

**Publisher**<http://jssidoi.org/esc/home>**PECULIARITIES OF VIDEO STREAMING INDUSTRY DEVELOPMENT*****Alexandra Ioanid ^{1*}, Denisa Iliescu ²**^{1,2} National University of Science and Technology POLITEHNICA Bucharest, Bucharest, Romania¹ Academy of Romanian Scientists, Bucharest, RomaniaE-mail:^{1*} alexandra.ioanid@upb.ro (Corresponding author); ² denisamiliescu@gmail.com

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Abstract. The term “streaming” defines modern technologies for distributing the contents of files and audio or video in a continuous stream via a wired or wireless internet connection. The word “streaming” also means a “continuous flow” and represents a newly developed multimedia technology content carried out between the transmitting source and the receiving device. This article delves into the multifaceted dimensions of the streaming services industry, emphasizing the pivotal role played by innovation, technology, and performance. Through a comprehensive exploration, we highlight the transformative impact of real-time content. With projections indicating continued exponential growth, the industry's trajectory is analyzed within the context of the multidimensional triadic model. Case studies on industry leaders underscore the criticality of research and development investments in driving profitability. As the industry evolves, companies prioritizing user experience and technological innovation prepare for sustained success in this dynamic landscape. This article is a compass for industry stakeholders, providing insights into the intricate interplay of innovation, technology, and performance within the streaming services sector.

Keywords: innovation; technology; performance; streaming technology; multidimensional triadic model

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1. Introduction

Streaming technology began to develop in the 2000s, simultaneously with the development of computing capacity and computer performance stimulated by the expansion of the Internet. Since 2005, video streaming technology has gained global scale with the emergence of YouTube, Google Video and Dailymotion. The first two subsequently merged and provided widespread access to streaming entertainment content via the Internet (Wilbert, M., 2019). Thus, following technological developments, entertainment applications transmitting real-time content have attracted increased interest and functionalities (Zotos et al., 2011).

The streaming services industry refers to transmitting media or entertainment content to electronically interconnected devices, such as screens, televisions, personal computers, smartphones, and tablets, wherein content is simultaneously rendered throughout its transmission. Online streaming removes the necessity for

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prior content downloading and retention, with supported formats encompassing auditory and visual media, podcasts and webcasts, musical vignettes, cinematic productions, and serialized television programming (Frade et al., 2021; Austerberry, 2013). As the tendency for this mode of amusement increases, streaming services have emerged as a paramount facet of internet consumption (Lambrinos & Demetriou, 2010; Bampis & Bovik, 2018; Laterman et al., 2017; Nguyen et al., 2023).

Online streaming diverges from conventional video or audio content dissemination modalities, characterized by its dynamic transmission approach (Farhand & Tsechpenakis, 2023). Leveraging streaming technologies, antecedently readied audio files, video files, podcasts, webcasts, and music videos are methodically segmented into data packets and consecutively disseminated, enabling immediate access and viewing. Besides the waiting time being non-existent, the files can be played in real-time, another advantage being saving memory. Thus, the media files will not consume memory and will not take up additional space, being deleted automatically immediately after finishing watching or listening to them. This present study focuses on studying the multidimensional model of innovation, technology, and performance in the streaming services industry, a revolutionary and disruptive industry for the traditional model of transmission and consumption of entertainment content.

2. Review of literature. Innovative technology for entertainment

Multimedia streaming encompasses the real-time conveyance and distribution of entertainment content across a network to the recipient. Consumers of entertainment materials experience an uninterrupted and synchronized reception of media elements, coincident with their ongoing transmission and devoid of temporal lags (Maia et al., 2015). In streaming technology, a multimedia file is divided into tiny divisions, as appears in Fig. 1. Each division consists of a fraction of the original file and can be streamed individually. As a result, end-users are empowered to engage with the entertainment content contemporaneously with the reception of the data stream, thereby negating the necessity for data storage capacities. Moreover, the rendering of the content playback occurs instantaneously, transforming the streaming experience into a real-time phenomenon (Lam & Rossiter, 2008; Darwich et al., 2021).

Facilitating the adoption of the pioneering streaming technology necessitates the acquisition of a subscription-based affiliation with an online streaming service provider, alongside possessing a technologically proficient apparatus capable of accommodating said innovation. The seamless integration of these elements mandates steadfast, high-velocity Internet connectivity. Diverse devices of varying capabilities and specifications align with an array of personalized requisites, including but not limited to high-resolution 4K playback mechanisms, hands-free contrivances, specialized gaming peripherals, devices furnished with or bereft of remote-control interfaces, as well as economically viable options (Lambrinos & Demetriou, 2010; Bampis & Bovik, 2018; Nguyen et al., 2023).

