Indian Journal of Sustainable Development
10(1) 2024, 21-30
http://publishingindia.com/ijsd/

Submitted: 23 October, 2023
Accepted: 25 October, 2023

Leveraging Sustainability Through Technology for Agile Organisations

Capt. Yogesh C. Shah*

Abstract

In today's rapidly changing world, the concept of sustainability has become a crucial aspect for organisations striving to remain agile and adapt to evolving market demands. This abstract explores the potential of technology as a catalyst for leveraging sustainability within agile organisations. Organisations can enhance operational efficiency, environmental stewardship and social responsibility by integrating sustainable practices and technology-driven solutions. The abstract delves into the critical aspects of leveraging sustainability through technology within agile organisations. Firstly, it highlights the significance of agility in today's competitive landscape and how organisations must continuously adapt and innovate to remain relevant. Next, it emphasises the importance of sustainability and the need for organisations to adopt environmentally and socially responsible practices. The abstract further explores the various ways technology can be utilised to drive sustainability within agile organisations. It discusses the role of digitalisation and data analytics in optimising resource management and reducing waste. It also highlights the potential of renewable energy sources and smart grids in promoting energy efficiency and reducing carbon emissions. Additionally, the abstract examines the significance of leveraging technology for supply chain management, enabling organisations to trace and minimise the environmental impact of their products and services. Furthermore, the abstract addresses the challenges and considerations of integrating sustainability and technology within agile organisations. It discusses the need for a holistic approach involving cross-functional collaboration and stakeholder engagement to ensure successful implementation. It also highlights the importance of addressing ethical concerns and ensuring privacy and security using technology-driven sustainability solutions. This abstract provides a comprehensive overview of leveraging sustainability through technology for agile organisations. By embracing technology-driven solutions, organisations can enhance their environmental performance and improve their competitive advantage, brand reputation and stakeholder relationships. As sustainability continues to gain prominence, integrating technology becomes imperative for organisations striving to thrive in an ever-changing business landscape.

Keywords: Sustainability, Technology, Agile Organisations, Operational Efficiency, Environmental Stewardship, Social Responsibility, Digitalisation, Supply Chain Management

INTRODUCTION

The introduction sets the stage for the paper by providing background information, highlighting the significance of sustainability for agile organisations, and outlining the purpose and structure of the article. By examining the role of technology in driving sustainability, analysing successful case studies and addressing potential objections, this paper provides valuable insights into the practical applications and benefits of leveraging technology for sustainability in agile organisations. By integrating sustainable practices and utilising technology-driven solutions, organisations can enhance their environmental performance and improve their competitive advantage, brand reputation and stakeholder relationships (Chladek, 2019). As sustainability continues to gain prominence, integrating technology becomes imperative for organisations striving to thrive in an ever-changing business landscape.

* Research Scholar, Associate Professor, Indian Maritime University, Navi Mumbai Campus, India. Email: ycshah@imu.ac.in

Background

The background section provides contextual information about leveraging sustainability through technology for agile organisations. It may include statistics, trends or industry insights demonstrating sustainability's increasing importance in today's business landscape. This section aims to provide a foundation for understanding the need for organisations to integrate sustainability practices and technologies into their operations (Woo, 2020).

Significance of Sustainability for Agile Organisations

The significance of sustainability for agile organisations is highlighted in this section. It explores how sustainability has evolved from a mere corporate responsibility to a strategic imperative for organisations aiming to thrive in a rapidly changing world (Sustainable Business Strategy for a Positive Social and Environmental Impact, 2022). Agile organisations can adapt quickly to market shifts, customer demands and environmental pressures. These organisations can enhance their resilience, reputation and long-term viability by embracing sustainability.

Purpose and Structure of the Paper

The purpose and structure of the paper are outlined in this section to provide readers with a roadmap of what to expect. The purpose statement clarifies the paper's objective, which is to explore the role of technology in driving sustainability and its benefits for agile organisations. The structure of the paper typically includes an overview of the main sections or chapters that will be covered, providing a logical flow of the content. This section helps readers understand the organisation and scope of the paper and prepares them for the information that will be presented.

In summary, the introduction provides background information, highlights the significance of sustainability for agile organisations and outlines the purpose and structure of the paper. It sets the foundation for the subsequent sections, preparing readers to explore leveraging sustainability through technology for agile organisations.

