

## IMPLEMENTATION OF KAIZEN MANAGEMENT IN E-COMMERCE

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### Abstract

*The rapid growth of e-commerce has become a significant part of the global economic paradigm, especially with the rise of digitalization and internet accessibility. Kaizen management plays a crucial role in Japanese companies across various industries, including e-commerce. In contrast, Serbia's e-commerce sector faces challenges that disrupt its ability to meet international standards of quality and speed. By implementing Kaizen principles alongside Lean methodologies, that focus on waste elimination and process optimization, the research proposes strategies for enhancing the efficiency of Serbian e-commerce platforms. The findings suggest that adopting Kaizen can lead to significant improvements in Serbia's online trade sector, driving continuous improvement and long-term growth. This interdisciplinary approach, inspired by Japanese excellence, holds the potential to revolutionize Serbian business practices, making them more sustainable and competitive.*

**Key words:** Kaizen, e-commerce, continuous improvement, Lean, process optimization

### 1. Introduction

In recent years, e-commerce has become a key part of the global economy, with digitalization, internet accessibility, and growing digital literacy driving its expansion. As online platforms rise to prominence, effective management of these operations becomes crucial for maintaining a competitive edge. Kaizen, the Japanese philosophy of continuous improvement, is key to optimizing business processes.

Japanese companies, known for their efficiency and innovation through Kaizen, provide a valuable model for optimizing business operations across various industries, including e-commerce. While Serbia's online market is growing, it still faces challenges in meeting international standards of efficiency and quality.

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Serbia ranks mid-level in global e-commerce penetration, despite being more developed than other higher-ranked countries. This can be attributed to cultural factors such as a mistrust of online transactions, a preference for cash payments, and skepticism, especially among the elderly. (Ljubicic & Stokic, 2024).

This paper aims to analyse the Kaizen-driven Japanese model, identify inefficiencies in Serbian e-commerce, and propose improvements using Kaizen and Lean techniques. Serbia could harness these principles to transform its online platforms, fostering both competitiveness and continuous improvement.

## **2. Literature review**

### **2.1 Kaizen management**

Kaizen is a Japanese management approach centred on making continuous improvements through small, incremental steps and ideas. Its goal is to enhance labour productivity, business efficiency, product and service quality, as well as overall operational and financial performance (Janjic et al., 2019). Kaizen originates from two Japanese words: Kai (change) and Zen (good), which means "change for the better," or continuous and gradual improvement of every activity with the aim of creating more value and reducing waste (Project Management Srbija, n.d.). Kaizen can be defined as the principle of continuous productivity and constant quality improvement that never stops.

The Deming Cycle, also known as the Deming Wheel or the PDCA Cycle, is named after William Edwards Deming, who introduced this concept to Japan in the 1950s. This cycle represents a methodology for applying Kaizen and consists of four steps: Plan, Do, Check, Act (Lean Enterprise Institute, n.d.).

### **2.2 E-commerce in Japan**

Japan represents the third-largest e-commerce market in the world, following China and the United States (Statista, 2023). The leading e-commerce platforms in Japan are: Rakuten Ichiba, Amazon Japan, DMM.com, Mercari and Yahoo! Shopping (Ulpa, 2024). Many Japanese consumers favor shopping from trustworthy local e-commerce companies, with only 10.2% opting to buy from international sellers (ClickPost, 2024). E-commerce markets in Japan are very popular, taking up to 60% market share and remaining top destinations for daily shopping (Rakuten, n.d.).

### **2.3 E-commerce in Serbia**

Driven by the global digital economy, Serbia is experiencing a transformation in the way business is conducted, with a particular emphasis on the growing e-commerce sector. Companies that sell exclusively online are called "dotcom" companies. They don't have a physical presence but operate warehouses and distribution centers. For these companies, the sales channels are their websites.

Some of the leading online stores with a wide range of products on the Serbian market are: Ananas, Shoppster, Bazaar, eKupi, ePlaneta, Maxshop, and DotMarket.

### 2.3.1 Analysis of the current situation

**Growth of e-commerce** - Serbia has seen significant growth in online shopping over the past decade, with more consumers, frequent transactions, and higher spending. However, despite yearly increases, Serbia still trails behind EU countries in e-commerce development.

**Key players in the Serbian market** - It is difficult to find much information about their operations online and attempts to contact these platforms have not been met with responses. This limits the amount of information that can be gathered about these platforms, making detailed analysis impossible.

