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GAME STREAMING PLATFORMS AND THEIR IMPACT ON THE DEVELOPMENT OF ESPORTS AS A NEW SPHERE OF UKRAINE'S DIGITAL ECONOMY

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**ІГРОВІ СТРІМІНГОВІ ПЛАТФОРМИ ТА ЇХ ВПЛИВ НА РОЗВИТОК КІБЕРСПОРТУ
ЯК НОВІТНЬОЇ СФЕРИ ЦИФРОВОЇ ЕКОНОМІКИ УКРАЇНИ**

Ігрові стрімінгові платформи мають значний вплив на розвиток кіберспорту як нової сфери цифрової економіки України. Вони надають можливості гравцям та командам транслювати ігрові виступи в прямому ефірі, а організаторам турнірів здійснювати трансляції ігрових турнірів та змагань. Окреслені платформи привертають нових талановитих гравців та команди, які можуть просуватися та конкурувати на міжнародному рівні. Відтак, дослідження спрямоване на вивчення функцій ігрових стрімінгових платформ та їх впливу на розвиток кіберспорту як новітньої сфери цифрової економіки України.

У межах дослідження встановлено, що в Україні розвиток кіберспорту як ендемічної сфери цифрової економіки в значній мірі залежить від ролі ігрових стрімінгових платформ. Ці платформи надають можливість гравцям-аматорам, професійним спортсменам, організаторам кіберспортивних заходів та іншим зацікавленим особам транслювати відеоігри в режимі реального часу через Інтернет. Доведено, що популярність кіберспорту забезпечує віддалений доступ до кіберспортивних змагань та індивідуальних стрімів (оскільки вони привертають увагу глядачів). Доведено, що проведення турнірів та змагань кіберспортивними організаціями на платформі можливе завдяки формуванню контенту та пов'язаних з ним можливостей організаторів для привертання уваги спонсорів. Доведено, що формування контенту сприяє професійному зростанню кіберспортсменів, оскільки воно вимагає демонстрації їх навичок та талантів перед широкою аудиторією. Формування контенту допомагає привертати увагу потенційних спонсорів, фанатів та підвищувати репутацію в кіберспортивному середовищі. Доведено, що

створення контенту сприяє залученню нових талантів і може надихати молодь, а також створює платформи для виявлення та залучення нових талантів в кіберспорт. Стрімери можуть стати прикладом для початківців та молодих гравців, надихаючи їх до професійного розвитку в цій сфері. Отримані результати дослідження створюють основу для оцінки економічного впливу ігрових стрімінгових платформ на розвиток кіберспорту в Україні. Це може включати аналіз доходів гравців, стрімерів та кіберспортивних організацій, а також вивчення ефективності різних монетизаційних моделей, таких як платні підписки, донати та реклама.

Game streaming platforms have a significant impact on the development of esports as a new sphere of the digital economy in Ukraine. They provide opportunities for players and teams to broadcast their gaming performances in real-time, and for tournament organizers to stream gaming tournaments and competitions. These platforms attract new talented players and teams who can progress and compete at the international level. Consequently, the research aims to study the functions of game streaming platforms and their impact on the development of esports as a new sphere of Ukraine's digital economy. Within the scope of the research, it is observed that in Ukraine, the development of esports as an endemic sphere of the digital economy is significantly influenced by game streaming platforms. These platforms enable amateur players, professional athletes, organizers of esports events, and other interested individuals to live stream video games over the Internet in real-time. It has been proven that the popularity of esports is driven by access to esports competitions and individual streams, which attract viewers' attention. It has also been demonstrated that esports organizations hosting tournaments and competitions on platforms can attract sponsors' attention through content creation and related opportunities. Proved, that the professional growth of esports athletes is facilitated by the creation of content that showcases their skills and talents to a wide audience. This helps them attract potential sponsors, gain support from fans, and enhance their reputation within the esports community. It has been proven that the creation of inspiring content and platforms for talent discovery and recruitment play a crucial role in attracting new talents to esports. Streamers can serve as role models for beginners and young players, inspiring them to pursue professional development in this field.

