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MODELS FOR LEGAL PROTECTION OF COMPUTER SOFTWARE: WORLD EXPERIENCE AND LITHUANIAN PERSPECTIVE

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The text below represents and outlines most important statements and findings of the Doctoral Thesis and shall not be regarded as a complete translation of the Doctoral Thesis. For the reasons of brevity and compactness emphasis is given on the key conclusions drawn in the Thesis, as well as most important premises thereof. Full argumentation and collected empirical data supporting the conclusions are not translated entirely, however may be available at request.

Relevance, topicality and scope of the work

Part 3 of the preamble of the 1991 European Union (hereinafter - EU) directive 91/250/EEC says *"computer programs are playing an increasingly important role in a broad range of industries and computer program technology can accordingly be considered as being of fundamental importance for the Community's industrial development"*. Such conclusion is very important today since the software technologies encompass nearly all spheres of human activity in the information society (Kelleher, Murray, 1999). Human life and well-being has become directly dependant on the software driven machines, computer programs is an engine of modern information economy and a social imperative at the same time (Lessig, 2000). The development, distribution, service of software and all related businesses today form the most influential and quickly developing multinational industry which makes a continuously increasing input in the national economy (Shapiro, Varian, 1998). The above mentioned socio-economic significance of and influence of computer programs on the development of the information society are especially important in transitional economy countries where the information society and the national software industry are young and require overall promotion.

The socio-economic phenomenon of computer programs was foreseen already in the '80 of the twentieth century (Seipel, 1977; Tapper, 1978), and in contemporary jurisprudence computer programs are ascribed to material social needs and the fundamentals of an open democratic society (Lessig, 2000). A peculiar importance of computer programs conditions the situation when legal protection of software is ensured in almost in every country by choosing the national legal protection model of the computer programs to be the closest to the needs and goals of such country. Comprehensive scientific research is a precondition of the national legal protection model of computer programs.

Although at present the legal protection of software is ensured almost in all countries worldwide, both the subject-matter and applied forms of legal protection have undergone continuous change over decades, just as scientific discussion concerning various legal forms and admissibility of legal institutes for legal protection of software. It is universally recognised that every state should determine the legal protection instruments mostly corresponding to the needs of national software industries, because an effective legal environment may stimulate the development of such industries, whereas an improper

environment may pose an impediment. Considerable attention and critics at the same time was caused by a quick spread of patent protection of software and cyberspace innovations (Widdison, 2000), strict regulation of technical protective measures (Samuelson, 1999; Vinje, 1999; Lessig, 2000). Recently, an active interest has been taken in complex software protection instruments involving the institutes of the copyright and patent right (Reichman, 1994; O'Connor, 2000), scientific discussion concerning alternative *sui generis* legal forms (Phillips, 1993; Samuelson et al., 1994; Widdison, 2000) and new intellectual property forms - so-called 'petty patents' or utility models (Volcinskaja, 1996; Paley, 1996; Leith, 2000) for legal protection of computer programs has also renewed. Furthermore, both scientists and legislators have started paying more attention to the phenomenon of an "open source" computer programs and their socio-economic consequences. It is interesting that in spite of legislative establishment of legal protection of computer programs some scientists generally disprove the necessity of legal protection of computer programs (Stallman, 1994; Barlow, 1994; Watson, 1999), whereas others (Stranieri, 2000) are looking for other socio-economic mechanisms, as alternatives to the law, enabling to secure the interests of the authors (manufacturers) of computer programs.

It is important to note that in the twentieth century the effect and consequences of various forms of legal protection were started to be examined not only in legal but also in socio-economic aspect. It is universally acknowledged that legal protection of software is materially significant for development of software industry and economy on the whole. It is a uniform agreement that a favourable and up-to-date legal environment is a prerequisite of the development of the information economy (Samuelson, 1998; Heeks, 1999; OECD, 2000), particularly in those Central European countries where the development of the information society is slower, among them the countries in Eastern and Central Europe (van Zon et al., 2000; Thumm, 2000). Accordingly, it is proven, that limitation on legal protection, i.e. exceptions enabling to use the existing knowledge and technologies for creation of innovations, are necessary to ensure further socio-economic development of the society (Lessig, 2001). The search of legal forms compliant with the social needs for protection of the contents of computer programs and electronic space remains one of the most acute problems in legal protection of software and informational technology law (Lloyd, 2000).

Intensive scientific research, activity of legislative institutions and courts in developed industrial countries over several decades have elaborated several diverse mutually competing

forms of legal protection of software, the combination, priorities and interest balance whereof, adjustment to socio-economic needs of a specific country, allows to draw conclusions about the models of legal protection of scientific programs applied in one or another country or economic space. *The object of scientific research of the present thesis is the models of legal protection of computer programs which are formed or forming in the world practice*.

Up to now, in Lithuania scientific research has been focussed only on the examination of the peculiarities of separate forms of legal protection of software (Guobys, 1997; M.Kiškis, 1999, 2000, 2001; G.Pranevičius, 1999; Vileita, 2000), as well as practical issues arising from illegal reproduction, distribution and usage of software and prevention of such acts (Kaminskaitė-Pranckevičienė, 1998, 1999; Matulevičienė, 1999, 2000). A complex analysis of the legal protection of software and socio-economic needs for such protection has not been carried out in Lithuania yet.

