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Chief Editors' Note

The International Journal of Law in Changing World: Introduction to the First Issue

Dear Friends!

You are now reading the first issue of the International Journal of Law in Changing World. Law is transforming rapidly today because of the challenges of the 21st century's world. Sustainability issues, multi-scale digitalization as well as the global pandemic represent big challenges for modern law. To adapt to the new reality, it needs to change and the main task for lawyers is to offer the ways of its transformation.

The Issue of our Journal is truly international. Authors from different parts of the world presented their papers on current problems of law in Romania, Brazil, China, and Russia.

In this Issue of the Journal the research papers on cutting-edge topics are introduced. Thus, modern researchers pay significant attention to the criminal and civil procedure transformation arising from its' state-of-the art issues. And in this Issue authors considered such an important topic as the various incentive forms in the criminal procedure. It covers the issues of the usage of incentive forms to make criminal procedure correlate with basic human rights (See: G. Rusman Incentive Forms of Court Proceedings as an Element of the Transformation of the Criminal Process (Russia). Another paper in this section is devoted to the use of artificial intelligence in criminal proceedings and the necessity to respect the human rights. It gives useful insights from European perspective (See: T. Manea and D.L. Ivan AI Use in Criminal Matters as Permitted under EU Law and as Needed to Safeguard the Essence of Fundamental Rights).

Second section is devoted to the digital transformation and its consequences for regulation. It covers highly relevant issues of law and digital technologies in changing world. Thus, the use of digital technologies in transport and its legal implication were considered (See: M. Bazhina Disputable Questions of the Use of Digital Technologies in Transportation). Cryptocurrencies represent one of the biggest challenges for modern law and approaches to its regulation changes rapidly. The effort made by the author to find the best one for each country undoubtedly deserves attention (See Ya. Kuchina Existing Approaches to Define Cryptocurrency for Possible Legal Regulation).

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Lastly, we wanted to give young researchers the opportunity to share the results of their work with the world and that is why we decided to include the section "Voice of the Youth" to the Journal. We are extremely proud to publish here the paper of the youngest authors and constant participants of the International Research Group on Law, Digital Technologies and ADR: International and Comparative Perspective (See: B.A. Nejaim and I. Novikov On the Digital Singularity: Recognizing Virtual Property Through the Eyes of New Jurisprudence Over the Conflicts of Digital Goods).

We truly hope you will find this Issue useful and informative, because that was the goal of the Journal - to find the solutions to the crucial legal issues that arise from the constantly changing world.

We want to thank our authors, reviewers and editorial team members for their excellent job, support, and efforts to make this first issue happen. We wish all of you to increase excellence in legal research and its quality, and to develop better communication across the world.

Sincerely yours

Editors-in-Chief

Elizaveta Gromova and Daniel Brantes Ferreira

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Incentive Forms of Court Proceedings as an Element of the Transformation of the Criminal Process

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ABSTRACT

Criminal procedure is a complex type of legal relationship that is coercive in nature. At the same time, the trend of liberalization and humanization of criminal and criminal procedure law leads to a differentiation of the criminal procedure form, including through the expansion of incentive procedures.

At present, the law of criminal procedure in most States provides for certain types of proceedings which have the effect of encouraging a person accused of an offence by exempting him or her from criminal responsibility or by minimizing the amount of the criminal penalty. As a means of legal regulation, the rules on incentives impose legally binding obligations.

Being strictly regulated by its form the procedure of procedural actions of the court and other professional participants of the process, involves the implementation of incentive rules, provided by the legislation in force, in the framework of the incentive form of criminal proceedings. The study has shown that the incentive form of proceedings can be implemented in criminal proceedings under the general procedure of court proceedings (implementation of restorative justice, reconciliation of the parties, termination of the criminal case on other non-rehabilitative grounds). The incentive form of legal proceedings is implemented directly in the context of simplified or accelerated court proceedings (when considering a criminal case under a special procedure, when entering into a pre-trial cooperation agreement, etc.).

The analysis shows that encouragement in criminal proceedings is provided by the state in the form of relevant substantive rules providing grounds for exemption from punishment or grounds for preferential calculation of punishment. However, the state does not guarantee the implementation of such

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encouragement due to the discretionary powers of the authorized subjects and the plurality of persons involved in the incentive criminal procedure relations and their interests.

The author concludes that the current state of the institution of incentives in criminal proceedings indicates its dynamism and transformation into a more complex procedural form, which is widely spread and implemented in the criminal process of many states.

At the same time, we believe that the incentive form of legal proceedings in view of its mutual benefit acquires the features of universality, since the simplified and accelerated procedures for resolving criminal cases in most cases allow to consider the interests of all parties involved in the case. Therefore, the incentive form of criminal proceedings is characterized by such features as universality, mutual benefit, efficiency.

Under the current criminal procedural law, the incentive form of proceedings can include a special procedure for taking a judicial decision when the accused agrees to the charges, a special procedure for taking a judicial decision when the accused signs a pre-trial agreement on cooperation, the institution of release from criminal responsibility on assessable grounds (including restorative justice).

Keywords: criminal procedure incentives, restorative justice, differentiation of criminal procedure, simplified criminal procedure, exemption from criminal liability.

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1. INTRODUCTION

The implementation of humanistic principles in criminal proceedings requires constant transformation of criminal procedural legislation. The criminal procedure law of each state contains norms enshrining the possibility of differentiation of the criminal procedure form, and thus individualization of criminal proceedings. This approach by the legislator enables the person accused of committing a crime to exercise the subjective right to encouragement if certain conditions are met, while the law enforcer exercises discretionary powers.

Encouragement enshrined in criminal law and criminal procedure law is a measure of legal influence applied by the State in relation to the person accused or suspected of committing a crime, in the case of approval of certain merits in achieving generally recognized socially significant results (fulfilment of the conditions of encouragement laid down in the law).

In the implementation of incentive rules in criminal proceedings, the state, represented by the authorized subjects and the victim expect from the person accused of committing a crime, active socially positive post-criminal behavior - repentance for the deed, compensation for damages, apology, and other positive activity, indicating the intention of the latter to minimize the negative consequences of criminal actions, reduce their negative assessment.

In this case, manifestation of free will is a necessary condition for encouragement in criminal proceedings, but the internal position of the subject of encouragement may differ from its external manifestation in specific circumstances.

Implementation of an incentive rule in criminal proceedings is aimed at a specific procedural and material result, the achievement of which is possible only if all the conditions enshrined in the rule are met. At the same time, the application of the norm of encouragement is wrapped in the final procedural decision (decision to terminate the criminal case on non-rehabilitative grounds, a sentence rendered in a special order if the defendant agrees with the charges).

Restorative justice and the conclusion of a pre-trial cooperation agreement are the most common types of proceedings of an incentive nature in the criminal procedural legislation of most countries. However, these are by no means all possible forms of incentives.

The aim of the study is to identify existing forms of incentives in criminal proceedings and determine the characteristics of criminal procedure incentives.

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2. RESEARCH

In the course of research, a set of general scientific methods of research (logical analysis and synthesis, induction and deduction) and traditional methods (comparative legal, systematic) were used. The logical method and the method of comparative-legal analysis occupy a special place in the preparation of the article. In particular, these methods were used to analyze the theoretical and legal understanding of the differentiation of criminal proceedings, legal enshrining of incentive rules and their content, highlighting the features of incentive criminal procedure incentives. Using logical rules of deduction, the application of these methods made it possible to identify incentive forms of criminal proceedings.

3. RESULTS

Differentiation of the criminal procedure is seen as such a structure of legal proceedings, in which along with its regular order there are procedural forms that provide for both simplification of the procedure in simple cases of crimes of low public danger, and complication of it in cases of the most dangerous crimes or cases requiring special procedural protection of the legitimate interests of the accused or other participants of the proceedings (Smirnov & Kalinovsky, 2009, p. 272).

The differentiation of the criminal procedural form is not basic for the dualization of criminal proceedings, which are unified in their essence and significance. Despite the lack of reference to unity in part 2 of article 1 of the CPC of the RF, the latter is expressed in the current legislation as the totality of all mandatory conditions established for the order of the criminal proceedings (Tsyganenko, 2004, p. 7).

The concept of "differentiation of the criminal procedural form" is defined as a law-making process consisting in the activity of the legislator to separate from the system of criminal procedural rules a special group of rules regulating the necessary criminal procedural legal relations associated with certain features of the criminal case or the subject who committed the crime, to form a new criminal procedural form (Mischenko, 2014, p. 17).

Differentiation is considered as one of the directions of development of criminal procedural law, which is a specific method of legal expression in the criminal procedural form of substantive and procedural conditions of activity of its subjects, and its (differentiation) application leads to the structuring of procedural relations as a complex of different properties and position of procedural orders (criminal proceedings), including general order of criminal proceedings and differentiated orders.

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Criminal procedural form is defined as a complex and detailed procedural category regulated at the legislative level, which creates mandatory for courts, prosecution, investigation and enquiry bodies, the order of proceedings in a criminal case, carried out to implement the purpose of criminal proceedings (Grigoryev, 2018, p. 38).

Criminal procedural form carries out organizational, technical, and legal support of law enforcement and its procedural design due to the content in its structure components (stages, procedural proceedings and procedural mode) of elementary means (attributes) of impact on the procedural activity, which build an expedient order of this activity, preventing possible obstacles to the implementation of procedural rights and obligations of subjects of criminal proceedings (Skobkareva, 2018, p. 8-9).

Criminal procedural form: 1) is not equated with the procedure and sequence of all actions by participants in the process; 2) is strictly defined by law and serves to regulate decision-making on special issues; 3) contributes to the decision-making secured by constitutional procedural guarantees of protection of rights and legitimate interests of participants in criminal proceedings (Mischenko, 2014, p. 15-16).

Some authors define the procedural form of criminal proceedings as the legal form of the activities of the court, investigation bodies and prosecutor's supervision in initiating criminal cases, their investigation and resolution, as well as other participants in the process, involved in the case in one capacity or another, and relations associated with this activity (Machikhin, 2006, p. 8); the procedure established by law for the production of individual procedural actions (or their totality), which may be performed with or without the participation of the accused (questioning of a witness by an investigator).

Along with the external image of the criminal procedural form, which means the form of application of criminal law norms, we also distinguish its internal image as a form of application of the norms of criminal law itself. These are different characteristics of the work of the criminal procedural mechanism and at the same time the result of its work, namely: justice and criminal legal protection of social relations, generally forming the legal order guaranteed by the criminal procedural system (Kesaeva, 2017, p. 9-10).

The internal criminal procedural form is a way of legal organization of criminal procedural activity, and it also structures criminal proceedings as a certain system of criminal procedural relations (Kesaeva, 2017, p. 10).

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The main criterion for the classification of procedural forms of legal proceedings is the degree of differentiation of the functions of prosecution, defense, and resolution of the case by the circle of subjects implementing them (Prutchenkova, 1992, p. 6); agreement of the subjects of proof regarding the proof of the main fact (Alimerzaev, 2014, p. 9).

Incentives in the Russian criminal procedure include the possibility of exemption from criminal responsibility and mitigation of criminal punishment (up to complete exemption) provided by law for persons who have committed a crime, but who by their truthful testimony provide serious assistance in the investigation of this or another criminal offence (Novikov, 2008, p. 26).

On the basis of the current rules of criminal procedure law of the Russian Federation, the following classification of forms of trial is proposed: traditional, which includes the general procedure of trial (provided for in chapters 35-39 of the Code of Criminal Procedure of the Russian Federation); complicated forms, which include consideration of criminal cases by jury as well as in respect of juveniles (chapters 42 and 50 of the Code of Criminal Procedure of the Russian Federation); and simplified forms, i.e. enquiries and abbreviated enquiries (Chapters 32 and 32.1 of the Russian Federation Code of Criminal Procedure), a special procedure when the accused agrees to the charge (Chapter 40 of the Russian Federation Code of Criminal Procedure) and a special decision-making procedure when entering into a pre-trial cooperation agreement (Chapter 40.1 of the Russian Federation Code of Criminal Procedure) (Orlova, 2016, p. 8).