The obtained results provide a basis for assessing the economic impact of game streaming platforms on the development of esports in Ukraine. It may include analyzing the revenues of players, streamers, and esports organizations, as well as studying the effectiveness of various monetization models such as paid subscriptions, donations, and advertising.

Ключові слова: кіберспорт; ендемічна сфера; цифрова економіка; кіберспортмени; монетизація; екосистема кіберспорту.

Key words: esports; endemic sector; digital economy; esports athletes; monetization; esports ecosystem.

TARGET SETTING

Game streaming platforms have a significant impact on the development of esports as a new field in the digital economy in Ukraine. These platforms provide players and teams with the opportunity to livestream their gaming performances, while gaining access to a large audience of viewers from all around the world. Additionally, game streaming platforms stimulate the growth of communities and esports fans. Viewers can engage with players through chat and comments, exchange thoughts, offer advice on strategies and tactics, and support their favorite teams. This creates a sense of community and attracts more people to the esports environment. Thanks to game streaming platforms, esports gains wide recognition and popularity among viewers. The broadcasts of game tournaments and competitions attract the attention of a wide audience, including those who were previously uninterested in the world of esports. These platforms attract new talented players and teams who can progress and compete at an international level. The broadcasts of

Ukrainian esports tournaments and the performances of Ukrainian players attract the attention not only domestically but also internationally, which contributes to the popularization of esports with a Ukrainian focus.

ANALYSIS OF RESEARCH AND PUBLICATIONS

Currently, the majority of publications are dedicated to researching the essence of esports as a cutting-edge field in Ukraine's digital economy or the specifics of its development. Among those who have studied this issue are researchers such as Hobyk V.V., Horova K.O., Horoviy D.A., and Kiporenko O.V. Indeed, the development of esports is closely tied to the growth of game streaming platforms, which provide players, teams, and organizations with the ability to broadcast their matches, build communities, and interact with viewers. These platforms play a crucial role in expanding the reach and engagement of the esports industry. Correct, researchers such as Suska O.O. and Kolchar Supita have indeed emphasized the

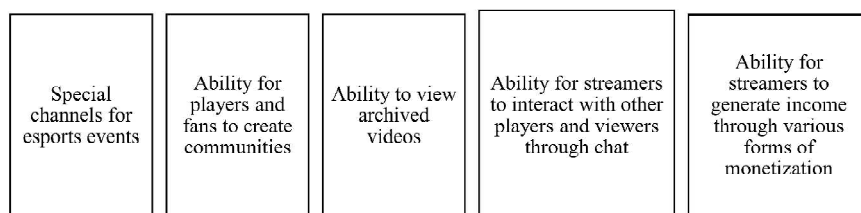


Figure 1. Functions of game streaming platforms and their impact on the development of esports as a cutting-edge field in the digital economy

Source: formed based on [1; 4; 6].

significance of studying the role of game streaming platforms in the context of modern esports. However, despite this growing interest, scientific research specifically focused on understanding the content of game streaming platforms within the realm of contemporary esports is still relatively limited in scope.

THE WORDING OF THE PURPOSES OF ARTICLE (PROBLEM)

The purpose of the article is to investigate the functions of game streaming platforms and their impact on the development of esports as a cutting-edge field in Ukraine's digital economy.

THE PAPER'S MAIN BODY WITH FULL REASONING OF ACADEMIC RESULTS

Esports is actively developing in Ukraine and has emerged as an endemic sector of the digital economy. In this process, game streaming platforms play a significant role, which, within

the scope of this research, are interpreted as online services that allow amateur players, professional athletes, organizers of esports events, and other interested individuals to livestream video games in real-time over the Internet. In this context:

1. Streamers utilize specialized software to capture their gameplay and broadcast it live on the platform. For example, OBS (Open Broadcaster Software) and XSplit are software tools used for streaming and recording video from a computer screen.

2. Viewers can watch the gameplay in real-time, leave comments, interact with the streamer through chat, send donations, or subscribe to the streamer's channel to support their content.