The insufficiency of scientific research determines that legal acts currently valid in Lithuania in the sphere of legal protection of software and data bases are not infrequently based on translations of the EU documents and other international instruments and not on scientific research. No comparative analysis has been made between legal protection of computer programs applied in foreign states and the Lithuanian intellectual property tradition, and the needs of the national software industry have not been evaluated. Mechanical and remote from practical needs transfer of foreign law principles and legal norms into the Lithuanian legal framework, though ensuring the compliance with international standards, fails however to guarantee its consistent implementation and other expected results. The relation between legal regulation models and development of public relations, the possibility to foster by legislative measures the development of the information economy in Lithuania and the utilisation of the national intellectual potential, has deserved little attention in the Lithuanian jurisprudence.

The defined situation in Lithuania requires further scientific research in the field of legal protection of software, and simultaneously conditions the necessity of the model for legal protection of software, adjusted to the Lithuanian peculiarities.

Goals and objectives

The main goal of the present thesis is to identify and motivate the national software legal protection model optimised to the needs of Lithuania, socio-cultural and economic conditions, complying with the strategic aims of the state, national mentality and legal tradition.

To achieve the purpose described above, the objectives of this thesis are to define and examine the software legal protection models applied by foreign countries and their socio-economic aspects; to evaluate the peculiarities of the Lithuanian legal framework, cultural-social-economic situation and their influence on legal protection of software; to analyse and assess the software legal protection regime currently applied in Lithuania, to establish its advantages and deficiencies; to submit recommendations concerning the national model of legal protection of software.

For implementation of the goal and objectives above, the study additionally includes a comprehensive commentary on legal acts valid in the sphere of legal protection of software; recommendations regarding possible public measures as well as improvement of activities of governmental institutions participating in legal protection of software; serves as a ground for further scientific studies, teaching programs and education in the sphere of legal protection of software and information technology law.

Results and novelty

The novelty of the present study within the context of the Lithuanian scientific studies and its relevance to the legal reform presently under way in Lithuania are proved by the following results:

- The study formulates an original and modern legal understanding of computer software taking into account the peculiarities of state-of-the-art computer programming;
- It is the first to provide and understanding of the software legal protection model and its principles;
- Gives recommendations concerning the establishment of the national model of legal protection of software in Lithuania and means of implementation of such model;

- Proposes a new law on legal protection of software and a set of public measures as a possible way of implementation of the national software legal protection model.

Methods of scientific research applied in the study

The study employs the following methods: historical, comparative, induction, deduction, empirical analysis and synthesis. Foreign and Lithuanian regulatory enactments and legal conclusions are interpreted and analysed using logical, systematic and comparative interpretation methods. The same methods are employed when analysing scientific literature. The software legal protection models are analysed in historical-comparative aspect which enables to reveal the essence of the existing models and draw the conclusions about their perspectives (Haynes, 1995). The proposal of the national software legal protection model is based on the scientific synthesis methods. Empirical data used in the study are grounded on sociological-economic surveys conducted by the Lithuanian and foreign public organisations (e.g. INFOBALT association) and the data and experience accumulated by the author himself, however it should be noted that there are very few empirical data about the comparative novelty of the scientific research object in the sphere in question (Lutterbeck), 2001).

Recognition of scientific work

Recognition of the results of the scientific work performed was received when the author delivered reports on the topics in question in international scientific conferences and seminars and announced the main propositions of his study in scientific publications acknowledged by the Lithuanian Scientific Council and other publications.

Structure of the thesis

This thesis consists of introduction, two chapters, proposals in respect of the national model for legal protection of computer software in Lithuania, conclusions and list of bibliography. Annex of the thesis provides a scheme-chart of the modern computer software, adopted by the author.

In consideration of the strategic priorities of the Lithuanian state, the attention in the thesis was focussed on the software legal protection models existing in separate EU states and investigation of such models, simultaneously encompassing the general issues of the legal framework of such governmental structures. The study gives an analysis of the scientific experience of foreign states, present and perspective software legal regulation models. US law and jurisprudence are examined in the present work taking into consideration the largest in the world and very quickly growing US software industry and a modern system of intellectual property rights which has a great influence on the law of EU and other states. The study also deals with the criticism in respect of the US software legal protection model and respective scientific works. The software legal protection models which are applied in foreign states are analysed historically, providing a selective study of integral parts of such models (law institutes), revealing their main characteristics, peculiarities and mutual differences, submitting a critical inter-comparison and comparison with the norms established in legal acts of the Republic of Lithuania. Issues of particular importance are discussed comparing the regulatory basis and practical experience of Lithuania and other countries from East and Middle Europe, as well as Scandinavia.

The first part of the study deals with the theoretical analysis of computer programs and their legal protection models – concept of computer programs, peculiarities of computer program as an object of legal protection, concept of the software legal protection model, goals and principles of such model and the structure of this work, the summary of the historical development and definition of the present status. This part also examines at length separate elements of the software legal protection model, i.e. protection of software by means of norms of the author's rights, patents and other forms in various jurisdictions, principles and tendencies of their mutual co-ordination.