The legislation of most common law countries in the field of criminal proceedings contains forms of court proceedings similar to those mentioned above. Such forms should include: consideration of a criminal case in the general order; complicated forms related to the participation of a jury in court proceedings, proceedings against juveniles, application of compulsory measures of medical nature; special procedure of trial in case of pre-trial cooperation agreement; simplified forms of proceedings, in case the accused agrees with the charges (including some types of restorative justice).

Singling out the form of court proceedings, one cannot but mention the opinion of Ashworth A., who states that there are two interrelated paradigms of goal-setting in criminal proceedings: the «punishment paradigm», where the key goal of criminal proceedings is to apply punishment (repressive measures) and restore «peace» between the state and the offender; the goal of the «restorative paradigm» is not to punish the offender, but to restore the victim's rights and, ultimately, the rights of the state (Ashworth, 1994, p. 34-35).

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Elements of restorative justice have been widely developed in international jurisprudence, both for adults and juveniles. Undoubtedly, the main aim of restorative justice is to restore justice, to ensure the peaceful resolution of criminal law conflicts. The positive practice of restorative justice programs demonstrates the limitations and negative side-effects of punitive approaches (punishment) (Zehr, 2002, p. 15).

Restorative justice programs are incentive-based in that the outcome is not strict punishment of the perpetrator, but rather relief from punishment or liability, through reconciliation of the offender with those affected by the crime, reparation for the harm caused, and restoration of social justice.

According to the report the Office of the SRSG on Violence against Children in 2013 «Promoting restorative justice for children», restorative processes are applied to juveniles, which may include mediation, conciliation with the victim, sentencing based on the socially positive behavior of the juvenile and the agreement reached on the results of restorative procedures. This report notes that restorative justice aims to rehabilitate and reintegrate the young offender, through a non-contentious and voluntary process based on dialogue, negotiation and problem solving, thereby helping to reconnect him or her with the community. This involves ensuring that the offender understands the harm caused to the victim and the community and accepts responsibility for criminal behavior and reparation[2].

One effective form of encouragement in criminal proceedings is the participation of an intermediary in the reconciliation of the offender with the victim, the implementation of mediation procedures. The result of such mediation is the termination of the criminal case or criminal prosecution against the accused or suspect if the statutory conditions aimed at reconciliation, making amends, compensation for the damage caused, and a formal admission of guilt are met. This model of restorative proceedings is particularly widely used in Canada, the United States of America, and some European countries.

The use of mediation in criminal proceedings as an effective incentive measure tends to expand in different states. For example, in the Republic of Kosovo, mediation is seen as an important aspect of the implementation of restorative justice, the purpose of which is to assist parties to criminal law conflicts. It is carried out through an extrajudicial procedure with the participation of a certified mediator, whose task is to achieve reconciliation of the parties, to achieve compensation for the damage caused to the victim. It

[2] Report of the Office of the SRSG on Violence against Children «Promoting restorative justice for children» // https://sustainabledevelopment.un.org/content/documents/2599Promoting_restorative_justice.pdf p. 28.

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is worth noting that the use of «online mediation» is widespread in this country. As noted by Milot Krasniqi, online mediation is used in cases where the parties are geographically distant from each other. A great advantage of this form of mediation is that it enables mediation even when the parties are in different and distant locations, reduces procedural costs and saves time (Krasniqi, 2019, p. 195-196).

In Russian procedural science, the concepts of «simplified» or «expedited» proceedings are widely used (Boyarskaya, 2012, Dudina, 2011, Esenkulova, 2013, Kachalova, 2016, Kishchenkov, 2010, Plyasunova, 2008, Tenishev, 2018, Tisen, 2017, Trubnikova, 1997) as a criminal case review procedure designed to optimize procedural institutions and rules while retaining fundamental individual rights guarantees (Orlova, 2016).

One of the common simplified forms of criminal proceedings is the application of a special judicial procedure for the conclusion of a pre-trial cooperation agreement. Dneprovskaya M. and Abramitov S. point out that the essence of this procedure is to induce the guilty by his actions to assist the bodies of preliminary investigation in the detection and investigation of crimes in exchange for receiving certain benefits as a defendant who pleaded guilty. At the same time, the cooperation agreement contains instructions on the actions that the suspect (accused) agrees to perform to assist in the detection and investigation of the crime, to expose other accomplices to the crime, to search for property obtained by criminal means (Dneprovskaya & Abramitov, 2019, p. 162).

Simplified criminal procedure is not only characteristic of the Russian criminal procedure. They are widely used in many states. In criminal proceedings in the United States of America, both at the state and federal level, immunity and leniency agreements have gained importance when plea bargaining in exchange for cooperation. This form of litigation can arise in complex white collar crime cases, organized crime cases, drug cases and other major criminal cases. A cooperation agreement is quite different from a mundane plea bargain (Hughes, 1992, p. 2). In this case, as long as the defendant fulfils the terms of the agreement in good faith, the state provides security and, where necessary, financial support.

The main objectives of the implementation of this criminal procedure incentive measure are to save procedural resources (procedural time, financial savings, etc.) as well as to prevent and prevent crime, including professional and organized crime.

The incentive for the accused, the suspect who has concluded a pre-trial cooperation agreement is to receive the minimum possible punishment for the crimes he has committed, provided all the conditions

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stipulated in the agreement are met, including providing the bodies carrying out the preliminary investigation with information that is essential for the detection of the crime.

Considering court proceedings as a strictly formalized order of procedural actions of the court and participants of the process, aimed at achieving the result - a reasonable, lawful (constitutional and legal) and fair decision by the court (Vitruk, 2009, p. 371), we believe that the implementation of incentive rules provided by the current legislation also occurs within a special procedure, which we call as an incentive form of criminal proceedings.

In this regard, we believe that incentive legal relations emerging within the framework of criminal procedure, including their initiation, implementation and enforcement are carried out within a special incentive form of criminal proceedings.

This incentive form of legal proceedings can be implemented as part of a criminal case considered under the general procedure of court proceedings (for example, when resolving the issue of termination of criminal proceedings in connection with reconciliation of the parties or a court fine, as well as active repentance). The incentive form of court proceedings is directly implemented in the context of simplified or accelerated, differentiated procedures of court proceedings (when the criminal case is considered in the order of special proceedings, reduced enquiry, conclusion of a pre-trial agreement on cooperation).

The previously identified nature of criminal-procedural incentive relations (as an element of the mechanism of legal regulation) as interdependent relationship of criminal law and procedural norm, is preserved and fully manifested in the incentive form of legal proceedings.

Procedural proceedings as an element of the incentive form, in turn, is defined as a totality of law enforcement actions aimed at the implementation and execution of the mechanism of incentives in the context of criminal procedure.

The current status of the institute of encouragement in the framework of criminal procedure shows its dynamism and evolution to a more complex procedural form, which is widely spread and implemented in the field of criminal procedure.

We believe that we should not be limited in the understanding of encouragement only as a material result in the form of a specific law enforcement act, we believe that encouragement in criminal proceedings should be considered in relation to its external form of implementation, starting from the moment when the subject becomes aware of the options for a favorable outcome of the case for him.

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In this case, incentive form of criminal proceedings, as an external expression of incentive mechanism, has an essential feature that determines the mutual benefit of incentives - a simplified or reduced procedure for its application, in which the initiation, implementation and development of appropriate criminal procedure incentive legal relations, multifaceted not only in its subject composition, but also in the pursued interests of each party.

The conceptual model of incentive form of legal proceedings that we offer is due not only to certain prerequisites, but also the obvious usefulness from the law enforcement point of view, since the incentives provided in the law in the form of features of its legislative regulation, finds its ambiguous reflection in judicial practice, differently applying the same rules of law.

4. DISCUSSION AND CONCLUSION

Thus, encouragement in criminal proceedings is provided by the state in the form of relevant substantive legal norms, providing grounds for exemption from punishment or grounds for preferential calculation of punishment, along with the establishment of a procedural procedure for the application of these incentive rules. But at the same time, the state does not guarantee the implementation of such encouragement due to the plurality of persons involved in the incentive criminal procedure relations and their interests.

However, we believe that the incentive form of legal proceedings in view of its mutual benefit acquires the features of universality, since the simplified and expedited procedures for resolution of criminal cases allows to consider the interests of all persons involved in the case.

In turn, the simplified procedure for the implementation of the incentive form of legal proceedings ensures the effectiveness of the criminal procedure as a whole.

Encouragement in the substantive sense implies a specific result (exemption from criminal responsibility, reduced penalty), and in the procedural understanding, the "incentive form of proceedings" implies a procedural order of initiation, development, and implementation of incentive legal relations.

Taking into account this understanding, it should be noted that in a criminal procedural form of encouragement the question of merit and assessment of the actions of the accused or defendant is not always mandatory, and may have an optional value, for example, in cases where the accused has applied

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to consider the criminal case in a special order of a court decision, but the court rejects it due to the objections of the victim or public prosecutor.

Accordingly, merit, as an integral element of substantive legal incentives, in the above example may not be established when deciding on the possibility of implementation of incentive form of legal proceedings, it is not decisive in this case, not essential for the launch of the criminal procedure mechanism of incentives.

It should be noted that, along with the above features of the incentive form of legal proceedings, application of the incentive norm in criminal proceedings entails negative procedural consequences, namely: when releasing a person from criminal responsibility with the use of incentives (for example, reconciliation with the victim, imposition of a criminal penalty, active repentance or in the presence of special grounds for termination of a criminal case) - absence of acquittal and information about criminal offence of a person with a criminal record. In case of application of the incentive norm connected with the verdict of guilty (simplified proceedings) the verdict itself is a negative legal consequence.

We believe that this peculiarity of the implementation of incentives is due to the public nature of criminal proceedings and the functions of the state in the fight against crime. On the other hand, a painless resolution of the resulting criminal law conflict associated with the commission of a crime can hardly be assumed.

Thus, this study proposes a model of incentive form of proceedings, characterized by such features as universality, mutual benefit, efficiency.

Within the framework of the current criminal procedural legislation of Russia, to the incentive form of legal proceedings should be included - a special procedure for taking a judicial decision upon consent of the accused to the charges (chapter 40 of the Criminal Procedural Code of the Russian Federation), reduced enquiry (chapter 32.1 of the Criminal Procedural Code of the Russian Federation), a special procedure for taking a judicial decision upon conclusion of a pre-trial agreement on cooperation by the accused (chapter 40.1 of the Criminal Procedural Code of the Russian Federation), as well as ins

It is worth noting that the development of the «special procedure» was facilitated by the idea of prioritizing the personal interests of the accused as a participant in criminal procedural relations who could influence the choice of form of trial and apply for a sentence under the rules of simplified proceedings.

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The value of the institute of exemption from criminal liability in connection with reconciliation of the parties and active repentance lies in the creation by the state of conditions conducive to the voluntary positive behavior of the person after the crime, aimed at eliminating the negative consequences of his act.

Special grounds for the termination of a criminal case constitute a separate, independent area for the implementation of the rules on incentives in criminal proceedings.

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AI Use in Criminal Matters as Permitted under EU Law and as Needed to Safeguard the Essence of Fundamental Rights

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ABSTRACT

In this article we shall attempt to systematically chart the curent AI legislation, as well as the most important proposals for legislation at the level of the EU and to point the clashes and common ground with some of the major aspects present in criminal law that are linked with the protection of the essence of fundamental rights. The image of man as a natural prey to suggestion and influence has made some believe that artificial intelligence represents the proper solution for ensuring not only impartiality in a justice system, but also efficiency. This encouraged a relatively uncomplicated view on the AI applications that would facilitate the work of police and judicial authorities through identification, data management, facial recognition, crime prevention and risk assessment. Underpinning this reassuring hope is the concern for the protection of the essence of fundamental rights. Anchored in the practical examples arriving via the professional experience of magistrates, the use of AI can have adverse effects, undermining fundamental rights, such as the right to non-discrimination, the right to protection of personal data and to a private life, the right to freedom of expression, and the right to a fair trial given the increased risk of reproducing bias and perpetrating discrimination, not to mention the ability of criminals to make use of it for their own illegal purposes. Assumptions on the interaction of AI and the essence of fundamental rights start from the

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very nature of man and the structure of society and the EU legislator has tried to gather all of these essential elements under the *roof* of a limited number of policies and legislation instruments.

