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Evaluating the Impact of the Covid-19 Pandemic on Snapchat's Business Outcomes

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ABSTRACT

This paper explores the impact of the COVID-19 pandemic on the operational and financial performance of the Snapchat platform. The research aims to assess the resilience of the Snapchat platform during the COVID-19 crisis and to understand how platform-based business models respond differently to global disruptions than traditional businesses. The analysis is based on key financial indicators derived from the profit and loss statement, alongside trends in user growth. Methodologically, the study employs financial analysis and statistical regression models to evaluate selected business metrics. The findings suggest that the global pandemic did not significantly disrupt Snapchat's operations. On the contrary, both gross profit and user numbers increased during the pandemic, with the platform recording its highest gross profit in the final year of the analyzed seven-year period, following the pandemic's end. While the pandemic had limited impact on overall business performance, a notable post-pandemic trend was observed: revenue growth fell below the average for the period studied. Despite consistently posting negative net results, investor interest in the platform remained stable. These findings underscore a key distinction between platform-based business models and traditional "pipeline" models, highlighting the resilience and unique dynamics of digital platform economies.

1. Introduction

The present paper represents a continuation of the paper of Lozić *et al.* [1] and presents the business results and concept of the Snapchat application, which was launched in 2011 as an entrepreneurial initiative by a group of Stanford University students. The core concept behind the application was the exchange of brief text and multimedia messages that would disappear shortly after being viewed. Snapchat enables users to send and receive text, images, and video content, which can typically be viewed only once or twice within a time limit ranging from 1 to 10 seconds, after which the content is permanently deleted [2]. The platform later introduced the "My Story" feature, which allows users to post content that remains visible for 24 hours before disappearing [3].

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This notion of ephemeral content quickly gained popularity among adolescents, contributing to the growth of a dynamic user base. It is perceived as a lightweight channel for personal communication, making users feel happier than other apps [4]. The development of a strong user community and the emergence of network effects are key characteristics of the platform economy model [5, 6], which also leverages the principle of zero marginal cost [7, 8]. Snapchat operates primarily on a freemium business model, offering core communication services at no cost, while premium features are available to users who wish to customize their communication experience.

Snapchat has emerged as a unique social media platform, particularly popular among young adults and research scholars. Users perceive Snapchat interactions as more enjoyable and associated with more positive mood compared to other communication technologies [9].

Initially conceived as a communication infrastructure for the exchange of short-form media, the platform rapidly evolved into a vibrant social environment that attracted the attention of global corporations. Selfies constitute approximately 50% of shared content, with most exchanges (55%) occurring between friends, and 18% between romantic partners [10, 11]. Moreover, while Snapchat can lead to relational challenges, it also enables more congruent communication within young adult interpersonal relationships [12].

By 2018, Snapchat had achieved "unicorn" status, with revenues surpassing \$1 billion for the first time. Its user base expanded steadily, aside from a brief stagnation in 2018. In 2015, the platform recorded over 100 million active users; by the end of 2022, this number had more than tripled to 375 million [13].

The origins of Snapchat are deeply rooted in student culture. The application was developed by 22-year-old students who subsequently left Stanford and Silicon Valley. Early branding, including the platform's logo, reflected a playful and informal approach rather than a focus on technical sophistication. The logo—a stylized ghost—symbolizes the transient nature of Snapchat messages. One of the platform's founders reportedly named the ghost "Ghostface Chillah," a reference to rapper Ghostface Killah of the Wu-Tang Clan, a favorite musical group of the creator.

Despite initial limitations in technical infrastructure and support, Snapchat successfully cultivated a user base largely composed of teenagers. Its founders abandoned formal education to pursue the project from their family homes in affluent neighborhoods. By 2022, the platform had generated \$4.6 billion in revenue and maintained an active user base exceeding 375 million.

This paper examines the platform's business performance in the periods preceding and following the COVID-19 pandemic. It evaluates financial indicators and user growth trends to assess the impact of the pandemic on Snapchat's operational and economic outcomes.

