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BUSINESS OPTIMIZATION IN E-COMMERCE: LEVERAGING DATA ANALYTICS FOR IMPROVED DECISION-MAKING AND PERFORMANCE ENHANCEMENT

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Abstract. In today's data-driven business environment, e-commerce platforms are increasingly leveraging data analytics to enhance operational efficiency, improve decision-making, and gain a competitive edge. This research examines how analytics is transforming core e-commerce functions, including inventory management, supply chain and logistics, personalization, marketing campaign optimization, and pricing strategy. By enabling real-time demand forecasting, route planning, and customer behaviour analysis, data analytics empowers businesses to deliver products more efficiently and tailor experiences for individual users. The paper presents case studies from leading platforms like Amazon, eBay, Shopify, and Flipkart to demonstrate how data-driven decision-making leads to measurable performance improvements and competitive success. These examples highlight the strategic importance of embedding analytics into e-commerce ecosystems as a foundation for business optimization, innovation, and long-term growth.

Keywords: business optimization, e-commerce, data analytics, decision-making, performance enhancement, business intelligence, digital transformation

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ОПТИМИЗАЦИЯ БИЗНЕСА В ЭЛЕКТРОННОЙ КОММЕРЦИИ: ПРИМЕНЕНИЕ ИНСТРУМЕНТОВ АНАЛИТИКИ ДАННЫХ В ЦЕЛЯХ УЛУЧШЕНИЯ ПРОЦЕССА ПРИНЯТИЯ РЕШЕНИЙ И ПОВЫШЕНИЯ ЭФФЕКТИВНОСТИ ПРЕДПРИЯТИЯ

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Аннотация. В современной бизнес среде, ориентированной на большие данные, платформы электронной торговли все чаще используют аналитику данных для повышения операционной эффективности, улучшения процесса принятия решений и извлечения ощутимых конкурентных преимуществ. Данное исследование посвящено аналитике данных с точки зрения трансформирмации ключевые функции электронной коммерции, включая управление запасами, цепочки поставок, логистику, персонализацию, а также оптимизацию маркетинговых кампаний и стратегии ценообразования. Благодаря возможностям прогнозирования спроса в режиме реального времени, планированию маршрутов и анализу поведения клиентов, аналитика данных позволяет предприятиям доставлять товары более эффективно, а также в существенной мере персонализировать пользовательский опыт. В исследовании представлен анализ ведущих платформ, таких как Amazon, eBay, Shopify и Flipkart, демонстрирующий, как принятие решений на основе данных приводит к измеримым улучшениям в показателях и способствует росту конкурентоспособности. Данные примеры подчеркивают стратегическое значение внедрения аналитики данных в экосистемы электронной коммерции как основы для общей оптимизации бизнеса, инноваций и долгосрочного роста.

Ключевые слова: оптимизация бизнеса, электронная коммерция, аналитика данных, принятие решений, повышение эффективности, BI-системы, цифровая трансформация

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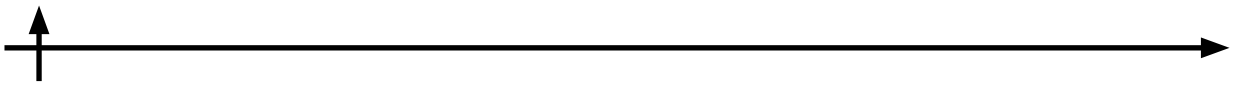
Introduction

The rapid evolution of e-commerce has revolutionized the way consumers interact with businesses, creating a highly competitive digital marketplace driven by convenience, personalization, and real-time access to global products and services. Consumers today can purchase everything from books to groceries with a few clicks, bypassing traditional physical retail models. This exponential shift toward online shopping has reshaped consumer expectations and introduced intense market competition, rapid trend cycles, and pressure for operational excellence. To thrive in this fast-paced environment, e-commerce platforms must adopt intelligent systems capable of making accurate, timely, and scalable decisions.

At the heart of this transformation lies data, massive volumes of it generated continuously through customer browsing behaviour, purchase histories, feedback, clicks, search queries, and



social interactions. When effectively harnessed, this data becomes a valuable asset, offering insights that can guide business strategy, streamline operations, and deliver highly personalized customer experiences. However, the sheer scale and complexity of such data pose significant analytical challenges that traditional decision-making models are ill-equipped to handle. This is where data analytics provides the necessary tools, methodologies, and technologies to transform raw data into actionable business intelligence.

