universität wien

MASTER THESIS

Titel der Master Thesis / Title of the Master's Thesis

Inside-out of Video Games in the View of Law

verfasst von / submitted by

Viktor Kasatkin.

angestrebter akademischer Grad / in partial fulfilment of the requirements for the degree of

Master of Laws (LL.M.)

Wien, 2022 / Vienna 2022

Studienkennzahl lt. Studienblatt / Postgraduate programme code as it appears on the student record sheet:	A 992 628
Universitätslehrgang lt. Studienblatt / Postgraduate programme as it appears on the student record sheet:	International Law
Betreut von / Supervisor:	emer. Univ.-Prof. Dr. Friedl Weiss

TABLE OF CONTENT

INTRODUCTION 4
CHAPTER I: DEFINING AND CLASSIFYING VIDEO GAMES. 7
1. Concept of a video game 7
1. Legal qualification of video games 11
Concluding Remarks 20
CHAPTER II: VIDEO GAME CONTENT: ELEMENTS AND THEIR CLASSIFICATION 22
1. Classification of Video Game Elements 22
2. Criteria for the Protectability of the Video Game Elements 24
3. Audio-visual Displays of Video Games 28
4. Computer Programs Inside Video Games 34
5. Elements of a Video Game as Objects of Industrial Property 42
6. User-generated Content 47
CHAPTER III: VIRTUAL WORLDS AND VIRTUAL PROPERTY 51
1. Explaining Virtual Property 51
1. Property Law Approach 53
2. Contract Law Approach 57
3. Application of Blockchain Technology in the Gaming Industry 58
Concluding Remarks 61
CONCLUSION 63
BIBLIOGRAPHY 66
ABSTRACT 73

Abbreviations

3D	Three-dimensional space
DAO	Digital decentralized autonomous organization
Dapp	Decentralised application
ECJ	The European Court of Justice
EU	The European Union
HUC	HunterCoin
NFT	non-fungible token
UK	The United Kingdom of Great Britain and Northern Ireland
US	The United States of America
VR	Virtual reality
WIPO	The World Intellectual Property Organization

Introduction

Over the past few decades, the video game industry has become one of the fastest growing and most profitable in the world. According to data for 2020, the global market for the video game industry amounted to approximately 143 billion US dollars, and by 2023 this figure is projected to reach 218 billion US dollars.[1] At the same time, the competing film industry, whose size in 2019 reached about $ 50 million, dropped to $13 billion in 2020[2]. The average annual growth rate of the video game industry is about 9 percent. At the same time, the COVID-19 pandemic had a positive impact on this growth. Thus, the growth in the number of active video game users in 2020 exceeded the annual average by 17 percent, the growth in the number of mobile game installations increased by 84 percent, and the total share of video game users in 2020 amounted to 2.7 billion people.[3]

With the development of cloud technologies, virtual and augmented reality technologies, "5g" generation networks, with an increase in the number of business models for monetization of games, distribution channels, as well as the types of video games themselves, approaches to the legal regime of video games and its individual elements as objects of intellectual property are also being transformed.

Despite such intensive growth and technological development of the gaming industry, many aspects related to the legal regulation of video games remain problematic, including at the level of the legal regime of a video game as an object of intellectual property, the legal status of video game elements and in-game property. There is a need to establish their legal regulation. However, the differences between video games and other intellectual property objects have led to difficulties in determining the legal regime that best meets their specifics. There is still no well-established approach among researchers to determine what a computer game is.

Currently, video games are not just simple computer programs. Video games include many constituent elements. This distinguishes modern video games from their predecessors – and at the same time reflects a greater number of specialists engaged in development, as well as a greater

[1] Newzoo Global Games Market Report 2020 // Available at: https://newzoo.com/insights/trend-reports/newzoo-global-games-market-report-2020-light-version/ (last visited 1 June 2022)
[2] Newzoo Global Games Market Report 2020 // Available at: https://newzoo.com/insights/trend-reports/newzoo-global-games-market-report-2020-light-version/ (last visited 1 June 2022)
[3] Newzoo Global Games Market Report 2020 // Available at: https://newzoo.com/insights/trend-reports/newzoo-global-games-market-report-2020-light-version/ (last visited 1 June 2022)

number of creative elements, many of which claim legal protection. On the other hand, it may seem that video games cannot receive copyright protection, since it excludes the protection of ideas, concepts, systems and methods, while video games are based on them.

Every year the number of disputes related to the violation of rights to video games increases. In the context of ambiguous legal regulation, it is becoming increasingly difficult to resolve emerging practical issues related to this area. This leads to a high degree of relevance of research aimed at the theoretical substantiation of the position of computer games in the existing system of intellectual property objects, as well as practical studies that allow solving problems of law enforcement.

Thus, the purpose of this work is to determine the legal regime for the protection of a video game, the most suitable for it as a whole as a single object, and the features of the legal regime of its individual elements.

In accordance with the purpose of the thesis, the following tasks are set:

- study of approaches to the legal qualification of a video game and determination of the legal regime of a video game as a whole;
- description of existing and possible classifications of individual elements of video games that make up the complex structure and content of video games;
- description of the legal aspects of the legal regime for the protection of individual elements of video games and in-game property;

The main sources used are relevant legislation, educational literature and publications in periodicals. At the same time, the international, supranational and national of various jurisdictions acted as the regulatory framework. The empirical basis, in turn, is represented by judicial practice.

The subject of this study is the relevant international and national legal norms, as well as the characteristics of video games as an object of intellectual property subject to legal protection presented in the doctrine.

The scientific novelty of the research consists in a comprehensive analysis of the legal regulation of rights to a video game as a complex object, computer program, audiovisual work, while additionally considering the status of individual elements of a video game, separately highlighting the legal qualification of relations related to virtual game worlds. Based on the

analysis of specialized literature and judicial practice, various points of view are considered, revealing the essence of a video game, the content of rights to it and ways to protect them.

The results of the work will allow us to apply the content of the conceptual provisions of the institute of intellectual property rights and justify new approaches to its further development.

It is assumed that this work in scientific and practice-oriented, applied purposes can be used for:

- further study of approaches to the definition of the legal regime of a video game as an object of intellectual property;
- study of certain aspects of the legal protection of the video game and its individual elements;
- systematization of existing approaches to the legal protection of video games;
- comparison of the results of this study with transformed and new approaches to the legal protection of individual elements of video games.

In accordance with the purpose and objectives, the thesis is structurally divided into three chapters. The first chapter is devoted to the analysis of approaches to the video game as a whole as an object of intellectual property, as well as the classification of its elements. The second chapter follows logically from the first and is devoted to the analysis of aspects of legal protection of individual elements of video games. The third chapter examines the features of virtual worlds and focuses on finding the optimal approach to the definition and regulation of in-game property.

Chapter I: Defining and classifying video games.

1. Concept of a video game

The variety of video games is incredibly great. This raises a lot of questions about their definition. At first glance, it is difficult to detect a direct similarity between a game with a text interface and a game that requires VR equipment. The differences between a flight simulator and a word game seem much more obvious than the similarities.

The lack of in-depth research in this area has led to a situation where the very definition of a video game is the subject of controversy. Is it necessary to consider video games as a continuation of cinema or television? Are they derived from other, "non-video" games? Do we need to define them as unique objects?

There are three main approaches to the definition of video games.

In the context of the first approach, video games are considered as a new form of storytelling. Thus, video games are placed in the same category as literature and cinema, although it is noted that their "representative character differs from other types of narration."[4] Indeed, the plot of the game often follows a certain story that develops as you progress through various game tasks.

At the same time, we should focus on whether the narrative element is something distinctive for games, or whether they are simply a combination of various forms, including narrative ones. However, following a certain narrative is not mandatory for video games. For example, Tetris (same as its video versions) does not contain any plot, but it does not cease to be a video game. The same can be said about dance and music games, which involve not a story, but sensory-motor actions. Moreover, in some games, the story can be left out in some games without affecting the gameplay.

As a counterargument, proponents of the narrative theory provide a broader understanding of the narrative in principle. For example, Tetris can be considered as a "kinetic narrative", since this game consists of consecutive events to which the concepts of success and defeat can be applied[5]. Despite this unusual approach, this position seems to be incorrect, since it makes the concept of narration too vague.

The second approach to the consideration of the essence of video games emphasizes their obvious gaming nature. Many of the founders of this approach were video game developers.

[4] Murray J. Hamlet on the Holodeck. Cambridge, MA: MIT Press, 1998. P. 52.
[5] Poole S. Trigger happy: the inner life of videogames. L.: Fourth Estate, 2000. P.108.

Therefore, this position is more in line with the practice of game development, focusing on their functional aspects rather than on the narrative element. Within the framework of this concept, researchers associate video games with earlier game forms, aiming to show that they reproduce many formal structures of traditional games in a new digital environment. They give different definitions of the game: "fictional, unpredictable activity with rules, with limitations in time and space, and not creating obligations."[6] "A game is a voluntary interactive action in which one or more players follow rules that are designed to limit the freedom of their behavior, creating an artificial conflict that eventually leads to quantitative results of the parties."[7] It is also pointed out that traditional games include rules, variables and quantifiable results, as well as the attachment of the result to the actions of the player.[8]

This can also be objected. Many video games do not provide for following the rules of traditional games. It is noteworthy that the theorists of this approach themselves recognize that games in which the player simply builds a city (Simcity, Skylines) do not fully meet the requirements of a traditional game, since they do not include a qualitative or quantitative goal.

The third popular approach calls video games "interactive fiction". The essence of this approach is that the game provides us with some fictional reality, a fictional world in which the objects offered by the game exist and which works according to its own laws, which may differ from reality.[9] The interactive element is that the player's actions advance the plot.

However, if we break this approach into components, we will see that it is also not ideal. The game may not be based on fictional events. A number of historical-oriented games are created on the basis of real historical events (although sometimes they follow the original very remotely), so they cannot be called completely fictional. Moreover, if we consider other categories of video games, even more questions arise. For example, it is difficult to talk about the existence of a fictional reality in relation to games where you need to assemble a mosaic. The same can be said about any puzzle games that are based on real physical laws or mathematical patterns.

As may be seen, each of the above concepts has its disadvantages, although it is undoubtedly based on facts. Therefore, it is worth trying to define video games through their division into separate, but interrelated components.

It seems to be reasonable to point out that a video game is still a game. Taking into account the arguments we have expressed against the classical understanding of video games as a new

---

[6] Caillois R. Les jeux et les hommes. Gallimard, 1967. P. 211.
[7] Zimmerman E. Narrative, Interactivity, Play, and Games. Cambridge, MIT Press, 2004. P. 37.
[8] Juul J. Half Real: Video Games between Real Rules and Fictional Worlds. Cambridge, MA: MIT Press, 2005. Pp.36-43.
[9] Walton K. Mimesis as Make-Believe: On the Foundations of the Representational Arts. Cambridge, Mass: Harvard University Press, 1990. P. 154.

expression of "traditional" games, we can use the approach of Wolfgang Kramer, who distinguishes "games with rules" from the general concept of games.[10] He puts forward two sets of criteria to distinguish "games with rules" from others. Each game is characterized by the acquisition of common experience, equality of players, freedom, activity and immersion in the world of the game. For "games with rules", additional features are highlighted: there are certain rules of the game and its purpose, as well as the competition of players. Thus, any video game will be a game, at least in a broad sense.

In addition, the fact that some of the long-existing games (for example, chess) can be easily transferred to the form of a video game also plays in favor of this approach.[11] The rules and appearance of the game pieces will be preserved, the only difference will be their virtualization – they will be presented only on the screen, and not as real objects.

Secondly, it should be pointed out that a video game functions on the basis of software – and, as its name implies, functions on a computer. The definition of "computer" and its concept includes can be found in legislation. For example, the US Code of Laws states that the term "computer" means an electronic, magnetic, optical, electrochemical or other high-speed data processing device performing logical, arithmetic or storage functions, and includes any data storage or communication means directly connected or jointly functioning with such a device.[12] At the same time, the term "computer" does not include automated printing devices, portable hand calculators and other similar devices. A shorter definition of a computer is given in the Uniform Computer Information Transactions Act[13], where a computer is defined as "an electronic device that accepts information in digital or similar form and manipulates it for a result based on a sequence of instructions." EU legislation widely uses the term "computer", but there is no legal definition of it. Probably, the European legislator proceeded from the generally accepted understanding of what a computer is from a technical point of view.

For example, the Russian legislation also does not define a computer. Moreover, in Russia, in relation to computer programs, the legislator uses a different term – programs for electronic calculating machines. Based on the wording of Article 1261 of the Civil Code of the Russian Federation[14], an electronic calculating machine refers to computer devices ("a program for

---

[10] Kramer W. What Is a Game? // The Game Journal, December, 2000. Available at: http://www.thegamesjournal.com/articles/WhatIsaGame.shtml (last visited 16 July 2022)

[11] Grosheide F. W., Roerdink, H., and Thomas, K., Intellectual Property Protection for Video Games: A View from the European Union // Journal of International Commercial Law and Technology, Vol.9 No.1 (January, 2014). Available at: https://media.neliti.com/media/publications/28815-EN-intellectual-property-protection-for-video-games-a-view-from-the-european-union.pdf (last visited 16 July 2022)

[12] 18 USC § 1030(e)(1) Available at: https://www.law.cornell.edu/uscode/text/18/1030 (last visited 16 July 2022)

13 § 59.1-501.1. Uniform Computer Information Transactions Act

[14] The Civil Code Of The Russian Federation Part Four No. 230-FZ of December 18, 2006

electronic calculating machines is a collection of data and commands presented in an objective form intended for the functioning of an electronic calculating machine and other computer devices"). The definition of an electronic calculating machine can be found in the state standard of the USSR “Software support of information processing systems. Terms and definitions". According to it, an electronic calculating machine is a calculating machine whose main functional devices are made on electronic components. The concept proposed by this state standard is outdated, since in the modern world it is answered not only by computers, but also, for example, calculators.

Therefore, the concept of a computer is left to be derived by researches by themselves. A rather common opinion is that a specific feature that distinguishes a computer from a number of other technical devices is its ability to execute a certain changeable set of instructions without the need for physical reconfiguration. That is, a device can be qualified as a computer if the software of such a technical device can be changed at the discretion of the user without necessarily replacing the hardware of the device, which makes it possible to use such a device to solve a wide range of tasks.

Video games also imply that during the game there is an interaction between a person and a computer. The user uses various input devices, controllers, to perform game actions, in turn receiving audio or video images of what is happening. Using a computer as a platform for games has made it possible to complicate game worlds and automate them.[15]

This implies the following element - interactivity. Interactivity refers to the player 's ability to actively participate in the choice of their actions and the passage of the game plot.[16]

It is worth noting that none of the above approaches excludes interactivity, but simply considers it in a different way. Proponents of narrative theory point out that the appeal of video games lies in their ability to combine the interactive participation of players with the story itself.[17] From the point of view of supporters of the second approach, interactivity is a self-evident property of any games, since without it the gameplay itself will not occur.[18] As for understanding a video game as an interactive fiction, interactivity in this case is directly included in the definition itself.

Despite this, games can include many plot insets in the form of images, text or video clips that advance the narrative, and which the player has no ability to influence. That is, part of the game is already clearly non-interactive. However, the world of a video game can include many different objects. And if some of them clearly react to the player's actions, this does not mean that

[15] Juul J. Introduction to Game Time. Cambridge, MA: MIT Press, 2004. P. 142.
[16] Manovich L. The Language of New Media. Cambridge: MIT Press, 2001. P. 54.
[17] Crawford C. The Art of Computer Game Design. Available at: https://www.digitpress.com/library/books/book_art_of_computer_game_design.pdf (last visited 16 July 2022)
[18] Zimmerman E., Salen K. Rules of play: Game design fundamentals. Boston, MA: MIT Press, 2003. P. 38.

the player does not explore other material provided by the game, does not use it to search for clues.[19]

Based on this, it should be noted that video games do not offer a single level of interactivity and can use different ways of interacting with the player. Also, the criterion of interactivity cannot be considered as determining in itself, since paper games, military or commercial flight simulators - they all assume interactivity (and moreover, sometimes they are fully interactive inventions), but are not video games.

The next element is the goal of developing video games – their entertaining nature. This will make it possible to distinguish between video games and similar objects with more practical purposes. These include military and commercial flight simulators, virtual museums and desktop computer assistant applications. It should be noted that although all of the above can be used for entertainment purposes, this is not their direct purpose. In addition, the entertainment character must be present precisely as the intended (and not already achieved) result in order to cover games that, although intended for entertainment, are not at all entertaining because of their shortcomings.

As an additional element, you can highlight the plot. This element is not mandatory, because in a number of games (for example, in Tetris or in mosaics), the plot may be absent.

Thus, there can be formulated a somewhat universal definitions of a video game: a game that functions on the basis of software that uses a computer as a platform, in the use of which the user is actively involved in an entertainment process that can follow a certain plot.

1. Legal qualification of video games

The legal regime of a video game as an object of intellectual property still remains one of the most debated topics in the scientific community. This is due to several reasons. Firstly, the legal definition of a video game as an object of intellectual property is not contained either at the national level or in international regulatory legal acts. Because of this, in different jurisdictions, depending on the established practice of law enforcement and legislative interpretation of the legal definitions of various intellectual property objects, video games are qualified as intellectual property objects in different ways. Secondly, neither in international nor in national norms are video games protected by the sui generis regime. Thirdly, disputes regarding the legal qualification of video games are caused by the complex factual nature of the video games themselves. Video games include a software component (the underlying computer program running the video game),

[19] Newman J. Videogames. New York: Routledge, 2005. P. 15

an audiovisual part (fixated images) and other elements that are various objects of intellectual property with their own unique characteristics. Approaches to legal qualification of video games vary depending on which element is given the greatest preference. In this regard, in a number of national legislations, for example, in Germany, video games can be protected both as computer programs and as audiovisual works[20]. And finally, approaches to the qualification of video games as objects of intellectual property are closely related to the development of the gaming industry. In particular, with the progress of the general scientific and technical level of video game production, due to which rendered certain approaches become obsolete, while others confirm their relevance and compliance with the modern realities of video game production. So, if previously all video games were simple computer programs, today they are often highly complex objects.

It is also believed that video games belong to the category of audiovisual works, claiming that they are a fixed series of interconnected images. There is also judicial practice confirming this point of view[21].

Thus, in the U.S., a country with the largest gaming industry, there is no uniform legal approach to qualification of video games. The legal protection regime depends on the specific circumstances of the cases. The technical characteristics of the video game specified during registration with the US Copyright Office are also taken into account. According to the Collection of Practices of the US Copyright Office, which is the official guide to the registration of copyright objects, registration of a video game as an object of copyright is possible both as a computer program and as an audiovisual work as they consist of different forms of expressions in digital format establishing the visual element of video games. It is possible to register program code underlying the video game as a literary work and at the same time the video game can be registered as an audiovisual work[22] if the displayed audiovisual material prevails on the software component, In disputes concerning the protection of rights to the program code that forms the basis of a video game, a video game is considered as a literary work, in particular as a computer program[23].

