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## Value Chain Strategy in Marketing: Turning Challenges into Opportunities in the Digital Age

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**Abstract:** The digital era brings significant changes in the marketing landscape, requiring companies to adapt quickly to technological dynamics and changes in consumer behavior. This article aims to analyze the application of Value Chain Strategy in marketing and identify how this strategy can help companies turn challenges into opportunities in the digital era. This research uses a literature study approach by collecting and analyzing information from various relevant sources regarding the application of Value Chain Strategy and the challenges faced by companies in the digital era. The results show that companies that are successful in implementing Value Chain Strategy have integrated digital technologies, such as the Internet of Things (IoT), artificial intelligence (AI), and big data analytics, into every stage of the value chain. This helps increase efficiency, improve product quality, and strengthen relationships with suppliers and customers. However, challenges such as the need for adequate technology infrastructure, digital skills gaps, and resistance to change still need to be overcome. The implications of this study emphasize the need for companies to undertake comprehensive strategic change. Companies should invest in technological infrastructure and improve the digital skills of the workforce.

**Keyword:** Value Chain Strategy, Digital Marketing, Digital Era, Marketing Challenges

### INTRODUCTION

Major changes in technology have created a dynamic business landscape, where companies are required to constantly adapt to the digital advancements taking place. One of the aspects of business most affected by these changes is marketing (Rust, 2020). In the digital era, marketing is no longer just about creating and delivering value to consumers, but also involves leveraging technology to understand and respond to changing consumer behavior. With the advancement of digital technologies such as social media, e-commerce, and artificial intelligence, companies need to formulate the right strategy to stay relevant amidst increasingly fierce competition (Usman, 2024). These changes bring various new challenges in the world of marketing, where one of the biggest challenges is the shift in consumer behavior. Modern consumers tend to be more informed and selective, and often rely on technology in the decision-making process (Santos, 2021). In this context, consumers' expectations of service personalization are also increasing, which forces companies to better understand the individual

preferences of each customer. Companies that are unable to respond quickly to these changes risk falling behind more adaptive competitors. In addition, increasingly globalized competition complicates market conditions, where players from different countries can easily access the same market segment through digital platforms. In such a situation, companies are required to not only understand market trends but also deeply analyze consumer data to identify opportunities and challenges (Kolyasnikov, 2020). The inability to adapt and innovate in the face of these changes can be fatal, so a careful and responsive marketing strategy is a must for the survival and growth of companies in the competitive digital era (Denga, 2022).

In the midst of the challenges of globalization and increasingly fierce competition, value chain strategy emerges as one of the effective solutions to improve company competitiveness (Miao, 2021). Value chain strategy emphasizes the importance of managing and optimizing each stage in the value creation process, starting from raw material procurement, production, to final distribution and marketing (Eisenreich, 2022). Through value chain analysis, companies can identify critical points where efficiency can be improved, costs can be reduced, and innovation can be implemented. In addition, the application of value chain strategy allows companies to reduce operational inefficiencies, improve product or service quality, and accelerate delivery time to market (Ariadi, 2021). In the long run, value chain strategy not only encourages internal efficiency improvement, but also provides more value to consumers (Awan, 2022). By creating more relevant products or services and providing a better experience for customers, companies are able to strengthen their competitive advantage and build stronger consumer loyalty.

Value chain strategy not only plays an important role in the context of production, but also has significant relevance in marketing, especially in the fast-paced digital era (Oliveira, 2021). The development of digital technology has opened up opportunities for companies to leverage large amounts of consumer data, known as big data, to understand consumer preferences, needs, and behaviors more deeply (Holmlund, 2020). By using data analysis supported by artificial intelligence (AI), companies can accurately identify consumer behavior patterns, which can then be translated into more effective marketing strategies (Okeleke, 2024). Technology supports the automation of marketing campaigns, allowing companies to respond to consumer needs in real-time (Kedi, 2024). By building more personalized and relevant interactions, companies can create closer relationships with consumers, increase loyalty, and strengthen long-term customer retention. Overall, a value chain strategy supported by digital technology and AI not only improves operational efficiency in marketing, but also creates significant added value for consumers (Attaran, 2020).