Additional technological paradigms and inventive breakthroughs, including but not confined to artificial intelligence (Mariani et al., 2023), machine learning (Suárez-Cetrulo et al., 2023; Shahraki et al., 2022; Jeon et al., 2020), and blockchain technology (Yuan et al., 2022; Tapscott & Tapscott, 2018), are poised to usher in transformative effects upon the landscape of the online streaming media sector. These technological underpinnings are intended to yield novel enhancements in the realm of streamed video content, augmenting the already pioneering domain of the streaming industry itself, which constitutes an innovation of technological merit (Lambrinos & Demetriou, 2010; Bampis & Bovik, 2018; Nguyen et al., 2023). The expectations are that all of these will create new opportunities for growth and development in the coming period and represent disruptive factors in how entertainment content is transmitted and consumed. The spread of this mode of entertainment transmission will accelerate and attract new users constantly in the future.

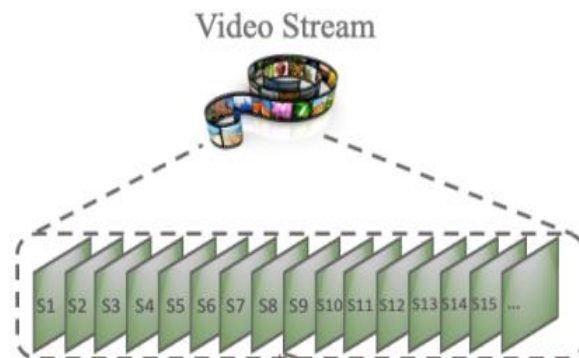


Figure 1. Video streaming structure
Source: Darwich et al. (2021)

Enhanced streamlining capabilities

Enumerated within the ambit of streaming technology's favorable attributes lies the augmentation of transmission capacity, accomplished at a notably diminished expenditure in juxtaposition to conventional modalities. This technological facet also engenders superior visual and auditory fidelity, optimizing the frequency spectrum allocation and ameliorating the financial outlays of modernizing transmission equipment (European Commission, 2006). Moreover, this technological milieu empowers users with the capacity to compile lists of viewing preferences (Hagen, 2015; Aguiar et al., 2021), thereby affording the prerogative to stipulate intermissions and revisit content at will (Ji et al., 2023).

According to Darwich (2020) there are three types of streaming: video-on-demand streaming, live streaming and live video streaming on demand, as shown in Figure 2. Within the realm of on-demand video streaming, the corpus of video content assumes the form of pre-existing video files ensconced within a repository designated for video streaming. Following user requisites, this content pool is gathered forward and seamlessly disseminated, generating a continuous playback upon their devices. This variant is facilitated by the Internet conduits, orchestrated by esteemed transmitters such as Netflix, Amazon Prime Video, and Disney+.

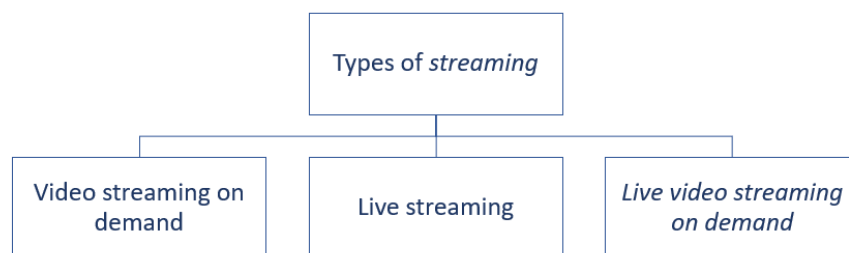


Figure 2. Types of streaming
Source: Darwich et al. (2020)

Within live streaming, the content undergoes instantaneous conveyance to recipients concomitantly with its recording through the video camera's lens. Consequently, the transmission unfolds in temporal synchronicity, devoid of antecedent archival and storage procedures. The domain of on-demand live video streaming represents an amalgamation of video-on-demand and live-streaming paradigms. In this modality, the live event is contemporaneously recorded during its unfolding and live-streamed, subsequently availing itself for subsequent on-demand viewing. This affords the advantage of accommodating users not concurrently tethered to the Internet during the live transmission, enabling deferred access at their discretion.