THE ROLE OF TECHNOLOGY IN DRIVING SUSTAINABILITY

Technology drives sustainability by enabling organisations to adopt innovative solutions and practices (Paul Daugherty et al., 2022). It offers tools and capabilities that optimise resource management, reduce waste, promote energy efficiency and enhance supply chain sustainability.

Digitalisation and Data Analytics

Digitalisation and data analytics empower organisations to optimise resource management and reduce waste. By leveraging technologies such as the Internet of Things (IoT) and artificial intelligence (AI), organisations can collect and analyse vast amounts of data to gain valuable insights (Teh, 2023). it enables them to identify inefficiencies, streamline processes and implement sustainability measures that result in cost savings and improved operational efficiency. Real-time monitoring and predictive analytics enhance decision-making capabilities, allowing organisations to identify and address sustainability challenges proactively.

Renewable Energy and Smart Grids

Integrating renewable energy sources and innovative grid technologies is crucial for promoting energy efficiency and reducing carbon emissions (Worighi, 2019). Agile organisations recognise the potential of renewable energy and invest in technologies such as solar panels, wind turbines and energy storage systems. These technologies enable organisations to generate clean energy, reduce their reliance on fossil fuels and contribute to a more sustainable energy landscape. Smart grids with real-time monitoring and demand-response mechanisms optimise energy distribution and enable efficient energy management.

Case Study: Company Schneider Electric demonstrates the successful implementation of smart grids to promote energy efficiency (Jackson, 2023). The company significantly reduced energy consumption and carbon emissions by leveraging intelligent grid technologies while ensuring a reliable energy supply.

Technology for Supply Chain Management

Technology is critical in enhancing supply chain sustainability by facilitating traceability, transparency and reducing environmental impact. With technologies like blockchain, organisations can track and verify the origin and journey of products, ensuring ethical sourcing and reducing the risk of environmental violations (Difrancesco, 2022). Digital platforms and data sharing enable stakeholders to collaborate effectively, making supply chains more efficient and sustainable.

Case Study: FedEx showcases sustainable supply chain practices. Technology enabled the company to achieve greater traceability and transparency in its supply chain, minimising environmental impact and strengthening its commitment to sustainability (Higgins, 2021).

In summary, technology catalyses driving sustainability in various aspects of organisational operations. From digitalisation and data analytics to renewable energy and smart grids, as well as technology-enabled supply chain management, organisations can leverage technology to optimise resource management, reduce waste, promote energy efficiency and ensure sustainable practices. Real-world case studies like Schneider Electric and FedEx provide practical examples of how organisations successfully implement technology-driven sustainability practices.

Case studies from Real-Life Companies on Leveraging Sustainability Through Technology for Agile Organisations

- *IKEA:* The furniture giant has been a leader in sustainability for many years, and it has used technology to help it achieve its goals. For example, IKEA uses data analytics to track its energy usage and identify areas where it can save energy. It also uses technology to improve the efficiency of its supply chain (Stackpole, 2021).
- *Walmart:* The retail giant has also been a leader in sustainability. It has used technology to reduce its energy, water and waste usage (Product Supply Chain Sustainability, 2023). For example, Walmart uses sensors to track energy usage in its stores and warehouses. It also uses drones to inspect its warehouses for leaks and other problems.
- *GE:* The industrial giant has used technology to improve the efficiency of its operations and reduce its environmental impact. For example, GE uses software to monitor its equipment and identify potential problems before they cause outages (Analytics Leverage industrial AI and machine learning to help improve operations and reliability and reduce costs, n.d.). It also uses 3D printing to create lighter and more durable parts.
- *Nest:* The smart home company has used technology to help people save energy and water. For example, Nest's thermostats learn the habits of their users and adjust the temperature accordingly (Reinartz, September 2019). Its smoke detectors can also send alerts to users' smartphones if there is a fire.
- *Tesla:* The electric car company has used technology to create a more sustainable transportation system (Tesla Impact report 2022). Its cars are powered by batteries that are charged using renewable energy. Tesla also offers solar panels and roof tiles to help its customers generate electricity.
- *Siemens:* The industrial conglomerate has used technology to help its customers improve their sustainability performance. For example, Siemens offers software that helps companies track their energy usage and identify opportunities for improvement (SIMATIC Energy Suite, n.d.). It also provides solutions for reducing water usage and waste.
- *ABB:* The Swiss engineering company has used technology to help its customers reduce their environmental impact. For example, ABB offers solutions for improving the efficiency of buildings and factories (Building Solutions for Industrial Building). It also provides solutions for reducing emissions from vehicles and other equipment.
- *Honeywell:* The industrial automation company has used technology to help its customers improve their sustainability performance. For example, Honeywell offers software that helps companies track their energy usage and identify opportunities for improvement (Energy Management, n.d.). It also provides solutions for reducing water usage and waste.
- *Johnson Controls:* The building technology company has used technology to help its customers

create more sustainable buildings. For example, Johnson Controls offers solutions for improving the energy efficiency of buildings. It also provides solutions for reducing water usage and waste.