Digitalization opens up great opportunities in terms of distribution and promotion. Through digital platforms, companies can reach a wider audience at a lower cost compared to traditional marketing methods (Peter, 2021). Digital platforms, such as websites, apps, and social media, allow companies to deliver messages directly to consumers without geographical restrictions (Rautela, 2021). E-marketing in Indonesia is currently receiving a positive response due to the vast and diverse market. This system allows outreach to all regions simultaneously without the need for branch offices and can operate 24 hours non-stop (Savitri, 2022). Among the various channels available, social media has become one of the most effective tools in bringing brands closer to consumers. With the ability to share content instantly and interact directly with audiences, social media allows companies to build stronger and more personalized relationships with customers (Hayes, 2021). This not only increases brand visibility, but also creates an opportunity to get direct feedback from consumers, which in turn can be used to improve products and services. However, the challenges of managing a digital marketing strategy cannot be ignored either. The intense competition for consumer attention in the digital space requires companies to constantly innovate and adapt quickly to changing trends. The emergence of new technologies and algorithm changes on digital platforms often affect the

way marketing messages are received by audiences. Therefore, companies must always conduct in-depth market analysis and utilize data analytics to identify consumer behavior patterns and evaluate the effectiveness of marketing campaigns (Gupta, 2021). The inability to adapt quickly can result in missed opportunities and even decreased competitiveness in the market. Therefore, the development of flexible and responsive marketing strategies is key for companies to succeed in facing these challenges, while also capitalizing on the huge potential offered by the digital age.

Companies that successfully implement a value chain strategy in marketing will have an advantage in terms of responsiveness to market changes (Tarigan, 2021). In the digital era, changes can happen very quickly, and companies that are slow to adapt will miss opportunities. By utilizing data analytics and information technology, companies can quickly adjust their strategies according to changing market dynamics. This not only improves competitiveness, but also allows companies to be more proactive in dealing with existing challenges. Overall, implementing a value chain strategy in marketing is an important step for companies to turn challenges into opportunities in the digital era. By focusing on creating value for customers, companies can improve efficiency, innovation and customer satisfaction. In addition, through the application of digital technology, companies can be more responsive to market changes and better prepared for emerging challenges. Therefore, it is important for companies to develop and implement a value chain strategy that fits the needs and goals of the business. With this background, this article will further discuss the application of value chain strategy in marketing in the digital era. The main focus of this discussion is how this strategy can help companies overcome challenges arising from changes in technology and consumer behavior, and how this strategy can be integrated with digital innovation to create greater opportunities in a competitive market. Applying the right value chain strategy can be the key to a company's success in facing challenges and capitalizing on opportunities in this growing digital era.

## **METHOD**

This research uses the literature study method to examine value chain strategy in marketing in the digital era. This method aims to identify and analyze relevant previous studies, to understand how companies can turn challenges into opportunities through the implementation of value chain strategies in the digital context. The data sources used in this literature study come from scientific journals, academic books, industry reports, and reliable articles that discuss value chains, marketing strategies, and digitalization in business. The literature search process was conducted systematically through academic databases such as Google Scholar, Scopus, and ScienceDirect, with relevant keywords such as “value chain strategy,” “digital marketing,” “digital transformation,” and “business challenges in digital era.” Data analysis was conducted using content analysis techniques, in which the selected literature was categorized based on key themes, such as digitization of value chains, marketing strategies in the digital era, and digital transformation in supply chains. From each theme, the study will highlight the challenges and opportunities companies face in utilizing digital technologies to improve efficiency, competitiveness, and innovation.

## **RESULTS AND DISCUSSION**

This research aims to analyze the application of value chain strategy in marketing in the digital era and how this strategy can turn challenges into opportunities. Based on a literature review of various industry studies and reports, there are a number of key findings related to best practices, challenges, and innovations made by companies in optimizing value chain strategies in the digital era.

