**Tokopedia E-Commerce Retail Business Innovation in the Retail Industrial Era 4.0**

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ABSTRACT Tokopedia's strategy in the world of retail 4.0 will be explained in this paper. The transformation of the retail world occurred from the 1.0 era to the 4.0 era and each has its characteristics. Tokopedia was born when it was in the retail 3.0 era and began to grow in the 4.0 era. A business model innovation strategy is very necessary for the business to survive in the online marketplace. Many innovations have been carried out, including (1) store management facilities (2) Shopping by type category of goods sold and business processes are very easy to learn (3) For easy access to online shops, sellers receive their accounts created during initial registration (4) Collaboration with various transportation services facilitates delivery of goods to consumers (5) simple payments and safe. The method used is to collect some literature to further identify whether it is by the topic to be discussed and make important points related to Tokopedia's strategy in the 4.0 era.

Keywords: Retail 4.0, Tokopedia, Innovation Strategy, marketplace

**1. INTRODUCTION**

The driving force behind the industrial revolution was the scientific revolution in the 16th century, when scientists such as Francis Bacon, and Rene Descartes emerged. In addition, the establishment of research institutions such as The Royal Improving Knowledge, The Royal Society of England, and The French Academy of Science.

This journal will discuss the role of information systems in the e-commerce retail industry in the industrial revolution era 4.0. The e-commerce retail business is the activity of selling goods and services directly to the final consumer. The e-commerce retail business in Indonesia is experiencing a swift industrial revolution. In the industrial retail era 4.0, e-commerce retail businesses have the opportunity to provide an experience to consumers that is different from before. In this all-digital era, the speed of renewal of e-commerce retail business is increasingly determining the strength of competitiveness in the market. This is what causes the e-commerce retail business information system to quickly adapt to changes in its environment.

In this millennial era, digital trade transformation can help e-retailers innovate to create extraordinary moments with consumers. As we know, digital transformation widens the gap between market leaders and those who are slow to adapt to change.

In Indonesia, the growth of e-commerce is very rapid, especially in the last 4 years, its growth has reached 500 percent. The results of Google's research included in the 2018 SEA Economic Report also show that Indonesian e-commerce transactions have reached 27 billion US dollars or the equivalent of 391 trillion. With a 49% share, Indonesia is the first in Southeast Asia for digital economic transactions, Tokopedia is one of Indonesia's online stores, which is growing very rapidly in the industrial era 4.0.

Tokopedia is an online marketplace that offers an opportunity for everyone who owns products in Indonesia, both individuals and companies, to open and manage their online store easily and at affordable prices as well as provide a comfortable and safe user experience. Tokopedia is one of the fastest-growing online marketplaces in our country with the vision of "Building a Better Indonesia Through the Internet". This start-up company that focuses on the online buying and selling industry is headquartered in Jakarta. Tokopedia, which operates in Indonesia, is an online shopping center that is in great demand. The Tokopedia application makes it easy for us to transact anywhere, both sellers and buyers serve buyers from all over Indonesia, and most of the products sold are new products. In addition, Tokopedia has also implemented relationship management strategies to maintain good customer relationships for each merchant that complies with applicable regulations.

**2. METHODOLOGY**

This study used an analytical descriptive method based on information obtained through a literature search, followed by a more in-depth analysis, this research is descriptive. Namely, research is conducted to determine the value of an independent variable, either one or more (independent) without comparison or related to other variables. This study explains the changes in the Tokopedia marketplace due to the Industrial Revolution 4.0. Research statements are taken from a collection of expert opinions and combined into one

1. Gather available sources of information, literature, books, the internet, existing articles, personal experiences, and other materials on the subject
2. Read verified sources
3. Check the information you read and whether it is relevant to the topic being discussed.
4. Summarize the main points of each relevant article
5. Write and arrange the important points you have learned systematically on paper

**3. RESULTS AND DISCUSSION**

**3.1 Retail Transformation 1.0 to 4.0**

The retail world must adapt to the revolution to achieve its desired goals. As we know, the industrial revolution caused global changes that succeeded in affecting many aspects of life. The process of producing goods or services that were initially unhealthy took a long time, and the very expensive costs were reduced. The first industrial revolution occurred around 1760. So far, four retail industry revolutions have taken place in Indonesia. Every industrial retail revolution is certainly capable of bringing about improvements in production and improvements in people's lifestyles in all aspects. The industrial retail revolution brought significant changes to the retail industry.

