

TRACING THE EVOLUTION OF ECOMMERCE: HISTORICAL FOUNDATIONS, IMPACTS OF THE PANDEMIC, AND FUTURE DIRECTIONS

E-TİCARET GELİŞİMİNE BAKIŞ: TARİHSEL TEMELLER, PANDEMİNİN ETKİLERİ VE GELECEK YÖNELİMLER

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Abstract

Electronic commerce, or ecommerce, has been a topic of interest particularly in the last years. While ecommerce activities are notably facilitated today, it has gone through notably different forms since its first seeds were planted. The COVID-19 pandemic was a crisis for most businesses but also an opportunity for some, especially for those who were able to pivot or transform their businesses with respect to the new needs of consumers. With the positive impact of the pandemic on ecommerce sector observed especially as of the second quarter of 2020, its trend has surpassed the expectations. This overperformance came with numerous sceptical questions about the future of ecommerce. This study investigates the historical evolution, pandemic-induced transformations, and future trends of ecommerce. It conveys a compilation of milestones through systematic literature review with a focus on the practicality. This paper provides with a timeline of the ecommerce history to bridge its evolution in the last 80 years by visualizing the phases it has been through along with its anticipated trend in the upcoming years. The studied data reveals how COVID-19 accelerated ecommerce growth and highlights its implications for global retail. The growth of ecommerce may slow down but it will endure its growth as online shopping has already become an indispensable habit.

Keywords: Ecommerce, online shopping, retail, sales, COVID-19, pandemic.

Öz

Elektronik ticaret veya e-ticaret, özellikle son yıllarda ilgi çeken bir konu olmuştur. Günümüzde e-ticaret faaliyetleri önemli ölçüde kolaylaştırılmış olsa da, ilk tohumlarının atılmasından bu yana oldukça farklı formlara bürünmüştür. COVID-19 pandemisi, çoğu işletme için bir kriz olsa da tüketicilerin yeni ihtiyaçlarına göre işlerini dönüştürebilenler için bir fırsat olmuştur. Pandeminin e-ticaret sektörü üzerindeki olumlu etkisi, özellikle 2020 yılının ikinci çeyreğinden itibaren gözlemlenmiş ve bu yükseliş beklentilerin ötesine geçmiştir. Bu yüksek performans, e-ticaretin geleceği hakkında birçok kuşkuyu da beraberinde getirmiştir. Bu çalışma, uygulama odaklı sistematik bir literatür taraması yoluyla önemli dönüm noktalarını derleyerek e-ticaretin tarihsel evrimini, pandemi kaynaklı dönüşümlerini ve geleceğe yönelik eğilimlerini incelemektedir. Bu makale, e-ticaretin son 80 yıldaki gelişimini ve gelecekteki olası yönelimlerini, geçtiği aşamaları görselleştirip bir zaman çizelgesi sunarak ortaya koymaktadır. İncelenen veriler, COVID-19'un e-ticaretin büyümesini nasıl hızlandırdığını göstermektedir ve küresel perakende üzerindeki etkilerini vurgulamaktadır. E-ticaretin büyüme hızı yavaşlayabilir ancak e-ticaret alışverişçiler için vazgeçilmez bir alışkanlık hâline geldiğinden büyümesi devam edecektir.

Anahtar Kelimeler: E-ticaret, internetten alışveriş, perakende, satış, COVID-19, pandemi.

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Citation: Örendil, E. Tracing the Evolution of Ecommerce: Historical Foundations, Impacts of the Pandemic, and Future Directions, İşletme Ekonomi ve Yönetim Araştırmaları Dergisi (2025) 8 (1):47-54, DOI: <https://doi.org/10.33416/baybem.1581338>

1. INTRODUCTION

Digital technologies have reshaped everyday routines, particularly in the recent decades. The ways in which we study, work, handle errands have all transformed dramatically. These changes have also rewritten the rules governing the global economy, with electronic commerce at the heart of this transformation. Electronic commerce—commonly referred to as ecommerce, eCommerce, or e-commerce—generally refers to business transactions involving the sale of services and goods via computer telecommunications networks (Zwass, 2019). While this description is accurate, it can be considered somewhat restrictive. A more expansive understanding includes any transaction (e.g., the sales of information, goods, services) in any environment (e.g., business-to-business, business-to-consumer) and via any medium (e.g., websites, smartphone applications, social media).