## Implementation of Value Chain Strategy

The results show that companies that successfully implement Value Chain Strategy are able to identify and optimize each stage in the company's value chain. In an era where technology is developing rapidly, the ability to utilize digital advances has become a decisive factor in achieving operational efficiency and competitive advantage (Hussain, 2023). Using digital technologies such as social media, smart phones, analytics, and integrated devices can increase operational efficiency, improve customer experience, and create innovative business models (Sulastri, 2023). Companies that are successful in implementing value chain strategies not only focus on improving internal efficiency, but also on how companies can maximize the value provided to consumers (Cirone, 2023). At the procurement stage, the use of digital technology has brought significant changes in the way companies interact with suppliers and manage raw material procurement processes. Many companies are now using digital platforms to speed up the purchasing process and strengthen relationships with suppliers (Mujianto, 2023). The platform allows companies to monitor the quality, price, and delivery of goods in real-time, which in turn reduces operational costs and speeds up procurement time. In addition, this technology also helps companies choose more competitive and sustainable suppliers (Hendiani, 2020).

In the context of supplier management, companies that use digital technology can build more transparent and collaborative relationships (Montecchi, 2021). Technologies such as blockchain enable the recording of every transaction and interaction in the supply chain, increasing transparency and data accuracy (Centobelli, 2022). With this transparency, companies can better monitor supplier performance, identify potential problems early on, and ensure compliance with set standards. This not only reduces the risk of production delays but also improves the quality of the final product. At the production stage, the implementation of automation and data-driven management systems has become standard for many modern companies. Internet of Things (IoT) technology allows production machines and devices to be connected in real-time, allowing companies to monitor every step in the production process in detail (Soori, 2023). With real-time data, companies can detect possible problems, such as machine breakdowns or production errors, before they have a greater impact on product quality. This efficiency not only saves repair costs but also increases overall productivity.

The use of data analytics in production also provides strategic advantages. Data collected from the production process can be analyzed to identify trends, make market demand predictions, and optimize resource allocation (Ranjan, 2021). These data-backed decisions enable companies to better plan production, match production capacity to market demand, and improve product quality through stricter quality control. Thus, the use of data technology not only improves operational efficiency, but also creates added value for consumers. At the distribution stage, many companies have begun to utilize digital technology to optimize the logistics process. A digital-based supply chain management system allows companies to track the delivery of goods in real-time and organize shipments more efficiently (Minculete, 2022). With this system, companies can identify the most efficient delivery routes, reduce transportation costs, and ensure products reach consumers on time. The use of GPS and RFID technology helps in improving delivery accuracy and minimizing the risk of delivery errors (Elsanhoury, 2022).

The implementation of a digital marketing strategy that is integrated with the value chain is also the key to success in the digital era (Katsikeas, 2020). Companies use consumer data collected through various digital platforms to design more personalized and effective marketing campaigns (Nair, 2021). Consumer data analysis allows companies to better understand consumer preferences, so they can customize products and services to meet dynamic market needs. In this case, digitalization not only changes the way companies produce

and distribute goods, but also how to interact and build relationships with consumers. The optimal implementation of Value Chain Strategy in the digital era allows companies to provide more value to consumers, from high-quality products to better customer experience (Lim, 2024). By utilizing digital technology, companies can not only improve efficiency at every stage of the value chain, but also create competitive advantages that are difficult to match. Companies that are able to optimize this strategy will be better prepared to face challenges in an increasingly competitive global market, as well as better able to respond quickly to changing consumer needs.

### **Challenges of Value Chain Strategy Implementation**

Although the implementation of value chain strategy provides many benefits, companies also face a number of significant challenges. One of the main challenges is the need for adequate technological infrastructure (Agrawal, 2023). Digitalization in the value chain requires huge investments in technologies such as the Internet of Things (IoT), artificial intelligence (AI), and big data analytics (Zamani, 2023). Companies need to ensure that they have a robust and reliable technology network to integrate all functions present in the value chain. However, not all companies, especially small and medium-sized ones, have sufficient budget and resources to implement such technologies. This limitation can slow down the digitization process and delay the benefits that can be derived from a digital value chain strategy. Besides infrastructure, another pressing challenge is the digital skills gap among the workforce. The application of advanced technologies in the value chain requires specialized skills that are not always readily available (Wahab, 2024). Many employees do not yet have an adequate understanding of how to use technologies such as AI and IoT, so companies must invest in training and digital skills development. However, these efforts are not only time-consuming but also costly. Without the right skills, digital transformation in the value chain cannot be optimized and can even lead to greater inefficiencies.

