Features of the Licensing of Open-Source and Closed-Source Software

Svetlana V. Pivneva[1]; Nataliaya G. Vitkovskaya[2]; Petr Katys[3]; Vitaly V. Goncharov[4]; Maya Livson[5]

[1]Russian State Social University, Russia.

[2]Russian State Social University, Russia.

[3]Federal Government Institution Scientific and Production Association Special Equipment and Telecoms of the Ministry of Internal Affairs of the Russian Federation, Russia.

[4]Kuban State Agrarian University named after I.T. Trubilin, Russia.

[5]Moscow Polytechnic University, Russia.

Abstract

The article presents a study of the features of licensing regulation of circulation of computer programs with open-source and closed-source software. The widespread dissemination of computer programs has caused the need to regulate their circulation, including the use of licensing mechanisms. The objective of this article is to analyze the features and highlight the differences of license agreements used for open-source software, on the one hand, and with closed-source software, on the other hand. The importance of legal regulation of software circulation, including the establishment of license agreements, is shown. The classification of computer software according to the availability of the source software is given, and the influence of this feature on the choice of the type of licensing agreement is shown. Examples of license agreements for common software products are considered. The practice of regulating software circulation by means of licensing in several countries has been studied. Conclusions are drawn on the possibility and expediency of considering global experience to improve Russian legislation.

Key-words: Open-source and Closed-source Software, Licensing, License Agreement, Developers, Users.

1. Introduction

Modern society has been an information society for several decades, which means that it has a specific form of social organisation in which the latest digital technologies for creating (generating), processing, and distributing information have become the main, fundamental sources of economic potential and power [1]. In this regard, the development of state institutions, industries, national

economy, and educational institutions in the modern world cannot be imagined apart from the processes of informatization, logically embodied in digital projects and programs of digital transformation of all socio-economic aspects of the activity. Every electronic device that surrounds us - from cash registers in shops, ATMs, computing complexes in factories, workplaces of public and civil servants (equipped with personal computers) to modern washing machines and Wi-Fi routers installed at homes of almost all of us - uses software that controls the operation of all semiconductor components of the mentioned above devices.

Computer programs are not only a unique object of copyright but also an important element of economic turnover. Together with objects of industrial property and means of individualisation, they are an integral part of companies' intangible assets and are intended not only to satisfy the aesthetic and spiritual needs of society but also become a source of multimillion revenues for their rights holders. A quick pace of development of new programs (at present, only in Russia the annual growth of applications for their registration is 15-20% [2]), the complication of their structure, the appearance of new varieties, expansion of civil relations into the Internet space, etc. - determine the urgent necessity to develop the legal regulation of computer software circulation.

Mass purchases of software products made by turnover participants, conducted by right holders and government agencies to check the "license cleanliness" of software deployed in the organization, and the intricacies of Russian tax legislation inevitably force lawyers to dive into the nuances of computer software licensing. Features of open-source and closed-source software licensing are of great importance when analysing issues related to software licensing. The increasing popularity of its use by both developers and end-users makes it necessary to clarify the legal status of such products and the legal risks associated with their use. Unfortunately, Russian literature and judicial practice still cannot provide an in-depth analysis of these issues.

Problems and mechanisms of legal regulation of software circulation both with open-source and closed-source code in their works touched such Russian specialists as A.I. Savelyev [3], A.K. Zharova [4], A.I. Gorev [5], and others. Unfortunately, those few Russian studies devoted to the legal aspects of software licensing, although undoubtedly of scientific interest, in some cases are unable to provide answers to many questions that arise in practice. Mainly because they are limited to the analysis of Russian law only, while the software market is dominated by foreign products, mostly of American origin. As a consequence, the vast majority of license agreements granting the right to use a computer program not only rely on legal categories that are not specific to Russian law but are also often subject to foreign law. In this connection, the analysis of such contracts through the prism of

foreign law is of particular relevance so as it can be used to clarify the meaning of certain provisions in the contract, as well as their possible interpretation in the context of the Russian reality.

At the same time, the following foreign specialists have devoted their work to the problem of software circulation: E. Raymond [6], J. Reichman [7], S. Wuchty [8], etc. The main results of works of both Russian and foreign researchers on this problem are that the turnover of software should be facilitated by a centralized and systematic legal regulation. Therefore, the objective of this study is to analyze the civil regulation of computer software distribution through licensing and to identify the main trends in its development. The hypothesis of the study. Due to the widespread free distribution of open-source software (OSS), a tendency to move away from the classical forms of licensing in software turnover is forming in global practice.