In the last three years, the online streaming market has grown significantly (da Silva & Lima, 2022, Wu & Chiu, 2023). In 2020, the number of users exceeded the threshold of 1 billion (Watson, 2021). According to a report

by Research & Markets (2019), the market growth projection is 18.3% annually until 2026, reaching a value of approximately \$150 billion. The exponential growth witnessed in the online streaming market signifies a shift in consumer behavior. It heralds a new era of entertainment consumption, with far-reaching implications for content creators, technology companies and consumers alike.

The literature review has provided a comprehensive overview of the streaming services industry, emphasizing the pivotal role of innovation, technology, and performance in driving its rapid evolution. While existing studies have delved into various aspects of this dynamic sector, there still needs to be a notable gap in exploring the interplay between R&D investments, technological innovation, and subsequent profitability within industry leaders. This study seeks to address this gap by conducting a detailed analysis of the relationship between R&D investments and profit margins, shedding light on the critical role of continuous innovation in ensuring sustained profitability. Furthermore, examining organizational culture and capital infusion as catalysts for research and development activities will offer valuable insights into the mechanisms that drive innovation in the streaming services industry. By filling this gap in the literature, this study aims to contribute to a deeper understanding of the factors shaping the success of companies within this rapidly evolving landscape.

3. Research Approach

This study employs a mixed-method approach, combining quantitative analysis with qualitative case studies. The quantitative component involves an in-depth examination of financial data from industry leaders Netflix and Amazon over five years, focusing on R&D investments, profit margins, and other key performance indicators. The qualitative aspect involves detailed case studies to provide context and deeper insights into these companies' innovation strategies and organizational cultures.

This research aims to investigate the intricate interplay between innovation, technology, and performance in the video streaming services industry. Specifically, the study seeks to understand how R&D investments contribute to technological innovation and subsequently influence the profitability of industry leaders. Additionally, it aims to explore the role of organizational culture and capital infusion in driving research and development activities.

This paper explores the video streaming services industry, striving to study the complex interrelationship among innovation, technology, and performance. Three primary research questions guide the article. Firstly, how do investments in research and development influence business performance and profitability in leading companies in the streaming industry? How do organizational culture and capital infusion impact innovation-driven technologies in this dynamic sector? The third question is, how does the multidimensional triadic model of innovation, technology, and performance provide insights into companies' competitive standing and evolutionary trajectory in the video streaming services industry? Through an extensive study of industry leaders, this research emphasizes the pivotal role of innovation, technology, and performance in shaping the success and evolution of the video streaming services sector.

4. The multidimensional triadic model innovation – technology – performance

The domain of video streaming services stands as a paradigm-shifting and perturbing force within the conventional ideas of content transmission and consumption in the entertainment sphere. This sector, so far underrepresented in scholarly inquiry due to its recent creation and rapid evolution, has substantial developmental prospects, offering significant opportunities for scientific and research purposes.

Triadic models, elucidated as theoretical frameworks comprising three interdependent constituents, manifest a complexity exceeding the mere tripartite configuration. These models, of triad essence, must embody a systemic and integrative disposition. They are designed to be an integral component of an overarching system, accentuating the intrinsic significance of each element while accentuating the interconnections that bind them.

This integrated framework is an invaluable analytical tool for theoreticians and assumes a pivotal role as a decision-making prop for managers, entrepreneurs, and legislators. Under its integral synergistic nature, the

model fosters a higher order of possibilities and augmented value, positioning itself as an indispensable asset in the horizon of research and practical application (Scarlat, 2017).

Scarlat and Iliescu (2021) articulated that a "triad" embodies a multifaceted and intricate construct, permeating diverse realms of scientific inquiry and shared knowledge. This concept finds its expression in a myriad of contexts, some of which include: the triadic color scheme, the tricolor flag, the political triumvirate, the triadic literary form that appears in medieval literature from the area of Wales and Ireland or the triads in chemistry that record the oldest system of classifying elements by atomic weight (Döbereiner's Law of Triads, 1817). Such instances underscore the pervasive and interdisciplinary nature of the "triad" concept, spanning diverse disciplines and historical epochs, epitomizing the potent interplay between symbolism, structure, and classification (Scarlat & Iliescu, 2021).

Additional instances of triads permeate the academic discourse, exemplified by the "triple helix" model elucidated by Etzkowitz (2003; 2008). This dynamic configuration, conceived in 1993, encompasses the synergistic interplay of three distinct domains: academia, industry, and government, forging a nexus of innovation and progress. Similarly, Ohmae (1985) introduces a triad in global economic geography, delineating the geographic regions of North America, Western Europe, and East Asia as pivotal epicentres. The triadic construct extends its reach to encompass continental divisions, as seen in the amalgamation of North America, Central America, and South America, or the Benelux coalition uniting Belgium, the Netherlands, and Luxembourg.