The legal definition of an audiovisual work in the USA can be divided into the following main features. Thus, according to Section 101 of the US Copyright Act, an audiovisual work is: 1) a series of related images, 2) intended to be shown by the use of machines, or devices, 3) with

---

[20] The Legal Status of Video Games: Comparative Analysis in National Approaches / Mr. Andy Ramos, Ms. Laura López, Mr. Anxo Rodríguez, Mr. Tim Meng and Mr. Stan Abrams Available at: https://www.wipo.int/export/sites/www/copyright/en/activities/pdf/comparative_analysis_on_video_games.pdf (last visited 27 July 2022)

[21] Compendium of U.S. Copyright Office Practices // Available at: *https://www.copyright.gov/comp3/* . (last visited 27 July 2022)

[22] Compendium of U.S. Copyright Office Practices // Available at: https://www.copyright.gov/comp3/ (last visited 27 July 2022)

[23] S. Gregory Boyd, Sean F. Kane, Brian Pyne. Video Game Law: Everything you need to know about Legal and Business Issues in the Game Industry. CRC Press, 2018, c. 21–22.

or without sound accompaniment, 4) regardless of the type of material carrier of such a work. To be applied correctly, this definition required certain interpretation by the courts, namely whether audiovisual elements of video games created by a computer program can be copyrighted and how exactly should they be fixated.

The issues of elements' copyrightability was resolved in Stern case[24] where the court stated that audiovisual display of a computer program should be fairly protected along with other copyrightable objects, thus it became possible to register video games as audiovisual works.

The matter of fixation requirement, which arises from the fact that video games are interactive and the end users by their actions determine the actual display, unlike in e.g. films, was cleared in the case of Midway Mfg Co v. Arctic International Inc[25]. That decision allowed to apply legal regime of audiovisual works to video games in full. The court in this case pointed out that an audiovisual work can be considered both as fixed, sequentially connected images, and images expressed in the absence of a certain sequence, but representing some unity. Video games, due to the peculiarities of their architecture and interactivity, represent a kind of unity, since a fixed sequence of displaying images is rarely inherent in video games.

However, this very fact that users' input into the gameplay is determines the display led to discussions whether the players can be considered the real authors of the game – not the game developers. In Midway Mfg. v. Artic International case[26] the court viewed players' actions as non-creative so far as they did not control the appeared images and the sequence of images was pre-determined by the developers to extent it was possible.

Other common law countries have a similar position, but do not qualify video games as computer programs, depending on the circumstances of the case. Thus, video games are qualified exclusively as films that are analogous to an audiovisual work in the UK[27]. The legal systems of Australia and South Africa follow the same approach.

A similar approach is used, for example, in South Korea, where video games can legally be considered as audiovisual works. At the same time, this does not mean that the computer program underlying the game is excluded from the scope of protection.

Thus, protection of computer programs in the Republic of Korea is granted in accordance with the Computer Program Protection Act of 1986[28], which defines computer programs as "works

[24] *Stern Electronics Corp. v. Kaufman*, [1981] 523 F. Supp. 635 E.D.N.Y.
[25] *Midway Manufacturing Co. v. Artic International Inc.,* [1982] 1011 F. Supp. 999 N.D. Ill.
[26] Ibid..
[27] Andy Ramos, Anxo Rodriguez, Laura Lopez, Stan Abrams, Tim Meng. The Legal Status of Video Games: Comparative Analysis in National Approaches, 2013 https://www.wipo.int/publications/en/details.jsp?id=4130&plang=EN (last visited 25 July 2022)
[28] Republic of Korea Computer Programs Protection Act (Act No. 3920. Dec. 31. 1986; As last amended by Act No. 5605 of December 30, 1998)

of a creative nature expressed in the form of a series of instructions and commands that are directly or indirectly used by a device capable of processing data, such as a computer, etc., in order to achieve a certain result"[29].

However, as a result of numerous discussions related to the expansion of the possible protection of video games, courts have begun to recognize video games as audiovisual works in cases where they meet the criteria set out in the Copyright Law of the Republic of Korea[30]. Paragraph 13 of article 2 of this Law defines a "cinematographic work" as "a work of a creative nature consisting of a series of images (regardless of whether it is accompanied by sound) that can be reproduced on mechanical or electronic devices, perceived visually, or visually and audibly." If a video game simultaneously falls under the definition of a computer program and a cinematic work, its copyright holders usually seek to protect it as a cinematic work, since in this case the game will be given stronger protection.

In the European Union which has a rather complex legal system in terms of copyright protection due to its nature as a union of sovereign states with their own legal regimes, yet rather harmonized among each other, it is not that easy to derive what status video games enjoy, however one can note directives that give an overview on how video games are regulated in the EU, in particular Information Society Directive[31], Computer Programs Directive[32] and Database Directive[33]. And of course, in this situation judicial practice of the European Court of Justice plays a major role in efforts to classify video games. While most of the countries apply different regimes to parts of video games, at the Union level however we can see approach which is more aimed at regulating video games as a whole.

For example, the case Nintendo v. PC Box[34] is a great demonstration not only of legal perception of video games but also their complexity in general. The case concerned attempts of Nintendo to protect their consoles from installing on them of illegal copies of video games (important to note that most of those “illegal” copies were not so *per se*, rather intended for different markets where Nintendo used separate pricing principles) by enhancing consoles with technological protection measures. While PC Box has created a program to override such

[29] The Legal Status of Video Games: Comparative Analysis in National Approaches / Mr. Andy Ramos, Ms. Laura López, Mr. Anxo Rodríguez, Mr. Tim Meng and Mr. Stan Abrams Available at: https://www.wipo.int/export/sites/www/copyright/en/activities/pdf/comparative_analysis_on_video_games.pdf (last visited 25 July 2022)

[30] Republic of Korea Copyright Act (Act No. 432 of January 28, 1957, as amended up to Act No. 9625 of April 22, 2009)

31 Directive 2001/2009/EC of the European Parliament and of the Council of 22 May 2001 on the harmonization of certain aspects of copyright and related rights in the information society OJ L 167, 22.6.2001

32 Directive 2009/24/EC of the European Parliament and of the Council of 23 April 2009 on the legal protection of computer programs OJ L 111, 5.5.2009

33 Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the legal protection of databases OJ L 77, 27.3.1996

[34] Case C-355/12 *Nintendo Co Ltd and others v PC Box Srl* [2014] ECLI:EU:C:2014:25

measures. The case was initially heard in Italy where the court referred to the European Court of Justice to get clarification whether the measures taken by Nintendo where adherent with the European copyright laws, in other words the ECJ had to decide on a quite broad matter: how to apply copyright laws to video games. In particular, should the underlying code and audiovisual elements of the game enjoy wholesome protection as equal and closely tied to unity elements or rather as separate objects regulated by specific EU directives. At first glance the computer program, as was intended by legislator, are regulated by the Computer Programs Directive and the audiovisual elements by the Information Society Directive. However, the ECJ looked deeper into the nature of video games and stated that videogames constitute complex matter comprising not only a computer program but also graphic and sound elements, which, although encrypted in computer language, have a unique creative value and they should be protected as the entire work, i.e. by the Information Society Directive. By saying this the court recognized that video games are actually much more than just a software displaying certain audiovisual content.

On the other hand, the court also elaborated on which of the above-mentioned directive shall be sued as *lex specialis* in such cases. While software exclusively regulated by the Computer Programs Directive, its application to video games is questionable as they consist of various different elements and therefore, in court's opinion, it would not be correct to imply the said Directive to them, which means that the governing directive for video games is the Information Society Directive.

Nevertheless, the EU members often use quite different approaches from the one stated by the ECJ. For example, French law qualifies a video game as a collective work[35]. Such a work is considered to be an object of copyright, which is created on the initiative of the organizer who carries out the subsequent distribution of the work, who does not take direct creative participation in the creation of the work. Such an object combines several works by different authors without the possibility of granting the authors involved in the creation of the work a separate right to the work as a whole. At the same time, each individual element of the video game is protected in accordance with the legal regime applicable to it. The French courts also draw attention to the fact that an audiovisual work assumes a "linear sequence of images", while the possibility of user intervention in their order excludes the required linearity.

In the German legal system, the approach is similar to the United States, since video games can be protected both as computer programs and as audiovisual works (cinematographic works in the terminology of German legislation)[36]. However, it differs in this part in the US law, a video

[35] the French Republic Law NO. 92-597 of July 1, 1992, On The Intellectual Property Code

[36] Copyright Act of 9 September 1965 (Federal Law Gazette I, p. 1273), as last amended by Article 1 of the Act of 1 September 2017 (Federal Law Gazette I, p. 3346), s. 2(1)

game as a specific object qualifies as a computer program or an audiovisual work, depending on which element of the video game is at dispute. In German law, a video game is simultaneously subject to protection as a computer program and a cinematographic work if the audiovisual displays meet the criteria for protection established by German law. Back in 1983, the German Court of Appeal refused to protect a video game as an audiovisual work because of its inherent feature - interactivity. The court ruled that players can use different approaches to the game, resulting in a different sequence of images in each case. Thus, the court considered that it was impossible to talk about the existence of predefined sequences of images[37].

As can be seen, it is the indication of the fixation of a series of images that does not allow us to unambiguously attribute video games to audiovisual works. The definition of audiovisual works is explicitly tailored to copyright objects such as motion pictures, and they imply only passive perception by the viewer. Moreover, a video game can go beyond this definition if it also includes text windows, still images, and so on[38].

When going deeper into studying the approach to a video game as a computer program we shall note that such approach exists due to the fact that at the heart of any video game is a set of instructions and operators interpreted by the hardware supporting the video game (gaming platform), designed to output a user graphical interface to the screen for the player to interact with the content of the video game. A video game, depending on the level of technical implementation, can be either a computer program or a set of computer programs and other information that is interpreted by the program to obtain the final result in the form of audiovisual displays perceived by the user.

For example, one of the first video games "OXO" (a 1952 video game, which is an analog expression of the game tic-tac-toe), "Tennis for Two" (a 1958 video game, which is a program that allows players to simulate a game of tennis, expressed in two vector lines, between which a vector dot in the form of a ball flew) they really were exclusively program code, since they had no sound accompaniment, did not assume the presence of a plot accompanied by a script, or a complex graphic design of a video game. Modern video games, in turn, assume the presence of at least all of the above elements.

One the of the first cases in the US in which a video game was viewed as a computer program was Williams Electronics Inc. v. Artic International Inc.[39], where Williams registered the

[37] Case Donkey Kong Junior [1983] OLG Frankfurt GRUR, 757.
[38] Stamatoudi I. A. Copyright and Multimedia Products: A Comparative Analysis. - Cambridge: Cambridge Univ.. Press, 2002. P.180
[39] *Williams Electronics Inc. v. Artic International Inc.* 685 F.2d 876

underlying computer program along with the audiovisual elements[40] and defendant copied both of them and created an almost identical object. Subsequently the court granted protection to both object and source code of the video game program.

It is important to note that at an early stage of the development of the video game industry, they really were merely computer programs, and its displays were audiovisual displays "generated" by the computer program itself, and not pre-created and subsequently integrated with the program audiovisual works and other visual elements of a video game created not by programmers, but by other participants in the process of creating a video game. Given the technical complexity of modern video games, audiovisual displays cannot be qualified as actually generated by the program itself, but the possibility of such interpretation of the category "generated" is also possible. The term “generated audiovisual displays” seems to be applicable in the case of classical utilitarian computer programs that do not require significant computing resources of the graphics processor hardware, the graphical user interface of which is not 3D graphics or virtual reality. The structure of the interface of utility programs and its appearance are determined by means of instructions embedded in the source, object codes of the program, and are generated by the hardware based on the interpretation of the program code itself. In relatively early video games with vector 2D graphics, the situation was exactly this way. In modern video games, graphic elements are often already created in advance with the help of special software by the creative work of the corresponding artists and designers, expressed in special digital formats, which, through a program (executable file), are activated at the right moment, depending on the interactive experience of the video game user. In other words, the video adapter or audio adapter at the right moment, at the request of the program, converts an existing, pre-created, graphic or audio file (which can be located both in the folder with the game and on a remote server), which is an instance of an existing protected result of intellectual activity, into a form that is suitable for subsequent image output to the screen of the gaming platform. These files can be replaced with other compatible files with the same name, and in this case the functionality of the program will not be lost, and the displayed element will be perceived by the user. With this in mind, the legal regime of computer programs seems applicable to video games, taking into account the peculiarities of their technical architecture. In the case of a relatively trivial actual implementation of the content and structure of a video game, it can qualify exclusively as a computer program. In the case of a complex technical nature of a video game and a multi-stage development process involving

[40] Theodore J Grabowski Jr, 'Copyright Protection for Video Game Programs and Audiovisual Displays; and - Substantial Similarity and the Scope of Audiovisual Copyrights for Video Games' (1983) 3 Loy LA Ent LJ 139, 146

various specialists whose creative work is expressed in elements other than a computer program, a video game should qualify as a complex object (multimedia product).

The key reason for existence of this concept is that a video game can actually function by virtue of the software. The software part allows you to interact with the game and control what is happening. Therefore, China, Singapore, Spain, Canada, video games are protected as computer programs[41], due to the specifics of the nature of video games and their dependence on the underlying software. Moreover, in China also online games are defined as gaming products and services that consist of software and data, and are provided through information networks such as the Internet and mobile communication networks[42], thus also treating them as software.

However, it appears that such a conservative approach does not correspond to the modern realities of video game development, considering the above-mentioned complex structure and content of modern video games and the different legal nature of video game elements. This point of view is correct if the game does not include third-party images. Then it can only be considered as a computer program. An example is exclusively text games. Nevertheless, in the modern world, almost all video games include libraries with "third–party" objects in relation to the program code - music, images.

When a video game is defined as a computer program, its audiovisual elements are considered to be of secondary importance. On the other hand, when a video game qualifies exclusively as an audiovisual work, technical components are ignored.

Additionally, the author of a computer program is a programmer or several programmers in collaboration. In other words, if a video game is recognized exclusively as a video program, then in this case it means that only a programmer is recognized as its author. In reality, modern video games, as a rule, have many authors: in addition to the programmer who develops the program code, they are also screenwriters, game designers (persons responsible for both the plot and the gameplay of the video game, whose related role is the production director in the film industry), graphic designers and composers of audio elements of the video game[43]. If a video game was qualified as a computer program from the point of view of law, their contribution to the video game being created would not be protected in any way by the norms of civil legislation, since they

[41] Andy Ramos, Anxo Rodriguez, Laura Lopez, Stan Abrams, Tim Meng. The Legal Status of Video Games: Comparative Analysis in National Approaches, 2013 // Available at: https://www.wipo.int/publications/en/details.jsp?id=4130&plang=EN (last visited 25 July 2022)

[42] Andy Ramos, Anxo Rodriguez, Laura Lopez, Stan Abrams, Tim Meng. The Legal Status of Video Games: Comparative Analysis in National Approaches, 2013 // Available at: https://www.wipo.int/publications/en/details.jsp?id=4130&plang=EN. (last visited 25 July 2022)

[43] Andy Ramos, Anxo Rodriguez, Laura Lopez, Stan Abrams, Tim Meng. The Legal Status of Video Games: Comparative Analysis in National Approaches, 2013 // Available at: https://www.wipo.int/publications/en/details.jsp?id=4130&plang=EN. (last visited 25 July 2022)

would be recognized only by the authors of those objects that were part of the video game, and not by the authors of the video game as a whole.

In addition to the above-mentioned qualification, Video games can be attributed to multimedia products. Some researchers point out that multimedia products are combinations of data and objects of various types, such as images (stationary or in motion), text, music and software[44]. An almost identical understanding is presented in the White Paper on Intellectual Property in the USA – "combinations of several different elements or types of work in a single environment. Such elements include: text (literary work), sound (musical work), still images (paintings) and moving images (audiovisual work)"[45]. In addition we can use another definition: "an object of copyright expressed in electronic (digital) form, which includes several protected results of intellectual activity (computer programs, works of fine art, musical works, etc.) and with the help of computer devices functions in the process of interaction with the user"[46].

Depending on what is primary for a multimedia product in the understanding of various researchers, they can be described as multifunctional computer systems that include works of various kinds: text, graphic, musical, audiovisual, etc., or as an ordinary work (audiovisual, literary, musical or graphic), converted into digital form using data processing tools, including software, as well as, in the vast majority of cases, a database.

All the above definitions agree on the complex nature of a multimedia product – that it combines many heterogeneous components, while acting as a single whole. However, in this case, it is not entirely clear what exactly makes it stand apart from protected objects, in particular, from an audiovisual work.

A very distinctive feature is the presence of a computer program that connects all the constituent elements of a multimedia product and allows them to exist as a single work. Images and sounds are "layered" on the program, creating an inextricably linked system that appears to the user.

In addition, its virtuality is considered as a distinctive feature of a multimedia product. It can be understood as an imitation of objective reality or a representation of the world invented by the author, as well as the expression of the result of intellectual activity in electronic form.

---

[44] Green Paper Copyright and Related Rights in the Information Society COM (95) 382 final, Brussels, July 1995 // URL: http://europa.eu/documentation/official-docs/green-papers/index_en.htm . (last visited 27 July 2022)
[45] Lehman B., Brown R. Intellectual Property and the National Information Infrastructure: The Report of the Working Group on Intellectual Property Rights United States. U.S. Patent and Trademark Office, Washington D.C., September 1995. // Available at: http://www.uspto.gov/web/offices/com/doc. (last visited 2 July 2022)
[46] E.S. Grin, Copyright in Multimedia Products, 2013 (Prospect).

Multimedia products can simulate reality (virtual museums, libraries, etc.), or display fictional worlds (video games).

Considering the essence of video games, we have repeatedly come to the conclusion that it is interactivity that is an important element that distinguishes a video game and leads to difficulties in determining its legal nature. It seems that interactivity can be recognized as the third distinctive feature of a multimedia product. This is directly related to the fact that the functioning of a multimedia product is based on a computer program. Unlike audiovisual works, a multimedia product is created for active interaction with the user. This is true for both video games and virtual museums.

Thus, those games in which audiovisual displays are created by a computer program, and not reproduced, can be considered exclusively computer programs, and not complex objects. If the audiovisual displays are reproduced and at the same time they were created earlier outside of this program, but later integrated into it, then we are talking about a complex object.

It seems that the vast majority of modern video games can be considered as a multimedia product. In practice, this is expressed in the fact that it should be considered as a complex object, that is, as a single whole. In this case, it is necessary to study how the rights are distributed among its creators, since as a result of the development of the game, a huge number of independent elements created by various people are used as a result of the development of a game.

Concluding Remarks

Thus, to conclude it is possible to come to the following. Approaches to the qualification of video games vary from jurisdiction to jurisdiction. This is due to the absence of a unifying regulatory legal act at the international level, as well as differences in legal definitions that may be suitable for video games, and their interpretation by judicial practice and doctrine. At the same time, the approaches developed in Germany, France and the U.S. look progressive, since in these countries they depend on the element of the video game in respect of which a dispute has arisen, which, taking into account the complex structure of the video game, makes it possible to effectively protect the rights to their various elements. Nevertheless, it should be borne in mind that, for example, in the legal systems of Germany and the United States, a video game can qualify as an audiovisual work, taking into account the broad interpretation of the norms governing their legal regime.