2. Methods

This study is based on a set of general and special methods of scientific knowledge. General scientific methods used by us are abstraction, generalisation, analysis, synthesis, dialectical, and system-structural methods of cognition. Special methods of cognition in this study are represented by formal-legal, statistical, comparative-legal, and other methods. In particular, the use of the comparative-legal method has helped to identify the features of legal regulation of free licenses in different countries and the possibility of their use in Russia. The application of legal forecasting methods allowed determining the emerging trends in the development of open and closed licenses. The normative basis of the study consists of the acts of Russian legislation and normative acts of other countries containing the rules governing relations in the sphere of disposal of the exclusive right to a work of science, literature, or art. The empirical basis of the study is the materials of law enforcement practice, including judicial practice, related to the disposal of the exclusive right to a work of science, literature, or art.

3. Results

Licensing agreements used in the circulation of computer software are divided into:

- End-User License Agreements;

- License agreements providing for the possibility of modifying the software, bright representatives of which are the open-source licenses: GNU GPL (GNU General Public License) and BSD (Berkley Software Distribution) licenses [9].

The first group includes the closed-source software distributed based on license agreements. Such a license agreement is also called the classical or commercial one. The rights are usually granted on a fee basis – on the condition of payment of the license fee [10].

The distribution of such software, as part of the license, is usually set with several restrictions. The main restrictions include a limitation on the number of users (legal copies of the software). The licensing agreement usually explicitly specifies the number of users who may use the licensed software product, or, similarly, the number of local computers on which legal copies of the software may be installed. In the case of networked software, the limitation on the number of users may also apply to the number of users working simultaneously with the licensed networked software product.

Usually, the license agreement provides for a prohibition on copying the licensed software, allowing only one (several) back-up copies. A license agreement typically also prohibits the distribution and sale of the licensed software as well as prohibiting the loan, rental, or lease of the software.

End-user license agreements, unlike agreements providing for the possibility to modify the software, do not allow users to make any changes to the software code.

Keeping the source code secret allows the copyright holder to maintain a monopoly over the software:

- To keep control over the development of subsequent versions of the software;
- To have an additional revenue stream from software maintenance services;
- To obstruct the access of the competitors to the innovative ideas of the program [10].

Sometimes license agreements provide for specific restrictions on user rights, such as geographical restrictions, internal use of the software only, and some others.

Software vendors realize that more restrictions on software users do not contribute to the growth of software products sales, that's why new modern software licensing schemes and technologies are being developed and offered to customers, designed in the way to provide the user with the best licensing conditions and to minimize their payments.

Modern corporate licensing schemes provide various discounts and the possibility of installment payments for bulk purchases of licenses.

Let us consider features of corporate licensing on the example of three schemes intended for licensing products of Microsoft Corporation.

Multi-Year Open License (MYO) is an agreement to purchase software in installments for three years, after which the user gets a permanent license for the right to use the software. The user then has the option to renew or not to renew the agreement to receive new versions of the software [9].

Open Subscription License (OSL) is an agreement that leases the software to the user for three years under optimal conditions. It minimizes and spreads over time the payments for software use (based on the subscription principle for one year of use); the amount of payments depends on the type of software and the number of computers on which it is installed. For three years, the user has full access to software updates. At the end of the specified period, the user can either terminate the agreement, extend it for a further period, or purchase the software [9].

Besides, OSL allows the user to install the software on the newly acquired computers beyond the number specified in the agreement, including additional copies (installations) of the software in the payment of the next year, thus, allowing the user to use the licensed software on all the computers, even the newly acquired ones, without violating the license agreement.

Enterprise Agreement (EA) is a scheme similar to the MYO scheme but applies to companies with at least 250 personal computers. Different discounts are provided here [9].

Regarding the above-mentioned group of agreements, the provisions of the Civil Code of the Russian Federation (CC of the RF) [11] determine the following conditions of the software right license agreement:

Firstly, the license agreement on granting the right to use the Computer Programme is not subject to state registration, as no work registration or any other formalities are required for the creation, realization, and protection of copyrights (Paragraph 2 of Article 1232, Paragraph 4 of Article 1259 of the CC of the RF).