The thesis presents the broadest understanding of computer programs under which a software is deemed a body of all elements and effects related to development and operation of a software, to the exclusion of any related hardware. Such understanding was firstly proposed by Bainbridge in 1992 already, however no object programming principles were taken into account then, thus the present study expands the concept by including the data into the scope of the computer program as an independent element of a computer program. The author's proposed new understanding-scheme of a software is given in annex hereof. The thesis also allows for a software concept in a narrow sense which may be equalised to a legal notion of a

computer program provided in legal acts of Lithuania and foreign states. In legal sense, the computer program is conceived as a body of instructions, given orally, in codes, schemes or any other form, which enable a computer to perform a certain task or achieve a certain results when such instructions are given by the means the computer is able to read; this concept also comprises the preparatory design materials of such instructions provided that the aforementioned body of instructions can be created based on such material. The concept and characteristics of the computer program are particularly important for grasping the peculiarities of the computer program as a subject-matter of law and selecting a proper model of legal protection (Samuelson et al., 1994; Dryja, 1995; Haynes, 1995; Lemley et al., 2000).

The software legal protection model in the present study is understood as a complex of legal norms, institutes and other legal instruments applied to specific social needs of the state, economic situation, political aims and legal heritage by which legal protection of software is established, i.e. rights to software, as well as limitations on such rights are defined. The concept of models of legal protection is used in the study for several reasons:

1) the existing legal concepts insufficiently reflect the subject-matter of investigation of the thesis;
2) in order to underline the complexity, i.e. the software legal protection model encompasses the norms of several independent legal institutes;
3) to emphasise the requirement of coherency of legal protection of computer programs - the legal instruments comprising the model may not be an accidental set, the model should be based on complementation and interaction principles;
4) the legal protection measures comprising the model are complemented by technical and other measures the application of which is regulated by separate legal norms complementing the norms that are directly applied for legal protection of software;
5) socio-economic and technical aspects, which determine the choice of the legal form, are underlined in the model.

Software legal protection models, i.e. sets of legal instruments, are analysed in this work disclosing their integral parts - separate forms of legal protection - the copyright, patent rights, other legal institutes invoked for legal protection of software, their inter-relation, socio-economic aspects. The socio-economic aspects of the model are studied taking into account their possible influence on the development of the national software industry, employment of the national intellectual potential and formation of the information society.

The analysis made in the first part of the present thesis allows to discern the most significant models of legal protection of software and their peculiarities in foreign states and governmental formations:

1. It is obvious that the software legal protection models are based on existing intellectual property law institutes - copyright, patent rights etc., and not on new legal paradigms. Today there are no national jurisdictions having the so-called *sui generis* software legal protection established, though it is *sui generis* software legal protection scheme which is supported by a certain part of scientists.

2. Although the historical analysis disables the revealing of all peculiarities, traditional intellectual property institutes however, when used in existing software legal protection models, are considerably modified and adjusted to a new subject-matter – computer software. A number of scientists even suggest that said modifications are so fundamental that it is possible to speak about novel institutes of legal protection of software - i.e. the above mentioned *sui generis* legal protection of software without directly naming it (Lemley et al., 2000).

3. Existing software legal protection models are based on the principle of co-ordination of various forms of legal protection. Art. 9 part 1 of the EU directive 91/250/EEC sets forth that the legal protection of software by the norms of the copyright law, established in the directive, has no prejudicial effect on any other software legal protection measures, including patents rights, trade marks, unfair competition, commercial secrets, legal protection of semiconductor products or contract law. This principle is practically implemented first of all in the sense that various legal instruments are used in complementing manner. Additionally it should be noted that the provisions of the directive in this case are considered on equal footing to other legal acts that determine other ways of legal protection of software, i.e. the copyright protection of software is not superior or subordinated with respect to other forms of protection. Patents are used for protection of those elements of software that are not protected by copyright - technical inventions used in software , and trade or service marks are used to establish an additional broader legal protection for the elements of software protected by the copyright. All such forms of protection co-exist without impeding each other. Some elements of software

may be protected by several forms of legal protection (e.g. the elements of the code of the program may be protected both as the object of copyright and a commercial secret or a part of the patented invention).

4. From historical point of view over the last decade the change of priority of certain legal protection forms could be observed within the model of legal protection. As already mentioned, the currently dominant forms of software legal protection include the copyright and patent right. Although the copyright remains the most widely outspread form of legal protection, in commercial sense it is the tendency to give priority to patent protection over copyright. In the USA, one can observe the most vivid tendencies of growth of trust in patent protection of software and even the declared focusing on the patent protection of software (Kuster, 1998; Henderson, Kane, 2000). Such tendencies are also witnessed by recent initiatives of the European Commission.

In view of the tendencies of entrenched patent protection of software, recently the number of proposals to reform the US patent system has increased in the USA (Stern, 1999; O'Connor, 2000) on motivation that the existing patent law provides an unreasonably broad legal protection which puts limitations on further innovations, i.e. disbalances the traditional purposes of the patent law (Perelman, 1996; Anawalt, 1999; Raskind, 1999; Dreyfuss, 2000; Lemley et. al., 2000). The proposals to apply petty patents or utility models for computer programs (Paley, 1996) were accepted in the USA neither by the scientific community nor by the legislators (Janis, 1999). Currently, no proposals are heard in the USA to establish *sui generis* legal protection of software and even the most active former proponents of *sui generis* legal protection of software replace such radical proposals with recommendations for reform of traditional intellectual property institutes (Lemley et.al., 2000). In view of the 1998 USA Digital Millennium Copyright Act, the copyright legal protection of software was reinforced by technical measures, however this legal act and the legal protection of technical measures determined therein has recently faced severe criticism in the US academic layers because technical measures frequently serve to infringe the exceptions to legal protection (user rights) (Samuelson, 1999; Lessig, 2000). The presently applied model of legal protection of software in the US, therefore mainly consists of the patent legal protection of software which is complemented by the copyright and legalised technical protection measures. This model complies with the needs of the USA, as the major national innovation space in the world, and is tailored to the market in which there is a surplus of investment