Drawing inspiration from triadic manifestations that resonate with economics, project management, entrepreneurship, and marketing, the present research converges on the triad of Technology, Innovation, and Performance. This triadic interplay assumes a pragmatic organizational vantage, underscoring a nuanced analysis of its latent potential. The study embraces an all-encompassing methodology, exemplified in synthetic, systematic, and synergistic facets (commonly referred to as the three S's), a conceptual framework expounded by Scarlat in 2017.

The impending study, rooted in the realm of business and organizational dynamics, aspires to unravel the particularities of the Technology – Innovation – Performance triad. This endeavor embodies a holistic perspective, echoing the very essence of synergistic interconnections (Scarlat, 2017).

Based on the triad innovation, technology, and performance (Scarlat & Iliescu, 2021; Scarlat, 2021), the present work proposes the multidimensional triad innovation, technology, and performance, a complex, multidimensional model, which puts at its center the triad innovation – technology – performance, each of its elements being in turn formed by a triad as depicted in Fig. 3. Thus, the technology component is made up of the triad hardware – software – knowledge, the innovation component is made up of the triad capital – organizational culture – patents, and the performance element is made up of the triad number of users – turnover – profitability.

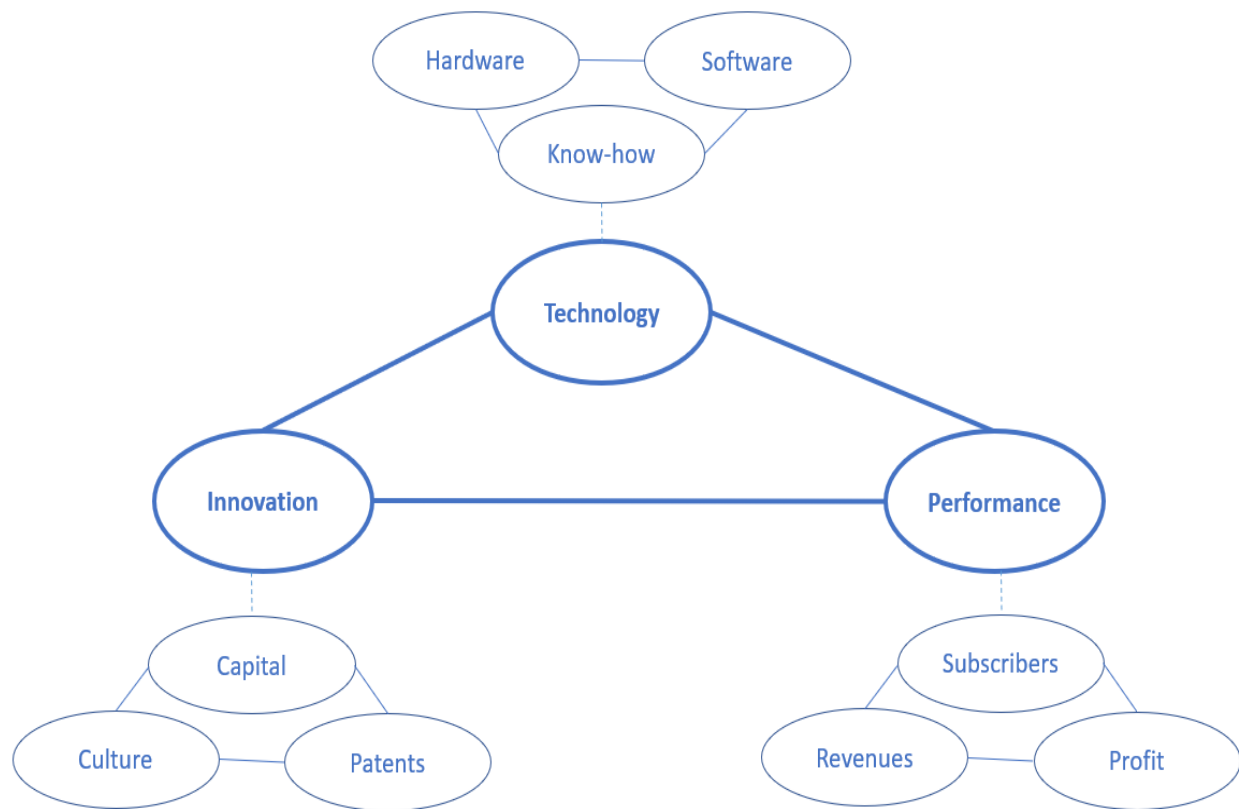


Figure 3. The multidimensional triadic model innovation – technology – performance