The research gaps that are identified and recognized are: first and foremost, the lack of analysis on platform-based business models during crises, the insufficient focus on the relationship between user growth and revenue diversification and last but not least, the underrepresentation of Snapchat in academic research. Therefore, the significance of this research is mirrored in its contribution to the platform economy literature and the enhancement of understanding of digital business resilience.

This paper is structured as follows. Section 2 provides a review of the relevant literature, highlighting key debates and gaps in current research. Section 3 outlines the methodological approach adopted in this study, including data collection and analysis procedures. Section 4 presents the findings, and finally, Section 5 discusses the implications of the results and concludes with suggestions for future research.

2. Literature review

Social networks are used by more than 4.48 billion people, and Snapchat is in 12th place according to the number of active users in 2022. From the beginning of 2022, more than 6 billion different digital contents are created daily on social networks [14]. According to the results of a survey made in Belgium, 91% of young people between the ages of 13 and 17 had Snapchat installed on their mobile phone [15], while in Great Britain 78% of young people of that age have Snapchat installed on their mobile phone [16]. In the USA, it is used by 90% of the population between the ages of 13 and 24 [2]. Snapchat's exponential development is a very rare case even among corporations in the platform economy model [10]. Young people were attracted to the platform by topics about pop culture, rappers, celebrities, hip hop music, fashion films, education, food and the like, but also topics related to feminism, indigenous languages and music, violence against women, xenophobia, Latin American problems, debunking stereotypes and the like [17]. The Snapchat user community is dominated by women with 54% of the user population [14].

The platform has developed various models of user community development in order to continuously strengthen the network effect. One such model is the use of gamification to engage users in communication. In order to maintain daily communication, the platform awards different types of rewards to users who communicate daily [18]. One of the forms of gamification is the "Snapchat Streak" model, in which "torches" are assigned next to the names of users who exchange at least one picture in 24 hours [19]. Facebook has three billion profiles, but does not provide similar gamification opportunities [16]. Research has proven that students used Snapchat more for communication than Facebook, and the reason for this is found in a greater degree of fun, practicality and attraction to messages that have personal characteristics [20].

Snapchat's unique configuration may make it a powerful platform for improving learner knowledge by leveraging its unique ability to capture attention of the user. This idea is supported by a conceptual framework of memory termed the "stage theory [21]. Snapchat users are more inclined to share relaxed content and humor than Facebook and Instagram users. Pictures on Snapchat are relaxed in contrast to pictures on Instagram where users want to show "their better selves" [22, 23]. The transient nature of Snapchat messages means that the platform is often considered more private and is likely to contain sensitive, highly personal activities such as messaging and flirting [24]. Messages on Snapchat are more personal and confidential, therefore more intimate, and the use of emoji allows for layering and better understanding, as well as avoiding ambiguity and embarrassment [25].

Studies have revealed a positive relationship between problematic use of social networks and one's need to belong, and one's need to be admired [26]. In this context, Snapchat is a platform that is very often the subject of such research. In 2017, Snapchat developed an application for uploading media to its own map or "Snap map". Snapchat users could tap the screen to find out where other users were uploading from. The images that were uploaded to Snap Map had a dubious character, and the peak of the problem occurred during the riots over the death of George Floyd [27]. Research has shown that the term sexting is associated precisely with the development of the Snapchat platform, which was accepted by adolescents due to rapidly disappearing messages [3, 28-30].

The platform is very often mentioned in cases of investigations into the sharing of explicit content, especially the sharing of personal images out of revenge [31]. Research related to drug dealing placed the platform in a high place according to the indications of the existence of contacts of interested parties in the sale of various types of drugs [32]. The platform is associated with the term "Snapchat dimorphic", and it is associated with a sudden increase in the number of selfies and

image filtering, especially among young women, and subsequently an increased demand for surgical operations according to the appearance from the photos [14].