Resistance to change is also an obstacle in the implementation of Value Chain Strategy. The introduction of new technology often causes anxiety among employees and management, especially regarding its potential impact on jobs and long-standing ways of working (Chowdhury, 2023). Many employees worry about losing their jobs or having to adapt to complex process changes. This resistance can slow down or even block the digital transformation process, because without full support from all parties in the organization, the implementation of new technology cannot run smoothly. Therefore, companies need to design a good change management strategy, including effective communication and in-depth training programs. Another challenge that often arises is the complexity of integrating new technology with existing systems. Many companies already have management and operation systems in place, so integrating new technologies into those systems can be very complicated. Incompatibility between old and new technologies can lead to costly operational disruptions. In the context of the value chain, collaboration with suppliers and distributors is often hindered when these business partners do not have the same technological readiness, which in turn can disrupt smooth operations (Nurhayati, 2023).

Another challenge is cybersecurity, which has become a major concern in the era of value chain digitization (Goswami, 2023). The adoption of digital technologies makes corporate data, including sensitive information related to suppliers and consumers, more vulnerable to cyberattacks. Cyberattacks can result in serious disruptions to business operations and cause significant financial losses. Companies must have a robust cybersecurity system to protect digital infrastructure. However, building adequate cybersecurity also requires significant investment, which adds to the cost burden for companies. Changes in government regulations and policies related to digital technology can also be a challenge in implementing Value Chain Strategy (Odimarha, 2024). Governments in various countries continue to update

rules related to data privacy, information security, and the use of digital technology, which can affect how companies conduct their operations. Companies must keep abreast of these regulations to ensure that they remain compliant with applicable laws. However, compliance with complex regulations often adds to a company's administrative and operational burden, especially when it comes to adapting business processes to different regulations in different regions.

### **Innovation in Marketing**

Companies that successfully implement a value chain strategy also show significant innovation in marketing. Many companies are now starting to utilize big data to better understand consumer preferences. Through in-depth data analysis, companies can conduct more effective market segmentation, so that they can target the right audience with relevant offers. The use of algorithms in digital marketing campaigns has helped companies identify buying patterns and consumer behavior, allowing companies to adjust marketing strategies in real-time (Adeniran, 2024). By understanding customer trends and preferences, companies can respond quickly to changes in the market, creating a competitive advantage. In addition, the application of advanced analytics technologies such as machine learning and artificial intelligence (AI) is also driving innovation in marketing. The technologies allow companies to analyze large amounts of data at a higher speed and generate more accurate insights. AI can be used to predict future consumer behavior based on historical data, which provides companies with a solid basis for formulating proactive marketing strategies (Potwora, 2024). Thus, companies not only react to existing trends, but can also predict and capitalize on emerging opportunities before their competitors.

The implementation of digital-based marketing strategies also allows companies to increase interaction with consumers through social media and other online platforms (Nitami, 2024). By utilizing these platforms, companies can create an engaged and loyal community. Research results show that companies that are active in communicating with consumers on social media are able to build higher loyalty (Khoa, 2023). Direct interaction with consumers gives companies the opportunity to listen to feedback, which is an important input in product and service development. There are various ways that can be done to establish relationships with customers, including providing optimal service, knowing information about customer desires, and good communication skills with customers (Adnan, 2021). By combining various communication channels, from social media, email, to websites, companies can ensure that customers have easy and convenient access to interact with brands (Rane, 2023). This approach not only increases customer satisfaction, but also allows companies to collect more comprehensive data regarding the customer journey, which becomes the basis for smarter marketing strategies in the future.