It seems that the most appropriate legal regime for video games *per se* cannot be singled out. The legal regime of each individual video game should be determined taking into account the specifics of its development. Firstly, the technical nature of the video game should be taken into

account, namely, the question should be solved whether the video game is exclusively a program code or a set of objects whose content and structure are united by a single goal. Secondly, it is necessary to take into account the circle of persons involved in the creation of a video game, as well as to determine which element the creative contribution of a particular author is aimed at creating: the video game as a whole as computer code or its separate element, for example, a script, graphic design of the in-game space, characters. This is necessary both for understanding the structure and content of a video game for correct legal qualification as an object of intellectual property, and for taking into account the property and personal non-property interests of persons involved in its creation or who organized its creation. Thirdly, in each case, it should be determined to what extent the video game and its elements meet the criteria of protection as objects of intellectual property.

It seems incorrect to single out the most appropriate legal regime for a video game. Nevertheless, it is worth noting that in the vast majority of cases that involve a plurality of objects that make up the content and structure of a video game, a video game should be subject to a legal regime of protection as a multimedia product.

Chapter II: Video game content: elements and their classification

As already noted in the previous chapter, presence of dissimilar protected objects of intellectual property in video games is determined by current level of development of the gaming industry, the participation of specialists of various profiles in the process of creating a video game, as well as desire of video game developers to create a unique interactive gaming experience for the video game user in conditions of fierce competition.

1. Classification of Video Game Elements

Conventional classification of objects of intellectual rights, which can be elements of a video game is built in accordance with the classification of protected intellectual property objects.[47] Thus, the elements of video games can be divided into objects of copyright, trademarks, objects of patent law and production secrets.

The elements of a video game that are subject to copyright protection include the video game program code, databases, a script, graphic design elements, including concept art created at the initial stages of video game development process, video game characters, and musical works. Trademarks expressed in video games include trademarks of various elements that make up a video game, for example, the name of a video game, the names of the software components of a video game, separate video game characters, phrases and sound slogans associated with the game (referred to as "catch-phrases"[48]), as well as trademarks registered in in relation to real-world objects that have found a reflection of their real image in a video game. The objects of patent rights incorporated into video games may include software elements (if this is possible in the jurisdiction in which the patent application is filed), technical solutions related to the network architecture of the software, innovative solutions in the organization of the gameplay and its elements or design, the appearance of the graphical user interface the interface of the video game, as well as the hardware inextricably linked to the video game, which makes up the interactive interface of the

[47] See: Lipson A. S., Brain R. D. Computer and Video Game Law – Cases, Statutes, Forms, Problems & Materials. Carolina Academic Press, 2009, c. 173–539; David Greenspan. Mastering the Game: Business and Legal Issues for Video Game Developers - Creative industries - No. 8. 2013 // Available at: https://www.wipo.int/publications/en/details.jsp?id=3233&plang=EN (last visited 30 July 2022); IGDA White paper // Available at: https://igda.org/resources-archive/ip-rights-whitepaper-2003/ (last visited 30 July 2022); S. Gregory Boyd, Sean F. Kane, Brian Pyne. Video Game Law: Everything you need to know about Legal and Business Issues in the Game Industry. CRC Press, 2018, c. 21–22.

[48] Mastering the Game: Business and Legal Issues for Video Game Developers - Creative industries - No. 8. 2013 // Available at: https://www.wipo.int/publications/en/details.jsp?id=3233&plang=EN. (last visited 30 July 2022)

video game. Such elements of a video game as the source code of a computer program, mailing lists for communication between the licensor and licensees of the video game, which are the contents of databases stored on the servers of the video game, and other elements that do not generally fit the criteria of protection as other objects of intellectual rights, but have a valid or potential commercial value, provided that they are kept secret from third parties.

Another proposed classification[49], set forth in the Memorandum of the International Association of Game Developers, is the division of a video game into audio elements, perceived by the user of a video game; video elements, displayed to the user of a video game; plot elements that make up the plot and the game world of a video game; video game program code. This classification is based on the identification of elements typical for most modern video games, in particular, the computer program as the basis of any modern video game and the game content perceived by the video game user, which includes audio and video elements, plot elements. However, this classification does not take into account optional elements that, if necessary, can make up the content of a video game. These include the above-mentioned production secrets, trademarks, objects of patent rights. This classification seems to be the most complete at the present stage of the development of the gaming industry.

For the purposes of describing the main aspects of the legal protection of individual elements of video games, their classification will be presented in a compromise version that reflects both the actual complex structure and content of the video game and the dissimilar IP objects that make up it. In other words, for the purposes of this work, individual elements of video games will be grouped from the basic elements of video games, depending on their specifics (from the code of computer programs and graphical user interface with its elements) to optional (industrial property, user content, production secrets), which will allow to follow the path of video game development. Thus, the classification will include computer programs, the legal protection of which is important, first of all, for persons involved in the process of its creation; audiovisual and other copyright elements of the video game, which are primarily necessary to ensure the interactivity of the video game and are perceived directly by the end user of the video game; objects of industrial property, including individualizing elements and elements protecting the content of innovative solutions involved in the video game; other elements such as user content and know-how.

[49] IGDA White paper : https://igda.org/resources-archive/ip-rights-whitepaper-2003/ . (last visited 30 July 2022)

2. Criteria for the Protectability of the Video Game Elements

However, all above mentioned elements do not receive legal protection by default, by virtue of their very existence. They must meet the criteria of protection, which may vary depending on the applicable law.

One shall begin with the analysis of copyright protection of these elements. The basics of copyright protection are contained in the Berne Convention, concluded in 1886[50]. Article 2 of the Berne Convention defines the range of protected works, and also provides an approximate list of them. In order to receive protection under the provisions of the Berne Convention, a work must belong to the field of literature, science and art, as well as be expressed in any way and in any form (however, according to art. 3 of the Convention, national legislation may not provide for the protection of certain works if they are not fixed in material form).

Other international acts in the field of copyright protection (the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS)[51], the WIPO Copyright Treaty[52], etc.) are mainly based on the Berne Convention and the World Convention, which provides for a lower level of copyright protection, allowing more States to join it.

At the level of national legislation, the provisions of these conventions are usually accepted, but the scope of protection and means of protection may differ. Let's consider how the criteria of protection capacity differ in different legal systems.

To start with, we can study auditory and visual elements. This category of elements includes musical compositions used in the process of creating the game, the game's artwork (including images of characters, game items, locations, as well as interface elements), video inserts, and text displays of the game.

Most of these objects belong to the category of works in the field of literature and art. The phonograms included in the game belong to the sphere of related rights.

To obtain copyright protection, firstly, it is necessary that the work belongs to the sphere of literature, science and art. It also requires an objective form of its consolidation (written, oral, image form). The most controversial condition for obtaining copyright protection is the requirement of the originality of the work.

---

[50] Berne Convention for the Protection of Literary and Artistic Works of September 9, 1886, completed at Paris on May 4, 1896, revised at Berlin on November 13, 1908, completed at Berne on March 20, 1914, revised at Rome on June 2, 1928, revised at Brussels on June 26, 1948, and revised at Stockholm on July 14, 1967 (with Protocol regarding developing countries).

[51] Agreement on Trade-Related Aspects of Intellectual Property Rights. 1994 // Marrakesh Agreement Establishing the World Trade Organization, Annex 1C.

[52] WIPO Copyright Treaty (WCT) (1996) TRT/WCT/001

Natural-legal justifications of copyright are typical for European countries. Therefore, the emphasis is on the individuality (originality) of the work as an expression of the author's personality. At the same time, the content of the concept of originality in the legislative acts of the EU member states is not disclosed[53].

In France, the requirements for the protectability of the work are formulated very concisely. According to the current Intellectual Property Code of 1992, "the rights of authors to all products of intellectual labor, regardless of their type, form of expression, merits or purpose, are protected"[54]. The concept of originality is formed by doctrine and judicial practice. Most often, originality is interpreted as an expression of the author's personality.

European case law has approved this approach. The decisions of the European Court, in particular, in the Infopaq[55] case and in the Painer[56] case, indicate that "an intellectual creation belongs to the author if it reflects the personality of the author." These cases laid the foundation for the use of the doctrine of "free creative choice"[57]. The possibility of choice can be said when the author was not limited to strictly defined ways of expressing the desired result. At the same time, the choice made by the author and the final result are not so important. As the court clearly points out in the Painer case, even a seemingly standard portrait photograph can be recognized as original, since in the process of its creation the author had considerable creative freedom.

The understanding of originality as a quality inherent in works created with the help of their own intellectual work was introduced at the level of the European Union in Directive "On the legal protection of computer programs"[58] and was partly aimed at softening the criteria of protection used by the Supreme Court of Germany in 1985. The decision in the Inkasso-Programm case stated that in order for a computer program to be recognized as protectable, it "must demonstrate a level that exceeds the level of an average programmer"[59]. At the same time, the German Copyright Law indicates only that the work must be a "personal individual creation"[60]. Despite the fact that at the moment this Directive has been replaced by a new one, the principles laid down in it have been preserved in the current regulatory legal acts.

---

[53] Karnell G. European Originality: A Copyright Chimera. Den Haag: Kluwer Law International, 1998. Pp. 201 – 209.
[54] Law NO. 92-597 of July 1, 1992, On The Intellectual Property Code
[55] *Infopaq International A/S v Danske Dagblades Forening* (C-5/08) EU:C:2009:465 (16 July 2009)
[56] *Painer v Standard Verlags GmbH* (C-145/10) [2011] E.C.D.R. 13 (12 April 2011)
[57] Lukoševičienė A. On Author, Copyright and Originality: Does the Unified EU Originality Standard Correspond to the Digital Reality in Wikipedia // Masaryk University Journal of Law and Technology, 2017, No 11, p. 221.
[58] Directive 2009/24/EC of the European Parliament and of the Council of 23 April 2009 on the legal protection of computer programs // Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0024&from=EN. (last visited 30 July 2022)
59 *Inkasso-Programm*—German Federal Supreme Court, 9 May 1985, GRUR 1985, 1041
60 Copyright Act of 9 September 1965 (Federal Law Gazette I, p. 1273), as last amended by Article 25 of the Act of 23 June 2021 (Federal Law Gazette I, p. 1858)

In general, the European approach is based on the fact that the decision regarding the presence or absence of the originality of the work should be decided in each specific case, taking into account all the circumstances. Since the works can be very diverse, the necessary level of creativity when creating them cannot be established unambiguously.

In order to prevent the recognition of copyrights to too wide a range of objects, the courts use the criterion of novelty, comparing works with already existing similar works in order to establish their significant similarities and differences.

The Anglo-Saxon understanding of copyright is based on the diametrically opposite position, according to which copyright is aimed at protecting the author's investment in the creation of a work.

Judicial practice of the UK before the Court of the European Union ruled in the Infopaq[61] case proceeded from the fact that a work is original if it is the result of the author's own skills and efforts. Initially, such a doctrine was called "sweat of the brow". Within the framework of this concept, the creativity of the author and the level of creative character of the work are no longer so important. This approach is aimed not at protecting the expression of the creative thought of the author, but at the efforts and labor invested by him in the creation of the work.

Consequently, the question arises about the necessary amount of skills and labor for the work to qualify for protection. This is solved as follows: in the case when the creation of a work does not require significant effort and skills, and the result is common for such a category of works (for example, a simple compilation of well-known facts[62]), no protection will be provided.

The US Supreme Court, in turn, pointed out that copyright is based on the relevant act of the legislator[63]. Recognition of the positivist nature of copyright and, accordingly, the discretion of the legislator in the formation of his system, determined a different approach - ensuring such a balance of interests of the author and society that would contribute to the development of science and art.

To obtain copyright protection in the United States, works must meet the requirements of originality and creativity (creative nature). Originality means "only that the work owes its creation to the author that is, that it was created independently, and not copied"[64]. The criterion of creativity implies the presence of "at least some amount of intellectual labor"[65].

For a long time, the dominant position was based on the recognition of the independence of the creation of the work and the absence of copying. According to the doctrine of "working

---

[61] *Infopaq International A/S v Danske Dagblades Forening* (C-5/08) EU:C:2009:465 (16 July 2009)
[62] *Cramp & Sons Ltd v Frank Smythson Ltd* [1944] AC 329
[63] *Wheaton v. Peters*, 33 U.S. 591 (1834)
[64] *Reader's Digest Ass'n v. Conservative Digest, Inc.,* 821 F.2d 800, 806 (D.C.Cir.1987*)*
[65] *Baltimore Orioles, Inc. v. Major League Baseball Players Ass'n*, 805 F.2d 663, 668 n. 6 (7th Cir.1986)

hard" that came from the UK, the "subjective" novelty of the work was enough to recognize the work as protected by copyright[66].

The opposite doctrine was called the "doctrine of creative choice", and provided copyright protection only if the minimum requirements of a creative nature were met. This approach is closer to the European tradition.

In the famous Supreme Court decision in the case Feist Publications, Inc. v. Rural Telephone Service Co.[67] the doctrine of creative choice was supported. The subject of the dispute was the borrowing by Feist Publications, Inc. of part of the directory of telephone numbers compiled by the telephone company Rural Telephone Service Co in its directory. At the same time, the borrowed directory was compiled according to the standard scheme, using the usual criteria for classifying subscribers. As a result, the court came to the decision that copyright protection applies only to the original elements of a composite work. Unfortunately, the Supreme Court did not indicate the minimum level of creativity necessary to grant copyright protection to a work, as well as the means of establishing it, limiting itself only to listing non-viable objects: these include intellectual products, the creation of which requires exclusively mechanical work, which are fully in the sphere of what is expected. It can be stated that the general standard of protection has remained quite low.

Thus, in order to talk about the protectability of a certain work, in any case it is necessary that it belongs to the sphere of literature, science and art, exists in an objective form and meets the requirement of originality (that is, it would be created by the creative work of the author himself and would be an expression of his freedom of choice when creating a work).

Applying this to the audiovisual components of video games, the following should be noted.

Musical works, regardless of whether they were written for the game to order or existed previously, will be protected if they have a creative character. In most cases, if they are not mechanical in nature or reduced to the simple use of works in the public domain or their individual elements, they will fall under copyright protection. In Germany, for example, even an insignificant level of creative contribution of a person who has processed someone else's musical work (including one that is in the public domain) is considered sufficient from the point of view of minimum standards of protection. The decisive argument in favor of low requirements is the minimum probability of re-independent creation of exactly the same work.

---

[66] Ginsburg J. C. No "Sweat"? Copyright and Other Protection of Works of Information After Feist v. Rural Telephone // Colum L Rev. 1992. No 338, pp. 339-340.

[67] *Feist Publications, Inc. v. Rural Telephone Service Co*., 499 U.S. 340 (1991).

The decoration of the game will also be protected separately if the general criteria are met. The scale of protection of visual elements of video games can be illustrated by the example of the game Battlefield 1942. It cannot be argued that the course of the Second World War is the result of the creativity of the creators of the game. The same applies to the locations and course of battles. But the way the game presents what is happening to the user, its visual elements, can be protected in accordance with copyright regulations.

At the same time, it should be borne in mind that the user interface also belongs to the category under consideration, in addition to images of characters, game items and locations.

3. Audio-visual Displays of Video Games

Commercial success of a video game is based, first of all, on the attractiveness of the game for potential players. Video game computer programs are the elements necessary to transfer the content of the video game to the player, form its technological basis, but they do not carry interest for users in themselves, since the user interacts with the content of the video game. The content part of a video game is a creative content that the video game is filled with to attract users. The content of the video game can be divided into two groups: audiovisual elements of the video game and other copyright elements of the video game. The audiovisual elements of a video game represent the audio and visual accompaniment of a video game, which is expressed in the graphical user interface of the video game as a whole perceived by the user through sight and hearing (the so-called "look and feel"[68] in the general appearance and perception of the video game), its audio accompaniment, characters, objects of fine art and other objects of copyright and related rights, audibly and visually perceived by users of video games. For the purposes of this chapter, other copyright elements are understood as the plot content of a video game, for example, a video game script, composite works in the form of databases, and other elements that meet the criteria of copyright protection as copyright works, which, however, are not a software component of a video game and do not form a direct graphic and sound expression of a video game.

The general graphical user interface, expressed in the general appearance and perception of a video game, as well as the structure, sequence and organization of the overall appearance of a video game ("structure, sequence and organization"[69]), can be considered as generated audiovisual displays of a video game (as an non-literary element of a computer program), if viewed

[68] P. Samuelson, Why the look and feel of software user interfaces should not be protected by copyright law. // Available at: http://www.foo.be/andria/docs/p563-samuelson.pdf (last visited 1 August 2022)
[69] Peter Stone, Peter Groves, Filtering the Functional out of Computer Programs 18 Business Law Review, Issue 2, c. 26; Dennis S. Karjala, COPYRIGHT LAW: Copyright Protection of Computer Program Structure, 64 Brook. L. Rev. 519 (1998). // Avaliable at: https://brooklynworks.brooklaw.edu/blr/vol64/iss2/3 (last visited 1 August 2022)

through the prism of the qualification of a video game as a computer programs. For example, in the USA, as will be shown below, judicial practice concerning computer programs has developed criteria for the protectability of graphical user interfaces and methods for comparing similar interfaces.

As for the European Union, the European Court of Justice in the case Bezpečnostní softwarová asociace – Svaz softwarové ochrany v. Ministerstvo kultury found that the reproduction of the graphical user interface does not provide an opportunity to violate the exclusive right to the program, since the graphical user interface is only part of the program that users access to use it the computer program itself, according to the applicable European directive[70], is only source and object code[71]. The European Court of Justice adheres to this position and in another case two years later came to the conclusion that if there is no borrowing of the source code, but only similarity in functional characteristics, then it is impossible to talk about a violation of the exclusive right to the program.[72] This approach is undoubtedly much narrower than the approach to the legal protection of the U.S. computer programs.

In the U.S., judicial practice has developed approaches to the extent to which the graphical user interface is protectable. The first significant case that raised issues of legal protection of the graphical user interface of the program was the 1986 case of Whelan Assocs., Inc. v. Jaslow Dental Laboratory, Inc.[73]. The plot of the case was that the defendant had created a computer program similar in functionality to the plaintiff's program, the literal elements of which did not coincide with the literal elements of the plaintiff's program. At the same time, the user interface of the two programs had a significant external similarity. The court pointed out that the idea of the program, which is not protected in accordance with the meaning of copyright, is its main function. The court, based on the description of computer programs, determined this function. Those elements of the user interface, the inclusion of which is mandatory in order for the program to perform its main function, are inoperable, because without them the program could not be used to fulfill its main purpose. In other words, their inclusion is due solely to utilitarian considerations. The same elements, the inclusion of which was not necessary for the program to perform its function, were

[70] Directive 2009/24/EC of the European Parliament and of the Council of 23 April 2009 on the legal protection of computer programs // Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0024&from=EN. (last visited 1 August 2022)

[71] *Bezpečnostní softwarová asociace– Svaz softwarové ochrany v.Ministerstvo kultury* (2010) Caseno. C-393/09. Court of Justice of the European Union, ECR I-13971.

[72] SAS Institute Inc v. World Programming Ltd //Available at::http://curia.europa.eu/juris/document/document.jsf?docid=122362&doclang=EN(last visited 1 August 2022) ; Koukal P. Graphical User Interfaces and Their Protection in the European Union. In Thomas S. Clary. Horizons in Computer Science Research. New York: Nova Science Publishers, 2018. // Available at: https://www.researchgate.net/publication/330452786_GRAPHICAL_USER_INTERFACES_AND_THEIR_PROTECTION_IN_THE_EUROPEAN_UNION (last visited 1 August 2022).