Snapchat opens up a lot of room for image processing with its tools and filters, and research shows a strong link between dissatisfaction with one's own appearance and the use of filters to process selfies. All this leads to an increased level of anxiety in society [33]. Millennials alone are predicted to take more than 25,000 selfies in their lifetime. A large part of these photos will be processed with different image filters, and women are at the forefront of this as well. Instagram was primarily used for public sharing, while Snapchat was used for sharing private images. This highlights the various motives and possibilities of the ephemeral nature of Snapchat communication [34, 35]. Snapchat, like Tinder, discovered the problems of geolocation photos using the triangulation model, which is a contribution to the theories of "surveillance capitalism" [36]. and the role of various government bodies in this process is often mentioned [27]. Despite the fact that Facebook dominates among social networks according to the number of users, research has shown that users who have profiles on Facebook and Snapchat spend the same amount of time a day on both networks [20].

The COVID-19 pandemic has significantly impacted online communication and business platforms. Snapchat experienced increased private messaging but decreased public sharing, along with reduced communication homophily across demographics [37]. While eBay saw growth in online shopping due to lockdowns [38], Alibaba's overall business results were not majorly affected, though changes in revenue structure were observed. The pandemic's impact on online platforms varied, with some businesses remaining stable (e.g., food delivery, basic needs), others declining (e.g., tourism, offline retail), and some thriving (e.g., telecommunications, online shopping for essentials and health products) [39]. These studies highlight the diverse effects of COVID-19 on different online platforms, emphasizing the importance of adaptability and the shift towards digital communication and commerce during the pandemic.

3. Methodology and Research Questions

The research and analysis are based on selected data from the corporation's audit report [13]. In the research, data from the profit and loss account and the trend of active users of the platform were selected. Data from the audit report were selected according to the criteria set in the research questions:

RQ1. How strongly did the COVID-19 pandemic affect the financial results of the Snapchat platform?

In the first quarter of 2020, the corporation generated \$446 million more in advertising revenue than in the first quarter of 2019 [40]; the number of searches is not the highest for already established corporations such as Facebook, Instagram and Snapchat, but Tik Tok is in the first place, which will subsequently be reflected in revenues and stock prices [41]; research has proven a particularly increased activity of students on social networks, including Snapchat, during the pandemic, but also after 2020 [2].

RQ2. How did the COVID-19 pandemic affect the trend of users of the Snapchat platform?

In the first quarter of 2020, the number of active users increased by 11 million; communication between friends increased by 30%, and in the countries most affected by the virus by 50% [40]; the number of group video chats has grown beyond any platform expectations during the pandemic [42]; the ephemeral properties of the platform have triggered entirely new user behaviors. While previous generations preserved the memory of people and events in the past, Snapchat users define what they do not want to preserve, and have established the "Internet of Forgetting" [43].

Selected financial parameters will be processed using methods of financial analysis and statistical regression. The trend of the number of users will be processed by statistical analysis and regression

models so that they can be compared with the results of the analysis of financial parameters. The research and analysis are presented in the Results Analysis chapter, and the final results and interpretations in the Conclusion chapter.

4. Results

The research is structured into two main components: an analysis of financial indicators and an examination of user growth trends. To ensure consistency and comparability across both dimensions, a uniform seven-year timeframe (2016–2022) was selected.

3.1 Financial Data Analysis

During the analyzed period from 2016 to 2022, Snapchat's revenues increased by 1,037.7%—a rate of growth rarely observed in traditional linear business models. Revenue expansion occurred consistently on a year-over-year basis, with particularly pronounced acceleration during the onset and progression of the COVID-19 pandemic. This pattern suggests that the pandemic had a significant positive influence on the platform's revenue generation.

In the same period, direct production costs rose by 302%, a substantially lower rate than revenue growth. This disparity contributed to a remarkable increase in gross profit, which grew by 4,081.3%. Although direct production costs generally increased annually, a decline was recorded in 2018, which corresponded with a significant spike in gross profit. The gross profit margin—the share of gross profit in total revenue—also improved steadily throughout the period, reaching 60.6% by 2022. The detailed financial outcomes are summarized in Table 1.