capital. The US software industry is notably competitive and capable of quickly creating software substitute products, without infringements of the author's rights, therefore in the US model of legal protection of software copyright takes only the role of anti-piracy moderator. In such industry an active role naturally falls on patents which eliminate the possibility of substitute products. A traditionally strong patent system and extensive market in the USA also facilitates the patent holders' easier attraction of the investment capital. Other protection measures in the USA at present have no considerable economic significance, except the competition law which is not infrequently employed in cases when competitors use their intellectual property rights for violations of fair competition on a relevant market (e.g. in separate segments of the software market). The current antitrust investigations of Microsoft Corporation practices pertaining internet browsers and JAVA programming language implementations in Microsoft operating systems etc. confirm that the importance of the competition law for legal protection of software is increasing.

Despite efforts to harmonise, the national jurisdictions of the EU retained considerable inconsistencies between existing software legal protection instruments and their application in practice. Only copyright protection of software has been unified on the EU scale, although the differences might be observed even in this sphere (e.g. with regard to moral rights) (Rosén, 1996). For these reasons, it is expedient to examine in summary way only general EU initiatives in the field of legal protection of software. In national EU jurisdictions the author's rights remain the prevailing element of the software legal protection model, though lately on scientific and jurisprudence levels there is an active discussion pertaining to regulation of patents for software (Kelleher, Murray, 1999; Hart et al., 1999) and application of utility models for legal protection of software (Leith, 2000). It is difficult to forecast how long it will take for such initiatives to become EU legal acts. It should be noted that due to limited influence of the EU common market on the software industry (software by the USA manufacturers prevail throughout EU; EU software industry is generally more orientated to national markets and not to the common or international market; the offer of the EU investment (innovation) capital is considerably less than in the USA), the copyright in EU states is traditionally a more important form of legal protection of software. A sufficient number of pro-arguments (Kelleher, Murray, 1999) and contra-arguments (Eurolinux, 2000; Lutterbeck, 2001) have been proposed on EU level in respect of patent protection of software, however the latest EU initiatives provide for expansion of the patent protection of software. Notably, all EU initiatives in the sphere of legal protection of software and other innovations

emphasise the necessity to fully exercise the intellectual potential of Europe, the importance of these objects for socio-economic development and transition to information economy, which manifests itself in positions of EU members (EU Green Book on innovations and patent reform, proposal of the European Commission regarding directive governing legal protection of computer inventions). Due to controversial EPO practice and existing prohibitions to patent software *per se* the EU software industry may be in worse condition than the competitors in the USA (Hart et al., 1999). On the other hand, an open code software movement is especially strong in Europe (originated in Europe) which resists to the patent protection of software (Gonzalez, Barahona, 2000). Considerable scientific efforts are made for examination of the economic-social influence, perspectives and legal implications of open code software, including proposals to review the existing software legal protection models attempting to focus more on open code software (Lutterbeck, 2001). Such situation may be partly explained by cultural resistance to the US influence (Lessig, 2000). As an alternative for the initiatives of the patent protection of software on the part of the European Commission, new *sui generis* proposals for legal protection of software have been stated in European jurisprudence (Widdison, 2000). In consideration of the fact that in 1996 EU established for the first time *sui gener*is legal protection for databases which characterised by expansion of copyright protection, new recommendations to establish *sui generis* legal protection for software do not seem so desperate. It is important to note that both EU initiatives and scientific ideas are focussed on search of economically-socially orientated and motivated legal instruments. To sum it up, it may be said that the software legal protection model established by EU is presently mainly based on copyright supplemented by patent protection. In the nearest future the present model should be substantially reformed supplementing it with the possibilities of limited (providing for adequate safeguards) patent protection and/or legal protection by utility models, as well as likely orientation towards "open code" software.

Other developed countries of the world in most cases follow the experience of the USA and/or EU in establishing national software legal protection models. The copyright laws and patent practice in Japan in fact chase an example of the USA, since the social situation in Japan is similar enough to the USA - big national market, strong patent system, competitive national software industry and extensive resources of investment capital. By 1988 amendments to the Japanese laws regulating copyright it was refused, due to pressure from the USA, to include exceptions allowing de-compilation of computer programs for

compatibility purposes (Karjala, 1998), and the Japanese Patent Bureau Rules of Software-Related Invention Expertise took over the USA practice in the sphere of software patent protection (Lemley et.al., 2000).