[73] *Jaslow Dental. Laboratory, Inc. v. Whelan Assocs.,* 479 U.S. 1031 (1987).

protectable, since their borrowing could no longer be due to utilitarianism, since the ability of the program to perform its main function is preserved without them, which implies their protection as an original creative expression. In relation to video games, such an approach seems inappropriate.

Firstly, the approach developed in this case was based solely on the fact that the court allocated only one function of a computer program for its application. At the same time, the vast majority of modern utilitarian programs, not to mention video games, perform many functions, which is why it is impossible for the court to isolate the only correct function that defines the idea of the program. This approach has caused serious criticism among modern researchers[74]. Secondly, even if we assume that a video game has only one main function, then it is the entertainment of the user. It is difficult to imagine a part of the user interface of a video game, the borrowing of which is due to utilitarianism in such circumstances, since there are many ways to express the user interface of a video game today.

Another significant case developing an approach to the protection of user interfaces was the case of Computer Associates International, Inc. v. Altai, Inc.[75]. The essence of the case was similar to the previous dispute described – the court had to find out whether the defendant had allowed unauthorized copying by the copyright holder of the protected elements of the plaintiff's user interface. The court developed of the abovementioned approach and proposed a three-stage procedure for comparing elements of computer programs, namely the "Abstraction-filtration-comparison" test (hereinafter referred to as the “Test”).

Abstraction consists in dividing a program into its constituent elements and arranging the resulting elements in descending order of their abstraction level, starting from the general function, tasks (and, in fact, ideas) embedded in a computer program, ending directly with elements that are forms of expression of these ideas. The purpose of this stage is to separate the form of expression of the idea from the ideas themselves. This stage is when the court follows the path of a programmer, since the creation of any computer program begins with determining the tasks that it will perform, and ends with writing the source code. Filtering consists of the subsequent screening out of unprotected program elements, which, it would seem, are protectable forms of expression of ideas identified at the previous stage of the Test. Firstly, elements are excluded, the inclusion of which in the program is solely due to utilitarianism on the basis of the merger doctrine ("Merger

[74] See: P. Samuelson, Why the look and feel of software user interfaces should not be protected by copyright law. // Available at: http://www.foo.be/andria/docs/p563-samuelson.pdf (last visited 1 August 2022); Peter Stone, Peter Groves, Filtering the Functional out of Computer Programs 18 Business Law Review, Issue 2, c. 26–28; Copyright Law. Scope of Protection of Non-Literal Elements of Computer Programs. Second Circuit Applies an "Abstraction-Filtration-Comparison" Test. Computer Associates International, Inc. v. Altai, Inc., Nos. 91-7893, 91-7935, 1992 U. S. App. LEXIS 14305 (2d Cir. June 22, 1992) // Harvard Law Review Vol. 106, No. 2 (Dec., 1992), c. 510-515.

[75] *Computer Associates International, Inc. v. Altai, Inc*., 982 F.2d 693 (1992).

doctrine"[76]). Further, the elements are excluded, the inclusion of which is due to external factors on the basis of the doctrine of "a scene to be made" ("Scène à faire"[77]). The latter exclude elements that are in the public domain in accordance with applicable law. And finally, the third and final stage of the test is already in comparing the remaining elements. It is on the basis of this comparison that the court concludes that there is a significant similarity ("substantial similarity") between the two programs and the fact of unlawful reproduction of elements of the program by the defendant.

Using this test the court, concluded that the defendant's program did contain elements similar to the plaintiff's program, however, at the filtering stage, the court recognized these similarities as the costs of functionality in writing programs, applying the doctrines of "merger" and "scène à faire" to them. In relation to the case in which it was created, the Test led to the fact that after the filtering stage, in fact, only the literal elements of the program were compared. The non-literal elements, which were potentially protectable, were excluded through the application of the merger doctrine and the "scene to be made" doctrine, which led to the rejection of the plaintiff's claims, despite the obvious similarity with the defendant's computer program. Thus, despite the formal support for the approach of protecting non-literal elements of computer programs, in fact, the Test mainly reduced the process of identifying significant similarities only to comparing literal elements.

However, despite its shortcomings, the Test still does not exclude the legal protection of non-liberal elements, and, as already noted above, supports the idea of their protection to the extent that these elements are an expression of an idea, and not the idea itself. The very idea of protecting non-literal elements is very progressive, although it is quite difficult to apply in practice. It guarantees, albeit very narrow, but still the necessary minimum amount of protection of non-literal elements of the program, which gives developers an additional guarantee of protection of the results of their intellectual activity if such elements meet the criteria of the Test. Moreover, the test was developed at a time when computer programs were just developing and, taking into account the level of technological development, the application of the doctrine of "merger" and "scène à faire" looked justified, since it seemed that the idea really often merged with the expression, and the inclusion of similar elements was conditioned by existing generally accepted practices. Today, given the wide variety of possibilities for expressing ideas in video games, with

[76] The essence of the doctrine is that if an idea can be expressed only in a certain way, then granting legal protection to the expression of this idea would mean monopolization by the copyright holder of the idea itself, which contradicts the principles of copyright.

[77] This doctrine proceeds from the fact that some works themselves imply the inclusion in them of certain elements that are conditioned by the genre of the work or are generally accepted, used by everyone. For example, in the already mentioned case Whelan Assoc., Inc. v. Jaslow Dental Laboratory, Inc. the court also came also noted that certain elements of the user interface are generally accepted in the software market.

the development of video game creation technologies, it seems that these doctrines would be used less often.

In general, if we compare the analyzed cases, it becomes obvious that even those elements that are a protectable expression of an idea may not be protected by copyright, since they are conditioned by the functionality of a computer program. Moreover, in one of the most famous cases concerning visual displays of computer programs, Apple Computer Inc. v. The Microsoft Corporation court ruled that the implementation of some parts of the user interface is "so obvious and arising from practice that in itself does not imply absolutely no creative work," but, on the contrary, providing such elements with excessive legal protection may contribute to the growth of costs for the production of other programs, which may slow down the development of the computer software industry and technical progress[78]. Nevertheless, the court noted that thorough copying of the user interface is not permissible by default, and only similarity does not mean the fact of illegal borrowing.

However, the general approach developed in these precedents is important for understanding the ideas that were subsequently reflected in the judicial practice of the United States concerning audiovisual displays of video games directly. The approach itself consists in the fact that non-literal elements are protectable only to the extent that they meet the general criteria for the protectability of copyright objects in accordance with applicable law and in which their presence in a computer program is not solely due to utility and is not obvious, arising from general practice.

At the same time, in the judicial practice of the United States, approaches to comparing audiovisual displays of video games have been developed, however, in contrast to the above-described approaches developed in relation to computer programs, in the subsequent cases described in relation to the graphical user interface of a video game, the mode of an audiovisual work was extended. One of the first significant court cases where approaches to the legal protection of visual elements of a video game were developed is the case of Atari, Inc. v. Amusement World, Inc.[79]. In this case, the alleged plaintiff (Atari, Inc.) considered the fact of unlawful reproduction of visual elements of the Asteroids video game belonging to him by the defendant (Amusement World, Inc.) in the Meteors game. The essence of this 2D game was that the player controlled a spaceship, periodically shooting at asteroids and dodging them. During the consideration of the case, the court directly stressed that the defendant had completely borrowed the idea of a video game, but copyright allows this. Further, the court identified 31 key elements of video games that

[78] *Apple Computer, Inc. v. Microsoft Corporation*, 35 F.3d 1435 (9th Cir. 1995).
[79] *Atari Inc. v. Amusement World, Inc*. 547 F. Supp. 222 (D. Md. 1982).

were a copyrighted expression of an idea. In particular, the court found that 22 visual elements of the game mechanics ("design features") were identical, for example, in both games, the player controls a spaceship, moves it along a static black background; when hitting asteroids, they crumble into smaller asteroids; as asteroids pass, there are more; as more appear the number of asteroids in both games is accelerated by sound; when receiving 10,000 points, the player gets an extra life. At the same time, 9 compared elements were recognized by the court as different, for example, in the defendant's game before the game starts, the ship takes off from the planet, the plaintiff's game starts immediately in space; the gameplay of the defendant's game is more dynamic; meteors in the defendant's game are decorated in color; shooting in the defendant's game is automatic. However, following the consideration of the case, despite the presence of 22 identical elements, the court ruled that the defendant did not commit violations, since the presence of such elements in the game is due to its idea, genre, and similarities are inevitable, since they are dictated by the idea. In fact, the court applied the "scène à faire" doctrine mentioned earlier.

The next significant case concerning visual displays of a video game is Atari Inc. v. North American Philips Consumer Electronics Corp.[80]. In this case, the alleged plaintiff ("Atari, Inc.") considered the fact of unlawful reproduction of visual elements of the video game "PAC-MAN" belonging to him by the defendant ("North American Philips Consumer Electronics Corp.") in the game "K.C. Munchkin". As in the previous case, the court, applying the "Scène à faire" doctrine, pointed out that there are similarities in the visual design of video games, for example, the design of playing fields in the form of mazes, the presence of exits outside the playing field (maze), points "eaten" by a controlled game character, and these similarities are dictated by the genre of games "maze-chase[81]". According to the factual circumstances, this case is very similar to the previous one. However, the court found that the defendant committed a violation because the game character and the non-game characters hunting him were completely identical in both games. The identical appearance of the characters and the visually displayed mechanics of their behavior could not be dictated by the genre of the game, since such a genre does not imply the presence of these characters with the same characteristics in the design of the game.

In another case concerning clone video games, namely Tetris Holding, LLC v. Xio Interactive, Inc.[82], the alleged plaintiff ("Tetris Holding, LLC") considered the fact of unlawful reproduction of visual elements of the Tetris video game belonging to them by the defendant ("Xio Interactive, Inc.") in the game "Mino". The case summary is essentially similar to the previous

[80] *Atari, Inc. v. North American Philips Consumer Electronics Corp*. (672 F.2d 607) (7th Cir. 1982).
[81] A genre of video games in which a game character must escape from a maze, bypassing non-player characters hunting him and collecting points along the way.
[82] *Tetris Holding, LLC v. Xio Interactive, Inc.* 863 F.Supp.2d 394 (D.N.J. 2012).

two, since, at first glance, the idea of the Tetris game is constructed in such a way that the form of its expression essentially merges with it ("merger") and the presence of certain visual elements is due to the very idea of the game ("Scène à faire"). Nevertheless, the court concluded that these doctrines were inapplicable, since tetris is a unique puzzle video game, and there are an infinite number of ways to express a game with the same idea, which was also stated by the defendant themself. For example, the court found that, among other things, the design and movement of the blocks are identical; the dimensions of the playing field (in square blocks); the interface for visualizing the next falling block; the visual design of filling the playing field with square blocks when losing.

In the case Spry Fox, LLC v, Lolapps, Inc.[83], the alleged plaintiff ("Spry Fox, LLC") considered the fact of unlawful reproduction of visual elements of the video game "Tripple Town" belonging to them by the defendant ("Lolapps, Inc.") in the game "Yeti Town". The Court, using the logic already traced in the previous cases presented, using the doctrines "Scène à faire" and "merger", found out which similar visual elements are dictated by the functionality and genre of games, and then proceeded to compare similar elements. In this case, the court found that the playing fields of the games and the hierarchy of the progress of in-game objects were identical, because of which the defendant had to be held accountable, but the parties settled the dispute by concluding a settlement agreement.

Practice of the U.S. courts greatly narrows the scope of legal protection provided to game interfaces. In particular, if we consider the approaches developed in relation to computer programs and their audiovisual displays, then even despite the existence of developed tests, many forms of expression of ideas are recognized by the courts as not protected due to their utility. The approach to video games is similar. However, due to their greater interactivity and entertainment nature, audiovisual elements of video games are recognized as protectable in more cases. The doctrines of "merger" and "Scène à faire" are less often applied to them, but the courts take a compromise position, leaning towards not providing excessive legal protection to the graphical user interface of a video game. This is due to the desire not to create difficulties for other market participants in the video games industry, forcing them to reinvent the wheel.

4. Computer Programs Inside Video Games

Video games are inextricably linked with hardware, technical devices, using the interface of which the user can interact with them. In order for a video game to function on a specific device,

[83] *Spry Fox, LLC v, Lolapps, Inc.* No. 2:12-cv-00147 (W.D. Wash., 2012).

regardless of its type, whether it is a personal computer, mobile phone, tablet or game console, a pre-created set of data and instructions is required, designed so that the device can interpret this information, displaying an interactive graphical user interface on the screen for subsequent interaction of the player with it. Thus, this set of data and commands, which is a predefined algorithm perceived by the central or graphics processor of the gaming device, according to which the gaming device conveys the necessary information to the user, forms the technological basis of the video game. This basis is the computer program underlying any video game. That is why the development of a video game begins with the creation of a computer program.

Programs that are components of a video game can be divided into three main categories: the game engine of the program game engine, ancillary code, plug-ins.

The game engine of the program is the basic software on which 1) the logic, physics, sound and graphics of a video game are built and 2) the ways of interaction of a video game with the platform on which the video game will be launched and its operating system, 3) the prevailing language of subsequent video game development. The game engine determines what kind of graphics the game will have (3D or 2D graphics), what level this graphics will be, how fast the graphics will be, what laws of physics and mechanics will determine the gameplay (user experience of the player), what hardware interfaces will be controlled in the video game, which platforms will work with a video game.

Examples of game engines are the multiplatform engine "Unreal Engine" used in many modern action games (examples of games: "Fortnite", "PUBG", "Unreal Tournament"), engine “Unity” used mainly for the development of mobile games (examples of games: "Angry Birds 2", "Pokémon Go", "Fallout Shelter"), engine “Phaser” used to develop relatively simple 2D browser games (examples of the game: "Foot Chinko", "Chuck"), and "Doom engine" popular in the late 90s due to the popularity of the game of the same name. Game engines can be divided into three groups depending on the way they are distributed: 1) closed game engines, that is, game engines, access to the source code of which is provided by the copyright holder for a fee; 2) open game engines, that is, game engines, the code of which is distributed under open licenses, in particular, as open source software; 3) mixed game engines, that is, game engines, some of whose code is distributed under open licenses, but some game engine libraries are distributed for an additional fee.

The auxiliary code of the program is a part of the video game code that complements the code of the game engine and, in essence, represents the main part of its software component. If part of the code with the game engine, due to the prevalence of open and mixed game engines in two video games, may coincide, then the auxiliary code in video games is the original part of the game created independently through the creative work of the development team, expressing its

essence, making the game unique. It is this part of the video game code that is used in resolving disputes about the violation of exclusive rights when the copyright holder copies (reproduces) part of the code by the violator in his video game[84].

For example, in the 2018 case of Bethesda Softworks LLC v. Behavior Interactive, Inc. and Warner Bros, Entertainment Inc., in which one game company "Bethesda" filed a lawsuit for infringement of the exclusive right to the video game "Fallout Shelter" belonging to it by unauthorized copying of part of the source code of the game into the game the co-defendants of "Westworld"[85]. The violation of the rights to the auxiliary code was evidenced by the fact of copying the code with errors (bugs) inherent in both games and caused by errors in the copied part of the auxiliary code. However, taking into account the fact that, as a rule, developers jealously protect this part of the code through the use of technical means of protection, the introduction of a trade secret regime, the conclusion of confidentiality agreements, it is difficult for the copyright holder-plaintiff to prove that the defendant has access to the plaintiff's source code.

This is demonstrated by the case Antonick v. Electronic Arts, Inc.[86]. The dispute was related to the game "Madden NFL". According to the case file, plaintiff Robin Antonik, who is the developer of the first version of the game, filed a lawsuit for non-payment of remuneration for derivative versions of games by the defendant ("Electronic Arts, Inc.") which was due under the game development agreement with the plaintiff. The plaintiff could not provide the original source code of the first version of the game as evidence for comparing the original and derivative versions of the game, which is why the court refused to satisfy the plaintiff's claims. This part of the software component of the video game is usually confidential, is not disclosed by the copyright holders (except in cases of alienation of the rights to the video game to another person) and is not distributed as open source software based on open licenses.

Plugins are service programs (utilities), separate routines (sub-programs) and modules that allow to add additional functions to a video game. Depending on the decision of the copyright holder, they are also distributed through the three models previously designated for game engines, but the prevailing one is distribution in the form of open and mixed distribution models based on licenses. Adding such elements to video games is driven by attempts to reduce time required for video game development. In this case, the programmer does not have to spend extra time to create routines that perform routine functionality. Such subroutines are created by other persons. Examples of plug-ins can be plug-ins for tracking video game functioning errors; plug-ins for in-

[84] *Sega Enterprises Ltd. v. Accolade*, *Inc.,* 977 F.2d 1510 (9th Cir. 1992); Atari Games Corp. v. Nintendo of America Inc*.,* 975 F.2d 832 (Fed. Cir. 1992).
[85] *Bethesda Softworks LLC v. Behaviour Interactive, Inc. and Warner Bros, Entertainment Inc* 8:2018cv01846 (2018).
[86] *Antonick v. Electronic Arts, Inc*., 14-15298 (9th Cir. 2016).

game purchases; plug-ins for adding and implementing games of a certain genre. For example, the game engine used by a video game developer may be the "Unity" already mentioned above, and the plug–in being implemented is "RTS Asset", which is designed specifically for creating real-time strategies; plug-ins that allow players to independently create content for a video game (so-called developer tools); plugins that allow third-party advertising to be integrated into the game; plugins for localization of games; plugins for working with databases and tables.

Thus, collectively, the video game computer programs mentioned above represent the basis on which the video game functions on the user's device. At its core, the creation of the software part of a video game resembles the construction of a building, where the game engine is the bottom of the building, the auxiliary code is its main part, where plug–ins form building elements that are added depending on the purpose of the building and the needs of its owner (windows, pipes, etc.).

Due to the fact that different parts of the program code are distributed under different conditions, the fate of most modern video games depends on proper control, management and accounting of the rights to the software component of the video game. For example, the distribution of a computer program under an open license does not mean that the developer is not obliged to comply with the terms of this license. Depending on the type of open license, their conditions can be very specific. For example, in the open license "GNU GPL" (game engine "Quake engine"), there is a condition for the disclosure of part of the corresponding source code with the game engine. This must be taken into account with respect to the auxiliary code of the video game when distributing it, since violation of this condition may lead to the revocation of the license. The result may be the closure of the project, taking into account the fact that replacing the game engine will also require replacing auxiliary code and some plugins that have become incompatible with the new game engine. In turn, the license of the game engine "Unreal Engine" contains a condition that when the cumulative income from the distribution of the game, which is based on this engine, reaches the mark of one million dollars, the distributor (who can also be a developer) is obliged to pay royalties to the copyright holder of the engine in the amount of 5% of this revenue. In case of violation of this obligation, the rightholder of the engine may demand payment of a penalty or terminate the license unilaterally with prior notice to the licensee)[87]. For example, the case of Silicon Knights, Inc. v. Epic Games, Inc.[88] demonstrates what a violation of the terms of use of the Unreal Engine can lead to. In particular, the company "Silicon Knights" went completely bankrupt after paying the copyright holder of the engine, the company "Epic Games", compensation in the amount of 9.1 million dollars. Compensation was paid for violation

[87] Unreal Engine End User License Agreement for Publishing // Available at: https://www.unrealengine.com/ja/eula/publishing. (last visited 5 August 2022)
[88] *Silicon Knights, Inc. v. Epic Games, Inc.,* No. 12-2489 (4th Cir. 2014).

of the rights of the copyright holder of the engine. The violator copied thousands of lines of the game engine code without specifying the name of the copyright holder and without paying remuneration, which was a violation of the license terms.