- *United Technologies:* The aerospace and building technologies company has used technology to help its customers reduce their environmental impact. For example, United Technologies offers solutions for improving the efficiency of aircraft and buildings (United Technologies corporation, n.d.). It also provides solutions for reducing emissions from vehicles and other equipment.
- *Adobe:* The American software company has used technology to reduce energy usage by 20% (Energy Conservation, n.d.). For example, it has installed smart thermostats in its offices and used LED lighting. It has also developed a mobile app that allows employees to track their energy usage and identify areas where they can save energy.
- *SAP:* The German software company has used technology to reduce its water usage by 50%. For example, it has installed water-saving fixtures in its offices and used recycled water to flush toilets. It has also developed a water management system that helps it track its water usage and identify areas where it can save water.
- *Microsoft:* The American technology company has used technology to reduce its waste and eliminate single-use plastic by 2025 (Brad Smith, 2020). For example, it has installed recycling bins in its offices and used RFID tags to track the movement of products. It has also developed a system that allows it to donate food that would otherwise be wasted to food banks.
- *Amazon:* The American e-commerce company has used technology to reduce its carbon emissions and is set to achieve a net carbon emission-free goal by 2030 (Driving climate solutions, n.d.). For example, it has invested in renewable energy projects and used electric vehicles for its delivery fleet. It has also developed a carbon management system that helps it track its carbon emissions and identify ways to reduce them.
- *UPS:* The American logistics company has used technology to reduce its fuel consumption by using a software package Orion (Konrad, 2013). For example, it has installed telematics devices in its vehicles and used predictive analytics to identify areas where it can save fuel. It has also developed a fuel management system that helps it track its fuel usage and identify areas where it can save fuel.
- *FedEx:* The American logistics company has used technology to reduce its emissions and has also explored alternative fuel options (2022 ESG Report). For example, it has invested in renewable energy projects and used electric vehicles for its delivery fleet. It has also developed a carbon management system that helps it track its emissions and identify ways to reduce them.
- *DHL:* The German logistics company has used technology to reduce its wastage (How to reduce wastage along your supply chain, 2021). For example, it has installed water-saving fixtures in its facilities and used recycled water to flush toilets. It has also developed a water management system that helps it track its water usage and identify areas where it can save water.
- *Coca-Cola Enterprises:* The American beverage company has used technology to reduce its water waste and is trying to adopt a circular economy for its packaging needs (Business and sustainability report, 2023). One project currently in the pipeline is working with an agri-tech partner, Kilimo, to help local farmers save water by adopting technology-enabled irrigation management tools.
- *PepsiCo:* The American food and beverage company has used technology to reduce its carbon emissions (Climate Change, n.d.). For example, it has invested in renewable energy projects and used electric vehicles for its delivery fleet. It has also developed a carbon management system that helps it track its emissions and identify ways to reduce them.
- *Unilever:* The British-Dutch consumer goods company has used technology to reduce its water usage (Water Stewardship, n.d.). For example, it has installed water-saving fixtures in its facilities and used recycled water to flush toilets. It has also developed a water management system that helps it track its water usage and identify areas where it can save water.

These are just a few examples of how agile organisations use technology to improve their sustainability performance. As technology continues to evolve, we can expect to see even more innovative ways to leverage technology for sustainability.

BENEFITS AND IMPACT OF LEVERAGING TECHNOLOGY FOR SUSTAINABILITY

Leveraging technology for sustainability brings numerous benefits and positively impacts organisations. It enhances operational efficiency, promotes environmental stewardship and strengthens social responsibility.