Keywords: AI, criminal law, the essence of fundamental rights.

1. INTRODUCTION

A constant reassessment of the impact of AI gives rise to different attitudes at the level of the EU legislator and in the middle of the judicial professions. Our methodology shall link together personal experience from the life of a lawyer and a prosecutor and the views of the EU legislator.

The European Parliament has expressed its views on AI in multiple policy contexts, for instance in its resolution of 14 March 2017 on fundamental rights implications of big data: privacy, data protection, non-discrimination, security and law-enforcement,in its resolution of 20 January 2021 on artificial intelligence: questions of interpretation and application of international law in so far as the EU is affected in the areas of civil and military uses and of state authority outside the scope of criminal justice and through the report of the European Parliament's Civil Liberties, Justice and Home Affairs (LIBE) Committee on AI in criminal matters. Council too has recognised the specific fundamental rights requirements arising from AI use in law enforcement, while emphasising AI's potential to such an extend that in its December 2020 conclusions on internal security, set an objective that, by 2025, law enforcement authorities should be able to use AI technologies in their daily work, 'subject to clear safeguards'.

There are plenty of clashes, as well as common ground and we meant to identify them as we analysis the current EU view on the use of AI. The belief that AI would represent an important risk in relation to fundamental rights is taken into consideration by responsible policy makers, ethical reseachers, as well as those that simply oppose progress. This statement represents an interesting contrast to an argumented view that AI would perform a mainly reinforcing role with respect to the fundamental rights of a person. Both the risks and the opportunities brought by AI technology center around its ability for information gathering, data interpretation, information disemination and the potential ability of changing decisions and attitudes.

Unlike those that choose either to see AI as a threat or as an opportunity, we shall suggest that AI is in fact a necessary instrument as its necessity stems from the fact that the volume of information has increased beyond the human capacity, the complexity of the world reaches new levels every day and the

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expectations of each of us have increased steadily over the course of time. We suggest that there is a causal link between these three elements and the need to use AI.

At this point it seems more important to establish the basic legislative infrastructure, than to worry unduly about the AI content in its activity. The regulations on AI shall play a vital role in determining whether the AI technology shall be perceived as a totalitarian and reprehensible instrument or it shall win sympathy by fostering international, national, and individual concrete and abstract prosperity, as well as access to an improved justice system.

At least four abstract, cross-disciplined and horizontal benefits could be claimed on behalf of the role of AI in relation to the development of the justice system. We believe that these four benefits would start with the first one, which would be in nexus with the fact that AI could, from the incipit of its usage, break down traditional instruments, that are beginning to be thought of as inimical to the modernisation development but were lacking proper replacement till this moment. Secondly, we believe that AI would help to promote the attainment of an integrated approach that shall work across all fields of activity, making justice a trully inter-disciplinary system. Thirdly, we have reasons to believe that AI would assist in the management of information, considering the ever encreasing number of cases, and in the development of new technical skills that would be used to tackle the growing complexity of the cases. Fourthly, we believe that AI could be harnessed to the complex task of rapid management of data towards the expansion of fundamental rights protection.

At least two important general obstacles to success were frequently overlooked. The first of these was the culturally-bound model of development which characterized much of the thinking especially when debating the justice system. A second obstable that was overlooked was the wide range of factors that already limite our fundamental rights, but that can be treated through AI.

There are some that assume that the current state of protection of the fundamental rights is ideal, but it is far from the current reality, and this can be proven easily by considering the constant case-law of ECHR, but also the fact that most of the world does not receive proper appreciation of its protection of fundamental rights. Society, left to itself, without new developments, would not bring about attitude changes conducive to the requirements of developing a better framework for the protection of the essence of fundamental rights, as well as increasing the number of people benefiting from this framework.

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2. THE NEXUS BETWEEN AI AND FUNDAMENTAL RIGHTS

We believe that any type of regulation that would try to foster the development of AI without infringing upon fundamental rights would have to consider the rights that are in the biggest danger. We have identified in the Charter for fundamental rights of the European Union several fundamental rights that shall be placed at the forefront of the interaction with current and future AI technology: the right to human dignity (Article 1) (Kanuck, 2019), respect for private life and protection of personal data (Articles 7 and 8)(Ishii, 2019), the right to freedom of expression (Article 11)(Llansó, van Hoboken, Leersen, Harambam, 2020), the right to freedom of assembly (Article 12)(Muller, 2020), the freedom of art and science (Article 13)(Flach, 2012), the freedom to conduct business (Article 16)(Dirican, 2015), the right to protection of intellectual property (Article 17(2)(Gervais, 2020), non-discrimination (Article 21)(Frederik, Zuiderveen, 2020), equality between women and men (Article 23)(Leavy, 2018), the rights of the child (Article 24)(Fosch-Villaronga, van der Hof, Lutz, 2021), the integration of persons with disabilities (Article 26)(Guo, Kamar, Wortman, Wallach and Morris, 2020), consumer protection (Article 28)(Lippi, Contissa, Lagioia, 2019), the workers' rights to fair and just working conditions (Article 31)(Korinek and Stiglitz, 2019), environmental protection and the improvement of the quality of the environment (Article 37)(Hojageldiyev, 2019), the right to an effective remedy and to a fair trial, the rights of defence and the presumption of innocence (Articles 47 and 48)(Završnik, 2020).

The assumption of massive AI impact results from its specific characteristics, as well as general opinion on favour of it being a technology that is characterised by opacity, complexity, dependency on data and autonomous behaviour that can adversely affect a number of fundamental rights enshrined in the EU Charter of Fundamental Rights. AI emerges in a world in which disinformation, missinformation and fakenews represent visible results of the technological development and its impact upon people's attitude, allegiances, and behaviour.

In order to use AI systems, we ought to focus on creating legislation with a high level of protection for those fundamental rights that are most at risk, as well as acknowledge at the level of the policy making system that in order to address the various sources of risks brought about by AI technology, we would have to work on a clearly defined, researche based, in compliance with the legislation, risk-based approach. Legislation, policy making and research and development can create the proper environment for AI technology. AI technology should prove compatible with fundamental rights as long as it is

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managed through proper legislation that sets requirements for trustworthyness, proportionate obligations on all value chain participants and ample mechanisms able to promote the protection of the rights. The aim should be to prevent the chilling effect of bias attitudes, impressions, preferences, perceptions on the coding behind any AI system used in relation to the justice system or that could interact with fundamental rights.

3. THE DYNAMICS BROUGHT BY AI INTO CRIMINAL LAW: EVIDENCE, DECISION-MAKING AND LEGISLATION

Concern about AI in criminal law is chiefly focused on the potential effects of AI on AI-based evidence in criminal proceedings and on an increasing set of decisions taken by smart robots and AI systems (Pagallo & Quattrocolo, 2018).

One experiment, conducted by the Dutch authorities in 2018, used AI skills such as generic intelligence, quick decision making, the ability to process lots of data in a short amount of time, stable decision making, defined tasks, analytic skills in speech recognition software, automated anonymization of judgements, criminal sentence analysis, debt problems analysis and an AI Knowledge based system. In practice the AI Knowledge based system analysed and searched for similar cases based on imported text, pleadings, extracted the facts itself and searched similar facts in other cases, searched for matching and ranking and for common cases such as traffic violations, no default cases, asylum, and custody cases.

Another experiment, in 2018, conducted by the Austrian authorities integrated AI into judicial policies so as to have AI for analyzing incoming mail, build automated routing of all incoming documents (structured and unstructured, scanned and via ELC), without manual processing of the administration staff of the courts, AI for digital file management and AI for analysis in investigation data, AI for anonymization of court decisions, AI for optimiziation of internal workflows, AI for decision support and AI for optimization in data acquisition.

3.1 Evidence

It is expected that as AI shall become a constant component of society it will start to produce content that shall represent evidence. There are voices that raise arguments against this potential outcome,

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as there exists a concern with the role of AI-driven technology in the justice system. There are lively scientific debates upon the role of AI-driven technology, some that would argue it is their role to simply record, while others believe that it would present the danger of transforming reality before the court.

Nevertheless, this type of evidence shall find its way in the court room. The obvious advantage of AI-driven evidence would be the fact that, on condition of proper programming, it would result into a neutral read of reality, which is not in some way dependent on cultural conventions, but on coding, a coding that can be improved. There are a number of problems with the possibility of using AI-driven evidence, but advantages do exist.

The analysis of content that results from the monitoring of human behaviour by machines and software bots shall create data that would fall within the category of machine evidence. AI evidence would present itself as a selection of and impartial comment on reality as it unfolded and it would transmit to the authorities photographs, films, data as evidence of reality unfolding. This type of evidence would have to be less littered with so called preferred meanings. Preferred meanings are associated with evidence provided by persons, as there is the risk for evidence to coincide with the perceptions of the dominant sections of society or with the personal prejudice of the person.

AI evidence, in an ideal context, would have the function of presenting defamiliarized data that would be spontaneously honest and continously confronted by other means of evidence. Nevertheless, the manner in which AI technology would be constructed in order to provide impartial evidence would have to completly safeguard against prejudice. Thus, from the start we would be dealing with a technology that is created based on the principle of impartiality. At our present time, it would be difficult for us to state that all evidence presented in court presents reality in an impartial, documented and devoid of bias manner. Although AI content, presented as evidence, could offer information that would be closer to an impartial view, as it would be designed this way, it is still difficult to accept it in competition with evidence coming from people that are not inherently impartial. Despite this paradox, we shall witness a difficult period in which types of evidence shall compete.

This new type of evidence shall pose procedural challenges in criminal justice systems across the world because they have traditionally been tailored for human testimony. Nota bene, we shall be dealing with information proffered as evidence in courts that deal with criminal cases that has been directly generated by AI-driven systems that not only observe, but evaluate in their own manner the behaviour of

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human beings. AI-driven systems could exist to predict future behaviour in an attempt to enhance safety, safeguard the law and prevent infractions.

In order to illustrate our case, we shall refer to a poignant example of this type of evidence, namely automated driving. Probably it is common knowledge that automated driving existence whenever driving is assisted by technology through a growing range of safety features that include instruments that not only observe, but also evaluate a driver's ability to control, pilot and retake control of a vehicle where necessary. Thus, a consumer product generates data. In the EU, for instance, we are already in the presence of new intelligent devices, including drowsiness detection and distraction warning systems. These AI-driven systems monitor human behaviour and will become mandatory in new cars beginning with 2022. In our present days and especially in the future, in the event that human-machine interactions cause harm or an accident involving an automated vehicle, such as car accidents which continue to be common in the EU, there is likely to be a plethora of machine evidence, or data generated by AI-driven systems, potentially available for use in a criminal trial.

It is not yet clear if and how this data can be used as evidence, however, there is a sense in which AI-driven systems involve some crucial changes from preceding signifying evidence gathering. As an AI-driven system maintains in its work a natural distance from reality, it penetrates deeply into the complex web of social relationships without getting tangled in it. AI-driven systems could find a place in criminal fact-finding and adversarial and inquisitorial systems, although the current approach of this issue is very differently perceived (Gless, 2020).

3.2 Decision-making

Decision making is a vital issue in criminal procedure and the involvement of AI-driven technology in it deserves a critical revision. For the weakness of any criminal case lays in its inability to explain the necessity, proportionality and legal arguments of a decision. There is consensus that decision making in criminal law, not without the due measure of legal and legitimate compulsion, represents a vital component within the legal process of establishing guilt or innocence.

Formally, the legitimacy of the criminal investigation derives from the accountability of those that investigate. We focus upon the sovereign will of those, that based on the law and on the evidence, decide on the outcome. The interests of those that are responsible with the decision making process in a criminal trial must be aligned with or made equivalent to the general interests of the society.