**Visual Presentation** - Visual identity is crucial for brand perception and customer trust. Elements like logos, design, and product images are key. Many Serbian platforms lack professional and intuitive designs, with some even missing an "About Us" section.

**Logistical Aspects** - The mentioned platforms offer external delivery services and allow product returns within a set period.

**Customer Support** - Each company offers its own form of customer support, which may include a contact form, communication channels, or both.

**Reviews** - In the Serbian market, companies receive a mix of positive and numerous negative reviews, often related to long response times, delayed deliveries, or poorly delivered products.

### 2.3.1 Challenges

The biggest challenge for online retailers is providing security to consumers, ensuring the privacy of the data that customers leave in online stores, and establishing a trusting relationship with buyers (Matovic et al., 2013). E-commerce platforms are prime targets for cybercriminals, who continually develop new hacking methods. Among consumers, there is a prevailing fear of losing personal data, fraud, and a lack of understanding of protection mechanisms. Illegal activities like data misuse, online fraud, and identity theft highlight the need for strict regulations to ensure robust legal security and protection (Randjelovic, 2015). Many prefer cash payments and in-person shopping, especially among the older population, who are not keen on using cards and the internet. This mentality slows the growth of e-commerce penetration in Serbia (Ljubicic & Stokic, 2024).

## 3. Case study: Rakuten Group Inc.

Rakuten is a Japanese e-commerce giant that gives retailers the opportunity to sell directly to consumers in various categories, including electronics, clothing, accessories, home equipment, cosmetics, and more. It was established in 1997 by

Hiroshi Mikitani, centered around the online retail marketplace Rakuten Ichiba (ClickPost, 2024).

### 3.1 Kaizen in Rakuten

Rakuten upholds high quality in its operations by ensuring high standards in its products and services. Rakuten's corporate philosophy represents a system of values, mission, and practices known as **Rakuten Shugi** – Rakuten basic principles.

Some of the Kaizen principles practiced by Rakuten include:

**Voice of the customer** - Rakuten uses feedback from social networks and call centers to address customer issues. Actions include adding chatbots for inquiries, expanding payment options, and establishing a UX Research Room in 2013 to gather direct customer feedback (Rakuten, n.d.). Loyalty programs are popular in Japan, and Rakuten incentivizes users with points through its SPU (Super Point Up) program, offering more points based on the number of services used. Offline, Rakuten points can be earned and spent at around five million locations across Japan (Rakuten Card, n.d.).

**Involving employees** - One of the three, but also the first on the list of focuses that Rakuten highlights, is the focus on employees: "Growing with our employees". Rakuten empowers people and society through innovation (Rakuten, n.d.).

**Asakai** - Rakuten's weekly Monday meeting, fosters unity by sharing business progress, best practices, and trends. It helps employees understand broader strategies and encourages cross-department collaboration through Yokoten (horizontal deployment) (Rakuten, n.d.).

**Training and development of employees** - Rakuten supports employee growth through training, skill development, and retraining, aiming to be a "learning organization." Key development steps are goal setting, 1-on-1 meetings, training programs, the Internal Open Position System, the Expert Certification Program (Rakuten, n.d.).

**Teamwork** - Rakuten values diversity and believes collaboration is key to turning it into a strength, with all employees working as one team.

**Continuous improvement** - Rakuten uses NPS® (Net Promoter Score) surveys to measure and improve customer loyalty. Since 2018, Rakuten has outperformed competitors, holding a 7.9-point lead by the end of 2022 (Rakuten, n.d.).

## 4. Implementation of Kaizen in e-commerce in Serbia

The rapid development of e-commerce in Serbia demands innovative approaches to address the complex market requirements and ensure competitiveness. While Kaizen was initially linked to the automotive industry, its principles can now be applied to all areas of business, including the digital economy.

Lean methodologies can help e-commerce in Serbia to optimize resources and enhance user experience. The combination of these two approaches, Kaizen and

Lean, has the potential to improve business efficiency and contribute to sustainable market growth in Serbia.

#### 4.1 Quality goals

To improve and maintain quality in e-commerce, the goals are focused in three directions or general objectives:

1. **Increasing customer satisfaction** is key to the success of e-commerce, as satisfied customers not only return but also recommend the platform to others.
2. **Improving employee efficiency** is of great importance as it leads to increased business success. It plays a key role in ensuring smooth operations and delivering high-quality services
3. **Enhancing service** is aimed at providing exceptional service, that will satisfy customers and motivate them to return.