The importance of analytics for e-commerce has been widely acknowledged in previous research. Almtiri, Miah, and Noman (Almtiri, 2022) emphasize that small and medium-sized enterprises increasingly rely on decision support systems and ICT adoption to enhance competitiveness, yet they face persistent barriers such as limited resources, software adaptation difficulties, and a shortage of managerial expertise. Their findings highlight the importance of analytics but also point to the structural disadvantages that SMEs encounter compared to large corporations. Similarly, Pande et al. (Pande, 2023) examine how big data analytics can be applied in e-commerce to understand customer behaviour, predict preferences, optimize pricing, and enhance marketing effectiveness. While their work demonstrates the power of predictive modelling and machine learning for personalization, it also draws attention to unresolved challenges, including data privacy concerns, regulatory pressures such as GDPR, and the difficulty of scaling advanced analytical systems across businesses of different sizes.

Despite these contributions, several gaps in the literature remain. Much of the existing research focuses on either SMEs or on general applications of big data analytics, leaving limited insights into comparative, function-specific implementations across major e-commerce platforms (Abidemi, 2024). Ethical considerations and governance frameworks also remain underexplored, even though consumer trust increasingly depends on transparency and responsible data use. Furthermore, few studies provide multi-case comparative perspectives that analyze how different platforms adopt analytics according to their scale, strategic orientation, or technological capabilities.

This research addresses these gaps by investigating the role of data analytics in optimizing decision-making and enhancing performance within e-commerce. It seeks to examine six core functional areas where analytics exerts the most significant influence, namely inventory management, supply chain and logistics, personalization and customer experience, marketing campaign optimization, pricing strategy, and platform-level integration through case studies of Amazon, eBay, Shopify, and Flipkart. In doing so, the study sets out to analyze how data analytics supports inventory and supply chain efficiency, evaluate its role in driving personalization and marketing effectiveness, investigate its contribution to dynamic pricing, and compare how leading platforms implement these practices in distinctive ways.

The aim of the research is to demonstrate that data analytics is not merely a supportive tool but a central pillar of strategic agility and operational sustainability in the digital economy. By combining insights from literature with empirical case analysis, the study contributes to the ongoing discourse on digital transformation and provides recommendations for scalable, ethical, and impactful integration of analytics in e-commerce.

Materials and Methods

Research Design

This study adopts a qualitative, case study-based research design aimed at exploring how leading e-commerce companies leverage data analytics to optimize business functions and improve decision-making. The qualitative approach enables a deep exploration of organizational practices, technologies, and outcomes related to data analytics adoption. The case study method is particularly suitable for understanding complex, real-world applications of data-driven strat-

egies within their specific business contexts. By examining multiple case examples of Amazon, eBay, Shopify, and Flipkart, the research draws comparative insights across varying organizational models, technological infrastructures, and market environments.

Data Collection Method

Data for this research were collected through documentary analysis of secondary sources. These include academic literature, company white papers, industry reports, media interviews, and technology documentation. Particular emphasis was placed on collecting descriptive and strategic information regarding how each platform applies data analytics in core operational areas such as inventory management, customer personalization, logistics, and marketing.

The four selected case studies Amazon, eBay, Shopify, and Flipkart were chosen for their prominence in the global and regional e-commerce markets, as well as their diverse use of analytics across both customer-facing and internal operations. Each case was systematically analyzed using a structured framework to extract relevant insights on analytics strategy, implementation, tools used, and measurable outcomes.

Sources of Data

Data were drawn from a combination of credible sources, including:

— Peer-reviewed academic journal articles and conference proceedings
— Business technology publications (McKinsey, Forbes Technology Council)
— Company-authored materials (Amazon and eBay analytics documentation)
— Market intelligence reports (Statista, Gartner, Accenture)
— Case studies provided in publicly available business analytics and e-commerce literature

These sources provided both qualitative narrative accounts and quantitative performance indicators (sales uplift from recommendation engines, infrastructure savings, and customer engagement metrics), which were cross-referenced to ensure reliability and consistency.