Secondly, the signing of licensing agreements to grant the right to use a computer program or database is permitted through the conclusion by each user of an adhesion agreement with the relevant rights holder, the terms of which are set out on the purchased copy of such program, database, or on the packaging of the copy. The beginning of the use of such a program or database by the user means their consent to the conclusion of the contract (Article 1286 of the CC of the RF).

Thirdly, according to Article 1235 of the CC of the RF, a licensing agreement must be concluded in writing, failure to comply with which leads to the invalidity of the agreement; a licensing agreement may be both for a fee and free of charge, but the latter circumstance must be reflected in the text of the agreement since in the absence of an indication on the free of charge licensing agreement, it is considered to be on a fee (Paragraph 5 of Article 1235 of the Civil Code).

If the contract has no mention of being free of charge, and at the same time the amount of remuneration or the procedure of its definition is not specified, the contract is considered as unconcluded (Subparagraph 2 of Paragraph 5 of Article 1235, Paragraph 4 of Article 1286, Article 1234 of the CC of the RF).

Free-of-charge contracts include shareware and free software, which have also become widespread recently. The specific feature of such software is that when granting the right to use the software on a free of charge basis, the right holder usually stipulates some special restrictions on the use of the program. In particular, a very common condition is a prohibition to make any changes to the software code, except as expressly permitted by law. Besides, a common condition of the "free" license is a clause releasing the right holder from any guarantees and obligations related to the functioning of the software [4].

In any variants of the license agreement, the transferred computer programs have a closed code, and modification of the software code is possible only in case of decompilation. According to Article 1280 of the CC of the RF, decompilation actions are stipulated by the legislation of the Russian Federation by the person who lawfully owns a copy of the software for the purposes when the actions are necessary to achieve the ability to interact by an independently developed computer program with other programs that can interact with the program being decompiled. The law permits such actions to be carried out by another person on behalf of the copyright holder.

Decompilation does not require the consent of the right holder or payment of additional remuneration, but the following conditions must be met:

1. The information necessary to achieve interoperability has not previously been available to that person from other sources;
2. The above-mentioned actions shall be carried out only in respect of those parts of the decompiled computer program which are necessary for the achievement of interoperability;
3. The information obtained by decompiling may be used only for achieving interoperability of the independently developed computer program with other programs, may not be transferred to other persons, except for cases when it is necessary for achieving interoperability of the

independently developed computer program with other programs, and may not be used for developing a computer program which is substantially similar to the decompiled computer program or for carrying out other actions violating the exclusive right to the computer program [4].

Another type of distributed software is OSS. The source code of this software can be viewed, reviewed, and changed to make sure that there are no flaws or unacceptable features, which most often include covert tracking of the software's user. OSS allows a person to take part in refining the software itself, to use its source code to create newer projects, and to fix detected bugs in them. This can be done by borrowing the source code if the licenses are compatible, or by studying the data structures, technologies, techniques, algorithms, and interfaces used in the software. Most open-source projects are at the same time 'free software'. The main difference between open-source and free software is in priorities. The supporters of the term "open-source" pay attention to the effectiveness of open-source as a method of software development, modernization, and further maintenance [4]. Admirers of the term "free software" pay attention to the fact that the human right to freely distribute, modify, and study the software being used is the main advantage of free software. In 1998, Open-source Initiative (OSI) was established at the suggestion of American developers Bruce Perence and Eric Raymond. The Open-source Initiative developed and published a ten-point "Definition of OSS " [4].

To create a legal scheme for transferring exclusive rights to all software applicants around the world, the free software license – OSS (GNU GPL (GNU General Public License) and BSD (Berkley Software Distribution) – was developed.

To reveal the features of this software, firstly, it is necessary to say that in accordance with the legal constructs defined by the legislation of the Russian Federation, the author, with all their will, cannot give up all intellectual rights, which consist of exclusive and non-property rights. Unlike exclusive rights, non-property rights such as the right of authorship, the right to the name, and other personal non-property rights of the author under Article 1228 of the CC of the RF are inalienable and non-transferable. Authorship and the name of the author are protected indefinitely. A waiver of these rights is negligible. In this case, we can not exclude a situation where, if the author of a program code is placed on the Internet with a written expression of will that any entity may use this work, i.e. distribute, modify, etc., we cannot rule out a situation where an interested party which has discovered that the program was used by third parties may apply to the court for protection of the author's moral

rights. Such an interested party could be, for example, an organization for collective management of property rights. In Russia, such an organization is the Russian Copyright Society (RCS) [4].