#### 4.2 Efficient implementation of Kaizen with a Lean approach

Lean is an organizational approach that strives for maximum efficiency in all activities, minimizing the use of resources while simultaneously delivering top-quality products or services. Lean is not just a business model but a long-term commitment to continuous improvement, making the organization agile, adaptable, and capable of achieving exceptional results.

##### 4.2.1 Identification and Elimination of Waste

In this step, the foundation is to first define what constitutes value for the customer. To understand value, we must consider the product of the company's efforts and what the customer gains from it.

The next step is creating a value stream mapping (VSM), which visualizes all steps in the service delivery process, providing a clear picture of the arrangement and flow of activities.

Activities are categorized into three groups:

**Value-added (VA)** - activities that create customer value.

**Necessary non-value added (NVA)** - activities that don't create value but are essential.

**Non-value added (NVA)** - activities that don't create customer value.

This categorization helps identify the steps that directly contribute to the quality and customer experience, as opposed to those that do not add value and often result in wasted time and resources. Once the third group of activities is eliminated, efforts can be focused on the remaining value-added activities (Womack & Jones, 2003).

#### 4.2.2 Employee involvement

Rakuten applied Toyota's continuous improvement concept to its employees, fostering growth and improvement. Serbian online stores could enhance their businesses by adopting this approach. After identifying and mapping activities and waste, employees should be involved in proposing solutions, strengthening their sense of belonging. It's crucial to review suggestions, provide feedback, and encourage further ideas, even if not immediately implemented. Offering training, support, and recognition—through incentives, praise, or promotions—keeps employees motivated and engaged in the process.

#### 4.2.3 5S

5S is a systematic approach used in Lean manufacturing to improve efficiency. It consists of five key principles: Sort, Set in order, Shine, Standardize, and Sustain.

In the context of e-commerce in Serbia, the 5S can be applied as follows:

1. Sort: Review and remove outdated or unpopular products from the online platform and organize digital documentation to ensure easy access to important information.
2. Set in order: Optimize product listings for easier customer access and streamline digital tools and workspace for better efficiency.
3. Shine: Regularly clean and maintain the online platform, ensuring all information is current and links are working, and keep digital resources well-organized.
4. Standardize: Establish standards for adding new products, packaging, and delivery processes to ensure consistency, and create guidelines for organizing digital documents and communication.
5. Sustain: Implement routines for regularly applying the 5S principles to maintain long-term efficiency, provide training on their importance, and foster ongoing awareness of organization and cleanliness.

Applying 5S in e-commerce enhances efficiency, reduces waste, and creates a more organized environment, positively impacting customer satisfaction and employee productivity.

#### 4.2.4 Monitoring KPIs

KPI (key performance indicator) is a measurable metric used to track progress toward specific goals. Companies should select KPIs for conversion rates, page load times, customer and employee satisfaction, order volumes, delivery efficiency etc. By analyzing KPIs, businesses can identify areas for Kaizen improvements, focusing on small changes that boost efficiency and customer satisfaction, especially in Serbia's e-commerce sector.

#### 4.2.5 Communication with customers

Effective customer communication is essential for maintaining a Kaizen culture. Regular feedback collection helps identify areas for improvement and tailor products to meet customer expectations. Direct communication allows quick issue resolution, fosters innovation, and builds trust through loyalty programs like cashback. Consistent interaction also keeps companies agile, enabling them to respond swiftly to changing customer needs.

### 5. Case study: Ananas

Ananas e-commerce is one of the leading e-commerce platforms in Serbia. Founded in 2021 by Delta Holding, to connect buyers and sellers on a regional online shopping platform. The company does not have a formalized methodology for process improvement, a structured Kaizen approach, but the philosophy of continuous improvement is ingrained in the daily activities of its employees.

**Innovation and employee engagement** - A cornerstone of Ananas's operations as a new business is innovation. Product managers gather and develop ideas based on research, user feedback, and trends, with internal teams handling technical implementation. Ananas also encourages employees to propose AI ideas to enhance business processes. Through this approach, Ananas effectively implements one of the Kaizen principles, "Empower your people".

**Enhancing customer experience** - Ananas conducts surveys and workshops to improve customer experience, with employees suggesting platform enhancements. The company place the customer at the center of every business decision, referring to them as "king" and "queen."