Table 1

Selected financial parameters (000; \$)

	2016.	2017.	2018.	2019.	2020.	2021.	2022.
Revenue	404.482	824.949	1.180.446	1.715.534	2.506.626	4.117.048	4.601.847
Cost of revenue	451.606	717.462	708.865	895.838	1.182.505	1.750.246	1.815.342
Gross profit	-47.124	107.487	471.581	819.696	1.324.121	2.366.802	2.786.505
%	-	13,0%	39,9%	47,8%	52,8%	57,5%	60,6%
Total costs	924.867	4.310.525	2.448.896	2.818.862	3.368.698	4.819.117	5.997.153
Operating loss	-520.385	-3.485.576	-1.268.450	-1.103.328	-862.072	-702.069	-1.395.306
Net loss	-514.643	-3.445.066	-1.255.911	-1.033.660	-944.839	-487.955	-1.429.653

The results of the research using the regression analysis model determined an average annual growth of total income of 49.5% ($s=0.4952$) interpreted by the exponential regression equation $y=491035e0,4023x$, with a coefficient of interpretation of 97.78% ($R^2 = 0.9778$). The independent variable is the number of users, while the revenue is the dependent variable in the model. In the same period, direct production costs grew at an average annual rate of 26% ($s=0.2598$) interpreted by the exponential regression equation $y = 481969e0,231x$, with a coefficient of interpretation of 95.79% ($R^2 = 0.9579$). On the total income curve, the inflection point in the last period is below the average growth curve. This indicates an increase in income below the average growth rate. The same is true for the curve of direct production costs. The results of the regression analysis presented in Figure 1 prove the positive impact of the Covid 19 pandemic on the platform's revenues, and the decrease in revenues below average growth after the end of the pandemic.