Innovation in marketing driven by value chain strategy also involves collaboration with external stakeholders, such as influencers and business partners (Qin, 2024). Companies that successfully establish strategic partnerships with influencers can leverage their network and influence to reach a wider audience and increase brand visibility. Through collaborative marketing campaigns, companies can create content that is more interesting and relevant to consumers, which in turn increases engagement and conversions (Bakri, 2023). By continuously adopting the latest innovations and technologies, companies can not only improve their marketing effectiveness but also create added value for consumers. In an era where consumers have many choices, innovation in marketing is key to maintaining competitiveness and creating an exceptional experience for customers. Therefore, companies that are able to adapt and implement marketing innovations effectively will be better able to face existing challenges and capitalize on emerging opportunities in an ever-evolving market.

## CONCLUSION

The implementation of value chain strategy in marketing in the digital era is a crucial step for companies to remain relevant and competitive in a rapidly evolving market. This research shows that the strategy not only offers benefits, such as better operational efficiency and the ability to create added value for consumers, but also faces significant challenges. One of the main challenges that companies must face is the speed of adaptation to changes in consumer behavior that are increasingly experience-oriented. Companies that are successful in implementing a value chain strategy in the digital era must be able to utilize advanced technologies such as big data, artificial intelligence (AI), and predictive analytics to understand consumer trends and provide more targeted experiences. Despite challenges such as the need for adequate infrastructure, digital skills gaps and resistance to change, companies that are able to overcome these obstacles will find opportunities to compete better in the global market. The implications of implementing Value Chain Strategy in the digital era underscore the need for companies to make comprehensive strategic changes. Companies must invest resources in the development of modern and advanced technological infrastructure to support the digitization of the value chain. In addition, it is important to enhance the digital skills of the workforce through training and education programs, so that employees can adapt quickly to new technologies and increase productivity. Effective change management is also key to overcoming resistance to change in organizations, where clear communication and employee engagement can help facilitate this transition. In addition, with cybersecurity threats on the rise, companies need to strengthen data security systems to protect sensitive information and maintain consumer trust.

## REFERENCES

- Adeniran, I. A., Efunniyi, C. P., Osundare, O. S., & Abhulimen, A. O. (2024). Transforming marketing strategies with data analytics: A study on customer behavior and personalization. *International Journal of Management & Entrepreneurship Research*, 6(8). <https://doi.org/10.56781/ijret.2024.4.1.0022>
- Adnan, A. Z., Rahayu, A., Hendrayati, H., & Yusuf, R. (2021, February). The role of electronic customer relationship management (E-CRM) in improving service quality. In *Journal of Physics: Conference Series* (Vol. 1764, No. 1, p. 012051). IOP Publishing. <https://doi.org/10.1088/1742-6596/1764/1/012051>
- Agrawal, R., Yadav, V. S., Majumdar, A., Kumar, A., Luthra, S., & Garza-Reyes, J. A. (2023). Opportunities for disruptive digital technologies to ensure circularity in supply Chain: A critical review of drivers, barriers and challenges. *Computers & Industrial Engineering*, 178, 109140. <https://doi.org/10.1016/j.cie.2023.109140>
- Ariadi, G., Surachman, Sumiati, & Rohman, F. (2021). The effect of lean and agile supply chain strategy on financial performance with mediating of strategic supplier integration & strategic customer integration: Evidence from bottled drinking-water industry in Indonesia. *Cogent Business & Management*, 8(1), 1930500. <https://doi.org/10.1080/23311975.2021.1930500>
- Attaran, M. (2020, July). Digital technology enablers and their implications for supply chain management. In *Supply Chain Forum: An International Journal* (Vol. 21, No. 3, pp. 158-172). Taylor & Francis. <https://doi.org/10.1080/16258312.2020.1751568>
- Awan, U., Sroufe, R., & Bozan, K. (2022). Designing value chains for industry 4.0 and a circular economy: A review of the literature. *Sustainability*, 14(12), 7084. <https://doi.org/10.3390/su14127084>
- Bakri, Z. F. (2023). Analyzing the Influence of Digital Marketing Strategies on Business Performance in the Beauty Industry: A Comprehensive Analysis of Social Media Engagement and Influencer Collaborations. *Journal on Economics, Management and*