3.1. The Technology triad: hardware – software – know-how

Enterprises in the online domain cultivate and oversee many technologies spanning infrastructure and informational systems. This pursuit mandates a requisite degree of training and expertise, facilitating a technology triad's genesis. Within this triad, the constituents encompass hardware components, software systems, and a reservoir of technical understanding.

The term "hardware" encompasses the totality of apparatus and tangible components that comprise the streaming system. This contains specialized devices meticulously tailored for the express purpose of online audio or video streaming. The realm of hardware devices remains a dynamic landscape characterized by perpetual advancement, with innovative technological breakthroughs and functionalities surfacing regularly (Chernova, 2018; Messaoud et al., 2022).

"Software" comprehensively denotes the collective assemblage of computer programs and applications instrumental in the governance and management of the streaming system. These software applications are installed and run on computational machinery and tangible systems following predefined algorithms. The paramount objective of these information systems is converting original content into the desired format, a process facilitated by programming languages that manifest keen interest from academic and professional environments alike (Andrade et al., 2023; Gorawski et al., 2023).

In tandem, the experience of online streamed video entertainment is enabled through entertainment streaming applications. These software platforms, functioning as intermediaries, empower subscribers to access and enjoy entertainment content via Internet-connected devices, regardless of geographical location (Oyedele & Simpson, 2018).

"Technical know-how" embodies a constellation of practical, instrumental, and technical competencies, serving as a conduit for translating scientific knowledge and concepts into actionable endeavors, thereby fostering the innovation and development of novel technologies or addressing specific needs. This repository of expertise constitutes an organization's foundational intangible asset, augmenting its research and development (R&D) capabilities (Cleveland et al., 2015) and creating the prospects to generate future financial gains (Bechlioulis et al., 2023; Manea et al., 2021). These competencies form a deep interconnection with technological advancements, manifesting as both catalysts for their inception and consequences of adaptation to research outcomes and developments within the field (Parayil, 1991; Lipsey, 2001).

Furthermore, this consolidation of skills emerges as a statement of entrepreneurial orientation (Fellnhöfer & 2022), encapsulating the capacity to navigate and leverage the evolving landscape of technology and innovation.

3.2 The Innovation triad: capital – organizational culture – patents

The arena encompassing online and video entertainment is a fiercely competitive and perpetually evolving domain, marked by frequent consumer preferences and predilections oscillations. Innovation, delineated with a dual dimension (Svahn & Henfridsson, 2012), is deeply rooted in the necessities of economic entities while maintaining a vigilant focus on the intricate interplay of market commercialization dynamics and envisioning its future trajectory (Manea et al., 2021). This innovation framework coalesces into a triadic configuration characterized by the blend of capital infusion, organizational culture, and patent acquisitions.

Foremost among the constituents of technological innovation is the capital, a fundamental element that, coupled with an organizational culture markedly dedicated to research and development pursuits, confers a favorable environment conducive to the inception of financially rewarding innovations. The academic environment inquiries within this domain underscore the incontrovertible nexus between capital infusion and the trajectory of innovation performance. The injection of capital wields a profound influence on the outlines of innovative undertakings, and notably, it holds the potential to advance the temporal span leading to product commercialization (Bechlioulis et al., 2023; Prado & Bauer, 2022; Bai & Tang, 2022).

Furthermore, the merits of innovation are amplified when enterprises underscore the paramount significance of human capital and the cultivation of a technology-oriented setting (Ramírez-Solis et al., 2022).

Within global economies, corporate performance and innovation have emerged as paramount imperatives for enterprises, with their bedrock firmly grounded in the tower of organizational culture. At the crux of organizational success and innovation resides a fusion of established habits and behavioral norms, coalescing to constitute the framework of a company's culture. The embracement and propagation of change among personnel positively and favourably impact organizational innovation, thereby implicitly influencing overall corporate performance (Naveed et al., 2022; Byun, 2022). Furthermore, a cultivated culture stimulates an encouraging climate for the emergence of ecologically conscious technological innovations, thus furnishing a conduit for sustainable progress (Ullah et al., 2022).