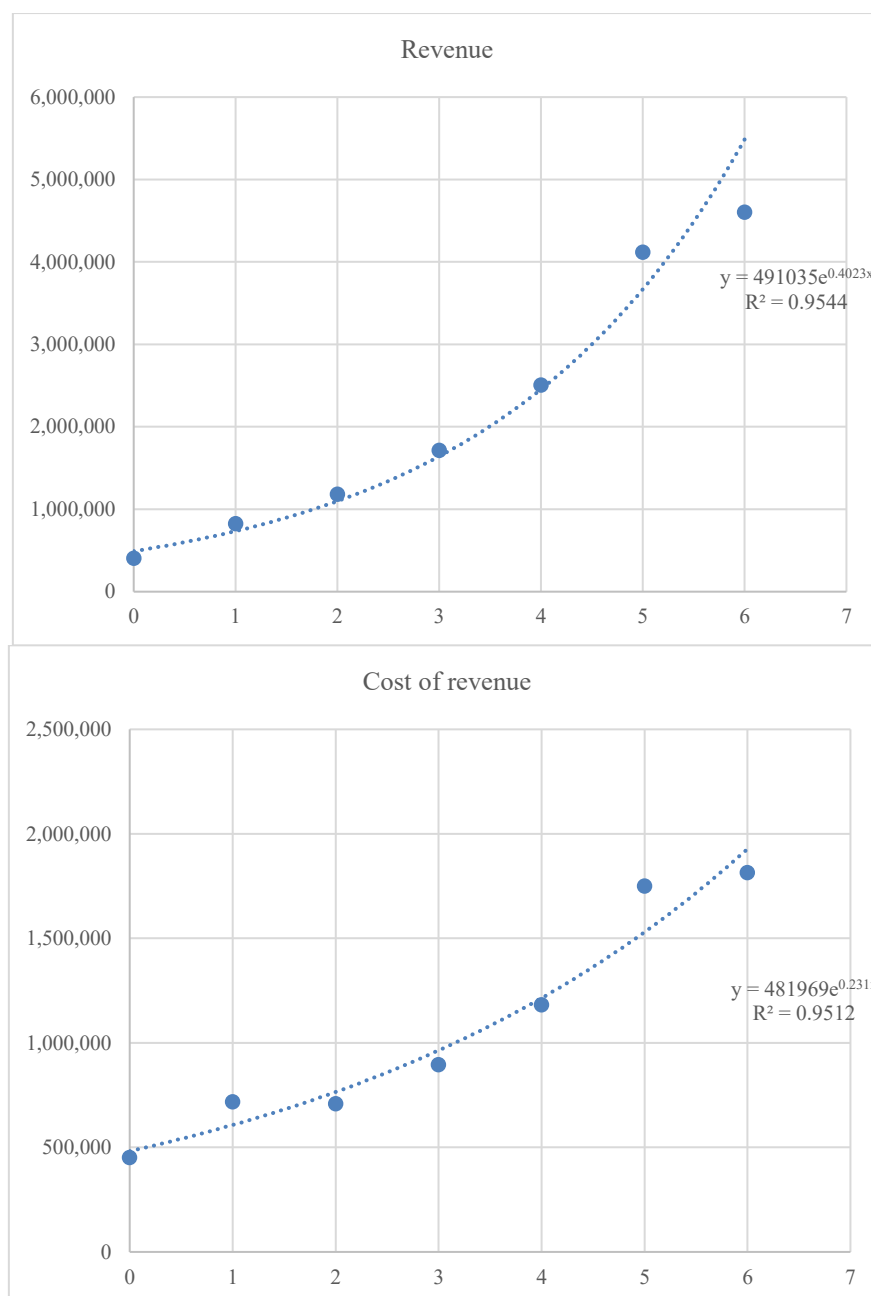


Fig. 1. Regression analysis

Despite the growth in income, total production costs are higher than income in the entire analyzed period. In the last analyzed period, the corporation realized almost one and a half billion dollars in losses from regular operations. Total revenues were 4.6 billion dollars, and total costs were almost six billion dollars. Total costs rose sharply in 2017, and thereafter fluctuated depending on the amount of financial activity in research and development. Since 2019, that is, with the continuous increase in income, the total costs of production have been continuously increasing. The increase in production costs was directly reflected in operating losses, that is, the corporation was never positive in the category of operating profit in the analyzed period. The curves of total costs and operational losses are shown in Figure 2.