Today, ecommerce promises numerous advantages, ranging from high availability and a wide selection of goods to the removal of geographical barriers between sellers and shoppers, making it accessible 24/7. Recognizing these and many other benefits, diverse sectors—from the military to fast-moving consumer goods—have increasingly incorporated ecommerce systems. Nevertheless, despite the breadth of this industry, there is limited research that links its historical roots to the transformative impact of the COVID-19. To address this gap, this paper compiles a summary of ecommerce’s history, examines the effects of the COVID-19 pandemic on the sector, and explores the industry’s future. This is accomplished via a thorough literature review designed to synthesize existing knowledge and identify evolving trends.

2. THE BRIEF HISTORY OF ECOMMERCE

Although the focus on the ecommerce intensified during the COVID-19 pandemic, its origins date back to the 1940s. Following the Second World War, Berlin was divided and occupied by the American, British, French, and Soviet military forces (Office of the Historian, Foreign Service Institute, 2019). The former three powers controlled the western portions of the city while Soviet troops were in control of the eastern sector. In the post-war period, the alliance of these allied powers deteriorated and turned into a hostile competition resulting in the Soviet Union’s blockade of rail, road, and water access to the areas of Berlin controlled by the western allies. In response, American and British forces airlifted food and fuel to Berlin from nearby airbases. While the Berlin Blockade and Airlift (1948-1949) lasted for almost a year, it led to the use of a system for ordering goods via telex (US Department of Commerce, 2024; Zwass, 2019). This seemingly unrelated military conflict thus helped spark the earliest foundations of ecommerce.

The complexity of data transactions inspired for creation of general standards that are structured, flexible, and adaptable with the aim of facilitating these exchanges. One of the pioneers of these standards is the electronic data interchange (EDI) where data is exchanged among business partners in a standard electronic format paved the way in the 1960s (Miva, 2020). Michael Aldrich is known for connecting a television to a real-time multi-user transaction processing computer via a telephone line in 1979 (Miva, 2020). His entrepreneurial spirit allowed masses to join real-time shopping transactions. In the more recent years, Aldrich pointed out how the nomenclature evolved through time:

“Names of companies change over time and names of technical ideas change too. [...] In 1979, there was no such thing as on-line shopping so when I invented it, I called it teleshopping, meaning shopping at a distance. Unknown to me, in 1977 in the USA, a TV selling technique called infomercials (effectively paid advertising programmes on TV with a pitchman urging viewers to make a phone call to buy goods) was also being called teleshopping. Over the years in USA, TV terminology ‘teleshopping’ succeeded ‘infomercials’ and my ‘teleshopping’ – real-time transaction processing from home via a Television or PC – became ‘on-line shopping’. The terms ‘e-commerce’ and ‘e-business’ are from the 1990s. We never used those terms.” (Aldrich, 2008)