3.3. The Performance triad: subscribers – revenue – profit

Concerning the performance triad, it encompasses an interconnection of three pivotal constituents: firstly, the consolidation of streaming service users, commonly referred to as subscribers; secondly, the financial inflows arising from online streaming entertainment; and finally, the underpinning profitability yielded by this multifaceted endeavor.

Streaming service users, defined as subscribers, denote individuals who remunerate a subscription fee to procure access to online-streamed entertainment content. As such, the customer base is an output of innovation, a performance measurement tool, and a source of income in the streaming services industry. Companies constantly seek to increase their customer base by focusing on the quality of experiences and satisfaction (Vendrell-Herrero et al., 2023 & Mullin, 2022).

The revenue within the streaming industry encompasses the cumulative earnings derived from diverse sources, containing subscription payments (Lozic, 2020), proceeds from advertising sales (Lawrence, 2022), and individualized viewing transactions. So, companies in the industry of entertainment streaming services offer a wide variety of entertainment programs, including movies, series, documentaries, sports broadcasts or games, for which they charge different types of subscriptions (Reiff, 2022; Jang et al., 2021; Wu & Chiu, 2023).

Profitability characterizes a favorable outcome achieved by a company oriented toward realizing financial gains over a fiscal year. This achievement emanates from the skilful allocation and utilization of its available resources, spanning material assets, financial capital, and human capital. This strategic utilization is orchestrated in a manner conducive to facilitating optimal conditions for all stakeholders involved. This skillful resource management strives to ensure enhanced future performance, establishing a discernible interrelation between a company's performance and overall welfare (Carp & Mirea, 2017).

4. The influence of innovation and technology over performance

The focus on research and development activity and the inclination towards the new factor and overcoming existing barriers and the status quo are key elements that indicate a company's interest in innovation, technology and sustainable development. Both investors and customers, society or other stakeholders, look with increased interest at companies that invest in research and development, these companies holding the premises of increased potential in achieving long-term success, improved profitability and a positive return.

The R&D investments represent a benchmark in the online entertainment streaming industry for technology and innovation. This study launches the hypothesis H0 that R&D investments influence business performance through increased profitability. The subjects of the study are the streaming industry leaders Netflix and Amazon, and the analysis will be based on a period of five financial years.

4.1. The relationship between R&D investments and profit margin at Netflix

As can be seen in Table 1, investment in research and development doubled during the mentioned period, starting from 1.2 billion USD allocated to this activity and increasing the amount constantly, reaching investments of 2.7 billion USD after five years. The profit margin percentage remained positive during the same period, rising from 10% to 21%.

Table 1. R&D investments and profit margin at Netflix

Netflix	2022	2021	2020	2019	2018
R&D investments (billion \$)	2.7	2.3	1.8	1.5	1.2
Profit margin (%)	18	21	18	13	10

To demonstrate the hypothesis and to verify the relationship between the R&D investments and the profit margin at Netflix, the correlation formula will be used as below:

$$\frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{[n\sum x^2 - (\sum x)^2][n\sum y^2 - (\sum y)^2]}} \quad (1)$$

where r = correlation coefficient

n = number of observations

x = R&D investment values at Netflix

y = profit margin at Netflix

Following the calculation using formula (1), $r = 0.82$ is obtained, a value that indicates a strong positive linear correlation and a confirmation of the H0 hypothesis: investments in research and development contribute significantly to high profitability. In the analyzed period, constant investments in research and development have helped Netflix enjoy positive financial results and increased profitability (Fig. 4).