The game engine, auxiliary code, video game plug-ins can also be divided into component elements, since first of all, they are computer programs from the point of view of copyright legislation.

There is no legal definition of a computer program at the supranational level. The mention of a computer program as a protected object of copyright is first found in the 1996 WIPO Copyright Treaty[89]. It does not contain a definition of a computer program. However, article 4 of the treaty protects a computer program as a literary work.

In the case of national legislation, the situation regarding the legal definition of a computer program is different. For example, in Russian legislation, Article 1261 of the Civil Code of the Russian Federation[90] defines a computer program. According to this norm, a computer program is 1) a set of data and commands expressed in an objective form, 2) which is designed for the operation of the device, 3) in order to obtain a certain result, 4) including preparatory materials and generated audiovisual displays. Especially interesting is the fourth highlighted part of the definition. According to Article 1259 of the Civil Code of the Russian Federation[91], a computer program is protected as a literary work. Preparatory materials and audiovisual displays generated by the program are also subject to protection.

The question arises: how can the generated audiovisual displays of the program be protected as a literary work? Literary works are expressed by means of numerical, textual or symbolic expression on a medium, while the audiovisual displays generated by the program, as mentioned earlier, are by nature closer to the category of audiovisual works and assume expression in the form of interconnected images, including those accompanied by sound. Neither the legal doctrine nor the judicial practice, which considers computer programs in the form of source text and object code, gives an answer to this question.

The legal definition of a computer program in the law of the Russian Federation is very close to the definition formulated by the US Copyright Act. Paragraph 101 of the said act means a computer program as a set of operators and instructions to be executed by a computer in order to achieve a certain result. Audiovisual displays are not directly mentioned in this article. However, in the scientific American doctrine and judicial practice of the United States, approaches have been developed according to which these elements are also recognized as an integral part of

[89] WIPO Copyright Treaty (WCT) (1996) TRT/WCT/001
[90] The Civil Code Of The Russian Federation Part Four No. 230-FZ of December 18, 2006
[91] Ibid.

the program. Audiovisual displays are considered as literal and non-literal elements of computer programs.

As mentioned above, as an object of copyright, a computer program consists of several elements, in particular, source code, object code, preparatory materials and generated audiovisual displays. In the legal doctrine it is customary to divide the elements of computer programs into literal and non-literal[92]. Literal elements are elements of a computer program expressed by numerical, textual or symbolic writing on a tangible medium. Thus, the literal elements include the source and object code, preparatory materials of a computer program. Non–literal elements are elements visually perceived by the user of the program, obtained as a result of interpretation by the device of literal elements. Thus, as non-liberal elements, it is customary to consider the graphical user interface of the program or, based on the paradigm of the current Russian legislation, the generated audiovisual displays of the program.

The source code of the program means the text of the program, including the text of commands, instructions. The process of creating source code is in many ways similar to writing the text of a literary work. Next, redo the sentence yourself so that it is not long, taking into account the existence of many programming languages, ways of expressing effective and high-speed algorithms by the authors. The source code of the program can be written in different ways, which implies a creative process in which the author of the computer program is involved.

The object code is understood as the result of the conversion of the source code by a special compiler program into code stored, as a rule, in the RAM of the device, which can already be perceived by an electronic computer for subsequent conversion of the code into machine code, that is, code that is already directly perceived by the hardware. Object code can be perceived by both a person and a device, but human participation in the creation of object code, as a rule, does not occur. The program can be written immediately in the form of object code, but this process takes a much longer amount of time and complex programs are not written in object code. Despite the fact that a person does not participate in the process of creating object code, legal protection of object code as an object of copyright is still granted for several reasons. Firstly, as mentioned earlier, object code can be created by a person to write programs. In an era when the art of writing programs was just beginning to develop, and the programs themselves were relatively simple, the authors used it directly, without using the source code. In other words, its creation may also imply

[92] Peter Groves, Computer Software: How Does That Look and Feel 14 Business Law Review, Issue 4, pp. 87–89; P. Samuelson, Why the look and feel of software user interfaces should not be protected by copyright law. // Available at: http://www.foo.be/andria/docs/p563-samuelson.pdf (last visited 5 August 2022); Lisa C. Green, Copyright Protection and Computer Programs: Identifying Creative Expression in a Computer Program's Nonliteral Elements, 3 Fordham Intell. Prop. Media & Ent. L.J. 89 (1992).

the creative nature of the author's activity, although today programs are rarely written on the object code. Secondly, the object code is essentially a form of existence of the source code, albeit transformed. Since the object code is much more difficult to perceive by a person and often represents a sequence of zeros and ones, it is ideal for distributing programs. The source code of the program thus remains inaccessible to the public, which gives competitive advantages to the authors and copyright holders of the program, since the logic of the construction and syntax of the program are kept secret. Thus, the provision of legal protection to the object code allows protecting the economic interest of the copyright holders of computer programs.

In addition to the source and object codes, machine code is also allocated. If we build a hierarchy of codes from the source to the machine, then: the source code is directly perceived and created by a person; the object code is an intermediate link between the source and the machine, perceived by both a person and an electronic computer; the machine code is an executable code that is not suitable for human perception. Machine code is not directly considered as a protected object of copyright and is not directly named anywhere as such, since a person does not take any part in its creation, it is practically unsuitable for human perception, and granting it legal protection as an object of copyright does not make sense, since it is impossible to distinguish machine codes that represent a sequence electronic pulses perceived by the device are almost impossible. They are an exclusively utilitarian form of expression necessary for the device to understand the given instructions and data. As one Australian judge aptly put it in one of the cases where the issue of the protectability of machine code was raised: "... granting legal protection to electrical impulses in a silicone chip as an object of copyright would be an absolute violation of the meaning of copyright ... "[93].

Another important element of the computer program is the preparatory materials. The provision of legal protection to preparatory materials is due to the fact that they can be used to recreate the program. In fact, they allow you to follow the path of the author of the program, which greatly facilitates its writing, allows you to understand the logic laid down by the author in the program. If we present an example of what may actually be preparatory materials, then they may be programmer's notes to the source text (or, in some cases, to the text of the object code), left, as a rule, directly in the program code files themselves or in the interface of special software integrated with the software development environment, for example, in the system of setting and controlling tasks or version control of the program. It can also be various schemes, developer notes, technical specifications for its development. Another reason for the spread of the legal regime for the protection of preparatory materials as an integral element of computer programs is

[93] *Computer Edge Pty Ltd v. Apple Computer Inc* (06 May 1986) - [1986] HCA 19.

to ensure the protection of the interests of persons in whose favor the subsequent alienation of rights to the program occurs. This is necessary in order for the acquirer to have the possibility of further independent support of the program, its modification or correction of errors in it, optimization of its operation. Without transferring preparatory materials to the acquirer, the program developer may abuse his position, for example, by imposing technical support services on the program to the acquirer, since it is difficult to make changes to the program, the logic of which is not clear, to anyone other than those who best understand its structure and logic - its direct developers. Having access to preparatory materials, the acquirer, following the path of programmers-developers, can ensure the effective and continuous functioning of the program with its subsequent improvement, which is the main purpose of its acquisition. Also, by analogy with the example given earlier, where when copying the source code of the video game Fallout Shelter, the code was copied with errors, which became proof of its illegal copying, it is potentially possible to imagine a situation in which such preparatory materials can be a good help in proving the violation of exclusive rights to the program, since when copying the code together with it, it is often the notes of programmers-developers to it are also copied. If the coincidence of the code text may still be due to its utility, then the coincidence of preparatory materials by analogy with errors and bugs may already indicate that the defendant had access to the original work and that the text (code) of the original work was borrowed without proper legal basis (for example, a license granted by the copyright holder).

The last, but not the least important element of the program is the audiovisual displays generated by the program. Under the audiovisual displays generated by the program, the graphical user interface of the program is considered, with which the user interacts when using the functionality of a computer program. The legal protection of the user interface is due to the fact that, firstly, the user interface is an idea expressed in an objective form, logic, construction of program displays, and secondly, protection of the economic interest of the copyright holder. The graphical interface of the program is the part with which the user directly interacts. The user-friendly interface attracts the user. That is why, when developing user interfaces, companies incur significant material costs for conducting user experience research ("UX/UI" research) aimed at developing the most user-friendly graphical interface.

A distinctive feature of non-literal elements is the possibility of their complete similarity in the two programs, despite the absence of any coincidences in the literal part of the program, which in practice creates difficulties in developing approaches to determine the facts of unauthorized reproduction by the copyright holder of a part of the program belonging to him, to determine the criteria of which part of the interface is protectable, and which has an exclusively utilitarian function and merges with the idea.

Understanding the existing program elements is also important for the transfer of rights to a video game. Thus, if the developer, when alienating the rights to the program to the organizer of the creation of a video game, insists that only the rights to one of the elements (for example, source and object code) will be transferred, the acquirer may demand the transfer of rights to all other elements of the computer program (for example, preparatory materials), since the legal regime of the computer program the program assumes that when the rights to a computer program are alienated, the exclusive right to its elements also passes to the acquirer.

5. Elements of a Video Game as Objects of Industrial Property

Any company whose main activity is the development of video games, regardless of its scale, is interested in protecting video games belonging to them as much as possible, using not only traditional tools, in particular guarantees provided by copyright legislation, but also other intellectual property institutions, in particular patent law and trademarks as part of the institute of means individualization. Unlike the traditional elements of a video game that form its basis, which do not require additional registration actions for protection as intellectual property objects per se, such specific elements as trademarks and objects of patent rights require compliance with a number of formalities to extend the appropriate legal regime to them.

The following elements of video games may be protected as trademarks: the name and logo of the video game, the name and logos of the technologies used in the video game, the names and design of the characters of the video game, slogans. This list is not exhaustive, but only represents a set of elements that, due to the established practice in the video game industry, are most often protected as trademarks. For example, sound designations may also be protected as trademarks, for example, sounds associated with a game or games of a certain publisher or developer[94].

Microsoft's experience in the market of massively multiplayer online games demonstrates how useful in some cases the legal regime of trademarks can be for the distribution of video games and how much this can affect the fate of entire projects that initially seemed ambitious. In 2003, Microsoft planned to release a game with the name "Mythica". One of the most popular projects in this niche at that time was the game "Dark Age of Camelot", developed by the company "Mythic Entertainment". Undoubtedly, this company has appealed to the court with a claim for violation of the exclusive right to its trademark. The result of the case was a settlement agreement between the two companies, according to which Microsoft refused to use this word in its project as its name, withdrew the application for its registration as a trademark in the United States and, moreover,

[94] S. Gregory Boyd, Sean F. Kane, Brian Pyne. Video Game Law: Everything you need to know about Legal and Business Issues in the Game Industry. CRC Press, 2018, c.20.

ceded the rights to trademarks already registered in other jurisdictions to Mythic Entertainment according to the international system of filing applications for trademark registration[95]. Subsequently, due to the time costs caused by the dispute, the costs of rebranding and re-conception of the game, it was decided to close the project. Thus, the game developed for several years was completely abolished due to infringement of the trademark rights of another video game developer company, allowed when using this trademark in the name of the video game.

The undoubted advantage of legal protection of a video game element as a trademark is its potentially eternal term of protection, since the copyright holder has the opportunity to extend its legal protection until the expiration of the term of its legal protection established by applicable law. Moreover, the registration of individual elements of video games as trademarks allows you to subsequently use additional methods of monetization, for example, the names and appearance of characters, the name of recognizable and associated with the video game weapons, game locations, which are subsequently used for fan service, in particular for the production of various kinds of products in the form of souvenirs, clothing and other goods., or in domain names associated with the game.

Nevertheless, the main disadvantage is the relative high cost of using such a legal regime[96]. Firstly, before applying for trademark registration, it is necessary to conduct an appropriate study, the subject of which will be the identification of already registered identical or similar trademarks in the jurisdiction where the trademark registration is planned. Secondly, the implementation of registration actions requires the applicant to bear the material costs caused by the payment of the corresponding payments in favor of the authorized bodies for the implementation of registration actions. Thirdly, the applicant will incur the costs associated with hiring a specialist with the necessary competence to support the process of national or international registration, for example, under the Protocol to the Madrid Agreement on the International Registration of Marks[97] or Registration of a Trademark in the European Union as a Community trademark ("European Union trade mark")[98].

Another significant disadvantage is the fact that registration as a trademark in one jurisdiction does not entail automatic legal protection of the trademark in other jurisdictions. In

---

[95] S. Gregory Boyd, Sean F. Kane, Brian Pyne. Video Game Law: Everything you need to know about Legal and Business Issues in the Game Industry. CRC Press, 2018, c. 35.
[96] David Greenspan. Mastering the Game: Business and Legal Issues for Video Game Developers - Creative industries - No. 8. 2013 //: https://www.wipo.int/publications/en/details.jsp?id=3233&plang=EN. (last visited 5 August 2022)

[97]Protocol Relating To The Madrid Agreement Concerning The International Registration Of Marks (As Amended On November 12, 2007)// Available at: https://wipolex.wipo.int/en/text/283484 (last visited 6 August 2022)
[98] Regulation (EU) 2017/1001 of the European Parliament and of the Council of 14 June 2017 on the European Union trade mark // Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32017R1001. (last visited 6 August 2022)

other words, registration as a trademark is closely related to the geography of distribution of a video game. For example, a violation in Germany of the rights to a trademark registered in the United States, but not registered in Germany, will not allow you to claim legal protection in Germany. However, if a violator from Germany subsequently decides to enter the market in the United States, in this case, in accordance with applicable law, the copyright holder will already have the opportunity to bring such a person to civil liability.

When talking about trademarks in video games, it is important to mention the use of third-party trademarks existing in the real world in video games. Various models of weapons, cars, phones and other products can appear in video games to ensure the authenticity of the game world, its correspondence to the real one, which potentially allows the player to feel the gameplay as part of the real world, associate himself with the events taking place in the game. As a rule, gaming companies conclude hundreds of licensing agreements for trademarks existing in the real world for their subsequent inclusion in a video game in order to minimize the risks of copyright holders' handling relevant claims. Nevertheless, the purpose of the trademark is the individualization of goods, works and services of a particular manufacturer. The inclusion of existing trademarks in video games is conditioned by freedom of speech. In other words, there is a conflict between the right to freedom of speech, creative expression and the exclusive right to a trademark. In the United States, a relatively recent precedent regarding this conflict is the 2020 case of AM General LLC v. Activision Blizzard, Inc.[99] In the defendant's game "Call of Duty", a 3D model of a real Humvee vehicle was recreated, the name of which was registered as a trademark, and the appearance of the vehicle as a "trade dress", a special object of intellectual property under the U.S. federal law protecting the appearance of manufactured products. The court found that the inclusion of the trademark and the appearance of the vehicle in the game was due to the need to achieve a proper level of realism in the game about military operations, and with reference to the First Amendment to the US Constitution on freedom of speech (according to the text of the decision, also freedom of creative expression) indicated that such inclusion was not the use of a trademark and "trade dress" within the meaning of applicable the U.S. intellectual property law. Moreover, the court noted that the use of these elements as part of a video game does not mislead the player as to who is the manufacturer of the products in respect of which the trademark is registered; the defendant's product (video game) does not compete with the plaintiff's product (vehicle), in respect of which the intellectual property objects used are registered. The court came to the same conclusion earlier in another case Mil-Spec Monkey, Inc. v. Activision Blizzard, Inc.[100], where the game "Call of Duty" already used the plaintiff's military uniform with the image of the plaintiff's trademark,

[99] *AM General LLC v. Activision Blizzard, Inc.*, 1:17-cv-08644-GBD-JLC (S.D.N.Y., 2020).
[100] *Mil-Spec Monkey, Inc. v. Activision Blizzard, Inc.,* No. 14-cv-2361 (N.D. Cal. Nov. 24, 2014).

which the user of the video game could use for his character. The court also pointed out that since the inclusion of the plaintiff's trademark in the game is due to the desire to enhance the artistic component of the game by adding a real object to the game in hostilities and since the use of the plaintiff's trademark does not create the likelihood of misleading video game users about who is the manufacturer of the products for which the trademark is registered (in this case these were patches on military uniforms), then there is no violation of trademark rights. In other words, the approach is that the use of a really existing trademark in the game is a violation of the exclusive right to the trademark if 1) the use is not artistically appropriate, that is, it is not due to the artistic component of the video game (in the examples given, this was due to the increased realism of the video game about military operations), 2) the use is artistically appropriate, however, such use of the trademark creates the possibility of misleading the user as to who is the manufacturer of the product, in particular, it gives the user the impression that the manufacturer of the products in respect of which the trademark is registered is the person distributing the video game. This test in the United States is referred to as the "Rogers test", which appeared in the late 1980s following the consideration of the case Rogers v. Grimaldi as an attempt to balance the right to freedom of speech and intellectual property rights to trademarks. The courts determine the applicability of this test to video games and other works of art, taking into account the specific circumstances of the case.

Another legal regime that applies to elements of video games as objects of industrial property is the legal regime of objects of patent rights. For example, the Cathode Ray Tube Amusement Device, officially considered the first video game device based on a cathode Ray Tube, was granted a patent in the USA in 1947[101].

There are many examples of patents in the gaming industry that are dynamically and inextricably linked to the user experience of a player. So, for example, a patent for an invention has been registered in the USA, the copyright holder of which is the company "Nintendo of America Inc.", for a strip of the mental state of a character controlled by a player, which depends on the interaction of a game character with objects of the game world that affect the character's needs for rest and sleep, the appearance of hallucinations, new sound effects, which allows the player to gain a new experience with each subsequent passage of the video game[102]. Another example is a patent for a character 's points distribution matrix for the subsequent acquisition of certain skills and tracking the progress of a game character[103]. Or, for example, a patent for a method of organizing the gameplay, which allows a video game to randomly generate random

[101] Patent US2455992A.
[102] Patent US 6,935,954 B2.
[103] Patent US 2002/019804.6 A1.

non-player characters who remember the previous interaction with the game character, whose subsequent behavior is determined by this interaction, and who become stronger depending on such interaction[104]. For example, in the Russian Federation, the legal regime of patent law is also used in the field of the video game industry. For example, a patent for a way to control an interactive video game, which consists in detecting the chewing movement of the user using the device's camera and prompting the game character to make a chewing movement in response to the user[105]. Or a patent for a three-dimensional game system, which is a structure of hardware and software consisting in a new way of displaying three-dimensional images[106]. Nevertheless, it should be borne in mind that due to the direct indication of the law (sub-paragraphs 4 and 5 of paragraph 5 of Article 1350 of the Civil Code of the Russian Federation[107]), rules and methods of games, as well as computer programs, cannot be registered as inventions in the Russian Federation, unlike in the USA, where there are no such exemptions, and in any new and useful methods, processes, devices, production methods, compositions of substances or their subsequent improvements can be registered as an invention[108]. However, the program code itself is not protected, unless it is described in the context of solving a specific problem and in conjunction with the hardware for which it is intended to function. Similar exceptions with respect to the patentability of rules and methods of games, as well as computer programs are established by subparagraph "c" of paragraph 2 of Article 52 of the European Patent Convention[109].