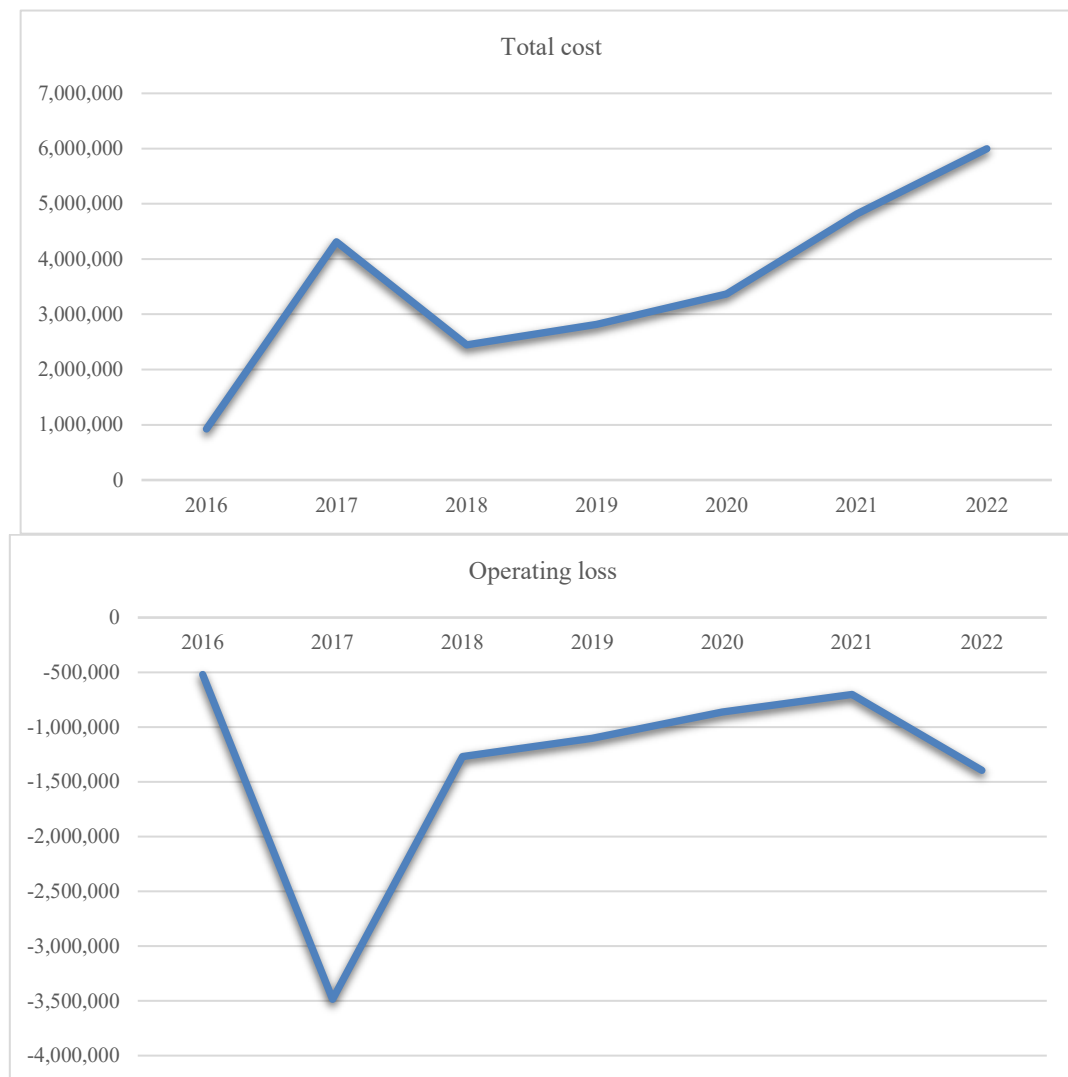


Fig. 2. Total costs and operational losses of Snapchat (2016 – 2022)

B. Financial Performance and Loss Trends

Throughout the entire period under analysis, Snapchat consistently recorded operating and net losses. The trend in both categories follows a similar trajectory: a significant increase in losses occurred in 2017, followed by gradual revenue growth and a corresponding reduction in losses. However, with the conclusion of the COVID-19 pandemic, total losses again rose sharply. The company failed to report profitability in any of the years examined, and in the final year of the period (2022), operating and net losses increased substantially.

Despite these persistent losses, the pandemic had a broadly positive impact on the platform's financial performance, particularly in terms of revenue growth. This phenomenon mirrors trends observed among other corporations operating under the platform economy model. For instance, both Shopify and Etsy experienced revenue growth during the pandemic, followed by a decline in 2022 [44, 45]. Conversely, companies such as Netflix, Tinder, and the global music streaming industry demonstrated sustained revenue increases throughout the pandemic period [38, 45].

C. User Growth Trends

Analysis of Snapchat's user base indicates signs of market saturation within existing user communities. A decline in user numbers was recorded in 2018 compared to the preceding year, after

which the platform resumed its growth trajectory. However, in the final two years of the study, the rate of user growth became digressive—slowing compared to earlier periods. Similar to revenue patterns, user growth decelerated following the pandemic, with the most recent annual increases falling short of those observed during the pandemic years.

D. ANOVA Analysis

To further investigate the relationship between user growth and revenue generation—a characteristic feature of the platform economy—an Analysis of Variance (ANOVA) was conducted. The model tested the correlation between the number of users (independent variable) and revenue (dependent variable). This analytical approach is increasingly relevant given that platforms such as Facebook experienced similar dynamics during the pandemic: increasing user numbers alongside declining advertising revenues. In response, platforms undertook cost-cutting measures, such as workforce reductions—Snapchat laid off 2,300 employees—and introduced premium subscription models to diversify revenue streams [31].