Results and Discussion

Case Study: Amazon

Amazon exemplifies the effective use of advanced data analytics and AI to gain a competitive edge in e-commerce. The company collects and analyzes massive volumes of structured and unstructured data from user interactions, including clicks, searches, purchases, reviews, and device usage, to extract insights into customer behaviour and preferences. Central to Amazon's strategy is its AI-powered recommendation system, which applies predictive analytics and machine learning algorithms, such as collaborative filtering and deep learning models, to suggest products tailored to individual users (Liu, 2022, 2024; Wang, 2024). This system is estimated to drive approximately 35 percent of total sales, demonstrating the direct impact of data analytics on business outcomes.

In addition to personalized recommendations, Amazon employs real-time analytics to optimize marketing campaigns, dynamic pricing, and inventory forecasting. Advanced customer segmentation enables the identification of emerging trends, accurate demand prediction, and targeted promotions for distinct user groups (Govindarajan, 2024). Amazon also applies AI in search and discovery, voice commerce through Alexa, operational analytics in supply chain management, and retail analytics in Amazon Go stores. These integrated functions enhance efficiency, scalability, and customer engagement, feeding into Amazon's Flywheel model, where improvements in experience generate more data for continuous refinement (Zhuang, 2021; Huang, 2020).

These findings align with Pande et al. (Pande, 2023; Hasan, 2024), who emphasize that big data analytics in e-commerce improves personalization, operational performance, and customer engagement. Similarly, the role of predictive analytics in Amazon's inventory and marketing

strategies reflects principles identified by Almtiri et al. (Almtiri, 2022) regarding the importance of decision support systems for scalable business optimization.

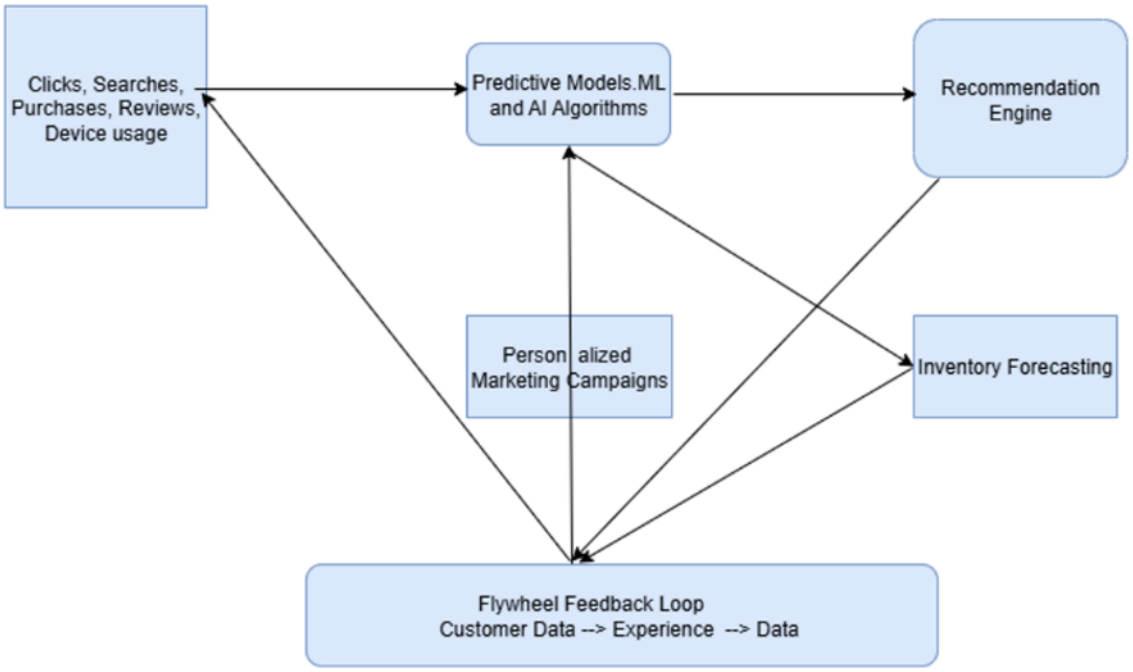


Fig. 1. Amazon analytics flow.

Case Study: eBay

eBay demonstrates a distinct approach, focusing on behavioural analytics and infrastructure optimization rather than inventory management. Processing over 50 terabytes of machine-generated data daily and managing more than 100 petabytes of historical data, eBay gains insights into user preferences, behaviour patterns, and search interactions. The platform replicates the personalized attention of local shops on a global scale through predictive modelling, real-time A/B testing, and sentiment analysis (Rimon, 2024; Shah, 2022).

