. J., Alliu, E., Cakici, A., Cormier, T., Deguelle, C., Gambhir, S., ... & Edinger-Schons, L. M. (2021, March). "Corporate Digital Responsibility" New corporate responsibilities in the digital age. In *Sustainability Management Forum| NachhaltigkeitsManagementForum* (Vol. 29, No. 1, pp. 13-29). Berlin/Heidelberg: Springer Berlin Heidelberg.

Jain, N., Thomas, A., Gupta, V., Ossorio, M., & Porcheddu, D. (2022). Stimulating CSR learning collaboration by the mentor universities with digital tools and technologies–an empirical study during the COVID-19 pandemic. *Management Decision*, *60*(10), 2824-2848.

Kaul, A., & Luo, J. (2018). An economic case for CSR: T he comparative efficiency of for-profit firms in meeting consumer demand for social goods. *Strategic Management Journal*, *39*(6), 1650-1677.

Korschun, D., & Du, S. (2013). How virtual corporate social responsibility dialogs generate value: A framework and propositions. *Journal of Business Research*, *66*(9), 1494-1504.

Lobschat, L., Mueller, B., Eggers, F., Brandimarte, L., Diefenbach, S., Kroschke, M., & Wirtz, J. (2021). Corporate digital responsibility. *Journal of Business Research*, *122*, 875-888.

Mention, A. L., Barlatier, P. J., & Josserand, E. (2019). Using social media to leverage and develop dynamic capabilities for innovation. *Technological Forecasting and Social Change*, *144*, 242-250.

Mirvis, P., Herrera, M. E. B., Googins, B., & Albareda, L. (2016). Corporate social innovation: How firms learn to innovate for the greater good. *Journal of Business Research*, *69*(11), 5014-5021.

Mueller, B. (2022). Corporate digital responsibility. *Business & Information Systems Engineering*, *64*(5), 689-700.

Mukhuty, S., Upadhyay, A., & Rothwell, H. (2022). Strategic sustainable development of Industry 4.0 through the lens of social responsibility: The role of human resource practices. *Business Strategy and the Environment*, *31*(5), 2068-2081.

Okafor, A., Adeleye, B. N., & Adusei, M. (2021). Corporate social responsibility and financial performance: Evidence from US tech firms. *Journal of cleaner production*, *292*, 126078.

Park, Y. W., & Park, Y. J. (2021). *Corporate Social Responsibility and Entrepreneurship for Sustainability*. Springer Singapore.

Rajak, D. (2011). *In good company: An anatomy of corporate social responsibility*. Stanford University Press.

Sheikh, S. (2019). Corporate social responsibility and firm leverage: The impact of market competition. *Research in International Business and Finance*, *48*, 496-510.

Smith, A. D. (2007). Making the case for the competitive advantage of corporate social responsibility. *Business strategy series*, *8*(3), 186-195.

Visser, W. (2016). The future of CSR: Towards transformative CSR, or CSR 2.0. In *Research handbook on corporate social responsibility in context* (pp. 339-367). Edward Elgar Publishing.

Websites

https://deepmind.google/discover/blog/deepmind-ai-reduces-google-data-centre-cooling-bill-by-40/

https://socialbusinesscreation.com/?attachment=91&document_type=folder&download_document_file=1&document_file=91

https://www.ibm.com/products/supply-chain-intelligence-suite/food-trust

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10453023/