Despite operational losses, Snapchat's market capitalization increased, and the platform attracted ongoing investor confidence, largely due to the continuous expansion of its user base and the strengthening of the network effect [46,47].

The results of the ANOVA model confirm a statistically significant relationship between the number of users and revenue. The strength of this correlation is reflected in a Multiple R value of 0.96352. The coefficient of determination (Adjusted R Square = 0.91405) indicates that the regression model is highly interpretable and statistically robust, especially for datasets with fewer than 30 observations. The statistical significance of the model is confirmed with a Significance F value of 0.000479, which is below the conventional threshold of 0.05. Additionally, the P-value of 0.0005 ($p < 0.05$) reinforces that the independent variable (Users) exerts a statistically significant effect on the dependent variable (Revenue).

These findings highlight the distinctive nature of revenue generation in platform-based business models, where user participation—often through a freemium structure—drives value creation across diversified income streams. The results also demonstrate the need for differentiated methodological approaches when analyzing platform-based versus linear (pipeline) economic models.

4. Conclusions

The Snapchat platform has achieved notable global success, despite its origins as an entrepreneurial initiative that initially appeared unlikely to yield substantial outcomes. Such a conclusion might reflect the perspective of analysts rooted in traditional "pipeline" economic models, but not those familiar with the dynamics of platform economics. Research and analysis conducted through the lens of classical linear business models reveal financial outcomes that diverge significantly from those typically associated with efficient and profitable corporations operating under conventional economic principles.

In the context of the global COVID-19 pandemic, the findings of this study can be summarized through four key observations. First, platform revenues experienced exponential growth during the onset and progression of the pandemic, suggesting a positive correlation between the pandemic and revenue performance. Second, Snapchat's gross profit margin reached 60.6% of total revenue—an outcome that would be highly atypical within traditional pipeline-based business structures. Third, total operating expenses exceeded total revenues throughout the entire period under analysis, indicating significant investment in research and development, particularly in the creation of new features and applications. Fourth, while the platform's user base continued to expand, the average

annual revenue growth outpaced user growth, suggesting effective business diversification and monetization strategies.

Regarding the first research question, the findings demonstrate that the COVID-19 pandemic did not negatively impact Snapchat's financial performance. On the contrary, the platform's revenues increased steadily during and after the pandemic period. Even more notable was the consistent rise in gross profit, which reached 60% in the final phase of the analysis. These results underscore the favorable financial impact of the pandemic on the platform—a trend also observed among other corporations operating within the platform economy model.

In relation to the second research question, user growth initially accelerated during the early stages of the pandemic, followed by a gradual deceleration. Nevertheless, user numbers continued to increase overall. Revenue growth, however, outpaced user growth, indicating enhanced efficiency in monetizing the platform's services. The pandemic stimulated interest in digital communication tools, particularly during periods of lockdown, contributing to Snapchat's surge in popularity—especially among teenage demographics.

Although the final period under review showed total revenue growth falling below the average for the entire period, this does not negate the broader conclusion that the pandemic positively influenced the platform's performance. Revenue growth remained consistent throughout the pandemic, with a decline only emerging post-pandemic. Meanwhile, user growth persisted, and the platform's global presence expanded. These outcomes reinforced investor confidence in the long-term potential of the Snapchat project, despite its ongoing operational losses. The increasing strength of the network effect remains a critical source of value and justification for continued investment.

Snapchat's trajectory illustrates a clear departure from the paradigms of the classical linear economy, yet it continues to generate and enhance value. The platform's response to the pandemic contrasts sharply with trends observed in traditional business models. One unresolved area for future research concerns the sustainability of the current revenue growth rate and the potential long-term implications of its recent deceleration. Subsequent studies will explore whether Snapchat can maintain its growth trajectory or if a structural slowdown in revenue expansion may emerge.

Conflicts of Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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