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Criminal law is depicted as the part of law where argumentation represents the most important component as it must grasp all the conditions which make freedom and impartiality possible. Decisions in this field may affect the freedom of people, and because human beings regard their freedom as one of the most precious things, there can be no doubt upon the legitimacy of the truth. Consequently, if a public offender decides to prosecute a suspect, he has to have good reasons for doing so and AI-driven technology can represent a proper instrument in gathering the necessary information to support either a claim of guilt or a claim of innocence.

In the next phase, the judge who finds a suspect guilty must firmly ground his decision and an AI-driven system can provide a large number of cases for the judge to choose the best argument. A perceived problem would be with the ability to measure the exposure of the judge to the AI chosen content. It should not be concluded that once the AI-chosen content becomes an instrument in supporting the activity of those involved in the criminal trial there is unlikely for us to contemplate a sizeable difference of outlook among these professionals. Professionals, through their current training, are less inclined to be influenced by human behaviour, but there is a real question on the impact of AI content. Magistrates are taught how to understand the means through which another person can influence their decision making process. This knowledge comes from years of experience.

Things are not so clear when we debate the way AI content would influence the decision-making process. Magistrates are more prepared to discover human influence, as well as understand the lack of impartiality of a person that could be a witness, for example, but interacting with AI-content would be something of a novelty. There exists a distinct care with the possibility of these quite different formulations of the social nature, coming from an AI system, might influence in a negative manner the decision process taking place in a criminal trial.

However, there is also the possibility for this type of data to permeate the judgement of a magistrate less pervasively. It will depend on the view of the person on the AI system, seen as a tool that can be used to gain efficiency and impetus in a criminal trial, as an authoritative information source, on which the magistrate risks to become more dependent as the complexities of social differentiation and the pressures of a rapidly changing worl threaten to become too much or an independent source of opinion. Such AI-systems, at this point in time, can be divided into rule-based systems, statistical systems and case-based systems.

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Case-based systems tend to be most popular nowadays, probably because they provide the judge with interesting information about similar cases (penalties, grounds), while his discretionary sentencing-competence is respected. Furthermore, the AI systems have been seen as systems that assist the decision making process and systems that make their own independant choice (Lima, 2018). We believe that different AI tools would be needed for judges and public prosecutors as their task presents significant differences. This represents just an example of variable that ought to be taken into consideration, as while the public prosecutor intends to put forward a sentence claim that is in accordance with the severity of the offence, it is the task of the judge to find a balance in the severity of the case and the person of the suspect. This means that it is easier to provide the public prosecutor with guidelines than to do the same for the judge. The position of the suspect and victim is again different, not only in terms of relation with the infraction, but also in terms of procedural rights.

Underlying all these reactions is a common assumption: that the AI does indeed have considerable or can develop considerable influence over the manner in which evidence is gathered and decisions are being taken in a criminal proceeding; that in this sense AI is powerfull and, thus, dangerous. The solution centers around working on a proper algoritm that would embed it with ethical behaviour (Barabas, 2020).

It does not appear as self-evident; therefore, it does not represent a priority task for the research world, the potential of AI of being used by the criminal world or the situation in which an AI can become rogue and infringe upon the law and our rights. We believe that this ought to be the primary concern, as from ancient times criminals have tried to use technology to increase their ability to commit crimes. For instance, robbers use weapons, thiefs use surveillance equipment, smugglers use fast boats, drug traffickers use drones, Darknet has become an illegal market for stolen personal data, credit cards and weapons and cyber crimes happen on a daily basis on the internet, a tool imagined to become an instrument for science, social connection, communication and information (Dremliuga, Prisekina, 2020).

Evidence already exists that underlines the ability of organised criminal groups of understanding technology. In fact, based on statistics and evidence gathered, the energy and ingenuity with which fraud rings and cyber criminals have deployed AI-based solutions has matched that of institutions meant to prevent such a behaviour. Moreover, the businesses and organisations that work to protect themselves from bad actors such as fraud rings and cyber criminals have become a daily target. In fact, the reality is that AI machines have been put already to malicious use and this use has resulted into judicial effects, damages and prejudices. There is a wide range of methods in which AI machines have been used in illegal activities, for example, from click farms to complex model extraction schemes (Vaithianathasamy, 2019).

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A natural evolution would be for the criminal world to move from AI as an instrument, to AI as an escape goat and to AI as an independent criminal. For the second example, consider the fact that there are companies that started to employ algorithms in order to replace employees as the leading cause of corporate misconduct. For as long as contemporary legal theorists can recall, the legislator has defined through legislation the concept of corporate misconduct in terms of employee misconduct. This misconduct covered a broad range of activities and behaviours ranging from civil discrimination to criminal insider trading.

Today, however, breakthroughs in AI technology, as well as the development of automated data allows automated systems to make an important number of corporate decisions, for example, it can decide the person that is deserving of a loan or what stock should be recommended for purchase. Nota bene, reporting does not simply mean collecting facts. It does not represent a matter that is limited to collecting facts and fact related information. Facts do not exist on their own, as we have been convinced till this moment, but are located within wide-ranging sets of assuptions. The introduction of AI technology might change these types of assumptions or eliminate them. These technologies introduce valuable efficiencies, but they do remove or reduce the incidence of corporate harm.

Unless the law adapts, and it can only adapt on condition that the overall mentality adapts, corporations will become increasingly immune to civil and criminal liability. To some point the legislator is trying to maintain an equilibrium between a highe degree of responsability and a low degree of responsability, but with this new technology we might find ourselves in the situation in which not only corporations, but medium or small companies, can easily transfer responsability from employees, for which they are liable, to algorithms, for which they are not liable (Mihailis, 2020). A lack of liability shall put in danger the consumer, as well as block innovation and improvement. Nevertheless, such crimes have received little concern from the publica although they represent a danger to the property and financial resources of the individual.

What if a person would order a robot or a controlled machine to hurt another human being? (Hallevy, 2010) Criminal liability for acts committed by AI systems deserves a serious analysis that ought to involve the ability of AI to accomplish *an actus reus*, being in command of a corresponding *mens rea*, the existence of the necessary cognitive capacities that would constitute responsibility (Lagioia, Sartor, 2020). The discussion would have to center around similar criminal activity accomplished by an online bot, the Random Darknet Shopper, in order to distingusih between criminal activities by humans and by artificial systems. Thus, we can imagine an actual evolution, in terms of judicial terminology, from the

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status of simple tools, instruments that are meant to augment human behaviour, to the status of "electronic persons" or even actual subjects of law.

3.3 Legislation

The magnitude of the technical, ethical, political, and social problems is appreciated by current legislative proposals that are meant to regulate the use of AI. Public concern about AI results into three major problems that need to be considered whenever legislation is being created to foster the use of AI systems. Anxious about this new technology, nervous at the assumed consequences of AI use, regulations on AI entities become complicated because of three reasons.

The first one is represented by the conceptual difficulties in defining AI systems. The second difficulty in constructing a proper legislation is in nexus with the existing party liability mechanisms, such as corporate liability, which is unsuitable for non-humans. The third difficulty, which is probably the most difficult to tackle, stems from the real fact that criminal liability, and liability in general, has always been naturally assumed to belong to a human offender, meaning that AI entities cannot satisfy the mens rea element of criminality and it will present a difficult task to uncover a chain of causation between the incriminated act and the human operator or creator.

Underlying all these reactions and barriers, finally, there is the fact that the purpose of sentencing is so deeply rooted in society that its application to non-human involvement would be inappropriate. AI systems ultimately show that criminal law and social expectations are inextricably linked. This paper accordingly raises two talking points: the role of criminal law going forward, and whether AI entities will ever be accepted into the wider society. An argument for its acceptance results from the current proposal on AI regulation. In line with our discussion we have identified that the proposal for a Regulation laying down harmonised rules on artificial intelligence (Artificial Intelligence Act) focuses on limiting the use of AI in the following justice related scenarios:

- when it is used by law enforcement authorities for making individual risk assessments of natural persons in order to assess the risk of a natural person for offending or reoffending or the risk for potential victims of criminal offences;
- when it is used by law enforcement authorities as polygraphs and similar tools or to detect the emotional state of a natural person;
- when it is by law enforcement authorities to detect deep fakes

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- when it is by law enforcement authorities for evaluation of the reliability of evidence in the course of investigation or prosecution of criminal offences;
- when it is by law enforcement authorities for predicting the occurrence or reoccurrence of an actual or potential criminal offence based on profiling of natural persons or assessing personality traits and characteristics or past criminal behaviour of natural persons or groups;
- when it is by law enforcement authorities for profiling of natural persons in the course of detection, investigation or prosecution of criminal offences;
- when it is for crime analytics regarding natural persons, allowing law enforcement authorities to search complex related and unrelated large data sets available in different data sources or in different data formats in order to identify unknown patterns or discover hidden relationships in the data.
- when it is by competent public authorities to assess a risk, including a security risk, a risk of irregular immigration, or a health risk, posed by a natural person who intends to enter or has entered into the territory of a Member State;
- when it is by competent public authorities for the verification of the authenticity of travel documents and supporting documentation of natural persons and detect non-authentic documents by checking their security features;
- when it is to assist competent public authorities for the examination of applications for asylum, visa and residence permits and associated complaints with regard to the eligibility of the natural persons applying for a status.

It is obvious that Certain AI systems intended for the administration of justice and democratic processes should be classified as high-risk, considering their potentially significant impact on democracy, rule of law, individual freedoms as well as the right to an effective remedy and to a fair trial. In particular, to address the risks of potential biases, errors and opacity, it is appropriate to qualify as high-risk AI systems intended to assist judicial authorities in researching and interpreting facts and the law and in applying the law to a concrete set of facts.Such qualification should not extend, however, to AI systems intended for purely ancillary administrative activities that do not affect the actual administration of justice in individual cases, such as anonymisation or pseudonymisation of judicial decisions, documents or data, communication between personnel, administrative tasks or allocation of resources.

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4. CONCLUSIONS

The purpose of this article is to point out the most relevant risks in this scenario. It should be obivous that there is no ambition from the part of the authors to deliver a definitive answer as technology, legislation and policy represent changing elements, but, rather, it is the ambiton of the authors to trigger a discussion on the need to set specific, clear, researched questions about if and how AI can be integrated into the criminal justice system.

AI used in the justice system has the potential to replace labour-intensive, paper-based systems which create error, duplication, inefficiency, processes that are hard to administer and even harder to navigate for citizens. People would have the benefit of seeing during their lifetime a replacement of this conservative system into systems that focuse on the efficient use of descriptive analytics, as well as of models, predictive analytics, text, content and data mining that would include, without being limited to, object recognition and statistics. So as to better understand the vision, we would have to think in terms of access to the justice system. In terms of access it would result into a transformation that would involve the use of legacy, old, ancient, stored data and content into a complex understanding of the person. By using the stored data or by collecting new data the system would be able to help redesign services towards the benefit of the person. A proper AI system can be used to manipulate, understand and analyse previously unused internal information to improve the current and future administration of justice.

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Disputable Questions of the Use of Digital Technologies in Transportation

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ABSTRACT

The article is devoted to the implementation of digital technologies in transportation. Nowadays the necessity and advantage of their use are not argued. However, along with the positive effect of the digital technologies in the sphere of transportation there is the other side of the coin. Firstly, it is the absence of common approach to the legal regulation of implementation of digital technologies in different countries. According to analysis, the national legislations operate with notions that sometimes are not used in other legislations or have some differences in the meaning. Such approach is not appropriate in international transportation as it creates obstacles that disturbs the transportation itself. The difference is intensified by the technical aspect. Each country has its own companies that elaborate the technical issues of the digital technologies' implementation. Nowadays there is no single criteria for the developers of the software used in technical objects. Different approaches in the creation can leads to the situation when intelligent objects could not recognize each other and as the result there will be not any connection and interaction between vehicles and infrastructure itself that are deemed to the core objects of digital technologies in transportation. Secondly, there is a phenomenon that shows that on the one hand, modern society depend on appeared digital technologies. On the other hand, the majority of people are afraid of new technologies as they bring uncertainty and unknown. Moreover, digital technologies in transportation are the easy target for violation right and interests of users. This problem requires the consolidation of forces of all countries to overcome it and protect certain person, society, and the state itself from the threat created by implementation of digital technologies.