- Business Technology, 2(1), 37-48.  
<https://plus62.isha.or.id/index.php/JEMBUT/article/view/187>
- Centobelli, P., Cerchione, R., Del Vecchio, P., Oropallo, E., & Secundo, G. (2022). Blockchain technology for bridging trust, traceability and transparency in circular supply chain. *Information & Management*, 59(7), 103508. <https://doi.org/10.1016/j.im.2021.103508>
- Chowdhury, M. M. H., Rahman, S., Quaddus, M. A., & Shi, Y. (2023). Strategies to mitigate barriers to supply chain sustainability: an apparel manufacturing case study. *Journal of Business & Industrial Marketing*, 38(4), 869-885. <https://doi.org/10.1108/JBIM-04-2021-0233>
- Cirone, F., Masotti, M., Prospero, P., Bosi, S., Dinelli, G., & Vittuari, M. (2023). Business strategy pathways for short food supply chains: sharing value between consumers and producers. *Sustainable Production and Consumption*, 40, 458-470. <https://doi.org/10.1016/j.spc.2023.07.017>
- Denga, E. M., Vajjhala, N. R., & Rakshit, S. (2022). The role of digital marketing in achieving sustainable competitive advantage. *Digital Transformation and Internationalization Strategies in Organizations*, 44-60. <https://doi.org/10.4018/978-1-7998-8169-8.ch003>
- Eisenreich, A., Füller, J., Stuchtey, M., & Gimenez-Jimenez, D. (2022). Toward a circular value chain: Impact of the circular economy on a company's value chain processes. *Journal of Cleaner Production*, 378, 134375. <https://doi.org/10.1016/j.jclepro.2022.134375>
- Elsanhoury, M., Mäkelä, P., Koljonen, J., Välisuo, P., Shamsuzzoha, A., Mantere, T., ... & Kuusniemi, H. (2022). Precision positioning for smart logistics using ultra-wideband technology-based indoor navigation: A review. *Ieee Access*, 10, 44413-44445. <https://ieeexplore.ieee.org/abstract/document/9761257>
- Goswami, S. S., Sarkar, S., Gupta, K. K., & Mondal, S. (2023). The role of cyber security in advancing sustainable digitalization: Opportunities and challenges. *Journal of Decision Analytics and Intelligent Computing*, 3(1), 270-285. <https://doi.org/10.31181/jdaic10018122023g>
- Gupta, S., Justy, T., Kamboj, S., Kumar, A., & Kristoffersen, E. (2021). Big data and firm marketing performance: Findings from knowledge-based view. *Technological Forecasting and Social Change*, 171, 120986. <https://doi.org/10.1016/j.techfore.2021.120986>
- Hayes, J. L., Brinson, N. H., Bott, G. J., & Moeller, C. M. (2021). The influence of consumer-brand relationship on the personalized advertising privacy calculus in social media. *Journal of Interactive Marketing*, 55(1), 16-30. <https://doi.org/10.1016/j.intmar.2021.01.001>
- Hendiani, S., Mahmoudi, A., & Liao, H. (2020). A multi-stage multi-criteria hierarchical decision-making approach for sustainable supplier selection. *Applied Soft Computing*, 94, 106456. <https://doi.org/10.1016/j.asoc.2020.106456>
- Holmlund, M., Van Vaerenbergh, Y., Ciuchita, R., Raval, A., Sarantopoulos, P., Ordenes, F. V., & Zaki, M. (2020). Customer experience management in the age of big data analytics: A strategic framework. *Journal of Business Research*, 116, 356-365. <https://doi.org/10.1016/j.jbusres.2020.01.022>
- Hussain, H. N., Alabdullah, T. T. Y., Ries, E., & Jamal, K. A. M. (2023). Implementing Technology for Competitive Advantage in Digital Marketing. *International Journal of Scientific and Management Research*, 6(6), 95-114.
- Katsikeas, C., Leonidou, L., & Zeriti, A. (2020). Revisiting international marketing strategy in a digital era: Opportunities, challenges, and research directions. *International Marketing Review*, 37(3), 405-424. <https://doi.org/10.1108/IMR-02-2019-0080>
- Kedi, W. E., Ejimuda, C., Idemudia, C., & Ijomah, T. I. (2024). Machine learning software for