The influence of the retail industry is growing very strongly. We can trace this change from the retail industry1.0 related to several steam engines that were created to mass-produce goods and large shops that also started to appear. This caused consumers to enjoy cheaper products during the Industrial Revolution 2.0 and caused more and more shopping centers to open. In contrast, in the Industrial Revolution 3.0, consumers can shop online all over the world via the Internet, changing shopping behavior because now we can buy anything without having to leave the house. This is proof that the Industrial Retail Revolution 4.0 will simplify and improve our lives.

The Retail Industry Revolution 4.0 began in 2010. This resulted in the low adoption of Retail 4.0 technology in Indonesia. This is also the case in less developed countries. The presence of the COVID-19 pandemic could accelerate the adoption of this technology. In the era of COVID-19, many Indonesians are shopping online, demonstrating that Retail 4.0 offers an engaging and safe shopping experience. Therefore, retailers have no choice but to use this technology as well. From the above discussion, we can conclude that the Retail 4.0 industry can create new standards that minimize direct human contact. So its implementation is important for retailers.

**3.2 Retail Industry 1.0**

Retail 1.0 is also known as automation. This industry began in the mid-18th century and ended in the mid-19th century. The late 18th century saw the emergence of factories using steam-powered machinery for mass production and the migration of people to cities. In the late 19th century, department stores dominated retail; They offer comprehensive services to customers such as loans, repairs, and personal support advising customers about product details and benefits. All businesses must pay in cash, and merchants must physically deposit cash in order to continue operating. As technology developed during the Industrial Revolution, the availability of affordable, high-quality goods increased significantly.

**3.3 Retail Industry 2.0**

The Retail Industrial Revolution 2.0 or mass production is the existence of products that are produced on a large scale so that production costs are low and this provides good opportunities for the automotive industry to grow rapidly. In the era of Retail 2.0, people focused on researching customer mindsets and motivations. Retail 2.0 began in the 20th century and ended with mechanization at the end of the 20th century.

**3.4 Retail Industry 3.0**

Online shopping has started to penetrate retail 3.0. The location and opening hours of a store do not limit consumer purchases, because the Internet can attract connected producers and consumers to view the 4 P's combination (product, price, place, and promotion). In the era of Retail 3.0, several online stores have sprung up such as eBay and Alibaba. Online consumers get cheaper prices than local prices. Thanks to technological innovation, consumers can buy products from abroad at lower prices than stores in Indonesia. Retail Industry 4.0 started in 2000 when Retail 3.0 ended and the era of digital Retail 4.0 began.

**3.5 Retail Industry 4.0**

Retail Industry 4.0 is the last change compared to Retail Industry 4.0. Several related technologies such as Artificial Intelligence (AI), Internet of Things (IoT), Cloud Computing, Big Data Analytics (BDA), and Augmented Reality (AR). Retail 4.0 is characterized by integration from the supply chain to customer loyalty. Among the technologies driving Retail Industry 4.0 is the Internet of Things, where sensors and devices collect data about customer behavior, stock levels, and storage conditions. Artificial intelligence is used to analyze data and provide personalized recommendations to customers, as well as to optimize supply chain operations and inventory management. Augmented reality will be used to create engaging shopping experiences that allow customers to try products virtually before they buy, and robotics and automation will be used to speed up processes such as order picking and packing, and in-store customer service and support. Retail 4.0 transforms retail into a more personalized, efficient, and convenient shopping experience for customers while increasing operational efficiency and profitability.