The significant importance while defending the interests of the free software developers in the court is:

- The choice of the licensor's and the licensee's right. The GPL does not regulate this question, therefore, the collision rules will be applied: if the licensor lives or acts on the territory of Russia, the Russian law will be applied to the relations between licensor and licensee according to Article 1211 of the CC of the RF;
- The difference in copyright law between Russia and the USA;
- The status of the Russian translation of the GPL. Russian civil legislation does not require the contracts to be concluded only in the Russian language, but the use of free software with maintenance in the English language may bring additional complications in different institutions and organizations if the software development is financed by public funds [5].

Thus, the use of OSS in the Russian Federation is not fixed by law, so there are different interpretations of the legal regime of OSS.

Consequently, the application of the GPL in Russia may be considerably complicated by issues preventing free software developers from defending their interests in court.

4. Discussion

It is advisable to refer to the international experience of regulating software circulation, first of all, to the experience of the USA, considering both the share occupied by the producers of this country in the world software market and the role of this country as a "trendsetter" for copyright law in most of the legal orders in the world.

The current regulation of OSS distribution in the US as a common law country has been influenced by the judicial practice of recognising the validity of free licenses, which is quite extensive in the US. Most court cases have involved the need to disclose the source code of a computer program. Cases such as 6 Progress Software Corporation v. MySQL AB [12], SFLC v. Monsoon Multimedia, Inc. [13], Anderson v. Super Micro Computer, Inc. [14], and others have had a strong impact on the current law.

P.S. Chestek, analysing the legal treatment of "open-source" computer projects, points out that the current regulation in the USA allows classifying such a case as joint authorship [15]. V. Lindberg argues that the legal treatment of OSS is similar to that of co-owned objects: "Open-source projects, however, belong to their communities, or more precisely to their contributors. Just as depositors become co-owners when they put their money in a credit union repository, coders become co-owners when they put their code in a source code repository" [16]. The position on the need to recognise derivative works based on "open content" is generally considered in scientific works in relation to OSS products. P.S. Chestek believes that the following situation needs to be understood: one author created and made freely available, under an open license, an open-source program. The user modified the code and the developer incorporated the user's suggested code into the original program. When discussing who authored the latter object, P.S. Chestek concludes that there are two separate programs: the original one authored by the developer and the one based on it. The researcher believes the scope of the copyrights over the derived program is fragmentary and concerns only that part of the work that constitutes the difference between the original and new objects. Nevertheless, the applicability of the American approach in Russian law is questionable. It seems that the American experience cannot be mechanically transferred to Russian conditions. The limits of its transferability are largely set by the specificity of the copyright system in comparison with the continental mechanisms of copyright protection.

There is now a clear trend moving away from licensing regulation of OSS. The model of regulating OSS as a paid public domain is becoming popular around the world.

The model of the paid "public domain" institution is discussed in detail by I. Bliznets and K. Leontiev [17]. The public domain is usually associated with the creation and activity of foundations or other structures that provide funding and support for creative activity, using the organizational capabilities of the state. Two approaches compete on the question of the legal nature of this institution: - paid public domain is an extension of copyright; - paid public domain is an instrument of fiscal nature, a kind of tax or fee collected in the interests of cultural development, "cultural rent" [5]. In this interpretation, the paid public domain appears as one of the tools used to finance relevant activities from the fees provided by this institution. The third approach implies a combination of the previous two. The institution of the public domain for a fee is established in the legislation of most developed countries in one of the following ways: - in a system of free use of works, the user is only liable to pay the appropriate fees, taxes, or charges [5]. Such an arrangement is established by the legislations of Argentina and Italy; - under a restrictive approach, to exploit works commercially, the

user must obtain the permission of a public authority. The duration of the system is limited to a certain period (France) or not limited in the widest sense. The payment of levies may be imposed on the use of all types of works (as in Mexico and Argentina with its all-inclusive model covering "the entire cultural heritage of humanity") or only on certain categories of works (France, Portugal) [5]. Responsibility for collecting levies, administering the funds raised, and distributing the funds collected falls on public authorities or organisations representing authors and performers [5].