These features are facilitated by the multitasking capabilities of game streaming platforms. They provide numerous functions, the main ones of which are listed in Figure 1.

So, let's examine the highlighted functions of game streaming platforms and their impact on the development of esports in more detail. Specifically:

1. Ability to create special channels for esports events. This enables esports organizations, teams, and tournament operators to stream their matches, attract viewers, and host content specific to esports.

The main advantages of special channels for esports events on game streaming platforms include (Table 1). convenient access to esports content, professional

Table 1. The main advantages of special channels for esports events on game streaming platforms

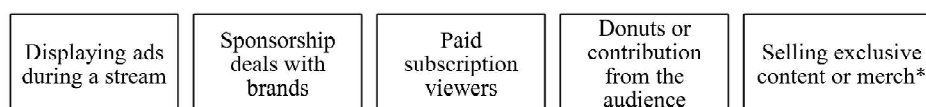
Main advantages	Characteristics of benefits	Impact on the development of e-sports in Ukraine
Convenient access to esports content	Special channels for esports events allow for easy discovery and viewing of esports matches, tournaments, and other events that take place on dedicated channels.	This ensures the convenience of consuming content and increases audience engagement.
Professional broadcasting	Special channels for esports events provide a variety of tools and features for professional broadcasting of esports events. This may include high-quality streaming, commentators, production decisions, graphics, and other elements that create an engaging and captivating broadcast.	
Audience engagement	Special channels for esports events attract viewers who are actively interested in esports.	This creates an environment for viewer interaction, discussing matches, supporting teams, and more.
Brand promotion	These channels provide esports organizations, teams, and tournament operators with the opportunity to build their brand and attract sponsors*.	
Interaction with viewers	Special channels enable active interaction with the viewers of esports events. Viewers can leave comments, ask questions, express their impressions, and show support in the chat or through other interactive features on the platform.	This fosters the building of a community around esports and increases viewer engagement in events.
Support for archived content	Special channels provide the ability to store and access archived videos of esports events. This means that viewers can watch recordings of previous matches, tournaments, and other exciting moments they may have missed.	This provides access to content even after the live stream has ended.

Note:

*As a channel becomes popular and has a large audience, it attracts the interest of companies that want to advertise their products or services during esports events.

Source: formed based on [1; 2; 4].

Figure 2. Main forms of stream monetization for esports organizations, esports players and other interested parties



Note

* Merch is T-shirts, hats, badges and other items with the logo, which certify belonging to a particular gaming community, e-sports team or brand.

Source: formed based on [2; 3].

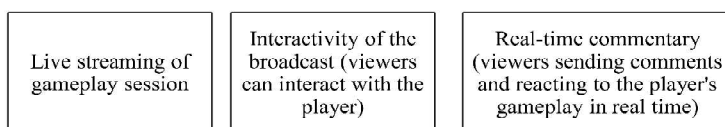


Figure 3. Key features of game streaming and its content on gaming streaming platforms

Source: formed based on [3].

fans can discuss their favorite games, exchange strategies, share impressions of matches and tournaments, and engage with both professional esports athletes and amateur players.

3. The ability to watch archived videos allows viewers to watch videos later when they have missed the live broadcast. This enables viewers to watch videos from popular tournaments,

player performances, and other content that they may have missed in real-time.

4. The ability for streamers to interact with other players and viewers through chat provides active communication, exchange of thoughts, questions, and interaction among stream participants.

5. The ability for streamers to earn revenue through various forms of monetization is an important aspect of streaming for esports organizations, esports athletes, and other interested parties (Fig. 2).

Therefore, among the main forms of stream monetization for eSports organizations, esports athletes and other interested parties are:

— Displaying ads during a stream. This opportunity arises because streamers have the ability to display

broadcasting, audience engagement, brand promotion, interaction with viewers, and support for archived content.

These features of special channels for esports events help enhance the esports ecosystem. Organizations, teams, and tournament operators can utilize these channels to promote their competitions and raise their profile within the esports industry.