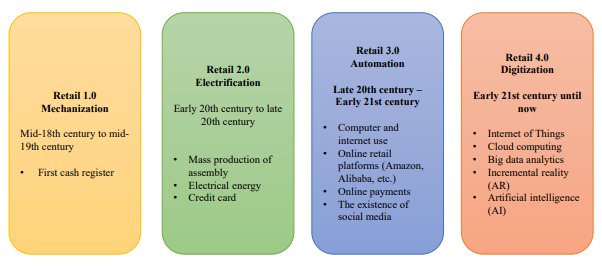


Figure 2 Transformation of the Retail Industry

**3.6 TOKOPEDIA AND THE RETAIL INDUSTRY ERA 4.0**

**TOKOPEDIA PROFILE**

William Taniwijaya and Leonntinus Alpha Edison founded Tokopedia on February 6th, 2009, and officially launched on August 17, 2009. Tokopedia received $2.5 billion from PT Indonusa Dwitama, an investment firm specializing in bauxite mining, oil palm cultivation, online shopping, the oil and energy sector, and financial services. Tokopedia received additional investment funds from Singapore-based East Ventures, which focuses on investing in Internet business development. Tokopedia is an e-commerce that can be used by everyone, both buyers and sellers. Tokopedia's vision is "to build a better Indonesia through the Internet". The company's head office is in Jakarta.

**PARTIES TRANSACTING ON TOKOPEDIA**

Tokopedia website domain owner (Market Place Provider)

1. Tokopedia domain owner is a person who has the right to the domain name of each Tokopedia that provides a marketplace as a place to meet sellers and buyers in the internet world, as a data provider responsible for the confidentiality of the data of people registered as users on the Tokopedia site
2. Seller

Sellers must register as users first to sell goods on the site page on Tokopedia.

1. Buyer

Buyers are parties who want to make product purchases through web media to be able to buy on the Tokopedia web, buyers must register as users first.

**TOKOPEDIA'S STRATEGY IN RETAIL 4.0**

Based on the author's observations, the revolution in the retail era of business model 4.0 brought many surprises and fast service to consumers. If we look back, several e-commerce companies such as Google, Facebook, Instagram, and Twitter offer the phenomenon of offering services without payment (free) and even subdivisions, so that the services offered are cheaper than the market.

Global retailing is the process of marketing products to end users with global consumer coverage around the world. Global retailers can explore e-commerce processes including Tokopedia. Its success even impacted the traditional retail business, therefore this is the main reason why Tokopedia was able to enable the implementation of Industrial Revolution 4.0 IT as below.

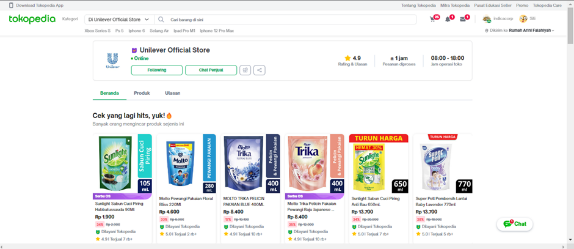


Figure 3 Tokopedia dashboard

Tokopedia is a new innovative online shopping site that carries the concept of a place for many online shops in Indonesia. All buying and selling functions and transaction processes are guaranteed to be safe through this platform. Becoming a Tokopedia seller is not difficult and that is one of Tokopedia's advantages. In addition, sellers get several features and functions that support business convenience, such as B. Store management mode, product classification, and transaction processing. The seller gets an account to sell in the online store. Tokopedia has also partnered with package delivery services such as JNE, sicepat, J&T, etc. to make it easier for the seller to deliver the package to the buyer. Can be done with a collection order, as long as the buyer has entered the dimensions in online stores. The payment process is also safe. The Tokopedia system sends payment to the seller when the buyer has confirmed receipt of the goods. Meanwhile, consumers who want to buy products from Tokopedia can enter the search box or browse for the desired product category. All product searches in online stores until the seller sends goods to consumers are carried out through an integrated system. In addition, Tokopedia has an account manager for each seller who has met the applicable requirements to receive special attention in the marketing process.

**4. CONCLUSION**

Based on the results of the above discussion, we can conclude that the challenges of Business Era 4.0 in the world of e-commerce are enormous. Digital transformation has changed the way society and the industry are viewed and has had a major impact on the development of e-commerce in Indonesia, especially Tokopedia. Online business technology and Business 4.0 are adapted for today. In the era of Retail 4.0, future growth is expected to be even better as innovative strategies have had many positive impacts on online shopping, especially Tokopedia.

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