In spite of great number of articles written in this field, there is no single approach for the solving of the problem. This fact makes the topic of research topical and worth of attention.

Keywords: digital technologies, transportation, automated vehicles, cyber crime

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1. INTRODUCTION

Digital technologies have an incredible potential for every sphere of our life. Orientated on safety, security, quality, and efficiency, they suggest new opportunities for different branches of economy, including transportation. Among the most discussable technologies are artificial intelligence, Internet of things (IoT), BIG DATA, 5G, technologies in the field of robotics etc. None of these developments exists in isolation. They are used in combination forming a new product that can be efficient for the state and the society.

Digital technologies, being ameliorating in a wide range of situations with transportation system, open new horizons for the acceleration of transport various goods from one place to another, decrease of costs on transportation, raising the level of security on the roads and enhancement of ecological situation not only in one country, but also all over the world. Along with the named benefits, digital technologies are fraught with danger not only to the certain person, but also to the society itself. Therefore, analyzing the impact of digital technologies in this or that sphere it is necessary to speak about their positive and pernicious influence on the economy, environment [5], social life and the certain person. The main idea of this research is to find the balanced approach to and treatment of facilitation and security issues alike.

2. KEY ISSUES IN DIGITAL TECHNOLOGIES USED IN TRANSPORTATION

To show the effect of digital technologies in transportation it is necessary to view several aspects.

1. The influence of digital technologies on the process of transportation. Nowadays the transportation companies offer the traditional way of transport goods and people. But the great desire to become the leaders in this sector of market push them to invest money in the elaboration of new technologies that can be helpful in the increasing of the security level, acceleration of transportation speed and decreasing of the companies' costs. These goals can be reached because of the elimination of human behavior factor. The lion's share of control over transportation is given to new technologies such as artificial intelligence [4], internet of things etc. Moreover, the central part of transportation management is work with Big Data and analytics that can be done only by modern computers with the sophisticated software. The mixture of these technologies produces tools for the further development of transportation.

The key tool aimed to reach the above-mentioned goals is the intelligent transport system (ITS). The notion of ITS is used all over the world. Almost all countries have developed Strategies or Concepts devoted to the implementation of ITS. Let us bring the **definition of the notion of ITS**.

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Article 4 of the European Commission Directive 2010/40/EU of July 7, 2010, defines that ITS is a system that uses information and communication technologies in the field of motor transport, including infrastructure, vehicles, users, traffic management, as well as interaction with other modes of transport. UNESCAP Report on Intelligent Transportation Systems for Sustainable Development in Asia and the Pacific underlines that ITS is, generally speaking, a combination of technologies for increasing efficiency in vehicular traffic.

Intelligent transport systems Handbook on Land Mobile (including Wireless Access) Volume 4 (2021 edition) [3] defines ITS as systems utilizing the combination of computers, communications, positioning and automation technologies to improve the safety, management, and efficiency of terrestrial transportation.

The notion of ITS is used in the current Russian legislation. In accordance with section 2 of GOST R 56829-2015 “National standard of the Russian Federation. Intelligent Transport Systems” dated June 1, 2016, ITS is understood as a management system that integrates modern information and telematics technologies and is designed for automated search and adoption of the most effective scenarios for managing the transport and road complex of the region, a specific vehicle or group of vehicles in order to ensure a given mobility of the population, maximizing the indicators of the use of the road network, improving the safety and efficiency of the transport process, comfort for drivers and transport users. The definition of this concept is duplicated in the Concept of Ensuring Road Safety with the Participation of Unmanned Vehicles on Public Roads, approved by the Decree of the Government of the Russian Federation No. 724-r, dated March 25, 2020.

In the Concept of the introduction of intelligent transport systems in urban agglomerations, approved by the Federal Road Agency “Rosavtodor”, the above definition is repeated.

In addition, this definition is the basis for other standards. For example, in January 2021, a Preliminary National Standard of the Russian Federation was developed. Intelligent transport systems. Requirements for the feasibility study of the creation of intelligent transport systems on highways (PNST514-2021).

The definition presented above is also used without any adjustments in Article 2 of the draft Federal Law on Highly Automated Vehicles and on Amendments to Certain Legislative Acts of the Russian Federation (Project ID 02/04/06-21/00116763).

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Road Safety Strategy in the Russian Federation for 2018 – 2024, approved by the Decree of the Government of the Russian Federation No. 1-r, dated January 8, 2018, contains a point of view that ITS is a kind of new technology. ITS involves a wide range of technological and organizational systems, applications, and services.

The analyze of above-mentioned definitions of the notion of ITS allows us to say that ITS is some kind of automated system that includes all the existing variety of achievements of modern technologies (for example, multifunctional software and hardware complexes, data exchange systems between vehicles, as well as with transport infrastructure, working with the help of 5G technologies), allowing for efficient and safe movement of goods, people, as well as management, control of the road situation, ensure reliable and sustainable interaction between vehicles (V2V), as well as with transport infrastructure (V2I). Even though the existing legal regulation mostly concerns road transport, the definition of ITS should apply to all types of transport, starting from land and rail, ending with sea and air.

The modern transportation needs require not only automatization of the separate parts of the transportation and transportation infrastructure, but also the automatization of the whole process. ITS is the great tool to combine the automated vehicles and infrastructure together. Some elements of intelligent transportation system have been applied now. For instance, some countries use the roadside equipment for speed enforcement. On Italian and Russian motorways there are such kind of systems that can measure the driver's speed in two different points to estimate the average speed. In case the average speed is lower than the maximum speed limit for the section then the data is deleted. Otherwise, the images are made available to the traffic police for enforcement procedures. However, such modern technology is created only for the control of road's security. Using such equipment does not mean the existence of intelligent transportation system. ITS is much more complicated including not only the automatization if the separate functions but also the interaction of vehicles and infrastructure as well. Regarding the technology of Internet of Things, the interaction between objects is possible only when they are equipped with the special systems that allow them to operate by themselves.

The development of scientific thought has moved the transportation industry much more ahead. The famous brands have **the modern versions of vehicles** that can move by themselves without the control of a person. In accordance with the classification made by the Society of Automotive Engineers (SAE) in J3016 Standard "Taxonomy and Definitions for Terms related to On-Road Motor Vehicle Automated Driving System" there are three levels of automatization: Level 3 – conditionally automated vehicle, Level 4 – highly automated vehicle, Level 5 – fully automated vehicle. All vehicles of these levels

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can transfer the function of monitoring to the SDS (Self-Driving System) or ADS (Automated Driving System).

Based on the above-mentioned classification the definition of each kind of automated vehicle differs by the description of what system and driver are allowed to do. Let us consider them in detail.

1. Conditionally Automated Vehicle is an automobile, which has SDS (ADS) that match with third level (L3) of classification made by Society of Automotive Engineers. The ADS recognizes times restrictions of the Operating Design Domain (ODD) and gives a transfer demand to the driver. Driver is a fall-back ready user while he or she do not need to uninterrupted control traffic environment. Nevertheless, they must be ready and able to renew the dynamic driving task (DDT) in case of system request or system failure.

2. Highly Automated Vehicle is an automobile, which has SDS (ADS) that match with fourth level (L4) of classification made by Society of Automotive Engineers. System recognizes all driving tasks. It is capable to monitor the driving environment. Under certain conditions, the System may issue a transfer demand to the chauffeur. The driver must undertake the dynamic driving task to continue the trip without Operating Design Domain. However, SDS (ADS) can execute the total dynamic driving task if the chauffeur is unable to satisfy the transfer demand. The driver does not need to uninterrupted control the driving environment.

There are some uncertainties against the status of the driver. Some consider that all those who present in the vehicle are considered to be passengers while the SDS (ADS) is involved though they may still be executing the strategic driving task. Others consider the user still as chauffeur while the SDS (ADS) is involved. Thus, it is important to continue further deliberation on this point as the determination of the driver's position influences on the legal consequences (especially in determine the liable person in case of losses).

3. Fully Automated Vehicle is an automobile, which has SDS (ADS) that match with fifth level (L5) of classification made by Society of Automotive Engineers. According to it, none of those who are in the vehicle is expected to execute any part of the dynamic driving task. In other words, driver may not be present. When the SDS (ADS) is engaged all occupants are viewed as passengers. It means that the driver intervention is not needed. However, the driver may have the option to control the driving under the following conditions: 1) if the vehicle contains appropriate equipment and 2) if the driver has the required skills and qualifications (licenses). In this case, human occupants may choose to perform the

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DDT. On the whole, according to the details of term "fully automated vehicle", it can be assumed that the term "driverless" is equivalent to the term "fully automated vehicle".

This classification is applied not only by SAE. This document is the basic one taken by UNESE as the core to allocate types of automated vehicles. Therefore, this article also uses the elaborated classification. This means that under automated vehicles man can understand highly automated and fully automated vehicles. Only these levels of automatization can allow vehicles to interact with other objects.

Moreover, to make the implementation of automated vehicles possible it is necessary to have vehicle connected with the infrastructure via exchanging data and information relevant for the specific road segment to increase overall road safety and enable cooperative traffic management.

The mentioned digital technologies introduced into transportation seem to have positive influence on the development of transportation relationships. Nevertheless, **the implementation of these technologies is rather disputable as there are some negative aspects of their use**. Let us view the negative aspects of the transportation digital technologies implementation.

First, there is no common legal base for the use of digital technologies. Each country elaborates their own terminology, provisions of regulation. Even the same notions may have differences in their definitions. This is a serious problem for the whole world. Countries cannot be isolated in the questions of transportation as international transportation is the key tool to develop worldwide trade. Therefore, the trade with the use of automated vehicles requires the elaboration of the rules that can be applied in different countries. The presence of different approaches leads to difficulties in the implementation of international transportation and the development of international transport links, which negatively affects international trade turnover. In this regard, some interstate entities are developing various concepts of interaction of national ITS. For instance, we can name the Recommendations of the Board of the Eurasian Economic Commission, dated December 22, 2020, No. 27 "On coordinated approaches to the interaction of national intelligent transport systems, including in order to improve transport (automobile) control", Order of the Intergovernmental Council, dated August 20, 2021, No. 15 "On the action plan (roadmap) for the implementation of the Main Directions and stages of the implementation of the coordinated (coordinated) transport Policy of the member States of the Eurasian Economic Union for 2021-2023". The main objectives of the adoption of such documents are to determine the possibilities of interaction with European and world institutions for standardization in the field of ITS that meet international requirements, the development of measures aimed at improving information interaction in the field of

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transport control in terms of information exchange, as well as the preparation of a unified legal framework for the creation, development, provision of ITS. As the result the main issue of the modernization of the current legislation is the convergence of legal regulations of different countries.

Second, digital technologies in transportation are vulnerable and increases the risk of invasion by law violators. This issue requires the joint participation of all states, namely: issues of information security (including cybersecurity) of the use of information transport systems. Transport systems capable of functioning autonomously are quite vulnerable to attacks from intruders. They are at risk due to the fact, that the technologies used (for example, inertial sensors – sensors that determine speed), functioning using various communication channels, software, are an easy target for cyber-attacks. The report entitled "Cyberattacks against an Intelligent Transport System: Assessment of upcoming threats to ITS", prepared by organization "Trend Micro", examines possible threats from cybercriminals, namely: interference in the work of ITS to create accidents, traffic jams, obstructing traffic and causing losses to individuals, legal entities and public authorities and local self-government. There are headlines in mass media that have been stipulated the existence of cases of interference in automated processes in the transport sector.

2. The influence of digital technologies on transportation documentation.

Coming to the first aspect concerning *the implementation of digital documents* it is worth mentioning that there is no single approach to this question among all countries. The reason for such situation goes deep into the peculiarities of legal regulation. There are two levels of regulation of transportation relationships: international and domestic levels, which differs from each other.