2. The ability for esports players and their fans to create communities where they can discuss games, esports events, share thoughts, and communicate is facilitated by the presence of social interaction features on gaming streaming platforms. These features often include chat functions, comments, forums, and dedicated sections for communication. This stimulates interaction and fosters the development of an esports community where players and

Table 2. Features of game streaming on gaming streaming platforms and their impact on the development of esports as a new sphere of Ukraine's digital economy

Types of streams	Specificity of content	The release of streams on the development of e-sports
streams of professional players	Professional players livestream their training sessions, gameplay, and participation in tournaments.	Streaming allows fans to familiarize themselves with esports disciplines, professional players, and gain insights into the game.
tournament streams	Esports tournament organizers livestream them in real-time.	Streaming allows fans to stay up-to-date with esports events and observe matches across various esports disciplines.
streams of other esports events	Organizers of major esports events (such as world championships, majors, or leagues) livestream them in real-time.	Streaming enables fans to stay informed about the intricacies of gameplays and matches across different esports disciplines.
streams of sports analysts and commentators	Analysts and commentators create streams dedicated to game analysis, strategies, matches, and esports events analysis worldwide.	
trainer streams	Coaches livestream streams where they share their experience, teach players strategies, analyze gameplay, and help develop skills.	Streaming is beneficial for both amateur players and professional esports athletes who aim to improve their gameplay and receive valuable advice.
streams of amateur gamers	Amateur gamers showcase their gameplay, interact with viewers, and engage in informal conversations.	This allows the creation of a community of players who are interested in specific games (which are esports disciplines) and interact with each other.

Source: formed based on [1; 3; 5].

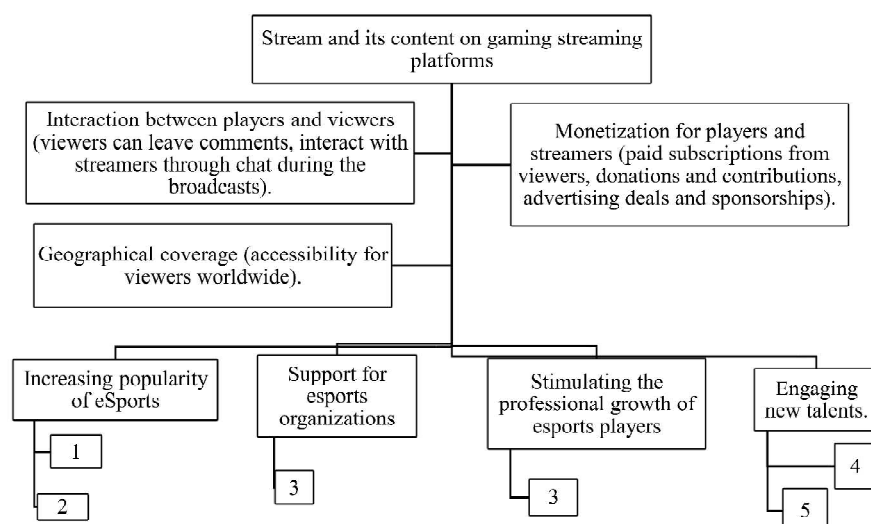


Figure 4. Scheme of influence of gaming streaming platforms on the development of eSports in the new sphere of digital economy of Ukraine*

Note:

*Directions of influence: (1) access to esports competitions; (2) access to individual streams; (3) content creation; (4) creation of content that can inspire youth; (5) forming a platform for discovering and engaging new talents in esports.