Unlike Amazon, eBay's analytics strategy prioritizes the management of unstructured customer journey data. The company employs a three-tiered system consisting of Teradata Enterprise Data Warehouse for transactional queries, Singularity for scalable unstructured data analytics, and Hadoop clusters for large-scale ad hoc processing. This architecture enables efficient real-time decision-making and supports infrastructure optimization. For example, minute-by-minute server data analysis revealed underutilized resources, allowing eBay to repurpose servers and save millions in capital expenditures (Benjamin, 2024; Adebanji, 2025).

The focus on behavioural analytics and IT efficiency illustrates the diversity of analytics applications in e-commerce. It confirms Pande et al.'s observation that predictive models can enhance both customer-facing services and internal operations while highlighting the need for robust technical infrastructure, particularly for platforms without inventory control.

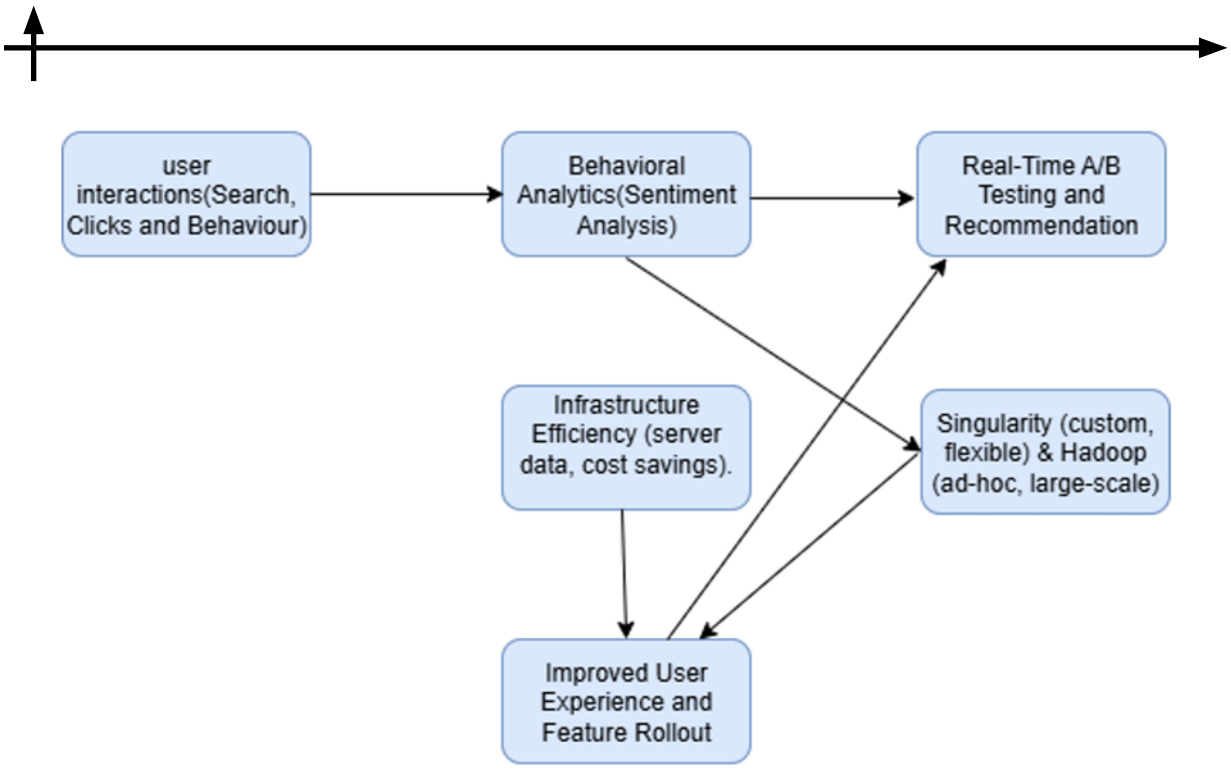


Fig. 2. eBay analytics flow.

Case Study: Shopify

Shopify provides a platform-centric approach, empowering small businesses to leverage analytics for growth and personalization. Through Shopify Analytics, merchants access insights into sales performance, customer behaviour, traffic sources, and marketing effectiveness. Real-time dashboards allow store owners to monitor conversion rates, cart abandonment, and customer demographics, supporting informed decisions on marketing spend, inventory management, and customer experience.