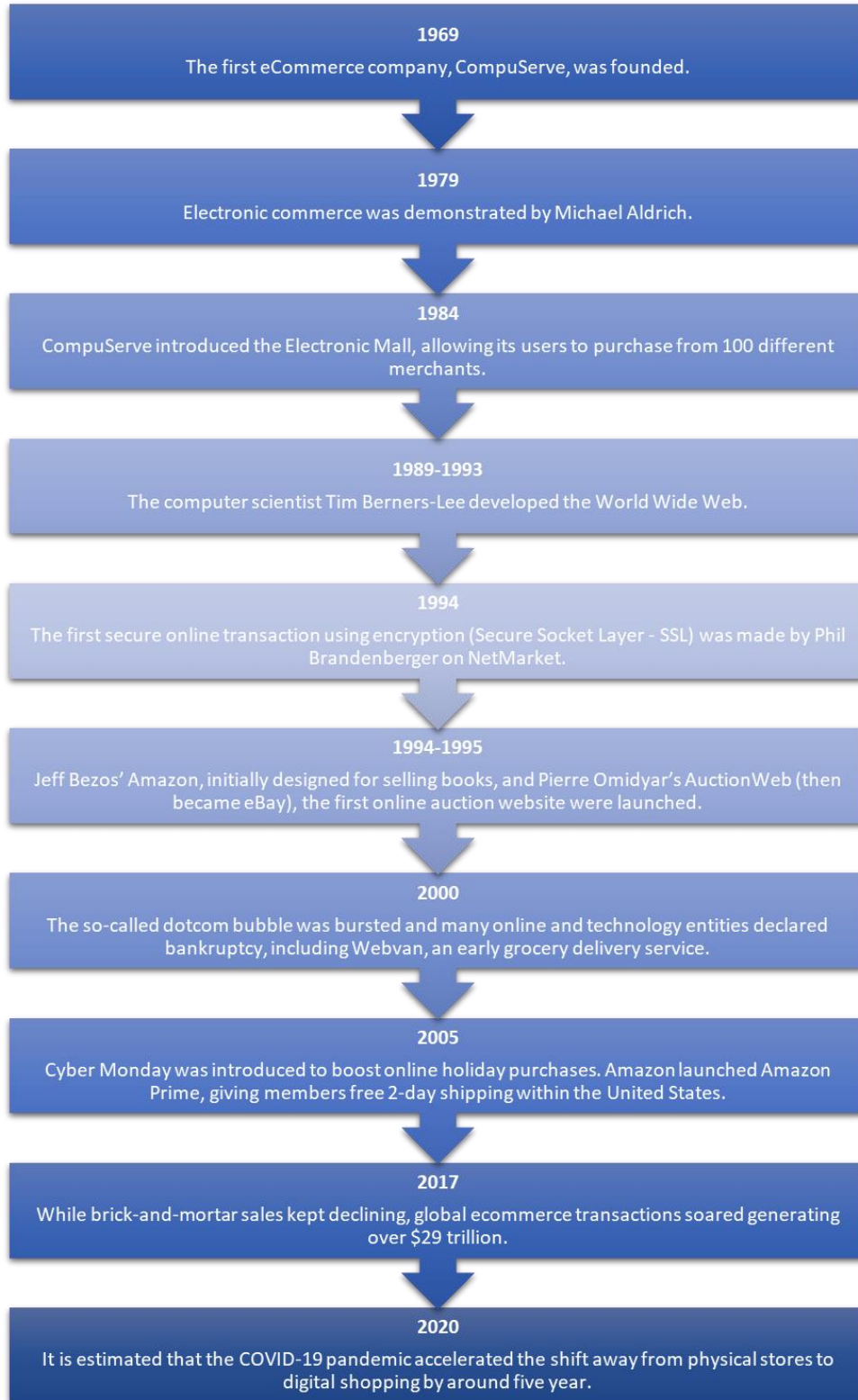
One of the earliest online retailers was Book Stacks Unlimited owned by Charles M. Stack (Miva, 2020). He moved the bookstore to the Internet under the name Books.com in 1992 which was later acquired by well-known Barnes & Noble (Miva, 2020). Today, the ecommerce relationships are built on several main models including but not limited to:

- Business-to-consumer (B2C)
- Business-to-business (B2B)
- Consumer-to-consumer (C2C)
- Direct-to-consumer (D2C) (Reed, 2020).

The history of ecommerce could undoubtedly be expanded in more detail. Before proceeding to the recent dynamics in the sector, this paper builds up on the aforementioned milestones through Figure 1 exhibiting a timeline consists of the significant points in the ecommerce history.

Figure 1

The History of Ecommerce



Source: Compiled from Miva (2020), Nelson (n.d.), Simakov (2020).