- optimizing SME social media marketing campaigns. *Computer Science & IT Research Journal*, 5(7), 1634-1647. <http://www.creativecommons.org/licences/by-nc/4.0/>
- Khoa, B., & Huynh, T. (2023). The influence of social media marketing activities on customer loyalty: A study of e-commerce industry. *International Journal of Data and Network Science*, 7(1), 175-184. <http://dx.doi.org/10.5267/j.ijdns.2022.11.005>
- Kolyasnikov, M. S., & Kelchevskaya, N. R. (2020). Knowledge management strategies in companies: Trends and the impact of industry 4.0. *Upravlenec*, 11(4). <https://doi.org/10.29141/2218-5003-2020-11-4-7>
- Lim, A. F., Ooi, K. B., Tan, G. W. H., Cham, T. H., Alryalat, M. A., & Dwivedi, Y. K. (2024). Adapt or die: a competitive digital supply chain quality management strategy. *Journal of Enterprise Information Management*, 37(2), 698-720. <https://doi.org/10.1108/JEIM-09-2022-0345>
- Miao, Z. (2021). Digital economy value chain: Concept, model structure, and mechanism. *Applied Economics*, 53(37), 4342-4357. <https://doi.org/10.1080/00036846.2021.1899121>
- Minculete, G., Stan, S. E., Ispas, L., Virca, I., Stanciu, L., Milandru, M., ... & Bădilă, M. I. (2022). Relational approaches related to digital supply chain management consolidation. *Sustainability*, 14(17), 10727. <https://doi.org/10.3390/su141710727>
- Montecchi, M., Plangger, K., & West, D. C. (2021). Supply chain transparency: A bibliometric review and research agenda. *International Journal of Production Economics*, 238, 108152. <https://doi.org/10.1016/j.ijpe.2021.108152>
- Mujianto, M., Hartoyo, H., Nurmalina, R., & Yusuf, E. Z. (2023). The unraveling loyalty model of traditional retail to suppliers for business sustainability in the digital transformation era: Insight from MSMEs in Indonesia. *Sustainability*, 15(3), 2827. <https://doi.org/10.3390/su15032827>
- Nair, K., & Gupta, R. (2021). Application of AI technology in modern digital marketing environment. *World Journal of Entrepreneurship, Management and Sustainable Development*, 17(3), 318-328. <https://doi.org/10.1108/WJEMSD-08-2020-0099>
- Nitami, M., Yani, R. N., Susanto, D. B., Diman, B., Fadillah, N., Aprillia, R., & Fujari, I. (2024). Digital Marketing as A Strategy to Increase Sales and Consumer Satisfaction. *Journal Informatic, Education and Management (JIEM)*, 6(2), 54-69. <https://doi.org/10.61992/jiem.v6i2.104>
- Nurhayati, K., Tavasszy, L., & Rezaei, J. (2023). Joint B2B supply chain decision-making: drivers, facilitators and barriers. *International Journal of Production Economics*, 256, 108721. <https://doi.org/10.1016/j.ijpe.2022.108721>
- Odimarha, A. C., Ayodeji, S. A., & Abaku, E. A. (2024). The role of technology in supply chain risk management: Innovations and challenges in logistics. *Magna Scientia Advanced Research and Reviews*, 10(2), 138-145. <https://doi.org/10.30574/msarr.2024.10.2.0052>
- Okeleke, P. A., Ajiga, D., Folorunsho, S. O., & Ezeigweneme, C. (2024). Predictive analytics for market trends using AI: A study in consumer behavior. <https://doi.org/10.53430/ijeru.2024.7.1.0032>
- Oliveira, L., Fleury, A., & Fleury, M. T. (2021). Digital power: Value chain upgrading in an age of digitization. *International Business Review*, 30(6), 101850. <https://doi.org/10.1016/j.ibusrev.2021.101850>
- Peter, M. K., & Dalla Vecchia, M. (2021). The digital marketing toolkit: a literature review for the identification of digital marketing channels and platforms. *New trends in business information systems and technology: Digital innovation and digital business transformation*, 251-265.
- Potwora, M., Vdovichena, O., Semchuk, D., Lipych, L., & Saienko, V. (2024). The use of