International conventions give rules only for international transportation for those countries who are members of these agreements. For instance, the Additional Protocol on electronic CMR, made to Convention on the contract for the international carriage of goods by road (CMR, 1956) [1]. It was entered into force on the 5th of June 2011. Today about 26 countries joined this agreement devoted to the introduction of e-CMR, such as Russia, Czech Republic, Bulgaria, Denmark, Estonia, France, Spain, Switzerland, Sweden, Turkey, Slovenia, Spain etc. The official implementation of e-CMR was in January 2017 when the first international carriage of goods between Spain and France was fulfilled. E-CMR is proved to be an effective instrument that is used in international turnover. Electronic form of the document has its invaluable advantages. Firstly, the use of the e-CMR reduces expanses. It is proved that processing costs were cut by 3 – 4 times. It is connected with the acceleration of administrative work namely: the reduction of paperwork, the cancellation of the necessity to make copies and scans. Secondly,

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implementation of e-CMR increase the transparency because of the accuracy of data, control of the dispatch and receiving of sending, the access to the information about the sending in real-time mode. These benefits support the improvement of logistic in the carriage of goods. Therefore, the competitiveness of all parties engaged into the carriage of goods with use of e-CMR increases. Thirdly, using of e-CMR helps to provide traffic security. E-CMR is bound with the eCall. In case of emergency a massage is automatically sent to the Emergency services.

Despite the above stated advantages, not all countries are using such electronic documents. Nevertheless, some countries give only their official support, but do not ratify the protocol. According to the Regulation on electronic information about carriage of goods (eFTI) adopted by the Committee on transport and tourism of European Parliament on the 4th of May 2020, all members of EU must move to the e-CMR not later than 2025. However, this demand does not mean that carriers are limited by the implementation of only electronic documents. The paper form of documents is not excluded. This results in the conflict of using different forms of documentation in international relations by various countries.

The above given example shows that the effectiveness of introduction of electronic documents depends on the number of states involved into its use. Only globe use of electronic transport documents would lead to the transparency, accuracy, and acceleration of document turnover.

Proceeding to the national level of transportation regulation it is found that electronic documentation exchange in transportation of different countries has diverse stages of development. Let us consider some examples of transportation legislation systems.

In Russia, there is no single system of electronic transport document turnover. There is a complex chain of restraining reasons. The first obstacle relates to the system of legal regulation of transport relationships itself. There is no one act devoted to the transport regulation. Each kind of transport has its own codified act (codes or charters):

- transportation by road is regulated by Federal Law “Charter of road transport and urban land electric transport”, dated November 8, 2007, No. 259-FZ;

- transportation by air is based on Federal Law “Air Code of the Russian Federation”, dated March 19, 1997, No. 60-FZ;

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- transportation by rail is governed by the Federal Law "Charter of Railway Transport of the Russian Federation", dated January 10, 2003, No. 18-FZ;

- transportation by water has two acts: the Merchant Shipping Code of the Russian Federation, dated April 30, 1999, No. 81-FZ, Code of Inland Water Transport of the Russian Federation, dated March 7, 2001, No. 24-FZ.

The absence of the single act regulated transportation relationships leads to the enlargement of juridical acts [2]. The same issues on different kinds of transport are governed by different acts, including subordinate legislation. The fragment regulation of transport relationships means that there are different forms of consignment depending on the kind of transport. Moreover, the number of documents and their titles are not the same for various kinds of transport. The same applies to the electronic document turnover: legislation on each kind of transportation has its own rules.

Thus, road transportation is regulated by the Decree of the Government of the Russian Federation "On approval of the Rules for the carriage of goods by road and on amending paragraph 2.1.1 of the Road Traffic Rules of the Russian Federation", dated December 21, 2020, No. 2200. In air transport, the Order of the Ministry of Transport of Russia "On approval of the form of an electronic consignment note in civil aviation", dated August 10, 2018, No. 300, is applied. The possibility of using an electronic waybill on railway transport is established by clause 113 of the Rules on goods, empty freight wagons carriage by rail, containing the procedure for redirecting the transported goods, empty freight wagons with a change in the consignee and (or) railway station of destination, drawing up acts on the goods, empty freight wagons carriage by rail, drawing up a railway waybill, terms and procedure for storing goods, containers at the destination railway station, approved by Order of the Ministry of Transport of Russia, dated July 27, 2020, No. 256.

The above-mentioned examples show that differences in legal paperwork cause overwhelming majorities of obstacles existing on transportation and logistics. Especially in multimodal transport this isolation according to the kind of transport impedes the performance of transportation and logistics operations. The need to reissue documents when using various types of transport significantly complicates the turnover of goods.

Thus, it seems appropriate to develop the unified form for all types of transport. In the Russian legislation, this goal is declared in the document approved by Order of the Government of the RF No. 1734-r. (November 22, 2018), known as the Transport Strategy that is applied till 2030.The act emphasizes

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the need to introduce electronic document management according to the "single window" principle. This means that the documents should be available not only to the direct participants in the legal relationships, but also to state bodies (for example, tax authorities) that exercise control over transport activities. Achievement of this goal would allow solving the following problems in the transport sector. First, the introduction of electronic document management would make the transportation process more transparent and accessible. Currently, in practice, situations arise when carriers (in particular, large companies) refuse to submit documents to court nitration, citing the fact that this is impossible due to the special nature of their maintenance and storage or for other reasons. Such circumstances may negatively affect the establishment of the circumstances of the case and, consequently, the determination of the responsible persons. Secondly, the introduction of such innovations would make it possible to increase the turnover of goods carried out through multimodal transport, in particular, intermodal transport, in which only a container with cargo is reloaded from one vehicle to another in specially equipped centers. At the same time, re-registration of documents is not required, which significantly reduces time costs. Thus, we are talking not only about changes related to the form of documents, but also about a qualitatively new approach to the regulation of document flow. The foregoing substantiates the need for unification of documents drawn up for multimodal transport, as well as for transport by various modes of transport. However, the Russian Federation has not yet adopted a law regulating multimodal transport. Even though the Ministry of Transport of Russia has already prepared five draft laws of the Federal Law "On direct mixed (combined) transportation" (project ID 02/04 / 05-20 / 00102210): the draft law of January 26, 2009, the draft law of March 30, 2015, the draft law of February 21, 2019, the draft law of January 9, 2020, the draft law of May 22, 2020, none of them was adopted. The reason for this is that none of the draft laws regulates fundamental issues among others the procedure and mechanism for the application of a single document during transportation. Thirdly, the introduction of electronic document management would create a basis for the unification of management of electronic documents.

Thus, the construction of common (single) system of electronic document turnover in transportation sphere is a chance for Russia to build a safe, reliable, and sophisticated transportation and logistics system.

According to the European legislation, the efficacy and effectuality of transport can be essentially increased by using communication technology including the integration of electronic documentation turnover in countries – members of EU. The open access for all participants of transportation relationships to the transport-related information must improve the traffic management and simplify administrative

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procedures. Such provisions are stated in the Regulation "On Union guidelines for the development of the trans-European transport network and repealing Decision No. 661/2010/EU", adopted by the European Parliament and of the Council of EU, dated December 11, 2013, No. 1315/2013.

It is very clear from the observation that there are bi-leveled differences in transportation regulation. On the one hand, different kinds of transport have their own rules including electronic document turnover. On the other hand, the national systems of transportation legislation are not equal to the international legislation. These doubled differences are the obstacle for the development of ecosystem of transportation document turnover.

Presented in the national and European Union strategies, this vision proposes measures that will streamline the creation of the unified system of electronic documentation. According to the analyze of international and national legislation we tend to underline as the sample of successful documentation turnover the experience of the International Federation of Freight Forwarders Association (FIATA)[2]. FIATA has elaborated a document used by a freight forwarder within the framework of an international freight forwarding agreement. This document is called FBL (Negotiable FIATA Multimodal Transportation Bill of Landing – multimodal bill of lading). A distinctive feature of the document is the ability to be negotiable, that is, act as a security (like a bill of lading issued for the carriage of goods by sea). This bill is an example of single document that can be used on different modes of transport. The unified form brings the benefit for the development of new generation of transportation: free of paperwork and human mistakes, time-consuming process of administrative work etc. An electronic version of the FBL already exists. However, the problem remains on the development of a mechanism for monitoring, issuing, and checking such an electronic waybill to existing requirements. Following the tendencies of digitalization, FIATA is looking forward to facilitating interoperability system of documentation relied on open and collaborative approach.

Thus, the creation of the single environment of electronic document turnover requires the unification of international and national legislation in the sphere of transport documents exchange. This tendency of building ecosystem of e-documentation has to correlate with the idea to create the more interoperable transport system.

[2]It is stated to be nongovernmental membership-based organization. According to the Art. 2 of FIATA Statutes it is acknowledged to be an umbrella organization ("central coordinating body") for associations of freight forwarders all over the world / URL: https://fiata.com.

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Along the problem of doubled level regulation of transportation documentation turnover, it is necessary to underline that the enhancement of transport and logistic traffic depends on the standardization and harmonization of transportation and trade documentation. At the first glance, trade and transport are two separate branches of economic activity. However, these two areas are very close to each other as carriage of goods is the kind of instrument to fulfil the obligation on goods supply. Therefore, transport operations are usually inside the contractual obligation of goods supply. Using metaphoric language, we can say that these two contracts is a kind of "Russian Matreshka": relationships on supply contain relationships on carriage of goods inside. This explanation presents the necessity to enable the "partnership" between two systems of documentation. The integration of two systems of documentation may leverage its strength to make the transportation faster, transparent, more clear, secure etc. This will result in the intensification of territorial, economic, social cohesion.

From results of the research of the first issue of the article, it is concluded that to build up a system of transport documentation that can support the development of transportation (so called "ecosystem"), there is a need to step up action at multivarious levels.

3. CONCLUSION

Thus, digital technologies are known to be the great step forward. They are regarded as the main source to improve the safety, management, and efficiency of existing systems, including transportation systems. Being a rapidly developing sector digital technologies suggest modern solutions for current problems, such as cause traffic congestion, safety issues and air pollution. Nevertheless, providing with the decisions of the existing problems digital technologies also create new challengers that society must overcome. However, the new questions are more global and are not the matter of only one country. The idea is that the implementation of digital technologies requires consolidation to prevent unwilling consequences.

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Existing Approaches to Define Cryptocurrency for Possible Legal Regulation

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ABSTRACT

In this article, the author considers the question of how the understanding of the essence of cryptocurrency as a destructive innovative technology is built. The position of the author lies in the fact that the cryptocurrency, even though it is, by all indications, one of the types of fintech, is considered separately in science. Due to this, in various works of scientists from different countries, one can note a trend towards a completely opposite understanding of what exactly is a cryptocurrency and what is its significance for changing the modern world financial system. Based on a comparative analysis of research positions, the author evaluates several approaches to the definition of the concept of cryptocurrency. The author identifies three such approaches and evaluates some purely local theories regarding cryptocurrencies and their nature. To express an individual position, the author highlights the main characteristics of the cryptocurrency and proposes to consider them not as a type of already existing currencies, but as a separate phenomenon. The author concludes that the study of cryptocurrencies at the micro and macro levels will allow not only to assess the risks of their use at a particular moment by specific categories of technology consumers, but to assess the systemic nature of the phenomenon and its impact on the future. This, in turn, should allow answering the question of how and when it is worth starting to regulate cryptocurrencies by the law - and whether it is necessary to do this in general.

Keywords: cryptocurrency, legal regulation, fintech, disruptive technology, legal definition

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1. INTRODUCTION

Cryptocurrencies represent one of the most relevant technologies for research, known as disruptive. Let us recall that technological innovations that fundamentally change the traditional ideas about the established relationships in society and the regulation of it are called destructive.