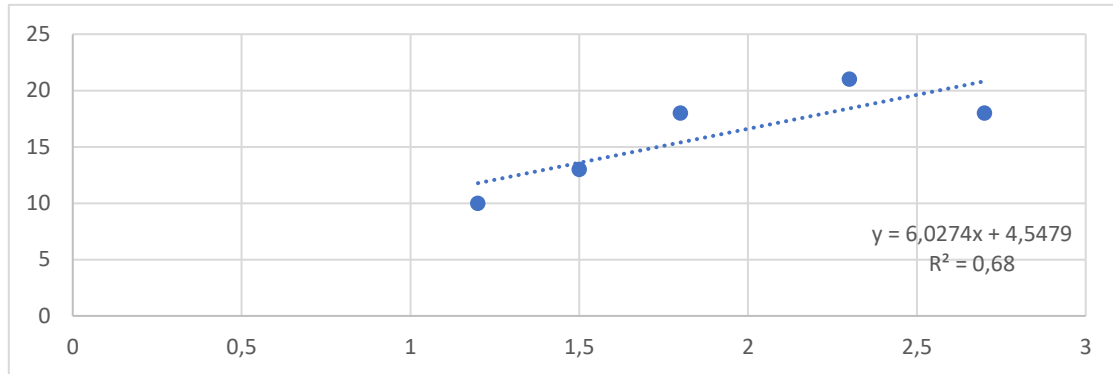


Figure 4. The correlation between investments and rentability at Netflix

4.2. The relationship between R&D investments and profit margin at Amazon

As can be seen in Table 2, investments in research and development have been a point of interest for the Amazon Company, starting from 29 billion USD allocated to this activity in 2018 and increasing the amount constantly, reaching investments of \$73 billion after five years. The operating profit margin percentage remained positive during the same period, with 4% and 8% variations.

Table 2. R&D investments and profit margin at Amazon

Amazon	2022	2021	2020	2019	2018
R&D investments (billion \$)	73	56	43	36	29
Profit margin	8	7	6	4	4

To demonstrate the hypothesis and to verify the relationship between the R&D investments and the profit margin at Amazon, the correlation formula will be used below.

$$\frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{[n\sum x^2 - (\sum x)^2][n\sum y^2 - (\sum y)^2]}} \quad (2)$$

where r = correlation coefficient

n = number of observations

x = R&D investment values at Amazon

y = profit margin at Amazon

Following the calculation using formula (2), $r = 0.95$ is obtained, a value that indicates a strong positive linear correlation and a confirmation of the H0 hypothesis: investments in research and development contribute significantly to high profitability. In the analyzed period, Amazon invested heavily in research and development, obtaining multiple patents, which resulted in additional revenue and increased profitability (Fig. 5).

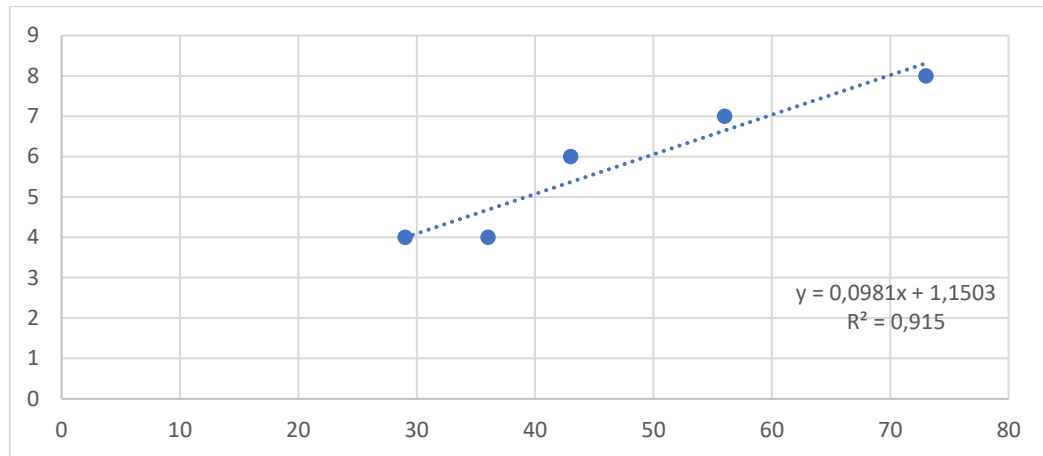


Figure 5. The correlation between investments and rentability at Amazon

Analyzing the pivotal role of research and development (R&D) investments in the online streaming industry provides valuable insights into the influence of innovation and technology on business performance. This study, centered on industry leaders Netflix and Amazon, establishes a compelling correlation between R&D investments and profitability. Notably, both companies steadfastly committed to R&D, with significant financial allocations. This commitment yielded results, as evidenced by positive shifts in their profit margins. The robust positive correlation coefficients ($r = 0.82$ for Netflix and $r = 0.95$ for Amazon) affirm the hypothesis (H0) that R&D investments substantially contribute to strengthening profitability. These findings serve as a resounding endorsement of the strategic significance of R&D investments in sculpting and reinforcing a company's performance landscape, propelling them towards enduring financial triumph in the intensely competitive online entertainment domain.

The demonstrated correlation between R&D investments and profitability suggests a broader trend: that innovation-driven strategies are not only relevant but essential in a rapidly evolving digital era. As companies seek to capture and retain audiences in an increasingly competitive market, the ability to pioneer and adapt cutting-edge technologies becomes a defining factor for success.