The graphical user interface of a video game can be protected as an industrial design, which is confirmed by the issuance of a patent for an industrial design by the competent authority. So, in the USA, provided that the graphical user interface meets the criteria of novelty, non-obviousness and decorativeness, the graphical user interface can be protected as an industrial design[110], which, in turn, allows you to protect its appearance, provided that the interface is not exclusively utilitarian, resulting from general practice, and any person who does not have special knowledge, will perceive it as innovative. Nevertheless, it seems that such a method of protecting the user graphical interface seems superfluous, given the previously mentioned possibility to register a video game as an audiovisual work. At the same time, the application for registration is accompanied by relevant materials that reflect the appearance of audiovisual displays.[111] In the

[104] Patent US 2016/0279522 A1.
[105] Patent RU 2015 148 842 A.
[106] Patent RU 2 339 083 C2.
[107] The Civil Code Of The Russian Federation Part Four No. 230-FZ of December 18, 2006
[108] 35 U.S.C. 101.
[109] The Convention on the Grant of European Patents of 5 October 1973.
[110] 35 U.S.C. 171; Lipson A. S., Brain R. D. Computer and Video Game Law – Cases, Statutes, Forms, Problems & Materials. Carolina Academic Press, 2009, c. 305–361.
[111] Compendium of U.S. Copyright Office Practices // Available at: *https://www.copyright.gov/comp3/* . (last visited 5 August 2022)

European Union, the protection of the graphical user interface as an industrial design is also possible, taking into account Article 3 of the Regulation of the Council of the European Union of December 12, 2001 No. 6/2002 "On Industrial Designs of the European Union"[112], while the scope of the protected interface is determined with the images of the appearance of the interface attached to the application for registration of an industrial design, which allows you to protect the external the type of interface, taking into account the previously mentioned narrow approach of the EU to the protection of graphical user interfaces as an object of copyright[113].

Moreover, as already noted above, the objects of patent rights can be part of a single structure of a video game as a multimedia product. It seems that it is possible to draw a dichotomy of the elements of video games that make up the objects of patent rights in video games into elements and auxiliary technologies for games that are inextricably linked to the video game. In the first case, the objects of patent rights should be recognized as elements of the structure of a video game as a complex object, in the second case, they cannot be part of the legal regime of a multimedia product, but act as an additional legal regime that allows protecting the content of a specific game mechanics.

The main disadvantages of applying the legal regime of the object of patent rights to the elements of video games is the long period of obtaining a patent, which is critical given the desire to quickly launch the game into commercial operation and the related need to make a decision on filing an application at the early stages of game development; the need to disclose the content of the element to the public, since obtaining a patent involves disclosure of the content of the invention; the high cost of the patent registration procedure. As a rule, patents for individual elements of video games are obtained by large game developers and publishers, since they have the necessary time, organizational and material resources to obtain a patent.[114]

6. User-generated Content

Also, among other elements of a video game that are objects of intellectual property, it is possible to distinguish user-generated content. Examples of such content can be both computer

[112] See: Grosheide F. W., Roerdink, H., and Thomas, K., Intellectual Property Protection for Video Games: A View from the European Union // Journal of International Commercial Law and Technology, Vol.9 No.1 (January, 2014). // Available at: https://media.neliti.com/media/publications/28815-EN-intellectual-property-protection-for-video-games-a-view-from-the-european-union.pdf .

[113] Centre for European Economic Research. Discussion Paper No. 17-007 Digital Design Protection in Europe: Law,trends and Emerging Issues // Available at: https://ftp.zew.de/pub/zew-docs/dp/dp17007.pdf (last visited 6 August 2022)

[114] See: David Greenspan. Mastering the Game: Business and Legal Issues for Video Game Developers - Creative industries - No. 8. 2013 // Available at: https://www.wipo.int/publications/en/details.jsp?id=3233&plang=EN. (last visited 6 August 2022)

programs and other copyright objects, such as fan art and other cosmetic graphic modifications of video games.

User content can be divided into two groups: 1) user content created using developer resources, and 2) user content independently generated by the user. So, the first group includes user content that is derived from copyright objects that are part of the game, or that is created using so-called Developer's tools (Developer's/Creator's toolkits). The developer's tool is a separate video game module that allows the player to create various modifications and graphic content independently in the interface of the game itself or in the special interface of this video game module. The second group includes content that is independently created by the user without using any developer resources. For example, independently created with the help of third-party software graphic models of game or non-game characters, textures, individual modifications of the video game code and other results of intellectual activity.

The rights to any user content in compliance with the criteria of protection established by applicable law for copyright objects, by default belong to the users themselves as the authors of such works. This is most clearly demonstrated by the situation with the game "DOTA". Initially, this game was a custom modification created in the map editor of the WarCraft III video game owned by Blizzard. The license agreement with the end user did not contain a reservation about the transfer of rights to the user content created using this game module to the licensor. Subsequently, the creators of this modification, being the copyright holders of the modification, transferred the rights to the modification to Valve, which subsequently released a full-fledged DOTA 2 video game. Blizzard, in turn, could not do anything about it and, due to the lack of a reservation, lost one of the most successful projects in the video game industry. However, as a rule, end-user license agreements still contain reservations about the transfer of rights to user content that is derived from a video game to the licensor of the video game[115]. In the case of the first designated group of user content, which, in fact, are derivative works created by the user as a result of using a video game or its individual elements on the basis of a license concluded with the licensor of the video game by accepting the terms of click-wrap and browse-wrap agreements, the legality of the provisions on the ownership of rights to the licensor of the video game does not raise questions. At the same time, in the case of the second designated group of user content, things are different. So it is not difficult to imagine a situation in which a user who is qualified in programming independently creates a piece of code that he later integrates into a video game, thereby optimizing the performance of the game or adding new functionality to it. Or when the

[115] Carl "Ott" Lindstrom, Mod Money, Mod Problems: A Critique of Copyright Restrictions on Video Game Modifications and an Evaluation of Associated Monetization Regimes, 11 Wm. & Mary Bus. L. Rev. 811, 2020 // Available at: https://scholarship.law.wm.edu/cgi/viewcontent.cgi?article=1198&context=wmblr. (last visited 6 August 2022)

user independently creates textures for a video game in a special 3D model editor or adds other graphic elements to it.

In these cases, the user creates these works independently, without using any resources of the original game. In this case, the created work cannot be considered derivative, and, thus, the rights to it cannot be transferred to the licensor of the video game on the basis of special provisions of the end-user license agreement. Nevertheless, despite the fact that the rights to such user content belong to the modder (the person generating user content), such cases may be considered a violation of the end user license agreement or a tort, since, as a rule, such agreements contain a ban on modifying the video game program code or making changes to the files contained in the folder games. In the absence of such a prohibition, user modifications may be considered a violation of the exclusive right to a video game, since they constitute a modification without the user having a proper legal basis (for example, a copyright holder's license), or, for example, a violation of the personal non-property rights of the author of a video game, in particular the right to inviolability of the work and protection of the work from distortion.

An example of such a situation is demonstrated by the case of DavidSon & Associates, Inc. v. Internet Gateway[116]. The plot of the case was that the defendant independently created an unofficial server for Blizzard online games so that players could play not only on the official servers of the video game copyright holder. The court found that the plaintiff in this case violated the terms of the license agreement with the end user, in particular the prohibition on reverse engineering of the video game program code. Cases where such actions will not qualify as a violation are cases of free use of the work permitted by applicable law, directly named in the law.

American legislation in relation to mods demonstrates great flexibility, since in addition to the list explicitly named in the US Copyright Law, it also contains section 107, which enshrines the doctrine of fair use ("fair use") at the legislative level. This doctrine is a positive means of judicial protection of the defendant in disputes about the violation of the exclusive right to works of science, literature and art, and not a legally sanctioned state basis for the free use of the work. The Court considers the possibility of applying this doctrine at the request of the defendant in each individual case on the basis of four factors: 1) the court assesses the purpose and nature of the use of the work, including whether such use was of a commercial nature or the use was carried out for non-commercial purposes; 2) the essence of the work used; 3) the size and materiality of the part of the work used relative to the entire protected work; 4) the scale of the impact of such use of the work on the market and the value of the work used.

[116] *Davidson & Associates, Inc. v. Internet Gateway*, 334 F. Supp. 2d 1164 (E.D. Mo. 2004).

In turn, in contrast to the widespread practice in the video game industry, the developers of the Dungeons and Dragons game, inspired by the example of the Free Software Foundation (a non-profit organization created by Richard Stallman that supports the free software movement), developed the so-called "Open Game License"[117]. The terms of this open license, created specifically for video games, allow video game users to create and distribute game modifications on a commercial basis without paying remuneration to the licensor.

[117] Open Game License // Available at: http://www.opengamingfoundation.org/ogl.html. (last visited 7 August 2022)

Chapter III: Virtual Worlds and Virtual Property

As seen from previous chapters video games are highly complex intellectual property objects that consist of various elements, such as trademarks, software, images, audiovisual components and some other, however it is not the only thing the video games are – all those elements create a separate world, a virtual world existing inside video games where the end user dives into while playing the game. These worlds are full of their own items and "property" (here used in brackets), governed by their own laws and having unique status, which still remains unclear, as there has been developed no unified approach on how to qualify the virtual property from the legal standpoint. These virtual property items vary from other elements of video games due to their special significance for players – they allow players to distinguish themselves from other individuals and bring experience that simply cannot be provided by a default gaming interface. Thus, to achieve understanding what a video game is from in the eyes of the law, we cannot try but deliberate on the legal nature of these objects and legal regulations or relations arising out of them.

1. Explaining Virtual Property

Virtual game property includes game attributes, including weapons, character equipment, clothes, houses in the game world. Game property as a kind of virtual property has intangible nature and is always presented in digital form and is a digital object, therefore unlike things, is not amenable to depreciation and consumption. Due to this fact, from technical point of view virtual game property is just a piece of computer code, a part of the underlying computer program, however associated with a picture displayed to the user. For this reason, user's power over virtual property resembles "quasi-ownership". So, logins, passwords from user accounts in games and social networks, public and private keys from the crypto wallet, login and password of the site administrator, the owner of the domain name, make access to the virtual property controllable[118]. Game developer, domain name registrar, and social network administrator – they all have the technical capabilities to determine the fate of the user's virtual property. This capability is referred to as "digital power" (digital force), since the use of the account and the attributes of the game is carried out as long as the developer supports the operation of the server (platform)[119]. Despite the absence of a central entity in the blockchain technology, this technology may be subject to a

[118] Fairfield J. Virtual Property // Boston University Law Review. 2005. P. 1053-1055.
[119] Palka P. Virtual property: towards a general theory. PhD. Florence: European University Institute. 2017. P. 26, 49-53.

"50+1" attack, which may also indicate the presence of secondary control over user power, even if different from the control of the central server.

Main function of these items is to help the player to get through the game and with developing the game character by serving as an actual tool. And these items can be either acquired for free as rewards for in-game achievements or purchased for real money. In-game items purchased for money can be referred to as the "additional game functionality". Despite the absence of jurisprudence on the recovery of losses caused by unjustified write-off of game attributes acquired for free, these game attributes should also be attributed to virtual property, since game attributes have the same value on the market regardless of how the user acquired them: for money from the developer or during the game.

Moreover, we shall highlight once again that virtual gaming property is part of the game, i.e. first and foremost, a part of a computer program. The image by which the game attribute is displayed in the game, or the code by which it is written, does not have any value outside framework of the game and since the copyright owner to the game is its developer, users do not enjoy any rights to these objects outside that game.

Another feature of virtual game property is its economic value, caused by its actual transferability due to existence of demand and the sales market. Game property can be transferred in two ways: according to the rules of the game or together with the transfer of the account (transfer of the key and password of the account). The latter method is characteristic of all types of virtual property, whereas the transfer of an object without losing an account is characteristic exclusively of stickers on social networks, virtual gaming property and decentralized virtual property (tokens). The process of transferring game property in the game is automated, but depends on the game developer, unlike the process of transferring tokens in blockchain technology. Transferability and conveyancing of virtual gaming property from the point of view of law is ambiguous, since most publishers' end-user agreements contain a ban on its sale, donation, or other alienation. Despite the ban, the objects of the game world acquire economic value because they circulate among games' users and can be transferred from one user to another according to the rules of the game or by transferring a login and password (when selling a user account). Game attributes perform a service function, since they aid in progressing within the game and in developing the game character.

In the case of Kremen v. Cohen Network Solution Inc, the site administrator was recognized as the owner of the domain name[120]. The court noted that the owner of the domain name (administrator) independently, without the participation of the registrar, decides on the order

[120]*Kremen v. Cohen Network Solution, Inc.*, 337 F. 3d 1024 [2003].

of use of the site, its content and accessibility for users. The court also took into account that it is unfair to deprive the administrator of the opportunity to benefit from the work done on the development of the site, leaving the domain name with which this site is directly linked without legal protection. Some authors note that the user should be given ownership of the game property in the same way as in this case the ownership of the domain name[121] was recognized. This position is questionable, since the degree of participation of the game developer in determining the fate of the user account and game attributes is higher than the degree of participation of the registrar in determining the fate of the domain name and the associated site. In addition, gaming property has a number of special features that distinguish it from a domain name and other types of virtual property.

With respect to some objects of virtual property, we can talk about the existence of an open registry in which these objects are fixed for certain persons. The existence of such registers is associated with the digital form of virtual property, since from a technical point of view, any virtual property is a code and is subject to fixation in the program or database from which the program extracts this code. Both domains are registered in a special registry, and tokens are recorded in the blockchain database. Game developers use databases to store information about the "game state" of the user, including his game inventory. However, not all virtual property databases are open. So, the user has access only to his account and sees the game attributes belonging to him, but not the game attributes of other users. The closed nature of the registry or database is another feature of gaming property compared to some other types of virtual property.

1. Property Law Approach

Since virtual property has economic value and is able to be traded on the market is absolutely necessary to understand its legal nature – anything that becomes an object of legal relationships shall be correspondingly classified. Studying their legal nature could explain regulation of relations between game developers and users that arise out of the said items. As said above, game attributes are an integral part of an video game (especially online multiplayer game), that is a computer program (primarily) in respect of which the developer has exclusive rights as an object of copyright – one shall bear this in mind for the purpose of the following discussion.

There are two main approaches on how to perceive in-game items – either as property, regulated as such by applicable norms or as simply a subject matter of a contract between game developer and user.

[121] Chein *A.* A Practical Look at Virtual Property Note // St. John's Law Review. 2006.

In accordance with the property law theory, the user has absolute rights to virtual gaming property. Due to the immaterial nature of the virtual gaming property, the user cannot actually (physically) own it. At the same time, the establishment of an intellectual property regime to endow the user with a legal monopoly on virtual gaming property is considered unnecessary due to the availability of limited access to the player's account[122]. Third parties cannot use virtual gaming property unless the user provides them with a login and password from the account to which this property is assigned. Thus, the user controls the virtual gaming property using passwords in the same way as the owner exercises physical possession of the thing.

The extension of the proprietary regime to virtual property entails such legal consequences as the legality of the circulation of game attributes on the market, as well as, possibility of applying the rules on vindication and on a bona fide acquirer. The object of property rights is only a material object, that is, a thing, which prevents the extension of the real-legal regime to intangible virtual property. It is also impossible to carry out a classical transfer (tradition) of a thing in the game, since from a technical point of view, the game attribute is not transferred, but disappears from the inventory of one user and appears in the inventory of another.

The U.S. researches have expressed ideas about qualification of virtual objects as objects of property, where it is proposed to extend the norms of common law on property rights to virtual objects. From the point of view of supporters of this position virtual objects are intangible objects of a special kind, occupying an intermediate position between intellectual property objects and conventional objects of property rights. They are not the latter, since they exist only on computer screen, and they do not belong to the former, since in some cases they are not the subject of the user's creative work[123]. As arguments in favor of their position, proponents of the extension of property rights norms to virtual objects refer to the fact that such objects can be acquired and alienated and have an expressed consumer value[124]. In addition, "certain types of virtual property have many characteristics characteristic of traditional objects of property rights, and should not be excluded from legal protection just because they initially look unfamiliar"[125].

Possibility of extending the property ownership regime to virtual objects is also supported by possibility of applying postulates of John Locke's labor theory to them, which is one of the most popular grounds for an individual's ownership of objects to which his work was applied. John

---

[122] Fairfield. J. Virtual property // Boston University Law Review. 2005. P. 1047–1102.

[123] Duranske B. T. Virtual Law: Navigating the Legal Landscape of Virtual Worlds. Chicago: ABA Publishing, 2008. P. 80.

[124] Lastowka G., Hunter D. The Laws of the Virtual Worlds // California Law Review. 2004. Vol. 92. Issue 1. P. 49.

[125] Hunt K. This Land is not Your Land: Second Life, Copybot and the Looming Question of Virtual Property Right // Texas Review of Entertainment and Sports Law. 2007. Vol. 9. P. 172.

Locke stated that things belong to those who invested their labor and efforts in them, despite that those things belonged to all other individuals. After all, the user spends a lot of time, effort, and often money on development of his virtual game character, which gives grounds for certain proprietary claims of the user on the result of his efforts[126]. As one author notes, "earning real and virtual money has one thing in common - the real time spent on it"[127]. However, it is also often noted that this theory may give advantage to game developers as they are the ones actually creating the virtual world and virtual property items, hence their claims seem to be way stronger that those of the players.

Nevertheless, the U.S. courts have not yet decided to openly recognize the rights to virtual objects as the property of the user - partly due to conservatism, and partly due to the lobby of the gaming industry, which is not interested in granting users any rights to virtual objects, because this may shake its monopoly on regulating relations arising within virtual spaces, and impose additional encumbrances. The fact is that the copyright holders have a legitimate interest in protecting the investments made in the development of the virtual world, as well as in exercising control over what happens there[128]. This is especially true of those virtual worlds where the main interest of users is in the progress of the character during certain tasks. In such worlds, copyright holders often prohibit the sale of virtual objects and accounts under the threat of account blocking[129]. Otherwise, there would be a significant imbalance: a player who had just joined the game could match his performance with experienced players only due to significant financial injections into the game, which would scare off many users.

Recognition of virtual property as property in the legal sense may also entail responsibility of copyright holders to make changes to the virtual world that cause damage or decrease in the value of such objects[130]. For example, as a result of the creation of new virtual real estate objects next to those that were previously purchased by users, their value may significantly decrease and the investments made by users will depreciate. Or another example: if the value of a virtual object is inextricably linked to its rarity, the additional introduction of such objects into the game by the copyright holder for the purposes of adjusting the balance of the game may be regarded as a violation of the user's "virtual property" right. In other words, the creation of a certain virtual object

---

[126] Shen L. Who Owns the Virtual Items? // Duke Law and Technology Review. 2010. Vol. 9. No. 1. P. 5 - 6; Passman M. Transaction of Virtual Items in Virtual Worlds // Alabama Law Journal of Science and Technology. 2008. Vol. 18. P. 263 - 264.

[127] Jankowich A. Property and Democracy in Virtual Worlds // Boston University Journal of Science and Technology. 2005. Vol. 11. No. 2. P. 183.