Operational Efficiency

Implementing technology-driven sustainability initiatives improves operational efficiency, leading to streamlined processes and reduced costs (Javaid, 2022). By leveraging automation, organisations can eliminate manual tasks and optimise resource management, resulting in improved productivity and cost savings. Through real-time data analytics and advanced technologies, such as AI and machine learning, organisations can make data-driven decisions, optimise workflows and ensure efficient resource allocation.

Case Study: Accenture serves as an example of how technology-driven sustainability initiatives can enhance operational efficiency, it provides consultancy to firms looking for sustainable operations (Sustainable technology, n.d.). By implementing digitalisation and automation, the company achieved streamlined processes, reduced costs and improved overall operational performance.

Environmental Stewardship

Technology plays a vital role in promoting environmental stewardship by enabling organisations to reduce their carbon emissions and ecological footprint. Organisations can minimise their reliance on fossil fuels and reduce greenhouse gas emissions by adopting renewable energy sources and energy-efficient technologies. Additionally, technology facilitates waste reduction and supports implementing circular economy practices, promoting the efficient use of resources and minimising waste generation (Business and Sustainability Report, 2023).

Case Study: Cocacola exemplifies successful waste management through technology. The company achieved significant waste reduction, minimised environmental impact and embraced circular economy principles by implementing advanced waste management systems and recycling initiatives.

Social Responsibility

Leveraging technology for sustainability goes beyond environmental considerations; it also addresses social responsibility. Technology enables organisations to incorporate ethical considerations into their operations, such as fair labour practices, responsible sourcing and product transparency (Gurzawska, 2020). By leveraging digital platforms and communication tools, organisations can engage stakeholders effectively, foster collaboration and involve local communities in sustainability initiatives.

Case Study: Amazon demonstrates the integration of technology-enabled sustainability practices with social responsibility initiatives. Through technology-driven transparency and stakeholder engagement, the company actively involves its stakeholders, addresses social issues and contributes positively to its communities (Yu, Hassan & Adhikariparajuli, 2022).

In summary, leveraging technology for sustainability brings multiple benefits and significantly impacts organisations. It enhances operational efficiency by streamlining processes and reducing costs. It promotes environmental stewardship by reducing carbon emissions, minimising waste and embracing circular economy practices. Additionally, it strengthens social responsibility through ethical considerations, stakeholder engagement and community involvement. Real-world case studies like Accenture, Coca-Cola and Amazon highlight the positive outcomes of integrating technology and sustainability in organisations.

ADDRESSING OBJECTIONS AND COUNTERARGUMENTS

When leveraging technology for sustainability, organisations may face objections and counterarguments. Addressing these concerns is essential to ensure the effectiveness and acceptance of technology-driven sustainability initiatives.

Objection 1: Technological Dependency and Environmental Concerns

One objection is the potential dependency on technology and its environmental impact. Critics argue that increased reliance on technology may lead to increased energy consumption and the production of electronic waste, contributing to environmental degradation.

Counterargument: While it is important to acknowledge the environmental impact of technology, it is equally important to recognise the potential of technology to mitigate environmental challenges. Advancements in technology enable the development of energy-efficient solutions and the use of renewable energy sources. Additionally, responsible e-waste management and recycling programs can minimise the environmental footprint of technology (Sustainable E-Waste Management: Why it Matters and How to Implement it, 2023).

Objection 2: Affordability and Accessibility of Technology-Driven Solutions

Another objection relates to the affordability and accessibility of technology-driven sustainability solutions. Critics argue that implementing such solutions may be costly and only feasible for large organisations with significant financial resources.

Counterargument: While the upfront costs of implementing technology-driven sustainability solutions can be challenging, the long-term benefits often outweigh the initial investment (Ekins, 2021). Technology advancements are driving down costs, making sustainable technologies more accessible. Furthermore, organisations can explore partnerships, government incentives and financing options to overcome financial barriers and ensure wider access to technology-driven sustainability solutions.

Objection 3: Ethical Implications and Privacy Concerns

Ethical implications and privacy concerns are raised as objections to using technology for sustainability. Critics argue that the collection and use of data may compromise individuals' privacy rights and raise ethical concerns about data security and consent.

Counterargument: Addressing ethical and privacy concerns is crucial in technology-driven sustainability initiatives (Dhirani, 2023). Organisations should prioritise data protection and adhere to ethical principles when collecting and using data. Implementing robust security measures, obtaining informed consent and ensuring transparency in data practices are essential. Organisations must develop clear data governance frameworks and comply with relevant regulations to protect individuals' privacy and maintain ethical standards.