By analyzing customer behaviour, Shopify enables personalized marketing and product recommendations. Integration with third-party applications enhances reporting capabilities, allowing small businesses to apply AI-driven insights without the resources of larger corporations. Shopify also supports multi-channel retail strategies, providing comprehensive visibility across online and offline sales touchpoints.

This approach demonstrates the practical application of big data analytics for SMEs, addressing gaps identified by Almtiri et al. regarding scalability and resource constraints in smaller enterprises (Deng; Urhan, 2022). Shopify's model confirms that accessible analytics tools can democratize data-driven decision-making, a theme less explored in prior literature (Jakkula, 2023; Zeng, 2021).

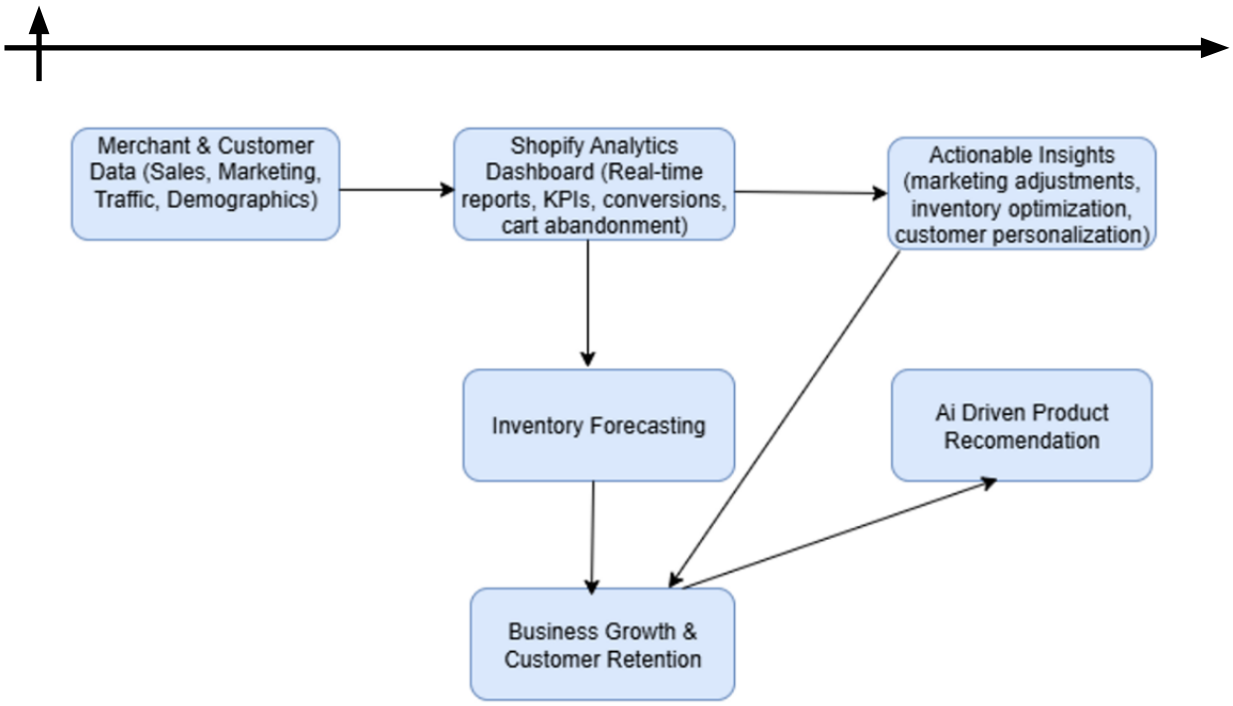


Fig. 3. Shopify analytics flow.

Case Study: Flipkart

Flipkart leverages predictive analytics to optimize inventory, supply chain operations, and personalized marketing within the Indian e-commerce market. Historical sales, seasonal trends, and customer behaviour data allow Flipkart to forecast demand accurately, reducing overstocking and stockouts while enhancing logistics efficiency. Machine learning algorithms facilitate targeted marketing campaigns and customer segmentation, increasing engagement and conversion rates (Jain, 2025; Fu, 2023).

Data science also underpins Flipkart's real-time supply chain monitoring, enabling the identification of bottlenecks, forecasting of delays, and streamlining of delivery processes. Customer behaviour analytics predicts churn risk and purchase likelihood, supporting proactive retention strategies. Flipkart's implementation highlights the applicability of analytics in emerging markets, demonstrating that predictive modelling can drive operational efficiency and competitive advantage even in complex market environments.