[128] Westbrook T. Owned: Finding a Place for Virtual World Property Rights // Michigan State Law Review. 2006. P. 788 - 789.

[129] E.g. World of Warcraft Terms of Use Agreement. Available at: https://www.blizzard.com/en-us/legal (last visited 6 August 2022)

[130] Bartle R.A. Pitfalls of Virtual Property. The Themis Group, 2004.

by the copyright holder will be equivalent to the recognition of a certain "debt" for him in relation to the user - owner of such an object, which most copyright holders are unlikely to be ready for[131].

Currently, the issue of the legal status of virtual objects in the US judicial practice is not resolved. One of the most cited disputes in the American doctrine, where the issues of ownership of virtual property objects were considered, is related to the Second Life project.

The plaintiff was Marc Bragg, a lawyer from the state of Pennsylvania, who was an active user of Second Life. The lawsuit concerned unlawful deprivation of his "ownership right" to virtual land plots by the defendant, Linden Lab, acting as the copyright holder of the Second Life software product. In the process of his participation in the virtual world of Second Life, the plaintiff acquired a number of land plots for the currency accepted in this virtual space ("linden"). The cost of the plaintiff's account was about 2 thousand US dollars. One of the virtual land plots was acquired by Brag using the vulnerability of the Second Life software code, which allowed him to purchase it quite cheaply. This action was a violation of the rules for the provision of services, and, as a result, Linden Lab blocked the plaintiff's account and erased his name from the register of "rights" to all land plots, including those that were acquired by him without any violations. Subsequently, these plots were resold by Linden Lab to other users without paying any compensation to the plaintiff. The plaintiff referred to the fact that such actions of the defendant constitute a tort called "conversion", the essence of which boils down to the misappropriation of someone else's property[132]. Unfortunately, the court was not given the opportunity to deal closely with the qualification of existing relations, because after it invalidated the arbitration clause in the rules for the provision of services, the case ended in a settlement agreement[133].

In any case, one way or another, the mechanical extension of provisions on things and property rights to virtual objects is hardly advisable, which can be illustrated by the evolution that has taken place in understanding the nature of intellectual property. It is known that the specifics of intellectual property objects required a significant adjustment of the classical property right, which eventually led to the emergence of a special legal regime of exclusive rights.

Important to mention, that this theory of virtual gaming property establishes guarantees of user rights, but is in conflict with the exclusive rights of the developer to the game as a computer program. Since the terms "absolute" and "urgent" are incompatible, then, as P. Palka notes, giving the user absolute rights will require assigning the responsibility to the game developer to maintain

[131] Duranske B. T. Virtual Law: Navigating the Legal Landscape of Virtual Worlds. Chicago: ABA Publishing, 2008. P. 96.
[132] Restatement (Second) of Torts (1965), § 222A.
[133] Bragg v. Linden Research, Inc., 487 F. Supp. 2d 593, 603 (E.D. Pa. 2007).

the server in working condition[134]. At the same time, property law does not allow the imposition of positive duties on the owner of an official thing, expressed in the commission of actions in favor of the authorized person. Contract law is by its nature urgent and cannot contain an "eternal" obligation to maintain the server. Thus, the assignment of this obligation to the developer is possible only within the framework of administrative, not civil law, for which special grounds must be found, for example, public interest.

2. Contract Law Approach

In absence of special regulation and the inability for one reason or another to use traditional provisions on property rights, it is possible to use the regulatory material contained in the contract. In fact, this is now happening in practice, when the relevant relations are considered in the context of licensing relations between the copyright holder (operator of the gameplay) and the licensee (user), drawn up in the form of various kinds of user agreements, which are click-wrap agreements. Purchase of virtual objects (hero equipment items, virtual currency, premium accounts, etc.) for real money can be considered as a kind of license payment, in exchange for which the copyright holder "activates" certain components of a computer program and the user gets the opportunity to use its additional functional characteristics. After all, from a technical point of view, all these virtual objects are nothing more than a certain program code, which is an integral part of the main program and does not represent much value in isolation from it[135].

Consideration of the existing relations between the user and the operator of the gameplay as of contractual nature entails a number of important consequences.

Firstly, it is possibility of regulating grounds for its termination and unilateral modification in a contractual manner. Since user agreements and other similar agreements are nothing more than an accession agreement, the terms of which are developed unilaterally by the gameplay operator, it is quite logical to expect that such an agreement will provide for the maximum administrative capabilities of this person in relation to such an agreement. In fact, the user agreement plays role of a law in relation to the corresponding virtual space, however, a law that is adopted within the framework of an absolute monarchy, without any democratic procedures. In this regard, it is not surprising that any objectivity can be counted on when considering disputes between users, but not between the user and the copyright holder (the operator of the gameplay),

[134] Palka P. Virtual property: towards a general theory. PhD. Florence: European University Institute. 2017. P. 49-53.

[135] Kwong J. Getting the Goods on Virtual Items: A Fresh Look at Transactions in Multi-User On-line Environments // William Mitchell Law Review. 2011. Vol. 37. No. 4. P. 1812.

which combines in one person the fullness of the "legislative", "executive" and "judicial" authorities.

Secondly, if virtual objects are an "addition" to the license agreement, then obligation to pay arises from the very fact that they are provided to the user, without any guarantees from the copyright holder (the operator of the gameplay), regardless of their subsequent use and the fate of the account of such a user. Similar consequences are possible in the case when the provision of in-game objects is considered by the user agreement as a service: it is considered rendered at the time of "crediting" such values to the user's account, and no subsequent refunds are made.

However, this approach has two main drawbacks. First of all, it is fraught with the absolute power of the copyright holder (the operator of the gameplay) and the associated disenfranchisement of users[136]. As the still few judicial practice shows, it is the relationship between the copyright holder and the user that is the most conflicted. In addition, the disadvantage is the fact that the question still remains: what is the legal status of such objects in the case when the user agreement does not regulate it in any way or there is simply no such agreement, including due to its invalidation?

At the same time this approach does not violate the exclusive rights of the developer to the game as a computer program. The user acquires the right to use the code (game attribute) under the license agreement, and its payment is a royalty or a license fee.

3. Application of Blockchain Technology in the Gaming Industry

Absence of a clear legal regulation of the turnover of virtual property does not allow users to rely on regulatory measures when protecting their rights in case of malfeasance of third parties, instead in relations with the game developer and third parties, the user relies on his counterparty's conscientious compliance with the principle of *pucta sunt servanda*. And there is one thing that could potentially help users in such cases and as well bring more clarity on how to qualify in-game items, which is the blockchain technology. Blockchain does not require trust between the parties when concluding a transaction and ensures its execution without state intervention. As noted by W. Mougayar, "trust should be free, and not in the hands of centralized forces that tax or control it."[137] Initially, the blockchain was developed as a technology for a platform for organizing

[136] Fairfield J. Mixed Reality: How the Laws of Virtual Worlds Govern Everyday Life // Berkeley Technology Law Journal. 2012. Vol. 27. P. 83; Merges R. Justifying Intellectual Property. N.Y.: Harvard University Press, 2011. P. 262

[137] The business blockchain : promise, practice, and application of the next Internet technology / William Mougayar ; forward by Vitalik Buterin. Hoboken, New Jersey : John Wiley & Sons, Inc., [2016]

payments with cryptocurrency (blockchain 1.0), but soon this technology began to be used to conclude smart contracts (blockchain 2.0).

A smart contract is a computer program (code) that automatically executes the terms of the contract written in it as commands when a certain condition (circumstance, trigger) occurs. All the terms of the contract can be written in the code, considering it as a way of fixing the will of the parties. True, the code becomes "smart" only with respect to those terms of the contract that are written using the "if... then..." branching operator and are executed automatically due to this.

Blockchain is a decentralized database that stores information about digital assets and all transactions made with them. The advantages of blockchain are making transactions without an intermediary, transparency, self-sufficiency, non-cancellability of operations, autonomy.58 At the same time, inheritance, sale, donation of virtual property through the conclusion of smart contracts in the blockchain 2.0 version meets a number of technical problems.

The peculiarity of blockchain technology is that it applies only to digital assets (tokens). In order to transfer transactions to the smart contract mode, in some cases it is necessary that the asset that is the subject of the contract is tied to a virtual unit (token) operated by a computer program. Virtual gaming property is not a digital asset, therefore a smart contract cannot provide automatic fulfillment of obligations by transferring a game attribute, the record of which is not in the database (in the blockchain). The problem of digitalization (tokenization) of gaming property makes it impossible to donate and inherit virtual property through a smart contract.

To conclude a contract for the purchase and sale of virtual property in the form of a smart contract, two models of program construction are used. When selling game property, the parties are interested in automating the process of fulfilling the seller's obligation to transfer the goods and the buyer's obligation to pay for it. The first model of a smart contract automates the execution of both of these duties, which are prescribed as commands executed when any circumstance (trigger) occurs. The second model programs only one of the responsibilities, linking its execution to the execution of another, which is specified not as a command, but as a condition for the execution (trigger) of a smart contract.

Since fiat money, unlike gaming property, can be represented in the form of tokens, blockchain technology programs the fulfillment of the buyer's obligation, but not the seller's. The execution of the command to write off tokens from the buyer's crypto wallet and transfer them to the seller's crypto wallet is made dependent on the transfer of the game attribute by the seller to the buyer. The fulfillment of the buyer's obligation to pay for it is counter. Thus, in the turnover of virtual gaming property, a smart contract allows you to ensure the fulfillment of the buyer's obligation to pay for the goods, but not the seller's obligation to transfer it.

Another problem with the use of smart contracts is the choice of a reliable oracle. An oracle is understood as an independent source of information about the occurrence of a circumstance that is a condition (trigger) for launching the execution of a smart contract. The cryptographic protection of the platform on which the smart contract is executed loses its advantages if the oracle can be hacked or bribed. The parties to the transaction (users) and the game developer have access to information about the transfer of the game attribute. The requirement of independence is largely met by information coming from a third party, that is, from the game developer. At the same time, the purchase of game property not "from the developer", but "through him" does not meet the economic interests of the developer, since it reduces the level of income of the developer from the sale of virtual game items.

For these reasons, blockchain 2.0 technology is not an effective way to solve the problem of turnover of virtual gaming property. Technical problems of using smart contracts lead to further development of the technology, in particular, decentralized applications (Dapps) and decentralized autonomous organizations (DAO) appear, which are conventionally designated as the version of blockchain 3.0. The next-generation blockchain technology further elaborates the concept of a "smart contract" in order to create decentralized, autonomous organizational units that are guided by they have their own laws and operate almost autonomously[138].

Gaming industry sees a huge potential in creating blockchain games as decentralized applications that not only make the user a full-fledged owner of virtual gaming property, but also eliminate intermediaries in the relationship between the user and the game developer and reduce the latter's costs for server maintenance. Traditional multiplayer games use a client-server architecture, where one or more client nodes are directly connected to a central server. Blockchain games are decentralized applications (Dapps) running on a computer peer-to-peer network that does not have control from a single center[139]. The decentralized application uses blockchain to store data and create smart contracts.

The virtual gaming property of blockchain games is initially presented in the blockchain registry in the form of tokens, which allows you to program the fulfillment of the seller's obligation to transfer the game attribute in a smart contract. The user is the rightful owner of the game property of blockchain games and can dispose of it[140]. Interchangeable and unique (non-fungible) tokens are used as virtual game property. The latter are used in collectible games, for example, in

[138] The business blockchain : promise, practice, and application of the next Internet technology / William Mougayar ; forward by Vitalik Buterin. Hoboken, New Jersey : John Wiley & Sons, Inc., [2016]
[139] Cai W., Wang Z., Ernst J. B., Hong Z., Feng C., Leung V. C. M. Decentralized applications: The blockchain-empowered software system // IEEE Access, vol. 6, pp. 53019–53033, 2018.
[140] Ibid.

the CryptoKitties game created on the Ethereum platform, where kittens are unique tokens of the ERC721 standard. On the contrary, in the multi-user blockchain game Huntercoin, the HUC currency is based on an interchangeable token of the ERC 20 standard.

Decentralized games are based on smart contracts, the execution of which depends on the actions of the parties, the expression of which takes place in the blockchain environment. Therefore, the execution of smart contracts in decentralized games has no vulnerability, as well as the problem of obtaining false or incomplete information from the oracle, since all information is contained in the blockchain.

Currently, blockchain games have technical shortcomings and cannot be compared with traditional multiplayer games in terms of update speed, user interface, game plot and a number of other aspects. At the same time, active developments in this area will allow protecting the user's rights to gaming property not in a legal, but in a technical way – using blockchain technology.
Use of new technology in the gaming industry makes it possible to eliminate the problem of uncertainty of law in the matter of protecting the interests of the user. Cryptographic encryption protects the user from theft of game property belonging to him. The "ownership" of the game attribute does not depend on the discretion of the game developer, since the virtual property is represented as a token in the user's crypto wallet and can be used outside the framework of this game. The turnover of virtual gaming property is mediated by smart contracts, the automatic execution of which does not require trust between counterparties. These advantages are peculiar exclusively to new decentralized blockchain games that have not managed to reach the level of graphics, depth of plot and, most importantly, the number of users that traditional online multiplayer games have.

Concluding Remarks

The key reason why it is so difficult to certainly determine legal nature and status of in-game virtual property lies in their manysidednes and ambiguity. On the one hand, they exist on a computer screen, only inside the video game being its integral part, however on the other hand they have certain influence on the “real” world (as opposed to the “virtual” world) and are born from actions from the real world: development by game authors and acquiring of items by the user. At the same time, in-game items can be acquired just through the game process as achievements or bought for money – in the latter case influence of the real world, where the money was earned becomes even greater. Moreover, the purpose served by virtual items can be different: either helping the user to progress through the game or just bring moral and esthetic pleasure. It brings us to another consideration: a quite often high emotional engagement of the user and their

connection with the game itself and virtual items inside it. Is not it a reason for a broader perspective for such items? Hence, it appears to be unreasonable to view virtual property just as pieces of software code and pictures on the screen and regulate them solely by means of license agreements between game publisher and user. However, there is a logical question, how can one single out certain objects from the game, that is another's intellectual property.

The previously mentioned crypto technology seems to be the most suitable solution. It is important to mention, that for video games industry crypto tokens and especially NFTs are not something completely new. It is fair to say that in-game virtual items are ancestors of NFTs and share the same nature, just having different surface. Surprisingly, game publishers have only recently started introducing crypto tokens into the game worlds and bringing together conventional virtual property and blockchain.[141] Actually video games worlds are alike another nowadays trending things – metaverses, which are the same virtual worlds but aimed at different purposes and built in their own way. However, future alignment of video games/virtual in-game items on the one hand, and metaverses/crypto tokens on the other appears inevitable. Moreover, blockchain technologies have proved to be reliable and quite sufficient and in my personal opinion rebuilding video games worlds in order to equal in-game items with NFTs could solve most of problems, arising out of current legal ambiguousness of such items.

[141] On the first efforts happened when UBISOFT introduced in December, 2021 their platform "Quartz" and integrated NFTs in their AAA game "Tom Clancy's Ghost Recon"

Conclusion

Thus, based on the results of this study, the following conclusions can be reached.

It seems that the most appropriate legal regime for video games per se cannot be singled out. A video game in the law of the EU member states, the USA and others may be protected as a computer program, as an audiovisual work and as a multimedia product. The legal regime of each individual video game should be determined taking into account the specifics of its development. Firstly, the technical nature of the video game should be taken into account, namely, the question should be solved whether the video game is exclusively a program code or a set of objects whose content and structure are united by one goal. Secondly, it is necessary to take into account the circle of persons involved in the creation of a video game, as well as to determine which element the creative contribution of a particular author is aimed at creating: the video game as a whole as the code of a computer program or its separate element, for example, a script, graphic design of the in-game space, characters. Thirdly, in each case, it should be determined to what extent the video game and its elements meet the criteria of protection as objects of intellectual property. Nevertheless, in the vast majority of cases that involve a plurality of objects that make up the content and structure of a video game, a video game should be subject to a legal regime of protection, namely as a multimedia product.

There is no single legal regime for video games at the international level. The analysis shows that the most common options for qualifying video games as intellectual property objects are qualification as a computer program, as an audiovisual work and as a complex object. The qualification of a video game as a certain object of intellectual property depends on the approaches developed by the legal doctrine and judicial practice of the relevant State, as well as the peculiarities of the legal definitions of the above categories.

Video games can include various protected results of intellectual activity and means of individualization. The classification of video game elements should not be based on a simple separation of them in accordance with the applicable legal regime of the relevant protected results of intellectual activity, but depending on the actual objects underlying the video game. So, computer programs underlying video games are allocated to a separate group. The second group includes elements that make up the interactive content of a video game, with which the user directly interacts, namely audiovisual (representing both audiovisual displays in unity and separately auditory and visual elements) and other copyright elements of video games. The third group includes elements of industrial property, the legal protection of which requires the passage of registration procedures, and the inclusion of which is mainly aimed at additional protection of the rights of the copyright holder of the video game in the distribution of video games and the

subsequent derivative of the direct distribution of video games distribution of fan service objects. The fourth group includes other objects, in particular user content, since it is not an integral part of the unified structure of the video game, but is optional.

The legal protection of video game computer programs is distinguished by the following features. Firstly, the above analysis demonstrates that the general trend is the legal protection of the source and object code of programs, as well as preparatory materials. In turn, differences regarding legal protection arise in relation to graphical user interfaces of programs. In some jurisdictions (*e.g.* USA) they can be protected as part of the computer program itself. In other legal systems, for example, in the European Union, they cannot. At the same time, approaches to legal protection may differ depending on the specifics of the legal family and the jurisdictions themselves in relation to graphical user interfaces. Secondly, the machine code, as well as some elements of the source and object codes, also cannot be recognized as protectable. Despite the fact that the creation of program code implies a creative process, nevertheless, taking into account the general similarities and syntax logic of existing programming languages, as well as the desire to maximize the speed of programs, they may in some cases be recognized as utilitarian and not subject to protection as literary works. Thirdly, many parts of the program code of video game computer programs are often used on the basis of open licenses. Because of this, the literal elements may coincide, creating certain difficulties in identifying the illegal reproduction of part of the video game code and determining whether the author really made a creative contribution to the creation of the program code, which affects its security capability.

The legal protection of audiovisual elements of a video game depends on the qualification of a video game as an object of intellectual property, since approaches to elements that differ from each other differ. Thus, in the USA and the European Union, at the level of judicial practice, certain methods have been developed to determine to what extent audiovisual displays generated by programs are protected, which, if a video game is qualified as a computer program, should be protected as part of it. If there is such a problem as "cloning of video games", the developed approaches to the methods of comparing video games make the above-mentioned jurisdictions attractive to video game developers, since such legal certainty is regarded by developers and organizers of video game creation as ensuring proper protection of their creative work and material costs incurred to produce an attractive user interface.

Despite the differences between the continental and Anglo-Saxon legal families, taking into account the similarity of legal definitions and the inclusion of non-liberal elements in the legal regime for the protection of computer programs, it seems that some US approaches to the legal protection of graphical user interfaces may be applicable in other countries. In particular, approaches in determining which elements are exclusively functional and perform a utilitarian

function, which follow from existing practice and cannot be considered protectable. At the same time, the appearance of the graphical user interface of a video game can receive legal protection as an object of patent law, namely as an industrial design. However, taking into account the patentability criteria, it seems that in the vast majority of cases it is extremely difficult to patent the graphical user interface of a video game.