Australia take an interesting intermediate position characterised by somewhat transitory socio-economic status between the USA and EU states, and rapidly growing although within the context of developed countries not sufficiently competitive software industry. For this reason, Australian legislators make active attempts to co-ordinate the positions of the USA and EU and to take specific initiatives to promote the national software industry. 1999 Australian Digital Content Copyright Amendment Act is assessed as an apt compromise between the positions of the USA and EU (Vinje, 1999). Until then, both copyright and patents, including peculiar short-term petty patents had been consistently applied to computer programs in Australia (Fitzgerald, 1999). In Australia, where the influence of Europe is inevitable due to peculiar structure of the state (decisions of UK courts may be observed in Australia as additional sources of case-law) (Fitzgerald, 1999), the USA practice is accepted more cautiously providing for "safeguards" ensuring the priority of national interests. As mentioned earlier, Australia is also actively seeking its own ways, suitable computer programs and other innovations for legal protection - at present recommending innovation patents based on legal protection of utility models as discussed in Europe which also have original features (e.g. limited number of patent claims). For these reasons, among developed countries Australia has, most probably, the most original software legal protection model which is adjusted not only to the protection of interests of foreign software manufacturers, but primarily for promotion of the national software industry. It is important to note that peculiar software legal protection models are sought by some EU states as well, e.g. the national initiatives of Austria to use modified utility models for legal protection of software at present receive favourable approval by EU institutions and Austrian information technology industry (Lutterbeck, 2001).

In the second part the analysis is focussed on presently in Lithuania applied software legal protection regime, its advantages and shortcomings, comparison of the current legal regime with the software legal protection models applied in foreign states, evaluation of the possibility to improve the legal protection of software. In the light of the experience and practice of foreign states, the Lithuanian legal tradition and peculiarities of socio-economic situation, premises for the national software legal protection model are made,

recommendations of the new Law on Legal Protection of Software are provided giving its outline. This part also enlightens on the critical issues concerning formation of information society, influence of legal regulation models on the advance of public relations and economic development.

In 1992 it was the first time when legal protection of software was attempted to be established in Lithuania thus overtaking many East European and even some West European countries. It is interesting that it was not the legislator which assumed, for the first time, the regulation of legal protection of software in Lithuania, but the executive power - the Government of the Republic of Lithuania. The Government by its special resolution in 1992 established a rudimental legal protection of software which was analogous to that of literary works, i.e. by the norms of the copyright. Protection by copyright has remained the main form of legal protection of software in Lithuania to date. Protection of software by copyright in Lithuania was regulated with the help of provisions of the Civil Code, later - special law, and currently - by a general law governing the copyright and neighbouring rights. The patent protection of software, in spite of proposals to establish it (Guobys, 1996), has not rooted in Lithuania until now, partly because of prohibiting provisions of laws and also due to conservative position of the State Patent Bureau of the Republic of Lithuania. Other forms of legal protection of software in Lithuania have not been applied or discussed so far.

The present legislative basis in Lithuania in the sphere of legal protection of software is characterised by absence of complex approach to the legal protection of software and its concept - there are no clear priorities and national approach to legal protection of software (and intellectual property on the whole), the legal protection of software and intellectual property is based on formal implantation of EU legal acts into the national legal system, not on scientific analysis, existing legal norms meant for legal protection of software fail to meet the peculiarities of computer programs, as an object of legal protection, and the needs of information society. Additionally, one more very important feature of legal protection of software existing in Lithuania can be discerned - due to intensive pressure of foreign states and international organisations, the policy of the Republic of Lithuania in the sphere of legal protection of software and intellectual property is aimed at fight against infringements of intellectual property rights (in particular, intellectual property rights of foreign entities), i.e. piracy. Following this trend, legal acts are adopted, budget assignments are made and the activity of governmental institutions is directed. Unfortunately, until now there are no

governmental programs or initiatives directed for attainment of another fundamental and no less important goal of the intellectual property rights - promotion of the national potential and creative drive. Such situation is also conditioned by the attitude of the conservative society which underrates the value of intellectual property. For these reasons it can be concluded that the model of legal protection of software does not exist today in Lithuania.

The existing software legal protection regime does not allow to utilise the national intellectual potential, thus transition to information economy in Lithuania is too slow and the national software industry is not innovative enough. The role of law in creation of information economy may not be underestimated, since a favourable legal regime is a prerequisite of the development of the national innovation and *vice versa* - an unfavourable legal regime conditions stagnation of innovations and causes the leakage of the innovation potential to foreign states where legal environment is more favourable for the development of innovations. For the very same reason the national legal environment, being favourable for development of innovations, attracts foreign investments and fosters international trade (Thumm. 2000). However, protection of intellectual property largely depends on the attitudes of the society, i.e. potential holders of intellectual property rights, such attitudes being more effectively formed by the policy focussed on utilisation of subjective rights and not on punitive policy which prevails in Lithuania at present. Taking into account a global nature of information economy, a successful model of legal protection of innovations must also be directed to a maximum international expansion of national innovations and attraction of foreign innovations. Besides, in the light of the situation that the Lithuanian economy today conforms to the features of imitation economy, the above mentioned objectives are especially up to date.

The aforementioned preconditions are applicable for legal protection of innovations in the broadest sense, however the computer programs are one of the most representative and significant innovations of the information society, therefore below is submitted a draft of the software legal protection model applicable with respect to legal protection of all information innovations, not only in the sphere of software.

Generalising the above stated socio-economic conditions and the peculiarities of the regime of legal protection of software, it is possible to name the following premises of the national software legal protection model:

- Overall promotion of potential subjects of legal protection in order to utilise the existing innovation potential, i.e. creation of new original computer programs and other software innovations;
- Adequate and effective guarantees of protection of the rights to software;
- Ensuring the balance of interests of the holders and users (society) of the rights to software;
- Co-ordination of legal and technical protection measures, technological neutrality and openness for novelties;
- Promotion of export of the national software innovations and import of foreign innovations;
- Maximum international integration of legal protection measures, formation of interstate and/or regional innovation space;
- Formation of public attitude to innovations and importance of intellectual property;
- Attention to new social-legal phenomena of the information society.