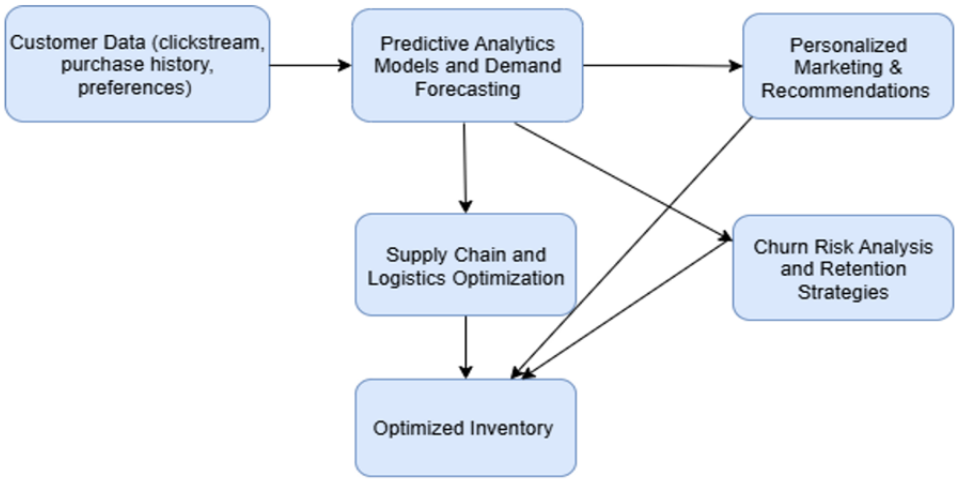


Fig. 4. Flipkart analytics flow.

Cross-Case Comparison

The following table summarizes the key use of analytics and unique focus across the four platforms.

Table 1. Key use of analytics and unique focus across the four platforms.

Platform	Key Use of Analytics	Unique Focus
Amazon	Personalization, logistics, pricing	End-to-end AI-driven optimization
eBay	Customer journey, UX, infrastructure	Behavior-based platform refinement
Shopify	Marketing, inventory, UX	Empowering small businesses
Flipkart	Inventory, supply chain, marketing	Predictive modeling for local markets

Analysis of these cases reveals that analytics has shifted decision-making from intuition to evidence-based practices, enabling faster, smarter, and more scalable actions (Mashtakov et al., 2023). Amazon integrates analytics across its entire business model, eBay emphasizes behavioural insights and infrastructure efficiency, Shopify democratizes analytics for SMEs, and Flipkart leverages predictive modelling for demand and logistics in emerging markets. These findings align with Pande et al. and Almtiri et al., confirming that data analytics enhances efficiency, personalization, and competitiveness, while highlighting the importance of scalability, accessibility, and ethical data governance.

Strategically, the results suggest that e-commerce businesses must integrate analytics as a central component of operations and growth strategy, rather than merely as a supportive tool. The practical applications demonstrated by these platforms offer insights for other firms seeking to leverage data-driven decision-making to optimize customer experience, operational efficiency, and strategic agility.

Conclusion

This research has explored how data analytics plays a critical role in optimizing key e-commerce functions such as inventory management, logistics, personalization, marketing, and pricing. Case studies of Amazon, eBay, Shopify, and Flipkart reveal that analytics has transformed business decision-making—from reactive and intuition-based to proactive, data-driven strategies.

Each company demonstrates a unique application of analytics based on its business model: Amazon integrates AI and predictive analytics across all operations; eBay focuses on customer behaviour analytics and infrastructure optimization; Shopify empowers small businesses through accessible dashboards; and Flipkart applies data science to improve supply chain and marketing performance.

The findings confirm that data analytics enhances both operational efficiency and customer experience, contributing to increased competitiveness in a crowded digital marketplace.