Also, taking into account the desire to achieve maximum realism of the in-game world, existing works of third parties may be included in the audiovisual elements of a video game, which causes a conflict between the right to freedom of speech and copyright. The inclusion of registered means of individualization in a video game is possible, however, depending on the jurisdiction, approaches to determining whether the demonstration of a trademark in a video game is a violation of an exclusive right or not vary.

In the case when user content is generated through the use of the video game copyright holder's resources, the created objects must be recognized as works derived from the video game and transferred to the video game copyright holder. In the case when the user content is generated by the player independently and without using the licensor's work as source material, the user content cannot be considered to belong to the licensor, since the occurrence of such objects is beyond the scope of contractual relations. It also seems that the protectability of user content will depend on how wide the possibilities of generating this content are provided to the user, since the limited range of alternatives presented by the video game in some cases may indicate a lack of originality (in jurisdictions where such a criterion of protectability is present) and the creative nature of work when creating such content.

At the same time video games host inside them separate virtual worlds, filled with various objects that have influence on the game process and are objects of social and legal relation between users themselves and users with game publishers. It is still unclear how in the existing law regimes these in-game objects can be defined. Both property and contractual theories have their own flaws not allowing us to categorically choose one of them. It is essential, when considering different approaches to bear in mind that although virtual property “lives” solely on the computer screen, it is influenced and affects the real world. Nowadays when boundaries between the two worlds seem to becoming more and more thin this consideration is even more important than before. This thought logically leads to the above drawn conclusion which implies spreading the legal regime of crypto tokens on in-game property as it will help resolve most of controversies in their nature and protect interests of both users and gave developers.

Bibliography

Books, Book Chapters and Periodicals

- Bartle R.A. Pitfalls of Virtual Property. The Themis Group, 2004.
- Caillois R. Les jeux et les hommes. Gallimard, 1967. P. 211.
- Carl "Ott" Lindstrom, Mod Money, Mod Problems: A Critique of Copyright Restrictions on Video Game Modifications and an Evaluation of Associated Monetization Regimes, 11 Wm. & Mary Bus. L. Rev. 811, 2020
- Casillas B, 'Attack of The Clones: Copyright Protection for Video Game Developers' (2013) 33 Loy. L.A. Ent. L. Rev., 137
- Castree S, 'A Problem Old as Pong: Video Game Cloning and the Proper Bounds of Video Game Copyrights' (2013
- Chein *A.* A Practical Look at Virtual Property Note // St. John's Law Review. 2006.
- David Greenspan. Mastering the Game: Business and Legal Issues for Video Game Developers - Creative industries - No. 8. 2013
- Dean D, 'Hitting Reset: Devising A New Video Game Copyright Regime' (2016) 164 U. Pa. L. Rev., 1239
- Dennis S. Karjala, COPYRIGHT LAW: Copyright Protection of Computer Program Structure, 64 Brook. L. Rev. 519 (1998).
- Dmytrenko K, 'Protection of Video Games by Copyright: Comparative Analysis of the US, the UK and German Legal Frameworks' (2018) CEU eTD Collection
- Duranske B. T. Virtual Law: Navigating the Legal Landscape of Virtual Worlds. Chicago: ABA Publishing, 2008.
- E.S. Grin, Copyright in Multimedia Products, 2013 (Prospect).
- Fairfield J. Mixed Reality: How the Laws of Virtual Worlds Govern Everyday Life // Berkeley Technology Law Journal. 2012. Vol. 27.
- Fairfield J. Virtual Property // Boston University Law Review. 2005.
- Ginsburg J. C. No "Sweat"? Copyright and Other Protection of Works of Information After Feist v. Rural Telephone // Colum L Rev. 1992. No 338
- Gonzales H, 'Protection of Video Game Mechanics through the Patentability of Software' (2019) La Propiedad Inmaterial N. 2

- Grosheide F. W., Roerdink, H., and Thomas, K., Intellectual Property Protection for Video Games: A View from the European Union // Journal of International Commercial Law and Technology, Vol.9 No.1 (January, 2014).
- Hunt K. This Land is not Your Land: Second Life, Copybot and the Looming Question of Virtual Property Right // Texas Review of Entertainment and Sports Law. 2007. Vol. 9.
- Jankowich A. Property and Democracy in Virtual Worlds // Boston University Journal of Science and Technology. 2005. Vol. 11. No. 2
- Jungar E, 'Streaming Video Games: Copyright Infringement or Protected Speech?' (2016) 3 (2) Press Start
- Juul J. Half Real: Video Games between Real Rules and Fictional Worlds. Cambridge, MA: MIT Press, 2005.
- Juul J. Introduction to Game Time. Cambridge, MA: MIT Press, 2004.
- Karnell G. European Originality: A Copyright Chimera. Den Haag: Kluwer Law International, 1998.
- Koukal P. Graphical User Interfaces and Their Protection in the European Union. In Thomas S. Clary. Horizons in Computer Science Research. New York: Nova Science Publishers, 2018.
- Kwong J. Getting the Goods on Virtual Items: A Fresh Look at Transactions in Multi-User On-line Environments // William Mitchell Law Review. 2011. Vol. 37. No. 4.
- Lastowka G., Hunter D. The Laws of the Virtual Worlds // California Law Review. 2004. Vol. 92. Issue 1.
- Lipson A. S., Brain R. D. Computer and Video Game Law – Cases, Statutes, Forms, Problems & Materials. Carolina Academic Press, 2009.
- Lukoševičienė A. On Author, Copyright and Originality: Does the Unified EU Originality Standard Correspond to the Digital Reality in Wikipedia // Masaryk University Journal of Law and Technology, 2017, No 11.
- Manovich L. The Language of New Media. Cambridge: MIT Press, 2001.
- Murray J. Hamlet on the Holodeck. Cambridge, MA: MIT Press, 1998.
- Newman J. Videogames. New York: Routledge, 2005.
- Nielsen S, *Understanding Video Games* (3rd edn, Roudledge 2016)
- Palka P. Virtual property: towards a general theory. PhD. Florence: European University Institute. 2017
- Peter Groves, Computer Software: How Does That Look and Feel 14 Business Law Review, Issue 4

- Peter Stone, Peter Groves, Filtering the Functional out of Computer Programs 18 Business Law Review, Issue 2
- Poole S. Trigger happy: the inner life of videogames. L.: Fourth Estate, 2000.
- Postel C, ‘Let’s Play: YouTube and Twitch’s Video Game Footage and a New Approach to Fair Use’ (2017) Hastings Law Journal Vol. 68, 1169
- Ribaudo N, 'Youtube, Video Games, and Fair Use: Nintendo's Copyright Infringement Battle with Youtube's Let's Plays and Its Potential Chilling Effects' (2017) 6 Berkeley J Ent & Sports L, 114
- S. Gregory Boyd, Sean F. Kane, Brian Pyne. Video Game Law: Everything you need to know about Legal and Business Issues in the Game Industry. CRC Press, 2018.
- Shen L. Who Owns the Virtual Items? // Duke Law and Technology Review. 2010. Vol. 9. No. 1.
- Stamatoudi I. A. Copyright and Multimedia Products: A Comparative Analysis. - Cambridge: Cambridge Univ.. Press, 2002.
- Stein J, ‘The Legal Nature of Video Games – Adapting Copyright Law to Multimedia’ (2015) Press Start Vol.2 Iss. 1, 43
- Theodore J. Grabowski Jr., Copyright Protection for Video Game Programs and Audiovisual Displays; and - Substantial Similarity and the Scope of Audiovisual Copyrights for Video Games, 3 Loy. L.A. Ent. L. Rev. 139 (1983).
- Walton K. Mimesis as Make-Believe: On the Foundations of the Representational Arts. Cambridge, Mass: Harvard University Press, 1990.
- White, Elizabeth (2013) "The Berne Convention's Flexible Fixation Requirement: A Problematic Provision for User-Generated Content," Chicago Journal of International Law: Vol. 13: No. 2, Article 18
- William Mougayar ; forward by Vitalik Buterin, The business blockchain : promise, practice, and application of the next Internet technology / Hoboken, New Jersey : John Wiley & Sons, Inc., [2016]
- Yin Harn Lee, Play again? Revisiting the case for copyright protection of gameplay in videogames, European Intellectual Property Review, E.I.P.R. 2012, 34(12)
- Zimmerman E. Narrative, Interactivity, Play, and Games. Cambridge, MIT Press, 2004.
- Zimmerman E., Salen K. Rules of play: Game design fundamentals. Boston, MA: MIT Press, 2003.

Cases

EU

- Case C-393/09, *Bezpečnostní softwarová asociace– Svaz softwarové ochrany v. Ministerstvo kultury* [2010] ECR I-13971
- Case C-145/10 Eva-Maria Painer v Standard Verlags GmbH [2012] ECR I-12594
- Case C-5/08 Infopaq International A/S v Danske Dagblades Forening [2009] ECR I-6624
- Case C-355/12 *Nintendo Co Ltd and others v PC Box Srl* [2014] ECLI:EU:C:2014:25

Germany

- BGH GRUR 1985, 1041/1047
- OLG Frankfurt am Mein, GRUR 1983, C.H. Beck, Munich 1983, pp. 757-758 on Donkey Kong Junior

US

- *AM General LLC v. Activision Blizzard*, *Inc.,* [2020] 1:17-cv-08644-GBD-JLC S.D.N.Y.
- *Antonick v. Electronic Arts, Inc*., 14-15298 (9th Cir. 2016).
- *Apple Computer, Inc. v. Microsoft Corporation*, [1994] 35 F.3d 9th Cir.
- *Atari Inc. v. Amusement World, Inc.* [1982] 547 F. Supp. 222 D. Md.
- *Atari, Inc. v. North American Philips Consumer Electronics Corp*. (672 F.2d 607) (7th Cir. 1982).
- *Atari Games Corp. v. Nintendo of America Inc., 975* F.2d 832 (Fed. Cir. 1992).
- *Baltimore Orioles, Inc. v. Major League Baseball Players Ass'n*, 805 F.2d 663, 668 n. 6 (7th Cir.1986)
- *Bethesda Softworks LLC v. Behaviour Interactive, Inc. and Warner Bros, Entertainment Inc* 8:2018cv01846 (2018).
- *Bragg v. Linden Research, Inc*., 487 F. Supp. 2d 593, 603 (E.D. Pa. 2007).
- *Computer Associates International, Inc. v. Altai, Inc.*, Nos. 91-7893, 91-7935, 1992 U
- *Computer Edge Pty Ltd v. Apple Computer Inc* [1986] HCA 19.
- *Davidson & Associates, Inc. v. Internet Gateway*, [2004] 334 F. Supp. 2d 1164 E.D. Mo..
- *Feist Publications, Inc. v. Rural Telephone Service Co.*, 499 U.S. 340 (1991).
- *Jaslow Dental. Laboratory, Inc. v. Whelan Assocs.*, 479 U.S. 1031 (1987).
- *Kremen v. Cohen Network Solution, Inc.*, 337 F. 3d 1024 [2003].
- *Midway Manufacturing Co. v. Artic International Inc.*, [1982] 547 F. Supp.
- *Mil-Spec Monkey, Inc. v. Activision Blizzard, Inc.,* No. 14-cv-2361 (N.D. Cal. Nov. 24, 2014).

- *Reader's Digest Ass'n v. Conservative Digest, Inc.,* 821 F.2d 800, 806 (D.C.Cir.1987*)*
- *Sega Enterprises Ltd. v. Accolade*, *Inc.,* 977 F.2d 1510 (9th Cir. 1992);
- *Silicon Knights, Inc. v. Epic Games, Inc.*, No. 12-2489 (4th Cir. 2014).
- *Spry Fox, LLC v, Lolapps, Inc.* [2012] No. 2:12-cv-00147 W.D. Wash..
- *Stern Electronics Corp. v. Kaufman*, [1981] 523 F. Supp. 635 E.D.N.Y.
- *Tetris Holding, LLC v. Xio Interactive, Inc.* [2012] 863 F.Supp.2d 394 D.N.J..
- *Wheaton v. Peters,* 33 U.S. 591 (1834)
- *Williams Electronics Inc. v. Artic International Inc.* 685 F.2d 876

United Kingdom

- *Cramp & Sons Ltd v Frank Smythson Ltd* [1944] AC 329

Legislative acts

- Agreement on Trade-Related Aspects of Intellectual Property Rights. 1994 // Marrakesh Agreement Establishing the World Trade Organization, Annex 1C.
- Berne Convention for the Protection of Literary and Artistic Works of September 9, 1886, completed at Paris on May 4, 1896, revised at Berlin on November 13, 1908, completed at Berne on March 20, 1914, revised at Rome on June 2, 1928, revised at Brussels on June 26, 1948, and revised at Stockholm on July 14, 1967 (with Protocol regarding developing countries).
- the Civil Code Of The Russian Federation Part Four No. 230-FZ of December 18, 2006
- the Convention on the Grant of European Patents of 5 October 1973
- Directive 2001/2009/EC of the European Parliament and of the Council of 22 May 2001 on the harmonization of certain aspects of copyright and related rights in the information society OJ L 167, 22.6.2001
- Directive 2009/24/EC of the European Parliament and of the Council of 23 April 2009 on the legal protection of computer programs OJ L 111, 5.5.2009
- Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the legal protection of databases OJ L 77, 27.3.1996
- the Federal Republic of Germany Copyright Act of 9 September 1965 (Federal Law Gazette I, p. 1273), as last amended by Article 25 of the Act of 23 June 2021 (Federal Law Gazette I, p. 1858)

- the French Republic Law NO. 92-597 of July 1, 1992, On The Intellectual Property Code
- Protocol Relating To The Madrid Agreement Concerning The International Registration Of Marks (As Amended On November 12, 2007)
- Regulation (EU) 2017/1001 of the European Parliament and of the Council of 14 June 2017 on the European Union Trade Mark
- Republic of Korea Copyright Act (Act No. 432 of January 28, 1957, as amended up to Act No. 9625 of April 22, 2009)
- Republic of Korea Computer Programs Protection Act (Act No. 3920. Dec. 31. 1986; As last amended by Act No. 5605 of December 30, 1998)
- § 59.1-501.1. Uniform Computer Information Transactions Act
- 17 U.S.C., US Copyright Act, 1976
- WIPO Copyright Treaty (WCT) (1996) TRT/WCT/001

Online Sources

- Newzoo Global Games Market Report 2020 // Available at: https://newzoo.com/insights/trend-reports/newzoo-global-games-market-report-2020-light-version/ (last visited 1 June 2022)
- Crawford C. The Art of Computer Game Design. Available at: https://www.digitpress.com/library/books/book_art_of_computer_game_design.pdf (last visited 16 July 2022)
- The Legal Status of Video Games: Comparative Analysis in National Approaches / Mr. Andy Ramos, Ms. Laura López, Mr. Anxo Rodríguez, Mr. Tim Meng and Mr. Stan Abrams Available at: https://www.wipo.int/export/sites/www/copyright/en/activities/pdf/comparative_analysis_on_video_games.pdf (last visited 27 July 2022)
- Compendium of U.S. Copyright Office Practices // Available at: *https://www.copyright.gov/comp3/* . (last visited 27 July 2022)
- Green Paper Copyright and Related Rights in the Information Society COM (95) 382 final, Brussels, July 1995 // URL: http://europa.eu/documentation/official-docs/green-papers/index_en.htm . (last visited 27 July 2022)
- Lehman B., Brown R. Intellectual Property and the National Information Infrastructure: The Report of the Working Group on Intellectual Property Rights United States. U.S. Patent and Trademark Office, Washington D.C., September 1995. // Available at: http://www.uspto.gov/web/offices/com/doc. (last visited 2 July 2022)

- Mastering the Game: Business and Legal Issues for Video Game Developers - Creative industries - No. 8. 2013 // Available at: https://www.wipo.int/publications/en/details.jsp?id=3233&plang=EN. (last visited 30 July 2022)
- IGDA White paper : https://igda.org/resources-archive/ip-rights-whitepaper-2003/ . (last visited 30 July 2022)
- P. Samuelson, Why the look and feel of software user interfaces should not be protected by copyright law. // Available at: http://www.foo.be/andria/docs/p563-samuelson.pdf (last visited 1 August 2022)
- Unreal Engine End User License Agreement for Publishing // Available at: https://www.unrealengine.com/ja/eula/publishing. (last visited 5 August 2022)
- Centre for European Economic Research. Discussion Paper No. 17-007 Digital Design Protection in Europe: Law, trends and Emerging Issues // Available at: https://ftp.zew.de/pub/zew-docs/dp/dp17007.pdf (last visited 6 August 2022)
- Kramer W. What Is a Game? // The Game Journal, December, 2000. Available at: http://www.thegamesjournal.com/articles/WhatIsaGame.shtml (last visited 16 July 2022)
- M.G. Debono, 'What's in a Game? Intellectual Property Law for a Budding New Industry' (FFF- Legal, 18 September 2013) Available at: http://www.fff-legal.com/whats-in-a-game-intellectual- property-law-for-a-budding-new-industry/ (last visited 30 August, 2022).
- Stephen C. McArthur, 'Clone Wars: The Five Most Important Cases Every Game Developer shouldknow'(2013),GAMASUTRA // Available at http://www.gamasutra.com/view/feature/187385/%20cl onewars_the_five_most_.php> (last visited 30 August 2022)

Abstract

Video games have become an important part of people's entertainment alongside with music, literature and movies and are actively competing with the latter for audience's attention. At the same time, video games represent a sort of legal phenomenon. It is rather difficult to qualify them from the legal standpoint due to their complexity and variety. On the one hand, video games are valued for their audio-visual displays, on the other, their core is computer programs, not to mention that video game can be a simple software using minimal visual elements or highly complicated with a plot and a full-grown virtual world. This is the reason for the issues of finding of the best legal definition for video games. Video games virtual worlds also represent a legal anomaly due to their dichotomy: they exist only on computer screens however are influenced by and affect the real world. The legal nature of virtual property objects is yet to be determined and explored in greater depths by the researchers.

Zusammenfassung

Videospiele sind neben Musik, Literatur und Filmen zu einem wichtigen Bestandteil der Unterhaltung geworden und konkurrieren mit letzteren aktiv um die Aufmerksamkeit des Publikums. Gleichzeitig stellen Videospiele eine Art Rechtsphänomen dar. Aufgrund ihrer Komplexität und Vielfalt sind sie rechtlich nur schwer zu qualifizieren. Einerseits werden Videospiele für ihre audiovisuellen Darstellungen geschätzt, andererseits besteht ihr Kern aus Computerprogrammen, ganz zu schweigen davon, dass Videospiele eine einfache Software mit minimalen visuellen Elementen oder hochkompliziert mit einer Handlung und einem vollständigen Inhalt sein können -gewachsene virtuelle Welt. Dies ist der Grund für die Probleme, die beste rechtliche Definition für Videospiele zu finden. Virtuelle Welten von Videospielen stellen aufgrund ihrer Dichotomie auch eine rechtliche Anomalie dar: Sie existieren nur auf Computerbildschirmen, werden jedoch von der realen Welt beeinflusst und beeinflussen diese. Die Rechtsnatur virtueller Eigentumsobjekte muss von den Forschern noch genauer bestimmt und untersucht werden.