The national software legal protection model in line with the above raised objectives may be created only by employing complex measures which may be relatively divided into three independent groups:

- Legal measures;
- Political-administrative measure;
- Public-social effect measures.

Legal measures, which in the present work are paid the greatest attention, can be divided into the following smaller groups:

- Adoption of national strategy for promotion of innovations and protection thereof, which should foresee the improvement of legal protection of software in Lithuania;
- Adoption of a new separate law on legal protection of software regulating in complexity the application of copyright, patents (utility models) and other legal instruments to computer programs;
- Review of valid laws which govern legal liability for infringements of copyright;

- Gradual harmonisation of Lithuanian laws with EU directives and international standards in view of the socio-economic situation, public needs and attitudes;
- Adoption of regulatory acts and/or adjustment to the requirements of laws;
- Drafting of commentaries to and elucidation of standard acts, manuals for application of such acts, and scientific-theoretical handbooks.

The national innovation promotion and protection strategy should comprise the general recommendations given in this thesis in respect of the model of legal protection of software and its preconditions, including adoption of a separate law on legal protection of software the concept and premises of the main provisions of which are discussed below. Other proposed legal measures are forthright enough and require no special explanations, except the proposal of a separate law on legal protection of software.

Political-administrative measures, required for a modern national software legal protection model, include the improvement of priorities of the state policy and administrative capacities in the sphere of legal protection of software. Currently, institutional preconditions for implementation of such political-administrative measures exist in Lithuania. The aforementioned national innovation promotion and protection strategy should determine a specific software legal protection policy, trends of activity of existing institutions and measures serving to improve administrative capacities, provide for governmental innovation promoting programs, according to the EU examples.

Public-social effect measures make a vital part of successful functioning of the software legal protection model. Although intellectual property and computer programs represent the same property as any other material objects, the extraordinary value of intellectual property is underrated. Computer programs are not infrequently considered as public ownership - nobody's property which may be used free of charge. Although nobody calls in dispute the authorship of or proprietary rights to such programs, consumers often fail to conceive or recognise the proprietary rights of the author or holder of the rights - primarily the right to receive compensation for usage of a computer program. Such attitude is partly conditioned by the soviet perception of intellectual property rights, as well as a paradox of the expression of intellectual property (necessity for storage media). Unfortunately, various punitive actions and their public advertising directed to the general public have yielded no tangible results in

Lithuania during the last decade, therefore, taking into consideration the experience of foreign states, public effect measures should be focussed on personal availability and eligibility for legal protection of original computer programs and other innovations, i.e. understanding of the public value of intellectual property, and not on information of the society about liability for infringement of the rights to computer programs. Only the society, in which intellectual property is a universally prevalent and recognised value, is capable of understanding the intellectual property, its regard and proper protection. For this reason, public effect measures, along with general public education measures, raising of the level of legal culture and legal sense, should necessarily span all possible measures encouraging individuals and economic entities to exercise intellectual rights to the broadest possible extent for protection of own creations and innovations. The attainment of this goal requires governmental financial support programs and similar initiatives following an example of EU states, and legal reform in the sphere of intellectual property should "forestall" the development of public relations, because one cannot expect a quick spontaneous change of public attitudes.

It would be ideal if all above mentioned measures were implemented simultaneously, however, in view of financial and economic situation of Lithuania, the priority may be given to legal measures (adoption and improvement of legal acts).

In the light of reforms ripening and performed in foreign states in respect of copyright and patent rights, likely application of legal protection of utility models to software, as well as existing deficiencies of Lithuanian laws, it would be advisable to regulate legal protection of software in Lithuania by a separate law on legal protection of software. The expediency of a separate law is based on peculiarities of the subject-mater of legal protection which require new norms of law different from existing law institutes. This law could establish the protection of software by the norms of the copyright, the norms of the patent (utility model) law, taking into consideration the specifics of software as the subject matter of legal protection, i.e. in theoretical sense, the law would establish distinctive *sui generis* legal protection of software. Namely such concept of legal protection of software is approved by foreign scientists, and *de facto* by legislators. In Lithuania this model further necessitated by numerous deficiencies of the 1999 Law on Copyright and Neighbouring Rights and inconsistencies with the said premises of the national software legal protection model. It should be noted that at present it is very suitable time for separating the legal protection of

software from the legal protection provided for conventional literary and artistic works and technical inventions, since, pursuant to the national Acquis program, national copyright laws will have to undergo significant modifications adjusting them to EU directive 2001/29/EC, which provides for the extension of the author's rights and neighbouring rights to computer networks and internet, as well as to the provisions of WIPO internet treaties signed by the Republic of Lithuania. Other circumstances which are important arguing the necessity of a separate law on legal protection of software include the continuity of regulation of legal protection of software in Lithuania, because until 1999 the legal protection of software had been governed by a separate legal act. Additionally, mention should be made of concentration and increase of transparency of legal norms which govern the legal protection of software, since inconsistency and intricacy of the law while regulating computer programs is often indicated as major deficiency of Lithuanian software laws by the software industry participants. The latter aspects are especially relevant while creating legal environment for the development of information society in Lithuania.