REFERENCES

Abidemi A., Abayomi P. 2023. Big Data analytics in e-commerce marketing and measuring its effectiveness. doi:10.13140/RG.2.2.29185.22881

Adebanji S., Balogun E., Kolade O. 2025. The role of business analytics in enhancing revenue optimization and competitive advantage in e-commerce. Gulf Journal of Advance Business Research 3 (3), 952-963. doi:10.51594/gjabr.v3i3.121

Almtiri Z., Miah S., Noman N. 2022. Impact of business analytics and decision support

systems on E-commerce in SMEs. Springer Nature Singapore, 344-361. doi:10.48550/arXiv.2212.00016

Benjamin L., Amajuoyi P., Adeusi K. 2024. Leveraging data analytics for informed product development from conception to launch. GSC Advanced Research and Reviews 19 (2), 230-248. doi:10.30574/gscarr.2024.19.2.0180

Deng C., Zhang J., Wu R. 2023. Application and future of data analytics in retail e-commerce. Proceedings of ICEDBC 225, 471. doi:10.2991/978-94-6463-036-7_7

Fu. X. 2023. The promoting role of business environment optimization on the development of cross-border e-commerce. Information Systems and Economics 4 (8). doi:10.23977/infse.2023.040818

Govindarajan S., Balaji A. 2024. Leveraging data analytics for product decision-making.

Hasan M., Daryanto Y., Triki Ch., Elomri A. 2024. An inventory model of e-marketplace with a promotional program. Journal of Modelling in Management 19 (3), 787-808. doi:10.1108/jm2-01-2023-0011

Huang Ch. 2020. The study of business model for cross-border e-commerce. Management Studies 8 (1), doi:10.17265/2328-2185/2020.01.004

Jain A. 2025. The role of predictive analytics in e-commerce conversion rate optimization. Journal of Computer Science and Technology Studies 7 (2), 114-121. doi:10.32996/jcsts.2023.5.4.25

Jakkula A. 2023. Predictive analytics in e-commerce: maximizing business outcomes. J. Mark. Supply Chain. Manag 2, 1-3. doi:10.47363/JMSCM/2023(2)158

Liu J. 2022. Research on the effectiveness of customers to business to customers business model on consumers' willingness to use e-commerce platform. BCP Business & Management 31, 1-12. doi:10.54691/bcpbm.v31i.2530

Liu P. 2024. Optimizing e-commerce operational efficiency and customer experience through data analytics and technological innovation. Advances in Economics, Management and Political Sciences. doi:10.54254/2754-1169/100/20241121

Mashtakov M.M., Shirokova S.V., Bolsunovskaya M.V. 2023. Application of RPA technology in management and decision-making processes. Technoeconomics 2, 1 (4), 29–40. DOI: https://doi.org/10.57809/2023.2.1.4.3

Pande P., Adokshaja K. 2025. Big Data analytics in e-commerce driving business decisions through customer behavior insights. ITM Web of Conferences 76, 05001. doi:10.1051/itmconf/20257605001

Rimon S., Tamim H. 2024. Leveraging artificial intelligence in business analytics for informed strategic decision-making: enhancing operational efficiency, market insights, and competitive advantage. Journal of Artificial Intelligence General science (JAIGS) 6 (1), 600-624. doi:10.60087/jaigs.v6i1.278

Shah W. 2021. AI and Big Data integration for intelligent supply chain optimization: boosting efficiency in ecommerce operations. Open Access Library Journal 12 (7). doi:10.13140/RG.2.2.12825.22888

Urhan C. 2023. Leveraging data analytics for improved business process efficiency. OSF Preprints, 1-9. doi:10.31219/osf.io/r8q6x

Wang L., Pertheban T., Li T., Zhao L. 2024. Application of business intelligence based on big data in E-commerce data evaluation. Heliyon 10 (21). doi:10.1016/j.heliyon.2024.e38768

Zeng A., Yu H., He H. 2021. Enhancing e-commerce recommender system adaptability with online deep controllable learning-to-rank. Proceedings of the AAAI Conference on Artificial Intelligence 35 (17), 15214-15222. doi:10.1609/aaai.v35i17.17785

Zhuang W. 2021. The influence of Big Data Analytics on e-commerce: case study of the US and China. Wireless Communications and Mobile Computing 1, 2888673. doi:10.1155/2021/2888673

СПИСОК ИСТОЧНИКОВ

Abidemi A., Abayomi P. 2023. Big Data analytics in e-commerce marketing and measuring its effectiveness. doi:10.13140/RG.2.2.29185.22881

Adebanji S., Balogun E., Kolade O. 2025. The role of business analytics in enhancing reve-

nue optimization and competitive advantage in e-commerce. Gulf Journal of Advance Business Research 3 (3), 952-963. doi:10.51594/gjabr.v3i3.121