In theory, every truly revolutionary technology has been disruptive in some way, from book printing to electricity, telephone, or radio. Thus, it is not too true to believe that contemporary disruptive technologies of the post-computer era are something radically new and unknown. They are based on yet existing technologies. Their revolutionary and destructive nature lies not in how the hardware parts were assembled and how quickly data is transferred in the space of these innovations. These technologies are changing the way the relations between mankind and states works in various combinations in the areas familiar to these parties - economics, politics, law.

In one of her core papers on fintech S. Omarova pointed out that the most important thing about fintech is how this disruptive technological innovation "beginning to change the way we think about finance" and how the "fintech phenomenon is gradually refraining our understanding of the financial system" (Omarova, 2019). Due to the fact that attention is most often focused on specific aspects of technology, the systemic changes caused by it escape the attention.

Cryptocurrency is no exception, as we have already said. Moreover, if we consider cryptocurrency as a part of fintech, then its features should be included in large-scale research on the subject and not go beyond the study of general fintech trends. However, there are circumstances, the reasons for which are very diverse, that cryptocurrencies are often studied outside the entire system of innovative financial technologies.

The reason for this exception is quite simple and lies in the fact that of all financial technologies, only cryptocurrencies encroach on one of the main state rights in the field of economics, which cannot be transferred to third parties without an imperious will – money emission.

Fintech as such, even though there is a dispute in academic and practical papers about them, the fintech types, differentiation with mobile banking and online banking, are easily adapted and included in the list of banking services and products. How and to what extent fintech is integrated into the activities of banks depends, objectively, on banks themselves, which is openly recognized[2].

[2] For example, the experts addressing the impact of the Covid-19 pandemic on the transition to online banking and the adaptation of fintech, they note that the expectation of a rapid leap in customer demand for such technologies was significantly exaggerated. In the UK the transfer to remote (mobile) banking services has increased only 5% higher than a year before, in 2019, from 52% to 57%. And the ability of banks to offer these technologies depends not only on financial capacity,

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Moreover, a comparative study of the practice of defining fintech in law shows that competition between banks and fintech start-ups often leads to a merger of the former and the latter[3]. As a result, innovative banking exists within banks, and independent fintech is absorbed by banks, in some cases almost completely. Thus, most of the risks associated with fintech fall within the limits of banking regulation, and fintech itself is content with a separate legislative act or an amended part in existing laws. And even though the law is not able to change the architecture of technology, to a certain extent it can change the way we understand this technology.

In case of cryptocurrency this trend has not been confirmed.

While studying the question of how cryptocurrency should be understood, we were faced with the fact that there is not even a single opinion on whether it is worth including cryptocurrency in FinTech, not to mention what cryptocurrency is and to which category it should be classified.

During the research, the current results of which are offered to the reader in this article, we proceed from the fact that not every legal system needs a definition of cryptocurrency. However, if we want to go beyond focusing on the current features of cryptocurrencies as means of payment, on its contradictory nature and threats to various areas of society, if we want order to realize how and to what extent cryptocurrencies are destructive as technology, we should ask what they are. What place they can occupy in the already existing familiar world of finance and economics, especially when reports and statistics allows us to conclude that this issue is not going to disappear soon[4].

2. DEFINING CRYPTOCURRENCY

The term "cryptocurrency", contrary to popular belief, came not from the science but from mass media. It arose in 2011 as the title of an article in the economic magazine that described the phenomenon of “electronic currency” the technical characteristics of which made it something unseen on the market

technological development and demand, but also on the desire of the banks themselves. See: Kevin Martin, Chief Operating Officer, Wealth and Personal Banking, HSBC How banking will change after COVID-19 // https://www.hsbc.com/insight/topics/how-banking-will-change-after-covid-19

[3] The example of this may be found in case with online banking and fintech in Russia where banks are very open to implement fintech in online banking services, so banks are highly competitive in this field and, what is very important for the customers, such products and services are regulated by the law, including Customers Protection Act. See the article on this matter: Kuchina, Y. O. (2021). Regulating fintech in Russia: problems arising from the lack of its legal definition. Justice, 3(2), 80-102.

[4] According to the statistics, global investment in financial technology ventures has more than tripled during the last five years – from under $930 million in 2008 to more than $2.97 billion in 2013, and to more than 213 billion in 2019. It is one of the fastest and rapidly grown industry in the world.

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finance[5]. At that time, the object of journalistic interest - Bitcoin – was more theory than practice, although it counted for several years and was by no means the first of the cryptocurrencies.

The rise of interest in Bitcoin, as well as in cryptocurrencies in general, came much later, and, in our opinion, this growth is related not only to the instantly increased popularity of blockchain technologies, part of which implemented into cryptocurrencies, but also with the rapid growth of the exchange rate of Bitcoin.

In this period domestic regulators turned the attention to cryptocurrencies, since some of technical characteristics do allow to consider them as a possible part of illegal activity. Special attention is paid to cryptocurrencies in terrorism financing crimes, drug or weapon trafficking, money laundering, etc. But, with all this, still there is no unified definition of cryptocurrency and, in some domestic researchs there is no even a single approach to understand it. This, in our opinion, may be the reason for the doctrinal problems in reflecting cryptocurrencies through the prism of law.

In certain national legal systemes this absence doesn't cause much problems allowing to implement the technical characteristics on case-by-case basis. In others the definition – both as a part of law and in academic papers – is a base, starting point allowing to built a unified structure of legal understanding.

We see this in almost every legal system. Explaining the urgent need of defining cryptocurrencies, the academics insists that the technical definition does not allow "revealing the essence of this economic category, and also prevents the prompt creation of adequate norms governing the procedures for issuing and circulation" of them (Vahrushev, Zhelezov, 2014). They suggest that when economic development is faster than the law amendments, such situation may cause different types of risk on micro and macrolevels. They also can discuss not only the need in total regulation, but concentrate on a particular areas. For example, some proponents insist on regulating the transfer of cryptocurrencies by intermediaries who serves these transfers, like operators of online wallets, exchanges, and gateways. The reasons are the same, the "missing link in the regulation of cryptocurrency transactions" (Hughes, Middlebrook, 2015).

Others highlight the sectoral problems, like the fact that decentralized cryptocurrencies do not have a specific legal entity that is responsible for consumer protection (Hughes, 2017). These authors refer to the fact that virtualised nature of cryptocurrencies makes the application of traditional legal frameworks

[5] «Bitcoin is different: It wholly replaces state-backed currencies with a digital version that's tougher to forge, cuts across international boundaries, can be stored on your hard drive instead of in a bank». Greenberg A. Crypto Currency. Forbes, April 20, 2011.

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weak, and the absence of a specific legal entity makes so the enforcement of any new legal framework. In general, we cannot consider these reasons ϕs insignificant. The main purpose of cryptocurrencies is to act as a substitute for money, and their unregulated use contains all the same threats that can come from money if they have not being regulated. Accordingly, the concern of experts in the field of tax law, consumer protection, anti money-laundering, etc. is understandable and justified. Such examples as the failure of the Mt. Gox Bitcoin exchange based in Tokyo, Japan, and the public prosecutions in the United States and Australia for Bitcoin-related transactions of illicit goods on the Silk Road marketplace also proof the position. This is also explain why different states behave differently in case of cryptocurrensies, from the total ban through the limited forms of regulation to the emission of centralised cryptocurrensy of the state.

When defining a cryptocurrency, one of the following approaches is usually chosen:

- technical description of the cryptocurrency;

- to outline its financial function;

- combine technical and financial characteristics, trying to derive a legal concept based on the usual technique of law writing.

The choce between technology, finance and law is deeply expalined in the papers on Fintech Trilemma issues, so we are not going to repeat it there. Instead we concentrate on the main consequencies of them.

Most of the analyzed authors chose a technical description as the essence of cryptocurrencies, noting that this is, for example, “the newest type of monetary currency, which is a decentralized accounting of digital assets based on blockchain technology and using cryptography methods in the process of functioning” (Kalinin, 2017). In the quoted passage, the author actually stated the technical characteristics (which, however, is not entirely true), adding the component “currency”.

The problem with technical description of cryptocurrencies outside of its specific type[6] is that such an approach does not take into account the difference in technical architecture of it. Along with it, the market prospects of a cryptocurrency also escape attention. Obviously, not every cryptocurrency can compete with Bitcoin, but each can become obsolete at any moment, like any technology. This, among others, is the reason of the principle of technological neutrality, which, for example, UNCITRAL follows

[6] Means Ethereum (ETH), Litecoin (LTC), Cardano (ADA), Polkadot (DOT), Bitcoin Cash (BCH), Stellar (XLM), etc.

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in its papers. So we suggest that as the legal act of a state is not usually a soft law, the legislator also should follow the principle to make this law works. Otherwise can cause the issues of implementation.

The economics approach of cryptocurrency defines it in contrary with the system of money, mostly fiat. Fiat money nowadays is understood as the prevalent monetary system, in which the medium of exchange consists of unbacked government liabilities, which are claims to nothing at all (Velde, 1998). So such approach can be named as "contrast", when the desicription of cryptocurrency is given as the opposite to fiat money.

This contrast, on the one hand, allows to demonstrate that the possible and very debatable transition from fiat monetary system to cryptocurrency may be a logic part of financial evolution, at least, if to research this through the example of transition from commodity money to fiat money. Some authors who analysed this transition proofed that it was not so dramatic as suggested, mostly because this process was under control of the governments (Redish, 1993). On the other hand sometimes this position or rather, the difficulty in determining what exactly is fiat money and what are their features leads to significant confusion.

The question arises - what is the essence of cryptocurrency, if it cannot be attributed to any of the already existing financial and monetary categories? We believe that it is possible to answer this question only after considering the technical nature of the cryptocurrency and, most importantly, the features of its origin.

3. CHARACTERISTICS OF CRYPTOCURRENCY

As it already mentioned, the term "cryptocurrency" appeared after being published in a financial magazine. Andy Greenberg, the author of the article, describing the phenomenon of Bitcoin as the first cryptocurrency, noted that it is a non-profit project "that seeks to create a new currency from something more than cryptography, network technologies and open source software" (Narayan et al, 2017). It is the remark about the non-commercial nature of Bitcoin, in our opinion, is the starting point that should serve as a categorization of cryptocurrencies in general.

Bitcoin was not just an attempt to create a digital expression for already existing national currencies, differing from the PayPal system only in the cryptographic methods used. Bitcoin was the attempt to create a currency that is accepted by non-state market participants (Swartz, 2018), free from national financial systems, financial regulations, treasuries and currency collateral.

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From a legal point of view, the goal of creating Bitcoin was to replace the state-backed currency with something that would be supported by the goodwill of the participants in the exchange process . And the current position of Bitcoin in the foreign exchange market, as well as the duration of its existence as an element of exchanging, allows to conclude that this attempt was a success.

At this stage of development of the digital currency market, we can talk about four types of digital currencies, the existence of which is confirmed by the law and contractual practicies. We suggest these types of currencies, chosen according to the purpose of their foundation and the peculiarities of their regulation:

1) private digital (electronic) currencies;

2) virtual currencies;

3) national digital currencies;

4) cryptocurrencies.

We can conclude that these four types are an addition to the already globally recognized cash and non-cash currencies, but, at the same time, they are not equal in content. We believe that the fourth of the types - cryptocurrencies - cannot be attributed to any of them, but should be singled out as a separate, unique type, and here's why.

Firstly, the most important difference between a cryptocurrency and other types of currencies is its complete independence from national currency systems, which is often referred to as the autonomy of a cryptocurrency. It is wrong to understand the existence of an exchange rate for cryptocurrencies as a dependence, since this rate is an effect derived from the recognition of cryptocurrency as part of the currency exchange process.

We suggest, that autonomy of cryptocurrencies consists in their complete legal independence at any stage: independence from the will of a regulator and a state, expressed in black letter law; independence from the will of the issuer - the emission of cryptocurrency is provided by technology functions, and it is difficult to predict the outcome of the emission. Thus, the technology ensures that there is no legal dependence on the will of a person and on person’s interference in the process.