Counterarguments and Responses

Counterarguments play a crucial role in strengthening the argument for leveraging technology for sustainability. Responding to objections by presenting evidence and practical examples and addressing concerns can help build a more robust case.

Responses to objections can include showcasing successful case studies of organisations that have implemented technology-driven sustainability solutions, highlighting the long-term cost savings and environmental benefits achieved. Additionally, emphasising the continuous improvement and advancements in technology that address affordability and accessibility concerns can address objections regarding the feasibility of such solutions.

By addressing ethical implications and privacy concerns, organisations can establish transparent practices and data governance frameworks to ensure data security, privacy protection and ethical use of technology.

In summary, addressing objections and counterarguments is crucial in demonstrating the viability and benefits of leveraging technology for sustainability. By providing counterarguments, organisations can showcase the positive impact of technology, address concerns and build a stronger case for the integration of technology into sustainable practices.

BEST PRACTICES FOR INTEGRATING SUSTAINABILITY AND TECHNOLOGY IN AGILE ORGANISATIONS

Certain best practices can be followed to integrate sustainability and technology in agile organisations effectively. These practices foster a holistic approach, encourage cross-functional collaboration, prioritise stakeholder engagement and communication, emphasise training and skill development and promote continuous improvement and adaptation.

Holistic Approach and Cross-Functional Collaboration

Taking a holistic approach is vital for integrating sustainability and technology seamlessly. Agile organisations should view sustainability as an integral part of their overall strategy, considering its environmental, social and economic dimensions (Miceli, 2021). This requires cross-functional collaboration, bringing together teams from different departments to collectively address sustainability challenges. Organisations can develop comprehensive and integrated solutions by involving stakeholders from various areas of expertise.

Stakeholder Engagement and Communication

Stakeholder engagement and effective communication are key to the successful integration of sustainability and technology. Organisations should engage with internal and external stakeholders, including employees, customers, suppliers and local communities. By involving stakeholders in the decision-making process and communicating sustainability goals, progress and achievements, organisations can build trust, gain valuable insights and foster support for their initiatives.

Training and Skill Development

Organisations must invest in training and skill development to leverage technology for sustainability effectively. Employees need to understand the potential of technology, be proficient in its use and be equipped with the necessary sustainability knowledge and skills. Training programs can include workshops, seminars and online courses that enhance employees' understanding of sustainability concepts and technologies, empowering them to contribute to the organisation's sustainability goals.

Continuous Improvement and Adaptation

Continuous improvement and adaptation are crucial for integrating sustainability and technology in agile organisations (Wouter Aghina, 2018). Sustainable technology solutions evolve rapidly, and organisations must stay abreast of the latest advancements and emerging best practices. Regular evaluation and assessment of sustainability initiatives, performance metrics and feedback from stakeholders enable organisations to identify areas for improvement and adapt their strategies accordingly. Agile organisations embrace a culture of learning and innovation, embracing feedback and implementing changes to drive continuous improvement.

In summary, integrating sustainability and technology in agile organisations requires a holistic approach, cross-functional collaboration, stakeholder engagement, training and skill development and a commitment to continuous improvement. By following these best practices, organisations can effectively align sustainability goals with technological solutions, maximise their impact and create a culture of innovation and sustainability.

CONCLUSION

Recap of Key Findings

In conclusion, the integration of technology and sustainability in agile organisations brings numerous benefits and opportunities. Through digitalisation, data analytics, renewable energy, smart grids and technology-driven supply chain management, organisations can

optimise resource management, reduce waste, promote energy efficiency and enhance transparency in their operations.

Furthermore, leveraging technology for sustainability has significant positive impacts, such as improved operational efficiency, reduced environmental footprint and enhanced social responsibility. By embracing technology-driven sustainability initiatives, organisations can achieve streamlined processes, cost savings, carbon emissions reduction, waste reduction and community engagement.

Future Prospects and Trends in Technology-Driven Sustainability

Looking ahead, the future prospects for technology-driven sustainability are promising. Advancements in technologies like artificial intelligence, the Internet of Things and blockchain will continue to transform sustainability practices. These technologies offer increased automation, real-time monitoring and data-driven insights, enabling organisations to make more informed decisions and drive sustainable outcomes.

Moreover, emerging trends such as circular economy practices, renewable energy adoption and sustainable supply chain management will shape the future of technology-driven sustainability. Organisations embracing these trends and effectively leveraging technology will be at the forefront of sustainable innovation and resilience.