The category of "public domain" was enshrined in the Russian legislation in Paragraph 3 of Article 28 of the Law of the Russian Federation "On Copyright and Related Rights" [18], which determined the right of the Russian Government to establish the payment of special levies for the use of works that have passed into the public domain in the territory of the country. Currently, the CC of the RF defines the possibility of transfer to the public domain after the expiry of the fixed term of the exclusive right to a work. However, there is no clear reference to a computer program as public domain although the legislator has made corresponding reservations regarding other objects, for example: - Article 1282 of the Civil Code - a work of science, literature, art; - Article 1327 of the Civil Code - phonogram; - Article 1331 of the Civil Code - the radio or TV program messages; - Article 1364 of the Civil Code - invention, utility model, etc.

It is believed that the model of the paid public domain is best suited for the circulation of OSS because it allows one to satisfy the interests of developers and users of such software.

5. Conclusion

Thus, modern communication technologies have reduced almost to zero the costs of dissemination of the results of intellectual activity and, consequently, the potential costs of violation of others' exclusive rights. The actual impossibility of ensuring the monopoly of the right holder raises the question of the effectiveness and prospects of the mechanism for the protection of the results of intellectual activity in the form of the granting of exclusive rights. The task of legal regulation of software circulation in Russia is to minimise the risks of monopolisation of the public domain, on the one hand, and, on the other hand, to resolve the conflict between personal non-property and exclusive rights. It appears that neither doctrine nor practice has yet managed to formulate an adequate response to these challenges. It becomes clear that the traditional commercial license is not suitable to serve the increasing turnover of OSS products and without proper legal regulation the circulation of OSS will constantly come into conflict with copyright rules. An alternative to such a state could be the public domain model discussed above, the main provisions and

principles of which should be used in the design of future regulation. Thus, the hypothesis of the study seems to be proven.

References

Kastels, M. (2000). The age of information: economy, society, and culture. M: GU VShE.

Main provisions of the long-term state strategy in the field of intellectual property. http://minobrnauki.rf/dokumenty/2881/fail/1405/12.11.30-strategiya-intel.sobstv.pdf

Savelev, A.I. (2012). Software licensing in Russia: legislation and practice. M: *Infotropik Media,* 432.

Zharova, A.K. Legal classification of software licenses.

Gorev, A.I. (2016). Legal regulation of software circulation: a monograph. Omsk, Omskaya akademiya MVD Rossii, 184.

Raymond, E. (1999). *The Cathedral and the Bazaar: Musings on Linux and Open-source by an Accidental Revolutionary.* O'Reilly and Associates, California.

Reichman, J.H., & Okediji, R.L. (2012). When Copyright Law and Science Collide: Empowering Digitally Integrated Research Methods on a Global Scale. *Minnesota Law Review,* 96(4), 1362-1480.

Wuchty, S., Jones, B.F., & Uzzi, B. (2007). The increasing dominance of teams in production of knowledge. *Science, 316*(5827), 1036-1039.

Livak, E.N. (2005). Software licensing. You have an inspection (specialised practical publication)]. *Minsk, 7,* 39-45.

Handbook on licensing. http://www.appp.ru/nopirate/corporate/part_1.php#1.2

Civil Code of the Russian Federation (with Amendments to the Civil Code of the Russian Federation, 10 January 2021) - http://base.garant.ru/10164072/

Progress Software Corporation v. MySQL AB, 195 F. Supp. 2d 328 (D. Mass. 2002).

SFLC v. Monsoon Multimedia, Inc. 07-CV-8205(S.D.N.Y. 2007

Anderson V. Super Micro Computer, Inc., No. 1:08-cv-05269-RMB (S.D.N.Y. 2008)

Chestek, P.S. (2017). A Theory of Joint Authorship for Free and Open Source Software Projects. *Colo. Tech. LJ, 16,* 285-325.

Lindberg, V. (2008). *Intellectual property and open source: a practical guide to protecting code.* "O'Reilly Media, Inc."

Bliznets, I., & Leontev, K. (1999). We need working mechanisms for copyright protection. *Russian Justice,* 11, 15.

Zakon, R.F. (1993). *The Law of the Russian Federation "On Copyright and Related Rights"* dated 09.07.1993 № 5351-1 (last edition dated 20.07.2004) (no longer in force)]. http://www.consultant.ru/document/cons_doc_LAW_2238