5. Discussion

The present study delved into the intricate nexus of the innovation, technology, and performance triad in analyzing the video streaming services industry. Through a comprehensive exploration of these dimensions, we have illuminated crucial insights into the dynamics propelling this dynamic sector forward.

Our investigation underscores the pivotal role of innovation as a catalyst for technological advancements and subsequent performance enhancement. The triadic innovation, technology, and performance model emerges as a robust framework, shedding light on the multifaceted interactions and interdependencies that characterize this industry. Our findings echo the sentiments of scholars such as Carp and Mirea (2017), emphasizing the correlation between companies' performance and their adeptness in developing and deploying innovation-driven technologies.

Moreover, the central role of organizational culture must be considered. A culture steeped in innovation spurs the development of decision-making models and provides a conducive environment for integrating engineering and business. This resonates with the emerging trends identified in the study, where companies proficient at adapting to changes, embracing change, and fostering innovation demonstrate heightened levels of success.

Furthermore, the significance of capital infusion in stimulating innovation is evident. As we've discussed, capital is a crucial enabler in driving research and development activities, thereby shaping the landscape for

technological breakthroughs. This aligns with Bechlioulis et al.'s (2023) assertion that capital is pivotal in expediting time-to-market and underpinning innovation-based profitability.

The analysis presented herein highlights the intricate interplay between innovation, technology, and video streaming services industry performance. As the industry continues its accentuated rise, these insights can serve as guiding examples for companies aspiring to navigate the landscape of technological innovation while optimizing their performance for sustained success.

Conclusions

The triadic innovation model, encompassing innovation, technology, and performance, emerges as a robust foundation for analyzing companies at the vanguard of the video streaming services industry. This dynamic sector has seized a dominant position within the entertainment market, undergoing rapid expansion recently. The interconnection of innovation, technology, and performance is a suitable approach to scrutinize these industry players, given their role in the sector's evolutionary trajectory and competitive standing (Martínez-Sanchez et al., 2021 & Kim et al., 2021). Those companies have transformed traditional industries (Bloomberg, 2022 & Yu et al., 2022) and have prospects of actual growth rates (Auletta, 2014), considering the untapped market potential. Companies that demonstrate adaptability to shifts in the actual dynamic landscape or proactively instigate transformations, fostering an internal culture that facilitates innovation and top-performing technologies, are susceptible to attain elevated levels of accomplishment and exceptional performance.

In conclusion, streaming technology has revolutionized how we consume entertainment content. This dynamic industry, characterized by its real-time access and diverse modalities, has seen exponential growth, with projections indicating continued expansion. The multidimensional triadic model of innovation, technology, and performance provides a comprehensive framework for understanding the driving forces behind this industry's success.

Furthermore, our exploration of R&D investments at industry leaders like Netflix and Amazon underscores the critical role of continuous innovation in ensuring sustained profitability. Organizational culture and capital infusion emerge as critical catalysts, fostering an environment conducive to research and development activities. As we look ahead, it is evident that the streaming services industry will continue to shape the future of entertainment consumption. Companies prioritizing innovation, investing in technology, and fostering a culture of adaptability are poised for continued growth and success in this ever-evolving landscape. With the potential for untapped market opportunities, the streaming industry stands as a beacon of innovation and technological advancement, reshaping traditional modes of content consumption.

The scientific novelty of this study lies in its comprehensive examination of the innovation-technology-performance triad within the context of the video streaming services industry. By applying rigorous analytical methods to the streaming industry dataset, this research advances our understanding of how these interrelated elements shape the competitive landscape of the digital entertainment sector. Integrating case studies, statistical analysis, and theoretical frameworks offers a nuanced perspective that transcends conventional examinations of business performance. This approach provides actionable insights for industry practitioners and contributes to the academic discourse surrounding the pivotal role of innovation and technology in contemporary business models. As such, this study stands at the forefront of research endeavors to unravel the complexities of the digital streaming revolution, offering practical value for industry decision-makers and conferring new perspectives on the dynamics of innovation and technology in today's highly competitive market.

In this rapidly evolving landscape, industry players must remain at the forefront of technological innovation. This entails substantial investments in research and development and cultivating a corporate culture that embraces change and creativity. As the demand for high-quality, on-demand content continues to increase, companies prioritizing user experience and staying attuned to modern technologies will be best positioned to capitalize on this expanding market. The multidimensional triadic model is a guiding compass, illuminating the intricate interplay between innovation, technology, and performance.

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