The Imperative for Agile Organisations to Embrace Technology for Sustainability

The imperative for agile organisations to embrace technology for sustainability is clear. In today's rapidly changing business landscape, organisations must adapt to environmental and social challenges while maintaining their competitive edge. Technology provides the tools and capabilities to drive sustainable practices, improve operational efficiency, meet stakeholder expectations and future-proof the organisation (Close, 2021).

By integrating sustainability into their core strategies, collaborating cross-functionally, engaging stakeholders, investing in training and skill development and embracing continuous improvement, agile organisations can successfully leverage technology to address sustainability challenges and create long-term value.

In conclusion, the integration of technology and sustainability is essential for organisations striving to be agile and responsible. Organisations can lead the way towards a more sustainable and resilient future by adopting best practices, staying abreast of future trends and recognising the imperative of technology for sustainability.

Author Contributions

Capt. Yogesh Shah: Conceived and designed the study, collected and analysed the data and wrote the manuscript.

The author read and approved the final version of the manuscript.

Data Access Statement

This perspective paper does not rely on original data collection or analysis. The views and arguments are based on a comprehensive review and synthesis of existing literature, publicly available data and expert opinions. We have appropriately cited and referenced the sources used throughout the paper to ensure transparency and support the reproducibility of our perspectives.

Funding

Any specific funding did not support this work.

REFERENCES

Analytics Leverage Industrial AI and Machine Learning to Help Improve Operations and Reliability and Reduce Costs. (n.d.). Retrieved from https://www.ge.com/: https://www.ge.com/digital/applications/analytics

(n.d.). *2022 ESG Report.* FedX.

Smith, B. (2020, August 04). *Microsoft commits to achieve 'zero waste' goals by 2030*. Retrieved from https://blogs.microsoft.com/blog/2020/08/04/microsoft-direct-operations-products-and-packaging-to-be-zero-waste-by-2030/

Building Solutions for Industrial Building. (n.d.). Retrieved from https://new.abb.com/buildings/buildings/industrial

(2023). *Business and sustainability report.* Cocacola.

Chauhan, C., Dhir, A., & Parida, V. (2022). Linking circular economy and digitalisation technologies: A systematic literature review of past achievements and future promise. *Technological Forecasting and Social Change, 177*(3). ISSN 0040-1625.

Chladek, N. (2019, November 06). *Why you need sustainability in your business strategy*. Retrieved from https://online.hbs.edu/blog/post/business-sustainability-strategies

Climate Change. (n.d.). Retrieved from https://www.pepsico.com/our-impact/esg-topics-a-z/climate-change

Teh, D., & Rana, T. (2023). The use of internet of things, big data analytics and artificial intelligence for attaining UN's SDGs. *Handbook of Big Data and Analytics in Accounting and Auditing* (pp. 235-253). Springer.

Dhirani, L. L. (2023). *Ethical dilemmas and privacy issues in emerging technologies: A Review.* Sensors.

Difrancesco, R. M. (2022). How blockchain technology improves sustainable supply chain processes: A practical guide. *Operations Management Research, Advancing Practise Through Theory*.

Driving Climate Solutions. (n.d.). Retrieved from https://sustainability.aboutamazon.com/climate-solutions

Ekins, P., & Zenghelis, D. (2021). The costs and benefits of environmental sustainability. *Sustainability Science*.

Energy Conservation. (n.d.). Retrieved from https://www.adobe.com/corporate-responsibility/sustainability/energy-conservation.html

Energy Management. (n.d.). Retrieved from https://buildings.honeywell.com/us/en/brands/our-brands/multisite/services/energy-management

Gurzawska, A. (2020). Towards responsible and sustainable supply chains – Innovation, multi-stakeholder approach and governance. *Philosophy of Management, 19*, 267-295.

Higgins, M. (2021, November 08). *Blockchain in supply chain*. Retrieved from https://www.forbes.com/sites/forbestechcouncil/2021/11/08/blockchain-in-supply-chain/?sh=e5e61cf4e1a6

How To Reduce Wastage Along Your Supply Chain. (2021, April 22). Retrieved from https://www.dhl.com/discover/en-au/logistics-advice/sustainability-and-green-logistics/how-to-reduce-wastage-along-your-supply-chain

Worighi, I., Maach, A., Hafid, A., Mierlo, J. V., & Hegazy, O. (2019). Integrating renewable energy in smart grid system: Architecture, virtualization and analysis. *Sustainable Energy, Grids and Networks, 18*. ISSN: 2352-4677.