3. THE IMPACT OF THE COVID-19 ON ECOMMERCE

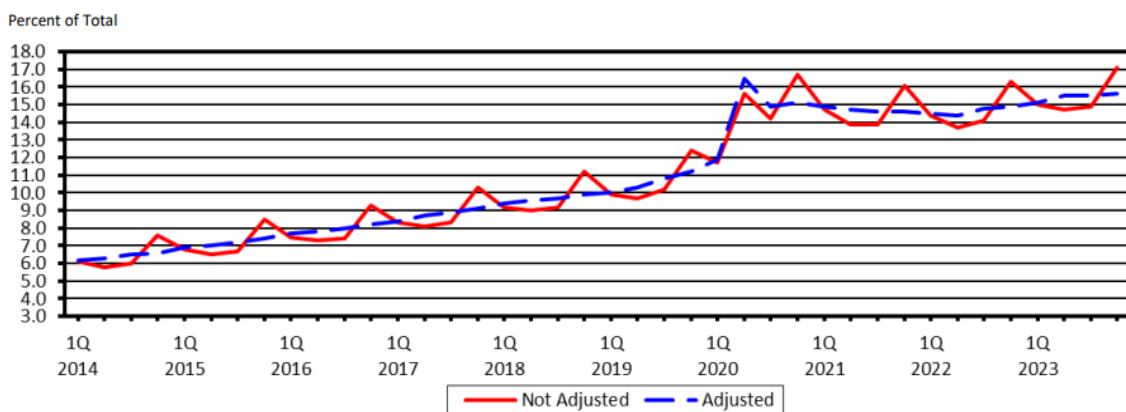
As with nearly every aspect of life, the COVID-19 pandemic triggered notable shifts in ecommerce. While the pandemic itself was a direct concern for shoppers, government-imposed restrictions also compelled consumers and businesses to alter their purchasing and operating behaviors, respectively. Industries experienced unprecedented outcomes: sectors such as hospitality and aviation were severely impacted, whereas telehealth and delivery services thrived during the pandemic (Sharma, 2020; Somanas, 2020; Vidovic, 2022). Beckers et al. (2021) found that 50% of businesses not previously operating online established an ecommerce presence at the onset of the lockdowns.

It is not surprising to see a noteworthy spike that implies the acceleration of ecommerce compared total retail sales after the first quarter of 2020 as observed in Figure 2 (US Department of Commerce, 2024). While this sudden increase can be interpreted as “the COVID-19 effect”, it is also visible that shoppers are inclined to preserve their online shopping habits even after the lockdowns. In a survey conducted by Euromonitor International even back in October 2020, 74 per cent of participating retail and consumer brand professionals had indicated that pandemic-led rise in ecommerce was expected to be permanent (Evans, 2021).

Further quantitative support for this trend can be seen in the share of ecommerce sales in the United States, which rose from 14.7% in 2022 to 15.4% in 2023—an increase of 70 basis points (US Department of Commerce, 2024). This notable rise in ecommerce sales even after the COVID-19 pandemic reflects a permanent shift in consumer habits. Although the shift was initiated by the circumstances during the pandemic, numerous benefits of ecommerce such as convenience, price advantage, and comfort have kept appealing shoppers. Analyzing non-adjusted data reveals that the fourth quarter of 2023 marked a record high of 17.1%, resulting from both seasonal factors and a broader positive trend (US Department of Commerce, 2024).

Figure 2

Estimated Quarterly US Retail Ecommerce Sales as a Percent of Total Quarterly Retail Sales



Source: Retrieved from US Department of Commerce (2024)¹.

Jílková & Králová (2021) found out that consumers from all generational clusters purchased goods and services digitally at a higher rate during the COVID-19 crisis. They also discovered that a particular generational cohort, the baby boomers, was an important driver of the growth in ecommerce. A significant shift toward digital shopping emerged, with 43% of respondents reporting that they had shopped online since the start of the COVID-19 pandemic, compared to only 12% before it began. Purchasing frequency also increased: 25% of respondents stated that they now order online weekly, whereas only 9.8% had done so before the pandemic across all age groups. Furthermore, Beckers et al. (2021) calculated that the median number of online orders per week tripled from 5 to 15.