- artificial intelligence in marketing strategies: Automation, personalization and forecasting. *Journal of Management World*, 2024(2), 41-49.
- Qin, L., Xie, W., & Jia, P. (2024). Value Chain Digitalization, Global Value Chain Embeddedness, and Distributed Innovation in Value Chains. *Sustainability*, 16(7), 2845. <https://doi.org/10.3390/su16072845>
- Rane, N. L., Achari, A., & Choudhary, S. P. (2023). Enhancing customer loyalty through quality of service: Effective strategies to improve customer satisfaction, experience, relationship, and engagement. *International Research Journal of Modernization in Engineering Technology and Science*, 5(5), 427-452. <https://www.doi.org/10.56726/IRJMETs38104>
- Ranjan, J., & Foropon, C. (2021). Big data analytics in building the competitive intelligence of organizations. *International Journal of Information Management*, 56, 102231. <https://doi.org/10.1016/j.ijinfomgt.2020.102231>
- Rautela, S. (2021). Social Media for New Product Launch: A Study of Social Media Platforms Across the RACE Planning Framework. *International Journal of Interactive Mobile Technologies*, 15(5). <https://doi.org/10.3991/IJIM.V15I05.18147>
- Rust, R. T. (2020). The future of marketing. *International Journal of Research in Marketing*, 37(1), 15-26. <https://doi.org/10.1016/j.ijresmar.2019.08.002>
- Santos, S., & Gonçalves, H. M. (2021). The consumer decision journey: A literature review of the foundational models and theories and a future perspective. *Technological Forecasting and Social Change*, 173, 121117. <https://doi.org/10.1016/j.techfore.2021.121117>
- Savitri, C., Hurriyati, R., Wibowo, L., & Hendrayati, H. (2022). The role of social media marketing and brand image on smartphone purchase intention. *International Journal of Data and Network Science*, 6(1), 185-192. <http://dx.doi.org/10.5267/j.ijdns.2021.9.009>
- Soori, M., Arezoo, B., & Dastres, R. (2023). Internet of things for smart factories in industry 4.0, a review. *Internet of Things and Cyber-Physical Systems*, 3, 192-204. <https://doi.org/10.1016/j.iotcps.2023.04.006>
- Sulastri, S., Mulyadi, H., Disman, D., Hendrayati, H., & Purnomo, H. (2023). Resilience acceleration model of small and medium enterprises through digital transformation. *Journal of Eastern European and Central Asian Research (JEECAR)*, 10(4), 609-619. <https://doi.org/10.15549/jeecar.v10i4.1355>
- Tarigan, Z. J. H., Siagian, H., & Jie, F. (2021). Impact of internal integration, supply chain partnership, supply chain agility, and supply chain resilience on sustainable advantage. *Sustainability*, 13(10), 5460. <https://doi.org/10.3390/su13105460>
- Usman, F. O., Eyo-Udo, N. L., Etukudoh, E. A., Odonkor, B., Ibeh, C. V., & Adegbola, A. (2024). A critical review of ai-driven strategies for entrepreneurial success. *International Journal of Management & Entrepreneurship Research*, 6(1), 200-215. <https://doi.org/10.51594/ijmer.v6i1.748>
- Wahab, S. N., Tan, A., & Roche, O. (2024). Identifying supply chain manager leadership skills and competencies gaps in Malaysia. *Higher Education, Skills and Work-Based Learning*. <https://doi.org/10.1108/HESWBL-07-2023-0179>
- Zamani, E. D., Smyth, C., Gupta, S., & Dennehy, D. (2023). Artificial intelligence and big data analytics for supply chain resilience: a systematic literature review. *Annals of Operations Research*, 327(2), 605-632. <https://link.springer.com/article/10.1007/s10479-022-04983-y>