In consideration of the presumptions stated above, the proposed independent law on legal protection of computer programs should regulate the following aspects of legal protection of software, i.e. the said law should include the legal norms governing:

1) legal protection of external expression elements of software by copyright;
2) special patent (utility models) legal protection of technical innovations in software (novel algorithms, operational methods, *etc.*);
3) general exceptions of legal protection of software applied to all users (among them establishing special rules applicable to open source computer programs);
4) special exceptions of legal protection of software applied to special categories of users (non-profit organisations, scientific/educational organisations, disabled persons, *etc*.);
5) assignment of the rights to software (software licence agreements);
6) provisions on implementation of legal protection of software;
7) liability of the users of software for infringement of the rights to software;
8) liability of the holders of rights to software for infringement of the rights of the users of software.

The proposal stated above in respect of the law on legal protection of software can be successfully implemented only by way of complex adoption of the necessary regulatory acts,

commentary to the law, and at the same time ensuring the education of state officials and the public, along with other public measures. While implementing the patent protection of software an active participation of the State Patent Bureau of Lithuania is required not only in drafting of regulatory acts governing the issue of patents for software but also for ensuring a qualified primary (formal) expertise of the patent applications for software. The regulatory acts of the State Patent Bureau should serve for review of the procedure of examination of patent applications curbing the way for obvious patents, also to level the possibilities of national and foreign entities and to implement the measures of propagation and support of patent protection. In the long run it would be expedient to discuss the possibilities to allow to file patent applications in a foreign language and to fully integrate the Lithuanian patent system into one of the regional patent systems.

The enforcement of the proposed Law on legal protection of computer programs, just as the Law on Copyright and Neighbouring Rights, would require the ensuring of proper competence of governmental institutions (law enforcement, customs *etc.*) (M.Kiškis, 2000). In this context, it is necessary to ensure the education of officials of all level law enforcement institutions and advisable to implement informal specialisation of judges.

Following an example of the European Union countries (England, France), in the long run it would be expedient to establish in Lithuania a pre-judicial institution for examination of disputes related to the rights of intellectual property. The functions of such institution could be performed by an institution which is in charge of enforcement of the proposed Law on legal protection of computer programs. The existence of such institution would undoubtedly contribute to the acceleration of resolution of disputes related to the rights of intellectual property and the formation of uniform practice. It should be noted that such proposal is suitable not only for legal protection of software but also for all spheres of intellectual property.

Conforming to the practice of European countries, teaching and education is undoubtedly one of the crucial measures of reinforcement of intellectual property rights. An important role in this sphere should go to the holders of the rights to software. Educational measures should serve to achieve that potential authors and manufacturers of software would know about all legal instruments available to them and should have the possibility to use them to the maximum extent both in Lithuania and abroad. In this respect, it is also necessary to

encourage the co-operation among the holders of the rights to software and governmental institutions, first of all - law enforcement institutions and the institutions which implement the intellectual property policy.

As mentioned above, the Lithuanian society has poor understanding of the specifics and importance of intellectual property, especially of its the meaning in information society. Such situation is partly conditioned by the historical heritage, thus it would take time to change the long-standing attitude. Public-information companies and their actions should primarily emphasise the significance of intellectual property and computer programs for the creation of the information society, as well as the possibilities of each member of the society to use the advantages of intellectual property for the purpose of protecting his/her rights. The change of the public attitude towards infringements of intellectual property rights might be expected only when a considerable part of the members of the society become right holders of the intellectual property rights. Upon change of the public attitude, the holders of the intellectual property rights will benefit the most, consequently they should take the most active part in educating the public. In the nearest future the initiatives of the holders of private rights should receive support on the part of governmental institutions as well. In order to use the national intellectual potential to the maximum and promote the national software industry, the governmental support would be necessary in accordance with the EU applied model, i.e. covering the expenses of the beginning and small holders of intellectual property rights incurred in connection with establishment, maintenance and expansion of intellectual property rights.

An essential problem related to education of the society, which should be solved by the state, is the usage of illegal software in governmental institutions. Such situation should not be tolerated and deprives the state of all moral rights to request the society not to infringe the intellectual property rights. As long as this problem is not solved, any public education measures may prove ineffective, therefore this problem should immediately be solved by way of compromise among the subjects of legal protection of software and state authorities. In governmental institutions it is necessary to use, to the broadest possible extent, open code software, since in such institutions the low cost, safety and flexibility of computer software is a very important aspect, along with the possibility to apply the software for individual needs.

An existing software legal protection regime in Lithuania is focused on the protection of intellectual property rights and obviously does not sufficiently encourage the national innovation and creation of intellectual property. The current public attitude is also inadequate and may not change by itself or by coercive measures, which is proved by the practice of the last decade in Lithuania. Such situation curbs further development of information society which in the perspective will cause economic and cultural backwardness. As mentioned earlier, a proper legal protection of software and other intellectual property is a prerequisite for establishment of the information society - society of the subjects of intellectual property rights. A national software legal protection model must ensure that the established legal norms would develop the national software industry and simultaneously would foster the growth of the economics and information economy. The establishment and implementation of the software legal protection model is an integral part of these processes, which is evidenced by the practice and scientific studies of foreign countries (Thumm, 2000). Any likely particular influence of the national software legal protection model on the growth of economy is not analysed in the present study, however this is a topic for further scientific research dealing with software legal protection models. For the above given reasons, the establishment of the national software legal protection model should be as important as any other investment or political measures meant for the growth of economy and development of economics.