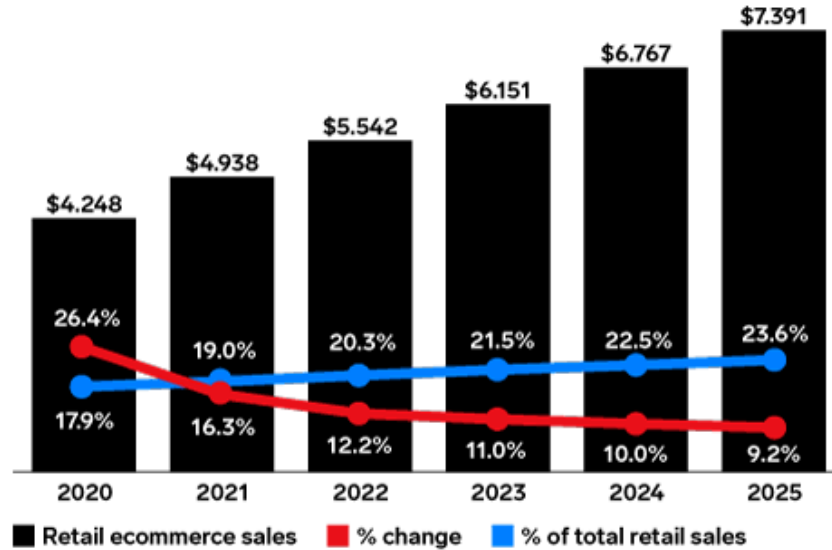
¹ Dashed blue line is the adjusted trend with regards to seasonal variation.

4. THE FUTURE OF ECOMMERCE: 2025 AND BEYOND

As of the end of 2021, according to Cramer-Flood (2022), the total of global ecommerce sales is estimated to have almost reached \$5 trillion which accounts for 19 percent of overall retail sales. The growth of ecommerce sales is estimated to be 10.0%, and 9.2% for the years 2024 and 2025, respectively. Although the growth will decelerate, this figure is anticipated to exceed \$7 trillion by 2025. The share of ecommerce sales in total retail sales is expected to show a positive trend resulting in 23.6% in 2025.

Figure 3

Retail Ecommerce Sales Worldwide, 2020-2025 (in trillions)



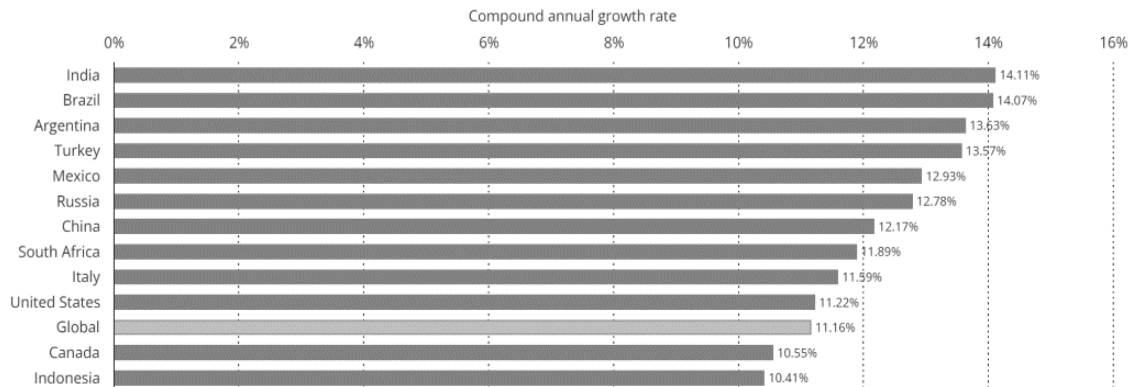
Source: Retrieved from Cramer-Flood (2022)

The top two countries, China and the USA, dominated ecommerce sales by generating over \$4 billion combined in 2023 (Brian, 2023). They are followed by the United Kingdom, Japan, South Korea, and India, respectively. The sum of these four countries is slightly over \$0.65 billion implying how ecommerce sector is voluminous in China and the USA. Consumer electronics, fashion, furniture, toys and hobby supplies are forecasted to be among the leading segments of B2C ecommerce sector globally (Bledsoe, 2023). Meanwhile, biohealth pharmaceuticals constitute the fastest growing product segment.