Source: formulated by the author.

advertisements during their streams. These can include platform ads, sponsorships, or commercial videos played during breaks in the stream. Cyber athletes earn revenue based on factors such as the number of views or interactions with the advertising content;

— Sponsorship deals with brands. This opportunity arises because streamers can enter sponsorship agreements with brands to display logos, links, or special content on their streams, as well as engage in joint advertising. Cyber athletes, esports teams, and esports clubs receive fees for such sponsorship agreements;

— Paid subscription viewers. This opportunity arises because game streaming platforms offer paid subscriptions that viewers can purchase to gain certain privileges and exclusive content. One example of viewer subscriptions can be found on the popular platform Twitch. They have a partnership and affiliate program that allows streamers to offer paid subscriptions to their viewers;

— Donuts or contribution from the audience. They can involve monetary contributions that viewers send through specialized platforms or services such as PayPal, Patreon, or other payment systems. This opportunity arises because viewers can send messages of support or expressions of gratitude along with their donations;

— Selling exclusive content or merch. This opportunity arises because streamers have the ability to provide and sell exclusive content (gameplay recordings, tips and strategies, tutorials, video lessons, or even personal exclusive meetings or training sessions) or merchandise (t-shirts, hats, badges, and other items with their logo) to generate additional income. In Ukraine, for example, many professional esports athletes and streamers have their own online stores where they sell t-shirts, hats, posters, stickers, and other goods featuring their brand. Fans can purchase these items as a way to express their support and affiliation with the community of their favorite esports player or team.

Regardless of the form of income, they allow streamers to earn money from their streams and content, provided that the stream and its content have the distinctive features outlined in Figure 3.

Stream — is a real-time transmission of video or audio information over the Internet. In the context of esports and video games, a stream refers to a type of live video broadcast of gameplay or other related content that is streamed in real-time. It has a significant impact on the development of esports (Table 2).

In particular, the types of influences vary across different types of streams, including those created by professional players, esports event organizers (tournament streams, streams of other esports events), analysts and commentators, coaches, and casual gamers.

Therefore, among the features of streaming and its content that influence the development of esports as a cutting-edge sector of the digital economy, we have identified the following [3]:

1. Real-time streaming of training or competitive gameplay sessions, allowing viewers to observe esports athletes, amateur gamers, and coaches during matches or competitions, follow their actions, and interact with them through chat or other platform features.

2. Interactive streaming, enabling viewers to engage with esports athletes through chat, comments, or special platform functions.

3. Real-time comments, where viewers send comments and react to a player's gameplay in real-time. This allows esports athletes to receive instant feedback from their audience and respond to their comments or requests during the stream.

Therefore, the identified features of gaming streaming platforms form the following scheme of their impact on the development of esports (Figure 4).

Based on its content, it is evident that the main areas of influence of such platforms on esports are: (1) the popularity of esports (facilitated by access to esports

competitions and individual streams that attract viewers' attention); (2) hosting tournaments and competitions for esports organizations on the platform (aided by content creation and the associated opportunities for organizers to attract sponsors); (3) professional growth of esports athletes (supported by content creation that showcases skills and talents to a wide audience); (4) attracting new talents (facilitated by creating content that can inspire youth and platforms for discovering and engaging new talents in esports).

CONCLUSIONS FROM THIS STUDY AND PROSPECTS FOR FURTHER EXPLORATION IN THIS AREA

The research findings highlight that in Ukraine, the development of esports as an endemic sector of the digital economy is significantly influenced by the role of game streaming platforms. These platforms enable amateur players, professional athletes, esports event organizers, and other interested individuals to livestream video games in real-time over the Internet. The main areas of influence of such platforms on the development of esports are as follows:

1. Popularity of esports, facilitated by access to esports competitions and individual streams that attract viewers' attention.

2. Hosting tournaments and competitions by esports organizations on the platform, made possible through content creation and the associated opportunities for organizers to attract sponsors' attention.

3. Professional growth of esports players, facilitated by creating content that showcases skills and talents to a wide audience. This helps them attract the attention of potential sponsors, gain support from fans, and enhance their reputation within the esports community.

4. Engagement of new talents through the creation of content that can inspire young individuals and platforms for discovering and attracting new talents to esports. Streamers can serve as role models for beginners and young players, inspiring them to pursue professional development in this field.

The obtained results create a basis for assessing the economic impact of gaming streaming platforms on the development of esports in Ukraine. This may involve analyzing the revenues of players, streamers, and esports organizations, as well as studying the effectiveness of various monetization models such as paid subscriptions, donations, and advertising.

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