Almtiri Z., Miah S., Noman N. 2022. Impact of business analytics and decision support systems on E-commerce in SMEs. Springer Nature Singapore, 344-361. doi:10.48550/arXiv.2212.00016

Benjamin L., Amajuoyi P., Adeusi K. 2024. Leveraging data analytics for informed product development from conception to launch. GSC Advanced Research and Reviews 19 (2), 230-248. doi:10.30574/gscarr.2024.19.2.0180

Deng C., Zhang J., Wu R. 2023. Application and future of data analytics in retail e-commerce. Proceedings of ICEDBC 225, 471. doi:10.2991/978-94-6463-036-7_7

Fu. X. 2023. The promoting role of business environment optimization on the development of cross-border e-commerce. Information Systems and Economics 4 (8). doi:10.23977/infse.2023.040818

Govindarajan S., Balaji A. 2024. Leveraging data analytics for product decision-making.

Hasan M., Daryanto Y., Triki Ch., Elomri A. 2024. An inventory model of e-marketplace with a promotional program. Journal of Modelling in Management 19 (3), 787-808. doi:10.1108/jm2-01-2023-0011

Huang Ch. 2020. The study of business model for cross-border e-commerce. Management Studies 8 (1), doi:10.17265/2328-2185/2020.01.004

Jain A. 2025. The role of predictive analytics in e-commerce conversion rate optimization. Journal of Computer Science and Technology Studies 7 (2), 114-121. doi:10.32996/jcsts.2023.5.4.25

Jakkula A. 2023. Predictive analytics in e-commerce: maximizing business outcomes. J. Mark. Supply Chain. Manag 2, 1-3. doi:10.47363/JMSCM/2023(2)158

Liu J. 2022. Research on the effectiveness of customers to business to customers business model on consumers' willingness to use e-commerce platform. BCP Business & Management 31, 1-12. doi:10.54691/bcpbm.v31i.2530

Liu P. 2024. Optimizing e-commerce operational efficiency and customer experience through data analytics and technological innovation. Advances in Economics, Management and Political Sciences. doi:10.54254/2754-1169/100/20241121

Mashtakov M.M., Shirokova S.V., Bolsunovskaya M.V. 2023. Application of RPA technology in management and decision-making processes. Technoeconomics 2, 1 (4), 29–40. DOI: https://doi.org/10.57809/2023.2.1.4.3

Pande P., Adokshaja K. 2025. Big Data analytics in e-commerce driving business decisions through customer behavior insights. ITM Web of Conferences 76, 05001. doi:10.1051/itmconf/20257605001

Rimon S., Tamim H. 2024. Leveraging artificial intelligence in business analytics for informed strategic decision-making: enhancing operational efficiency, market insights, and competitive advantage. Journal of Artificial Intelligence General science (JAIGS) 6 (1), 600-624. doi:10.60087/jaigs.v6i1.278

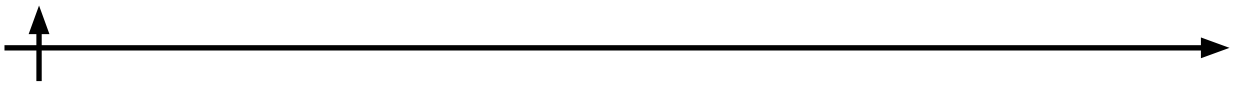
Shah W. 2021. AI and Big Data integration for intelligent supply chain optimization: boosting efficiency in ecommerce operations. Open Access Library Journal 12 (7). doi:10.13140/RG.2.2.12825.22888

Urhan C. 2023. Leveraging data analytics for improved business process efficiency. OSF Preprints, 1-9. doi:10.31219/osf.io/r8q6x

Wang L., Pertheban T., Li T., Zhao L. 2024. Application of business intelligence based on big data in E-commerce data evaluation. Heliyon 10 (21). doi:10.1016/j.heliyon.2024.e38768

Zeng A., Yu H., He H. 2021. Enhancing e-commerce recommender system adaptability with online deep controllable learning-to-rank. Proceedings of the AAAI Conference on Artificial Intelligence 35 (17), 15214-15222. doi:10.1609/aaai.v35i17.17785

Zhuang W. 2021. The influence of Big Data Analytics on e-commerce: case study of the US and China. Wireless Communications and Mobile Computing 1, 2888673. doi:10.1155/2021/2888673



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