Jackson, A. (2023, May 25). *Top 10: Smart grid companies*. Retrieved from https://energydigital.com/top10/top-10-smart-grid-companies

Close, K., Faure, N., & Hutchinson, R. (2021, Oct 14). *How tech offers a faster path to sustainability*. Retrieved from https://www.bcg.com/publications/2021/how-technology-helps-sustainability-initiatives

Konrad, A. (2013, November 01). *Meet ORION, software that will save UPS millions by improving drivers' routes*. Retrieved from https://www.forbes.com/sites/alexkonrad/2013/11/01/meet-orion-software-that-will-save-ups-millions-by-improving-drivers-routes/?sh=35139f944fc7

Miceli, A., Hagen, B., Riccardi, M. P., Sotti, F., & Settembre-Blundo, D. (2021). Thriving, not just surviving in changing times: How sustainability, agility and digitalization intertwine with organizational resilience. *Sustainability, 13*(4), 2052.

Javaid, M., Haleem, A., Singh, R. P., & Suman, R. (2022). Understanding the adoption of Industry 4.0 technologies in improving environmental sustainability. *Sustainable Operations and Computers, 3*(4), 203-217, ISSN 2666-4127.

Daugherty, P., Lacy, P., Podder, S., & Singh, S. K. (2022). *Uniting technology and sustainability.* Accenture. Retrieved from https://www.accenture.com/us-en/insights/technology/uniting-technology-sustainability

Product Supply Chain Sustainability. (2023, May 31). Retrieved from https://corporate.walmart.com/purpose/esgreport/environmental/product-supply-chain-sustainability

Reinartz, W. (2019, September). The impact of digital transformation on the retailing value chain. *International Journal of Research in Marketing, 36*(3), 350-366.

SIMATIC Energy Suite. (n.d.). Retrieved from https://www.siemens.com/global/en/products/automation/industry-software/automation-software/energymanagement/simatic-energy-suite.html

Stackpole, T. (2021, June 04). *Inside IKEA's digital transformation*. Retrieved from https://hbr.org/2021/06/inside-ikeas-digital-transformation

Sustainable Business Strategy for a Positive Social and Environmental Impact. (2022). Retrieved from www.gartner.com: https://www.gartner.com/en/insights/sustainable-business

Sustainable E-Waste Management: Why it Matters and How to Implement it. (2023, May 17). Retrieved from https://www.gep.com/blog/technology/sustainable-e-waste-management-nurturing-a-greener-future

Sustainable Technology. (n.d.). Retrieved from https://www.accenture.com/in-en/services/sustainability/sustainable-it-technology

(2022). *Tesla impact report 2022*. Tesla.

United Technologies Corporation. (n.d.). Retrieved from https://betterbuildingssolutioncenter.energy.gov/partners/united-technologies-corporation

Wadors, P. (2016, March 07). To stay relevant, your company and employees must keep learning. Retrieved from https://hbr.org/2016/03/to-stay-relevant-your-company-and-employees-must-keep-learning

Water Stewardship. (n.d.). Retrieved from https://www.unilever.com/planet-and-society/protect-and-regenerate-nature/water-stewardship/

Why Sustainability is Crucial for Corporate Strategy, World Economic Forum. (2022, June 9). Retrieved from https://www.weforum.org/agenda/2022/06 why-sustainability-is-crucial-for-corporate-strategy/:https://www.weforum.org/agenda/2022/06/why-sustainability-is-crucial-for-corporate-strategy/

Woo, C. (2020, September 17). *Embedding sustainability into business strategy and operations*. Retrieved from https://www.deloitte.com/global/en/services/risk-advisory/blogs/embedding-sustainability-into-business-strategy-and-operations.html

Aghina, W., Ahlbäck, K., Smet, A. D., Fahrbach, C., Handscomb, C., Lackey, G.,…Wilson, S. (2018). *The five trademarks of agile organizations*. Mckinsey.

Yu, W., Hassan, A., & Adhikariparajuli, M. (2022). How did Amazon achieve CSR and some sustainable development goals (SDGs)—Climate change, circular economy, water resources and employee rights during COVID-19? *Journal of Risk Financial Manag.*, 364.