**Loyalty program and service development** - Ananas has developed the A+ loyalty program, which offers customers free delivery and continually works to expand and enhance the program's benefits.

**Performance indicators** - Key performance indicators monitored by Ananas include number of sessions, page views of products, gross merchandise value (GMV), average order value (AOV), number of orders, and number of users.

While Ananas does not have a formalized Kaizen methodology, it applies certain Kaizen principles through improvements and innovations in its operations. This approach enables the company to grow and maintain competitiveness in the Serbian e-commerce market. To maximize the benefits of Kaizen principles, Ananas should integrate Kaizen principles into daily operations and its corporate culture. Introducing a Kaizen culture would further enhance the company's competitiveness and ensure sustainable growth.



## 6. Conclusion

The application of Kaizen principles in e-commerce can significantly enhance operational efficiency, customer satisfaction, and overall competitiveness. By examining the success of Rakuten and addressing the challenges present in Serbia's e-commerce sector, adopting Kaizen methodologies offers substantial potential for improvement. However, a key limitation of this study lies in the absence of direct data from more Serbian e-commerce firms, which limits the practical assessment of Kaizen's implementation in this context. Financial and infrastructural constraints also need further exploration. Future research should dig deeper on how Kaizen can be adapted to Serbian e-commerce platforms. Case studies and quantitative analysis of customer satisfaction and operational efficiency would provide clearer evidence of its long-term impact and feasibility in the Serbian market.

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## REFERENCES

- [1] Rakuten Card. (n.d.). *Campaign*.  
<https://www.rakuten-card.co.jp/campaign/rakuten-card/point-up/>.
- [2] Ulpa. (2024, Jul 20). *E-commerce in Japan: A complete guide*.  
<https://www.ulpa.jp/post/e-commerce-in-japan-a-complete-guide>
- [3] Rakuten. Integrated report.  
<https://global.rakuten.com/corp/investors/documents/annual.html>
- [4] Janjic, V., Bogicevic, J., & Krstic, B. (2019). Kaizen as a global business philosophy for continuous improvement of business performance. *Ekonomika*, 65(2), 13–25.
- [5] Project Management Srbija. (n.d.). *Kaizen method*.  
<https://project-management-srbija.com/kaizen>
- [6] Ljubicic, I., & Stokic, V. (2024). The growth of e-commerce in the Republic of Serbia. *Pravo – Teorija i Praksa*, 41(2), 122–135.  
<https://doi.org/10.5937/ptp2402122L>
- [7] Matovic, V., Cavic, B., & Bulovic, V. (2013). Strategije korišćenja Interneta u maloprodajnim objektima u Republici Srbiji. *Infoteh Jahorina*, 12, 703–707.
- [8] Lean Enterprise Institute. (n.d.). *Plan, Do, Check, Act (PDCA)*.  
<https://www.lean.org/lexicon-terms/pdca/>
- [9] Rakuten. (n.d.). *Product & service quality*.  
<https://global.rakuten.com/corp/sustainability/quality/>



- [10] Rakuten. Rakuten culture. <https://corp.rakuten.co.in/our-culture/>
- [11] Randjelovic, D. (2017). The internet sales in Republic of Serbia. *Pravo - Teorija i Praksa*, 34(1-3), 13–24.  
<https://casopis.pravni-fakultet.edu.rs/index.php/ltp/article/view/72>
- [12] Statista. (2023). *Revenue of e-commerce worldwide in 2023, by country*.  
<https://www.statista.com/forecasts/1283912/global-revenue-of-the-e-commerce-market-country>
- [13] Rakuten. (n.d.). *Start selling in Japan*. <https://marketplace.rakuten.net/>
- [14] Rakuten. (n.d.). *Sustainability at Rakuten*.  
<https://global.rakuten.com/corp/sustainability/>.
- [15] Rakuten. (n.d.). *Talent management*.  
<https://global.rakuten.com/corp/sustainability/employees/>.
- [16] ClickPost. (2024). *Top 10 eCommerce companies in Japan*.  
[https://www.clickpost.ai/blog/best-ecommerce-companies-in-japan#title\\_1](https://www.clickpost.ai/blog/best-ecommerce-companies-in-japan#title_1)
- [17] Womack, J. P., & Jones, D. T. (2003). *Lean thinking: Banish waste and create*. Free Press.