Another recent industry research calculated a compound annual growth rate (CAGR) of 14.1 percent for ecommerce sales between 2023 and 2027 (Bledsoe, 2023). With an ecommerce market valued over 63 million US dollars, India is expected to grow fastest with 14.11% and is followed by Argentina (14.07%), Brazil (13.63%), and Turkey (13.57%). Over the same period, the global retail ecommerce compound annual growth rate is estimated at 11.16%. Notably, the CAGR of the United States, the ecommerce giant of the Western Hemisphere, is nearly the same as the global average, at just 6 basis points higher.

Figure 4

Compound Annual Growth Rates for Ecommerce Sales of Selected Countries Between 2023-2027



Source: Retrieved from Bledsoe (2023)

As of 2022, at least 2.14 billion people—27.6% of the global population—were digital shoppers (Reed, 2020). The number of online buyers rose to an estimated 2.64 billion in 2023 (Woodward, 2024). In the United States alone, more than 274 million people—over 81% of the country’s population—were online shoppers as of 2023 (Woodward, 2024). By 2025, the number of online buyers in the United States is projected to surpass 290 million (Reed, 2020).

5. LIMITATIONS

Although this paper provides valuable insights into the evolution of ecommerce and highlights recent developments catalyzed by the COVID-19 pandemic, it also has certain limitations. First, much of the evidence presented relies on secondary data from diverse sources, which may lead to inconsistencies in data collection methods and analytical approaches. This could affect the accuracy and comparability of the findings. Second, while the paper discusses global ecommerce trends, several regions are addressed more thoroughly compared to others. Consequently, the coverage of regional nuances and local market behaviors might be limited. Furthermore, the time frame emphasized in most statistical references is confined to the 2020–2025 period, which could omit longer-term trends and changes in consumer behavior.

6. DISCUSSION AND CONCLUSION

This paper underscores the multifaceted nature of ecommerce, tracing its roots back to post-war innovations such as telex-based ordering systems and subsequently highlighting pivotal technological leaps like EDI. This historical perspective establishes that ecommerce is not merely a product of the digital age but rather an outcome of continuous adaptation and transformation driven by diverse needs. Over time, high-profile entrepreneurs and platforms have shaped today’s online marketplace, broadening consumer reach and offering unprecedented purchasing convenience.

Central to the discussion is the COVID-19 pandemic’s role in propelling consumer adoption of digital channels. Government-mandated lockdowns and social distancing measures forced numerous businesses to transition online, aligning with data showing a pronounced uptick in ecommerce sales across generational cohorts. Moreover, the paper emphasizes that, although this surge was initially sparked by crisis conditions, consumers appear inclined to maintain these digital behaviors even as in-person activities resume.

Looking ahead, the momentum in online shopping is far from waning. Rapidly emerging markets such as India and Brazil are projected to post double-digit compound annual growth rates, while established giants like the United States are expected to retain strong expansions close to the global average. Meanwhile, the ecommerce landscape continues to diversify, with new product segments like biohealth pharmaceuticals gaining traction. The projected expansion beyond 2025 indicates that consumers will likely retain their digital-first preferences, further amplified by technological innovations.

Overall, this paper reinforces ecommerce’s position as a cornerstone of modern commerce, simultaneously shaped by historical precedents, disruptive world events, and shifting consumer behaviors—and poised to

evolve further as it meets the challenges and opportunities of the years ahead. With relatively slower but steadier steps, the ecommerce is here to stay.

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Hakem Değerlendirmesi: Dış bağımsız.

Çıkar Çatışması: Yazar çıkar çatışması bildirmemiştir.

Finansal Destek: Yazar bu çalışma için finansal destek almadığını beyan etmiştir.

Teşekkür: -

Peer-review: Externally peer-reviewed.

Conflict of Interest: The author has no conflict of interest to declare.

Grant Support: The author declared that this study has received no financial support.

Acknowledgement: -