The analysis made in the study allows, apart from the aforementioned recommendations regarding the creation of the national legal model in Lithuania, drawing of the following **conclusions**:

1. Software is a peculiar object of intellectual property which encompasses creative and technological features and has a special socio-economic meaning. The proposed scheme-chart of modern software is presented in the annex.

2. The peculiarities of software require a special software legal protection model - a balanced set of legal instruments corresponding to the social, economic, political and legal situation of the state.

3. The software legal protection model should ensure adequate rights to software and their protection, at the same time provide the conditions for creation of new innovations. Under

conditions of the developing post-soviet society, the software legal protection model is very significant for the development of the national software industry and promotion of the information economy.

4. The software legal protection models applied in foreign states are based on the principle of co-ordination of various forms of legal protection (author's rights, patents, *etc*.), however so far in the world there is no uniform software legal protection model - different states and state formations apply different legal protection of software, corresponding to the legal traditions and socio-economic environment thereof. Besides, software legal protection models are dynamic, therefore they should be neutral from legal and technical point of view, and open to public needs.

5. The software copyright protection is analogous to the copyright protection of literary works only by general principles, whereas the specific norms of the author's rights, which are applied to literary works and software respectively, are very different. In particular, notice should be made on the incompatibility of software with non-property rights of the authors, the necessity to set forth special exceptions of the author's rights (user's rights) *etc*. The copyright may not protect valuable software elements and today they protect the software producers only from immediate reproduction of computer programs, i.e. piracy. For this reason the copyright alone does not longer perform the function of encouragement of innovations which is vital for the development of the software industry and creation of the information society.

6. The patent protection of software should be allowed for all inventions implemented with the help of computer programs, if they meet the customary patentability criteria and make a technical contribution to a known field of technology, which manifests itself so that a known technical equipment that performs computer program may cause certain consequences or changes in the state of art. A qualified expertise of patent applications is crucial for patenting of software.

7. Due to the provided extensive and unconditional protection with almost no exceptions whatsoever, the patent law becomes the leading form of legal protection of software. The traditional patent system is not adjusted for legal protection of incremental innovations on which modern software is based, is complicated, expensive and provides the conditions

for monopolisation of the software industry, therefore it cannot fully perform the role of the legal catalyst of innovations in the sphere of software. For these reasons the patent system should be reformed adjusting it for the changing peculiarities of software as a legal object and the needs of global information economics.

8. The reforms of existing software legal protection models, adjusting such models to the information economy environment, take three directions - applying utility models (petty patents) for legal protection software, promoting open source software and protecting software by technical means. Apart from these relatively moderate reforms, it is also recommended to look for new *sui generis* or hybrid forms of legal protection of software or even to refuse legal protection of software at all.

9. Neither of the proposed trends of the reform of legal protection of software independently resolves the fundamental problems of software legal protection which require a complex solution - establishing a national software legal protection model. Also it is necessary to ensure the compatibility of the present and future forms of legal protection of software (one form of protection should not eliminate another form or curb the way for the rights established by any form of protection), and the compliance with uniform principles (especially the principles of the balance of interests and promotion of innovations).

10. In Lithuania at present the legal protection of software by copyright is dominant; the patent protection of software and protection in other forms is practically not applied. The national software legal protection model does not exist in Lithuania so far.

11. When regulating the legal protection of software in Lithuania the general principles of law reform (continuity, transitional periods *etc*.) are not observed, the provisions of international legal acts are mechanically or even inaccurately implanted in Lithuanian laws, laws do not comply with the peculiarities of software as the subject-matter of legal protection, big attention is paid to infringements of the rights of foreign and Lithuanian authors and not to the promotion of the national software industry and innovations. The patent protection of software or inventions related to software is impossible at present in Lithuania, the innovation function of patents is also disregarded.

12. The promotion of the national software industry, creation and consolidation of information economics in Lithuania requires the national software legal protection model which can be realised by complex - legal, political-administrative and public effect - measures. The establishment of the national software legal protection model should be equally underlying as any other investment or political measures meant for the growth of economy and development of economics. In view of the economic situation of Lithuania, it is currently expedient to pay more attention to the financially undemanding reform of the regime of legal protection of software.

13. Having evaluated the experience of foreign countries, latest tendencies in the sphere of software legal protection and the shortcomings of the existing in Lithuania national software legal protection model, it would be reasonable, when creating the national software legal protection model in Lithuania, to adopt an independent Law on Legal Protection of Software which could regulate in complexity all forms of legal protection of software, establish the goals of software legal protection and the means for attaining such goals. The outline of the said Law on Legal Protection of Software is provided in the thesis. The proposal to adopt the independent Law on Legal Protection of Software should be co-ordinated with political-administrative and public effect measures.

14. The national software legal protection model should be socially focussed and should primarily underline the significance of intellectual property and software for the creation of information society and the possibility of each member of the society to avail himself of the advantages of intellectual property protecting one's rights. The change of the public attitude to the intellectual property rights might be expected only when a considerable part of the members of the society becomes the holders of intellectual property rights.

15. The experience of foreign states and some Eastern Europe countries and the achieved results allow to forecast that the establishment of a modern environment of legal protection of innovations, i.e. the selection of a proper software legal protection model, allows to expect a more vivid increase of foreign investments, utilisation of the national intellectual property, quicker transition to the information economics and a general positive influence on the economic development of the state.

Annex. Scheme-chart of modern computer software