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If we describe the emission of cryptocurrencies in a simplified way, without going into technical details of a particular type, then the process consists in the algorithm performing a series of calculations with enumeration of parameters to achieve a certain result. Even such a description allows us to conclude that legal or powers intervention in the process of issuing cryptocurrencies is impossible, because this emission, in fact, is not totally controlled by a human. The control over the emission literally is the control over the technical parts (hardware) of mining process. It can be stopped (by switching off) but can it be influenced by interaction with a legal power in the work of software? No.

Therefore, it is impossible to guarantee in advance the result of the emission, in whole or in part, exactly as it is required by the provisions of the law. In this feature of the cryptocurrency emission was named among the reasons why a ban is imposed on ICO procedures in some states. ICO is regularly mistaken for another way of cryptocurrency emission, along with mining and forging, while in terms of its legal content, the concept of ICO is much more complicated. Countries restricting ICO procedures (Canada, USA) or ban them (China) (Panova et al, 2019), as a rule, refer to the lack of legislative regulation, standardization and additional guarantees of the procedure (Chudinovskikh, Sevryugin, 2019). This lack exists in the area we described – the unability of a human will in any form of it to interfier in the cryptocurrency emission process on the same level it is possible to interfier in the emission of official currencies known as “money”.

We see that the non-centralized nature of the cryptocurrency is important for its existence and acceptance. The inability to intervene in the emission process, the almost complete incapability to influence in any way with power - and this factor cannot be ignored - affects the recognition of cryptocurrencies. Moreover, contrary to popular belief about the criminal potential of cryptocurrencies, we insist that independence of them is valuable in itself, and not as a guarantee of the ability to hide criminal activity. This conclusion is also confirmed by data on the decline in interest and demand for cryptocurrencies in states where the circulation of cryptocurrencies has been banned or restricted (Borri, Shakhnov, 2020).

4. CURRENCY – NOT CURRENCY: LACK OF TERMYNOLOGY

In this situation, we think that the use of the initial concept is debatable, especially in those states where the term “currency” legally can be used only as equivalent to the word “money”, either in cash or

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non-cash. This is obvious why Bitcoin and similar technologies were named "cryptocurrency" – to distinguish them from the already named and well-known types of currency but to highlight the equivalence of the function these two concepts share. Normally, "currency" is understood as a specific monetary unit of any national payment system, for example, the Russian ruble in the Russian Federation. Of course, in some studies on the issues of the world economy, this term is used to describe any objects of market exchange (Barakina, 2018), but we still believe that in legal terminology, and in jurisprudence in general, such a multiplication of terms and etitites is meaningless.

Also in some states this may cause the massive amending of existing law, close to reformation. This conclusion can be confirmed by the example of Art. 1 of the Federal Law on Currency Regulation and Currency Control (December 10, 2003 N 173-FZ), where the currency is:

A) money in the form of banknotes and coins that are in circulation as a legal means of cash payment, as well as banknotes withdrawn or withdrawing from circulation, that still can be exchanged;

B) funds in bank accounts and bank deposits.

We think that such a stable interpretation excludes even the possibility of considering cryptocurrencies as a type of currency, something as a new form (type) of money other than cash or non-cash. The basis for this conclusion is the narrow focus of the use of funds: it is only a means of payment that has no other functions, which is confirmed not only by domestic, but also international law.

That is why we didn't agree with the position of the Central Bank of the Russian Federation, which in its well-known clarifications from 2014 and 2017 called cryptocurrencies as "private virtual currencies" . Moreover, we generally consider it a wrong decision to equate cryptocurrencies exclusively with a currency, and we consider "cryptocurrencies" to be nothing more than a play on words that has become an established definition. Equating cryptocurrencies only with foreign exchange means, in our opinion, significantly reduces their technical, legal, economic, political perception as a phenomenon of the post-computer era.

The same problems come with identifying cryptocurrencies as a "currency surrogate" (Maramygin et al, 2016).

A currency surrogate is a substitute for legal tender or money in general, which performs all or part of their functions, such as a medium of exchange, payment or savings (Dudina, Kremleva, 2016). In

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some legal systems, illegitimate funds are understood as a currency (or money) surrogate. For example, Art. 27 of the Federal Law (July 10, 2002 N 86-FZ) on the Central Bank of the Russian Federation (Bank of Russia) states that "the introduction of other monetary units on the territory of the Russian Federation and the issuance of monetary surrogates are prohibited." There are no other references to currency surrogates at the moment in the legislation of the Russian Federation.

At the same time, experts identify cryptocurrencies and currency surrogates, usually not explaining what the latter are (Kharaeva, 2018). This term acquired legal meaning because of the speech of the Deputy Chairman of the Central Bank in 2018, where he quoted Art. 27 of Act N 86-FZ and noted that, in general, the Central Bank of the Russian Federation perceives cryptocurrency as monetary surrogates and does not support its circulation in any form. However, in fact, the meaning of the concept "monetary surrogate" is much deeper than it is commonly believed.

The concept of money surrogates has been known for a long time. At the beginning of the XX century, L.A. Lunts described this as "securities that, by the property of their negotiability, can receive the value of banknotes"(Lunts, 1999). At that time, promissory notes, bonds, and sometimes shares were classified as monetary surrogates, albeit L.A. Luntz preferred to use the term "private currencies".

Nowadays, the list of objects classified as monetary (currency) surrogates has expanded. So, it could be understood as "objects used as means of payment that are not obligatory for acceptance by everyone and do not meet the signs of legal or special means of payment, the release of which into circulation by the state was not carried out and was not authorized, and their production is prohibited and punishable in accordance with the law"(Kucherov et al, 2016). Others describes them that as money substitutes "used as a means of payment" (Arzumanova, 2014), which can be used for payments between parties if there is an agreement on this.

Another interpretations can be found in the economic papers. For example, Klistorin and Cherkassky indicate that currency surrogates perform the function of a means of payment, but do not serve as a store of value and, moreover, do not determine the proportions of the exchange of goods, and their features are formed through the non-market nature of their circulation (and gave as an example promissory note) (Klistorin,Cherkassky, 1997).

The most famous expert in currency surrogates O.Krylov considers them as a financial instrument capable of simultaneously performing, in whole or in part, the functions of the currency of the state

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(Krylov, 2011). In his opinion, a monetary surrogate can simultaneously be a measure of value; means of circulation; means of payment; means of accumulation; world money.

Giving examples of currency surrogates T. Deltsova names foreign currency, securities, treasury tax exemptions, bullions of precious metals, tax benefits, deposit and savings certificates, receipts, travel coupons, etc. (Deltsova, 2017) That is, in other words, any means of payment or payment exchange, except for the national currencies of a state, which, of course, allows to consider cryptocurrency as monetary surrogates.

However, the main issue on this definition is those that in international sources the term “money surrogates” does not exist.

From all that has been said, it becomes obvious that the parallels drawn by some authors (Shildina, 2016) between currency surrogates and cryptocurrencies are based on a simple statement that everything except the national currency of a state belongs to category “monetary surrogates”. From economic point of view, this position, probably, can be accepted, but jurisprudence, which considers the essence and content of such extremely heterogeneous concepts as tax benefits, certificates of deposit, precious metal ingots, receipts, metro coupons, cannot apply such a general term to a completely unique phenomenon in its legal sense - cryptocurrencies. For a lawyer all the object that can be included in the consept “monetary surrogates” are based on completely different criteria comparing to cryptocurrencies.

Therefore, as in the case of money, we consider monetary surrogates to be a definition that is not suitable for use in lawmaking and law enforcement. The only possible analogy between cryptocurrencies and monetary (currency) surrogates is admissible only if the issue of their legitimacy is considered, which, however, is doubtful due to the conflict between the cross-border nature of the first and the purely domestic nature of the second concept.

Other points of view on the cryptocurrency in typologies and classifications are expressed from the position of searching for similarities between cryptocurrency and other currency, payment systems and means of material compensation. During the research we have seen attempts to make comparisons between cryptocurrency and electronic money, cryptocurrency and electronic payment systems, and even with payment services like PayPal, Webmoney, Qiwi, Yandex.Money, etc., which also are sometimes mistaken for currency surrogates (Maramygin, Tereshkin, 2017).

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We think that this issue is not even debatable: electronic currency and electronic means of payment, as well as payment systems, are quite exhaustively regulated by domestic legislation, at least at the definitive level. For example in Art. 3 of the Federal Law of the Russian Federation (June 27, 2011 N 161-FZ) nn the National Payment System, the following definitions are given:

A) electronic money - money that is previously provided by one party (the party provided the funds) to another party, taking into account information on the amount of funds provided without opening a bank account (obliged party), for the fulfillment of monetary obligations of the party provided the funds, to third parties and in respect of which the party who provided the funds has the right to transfer orders exclusively using electronic means of payment (clause 18);

B) electronic means of payment - a means and (or) method that allows the client of the money transfer operator to draw up, certify and transmit orders in order to transfer funds within the framework of the applicable forms of cashless payments using information and communication technologies, electronic media, in including payment cards, as well as other technical devices (clause 19);

C) payment system - a set of organizations who interact according to the rules of the payment system in order to transfer funds, including the payment system operator, payment infrastructure service providers and payment system participants, of which at least three organizations are money transfer operators (clause 20).

According to the letter of this law, electronic payment systems are a subspecies of payment systems where transactions are carried out using the Internet or using other methods of data transmission. Moreover, none of these concepts is new, most of them in one form or another were defined back in 2007 in State Standartising Act (GOST) R ISO / TO 13569-2007 titled “Financial services. Information Security Recommendations” and Act N 161 just legitimated its provisions.

We suggest, that none of these concepts can be applied to the description of the cryptocurrency, just as the cryptocurrency cannot be attributed to them. The main reason is that all these phenomena interact with currencies and, in fact, are either a new type of money or an organized means of money transfer.

Accordingly, the interpretation of cryptocurrency as an element of currency transfer, that was made only on the basis of a part “currency” in the composition of the term, is absolutely incorrect. Such approach leads the doctrine and research (due to the lack of a norm) to an incorrect conclusion regarding its essence

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and financial role, which entails an incorrect assessment of cryptocurrencies' characteristics, possibilities of application and other related issues.

5. CONCLUSION

Thus, we believe that cryptocurrencies in their true sense can only be considered those types of digital currencies that are received by non-state actors as a result of the actions we have described, and not issued by any state with their mandatory inclusion in the national money circulation. We believe that the peculiarity of the regulation of cryptocurrencies, due to the legal custom that has already developed since the beginning of the issuance of Bitcoin, lies in the free contractual basis for their creation.

At the same time, the one fact is missed. The variety of cryptocurrencies (there are already about two thousand of them), the variety of combinations of their technological architecture, methods of creation (emission), not to mention the goals, tasks, functions, will make legal definition meaningless. It will suffice to give an example regarding Bitcoin as the most famous type. Supporters of the regulation of Bitcoin often do not mention the problem known as "final emission". It is widely known that the creator initially laid down the opportunity to issue only 21 million Bitcoins, after which the process will stop. It is currently impossible to predict the consequences of this end for Bitcoin itself, as well as for the entire cryptocurrency market. But it is already obvious that such a law will immediately lose its significance, because the object of regulation will independently, without regulator's will and intervention, terminate itself.

The fallacy of this position is that the technologies underlying species cryptocurrencies differ from each other, and legal characteristics derived from this make them objects of inherently different legal relations, many of which turn the term "currency" into nothing more than a metaphor. So, one of the species, ether exchange unit of the Ethereum platform, combines the characteristics of money, non-documentary non-nominal shares and bills, and the system itself allows you to perform many functions, i.e. its signs speak of the undoubted uniqueness of the technology. But when this cryptocurrency is taken out of the platform, it, from a legal point of view, acquires a greater resemblance to Bitcoin than when it is used internally platforms. This variations of cryptocurrencies often ignored when considering issues on cryptocurrencies regulation. And this makes us to think about: does this mean that for hypothetical actions with the ether using platform and beyond will require separate legal acts?

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Cryptocurrency, as the most striking and difficult concept ofthe post-computer era, once again confirms the complexity of perceiving technology as an object and subject of a crime. Law has dealt with this repeatedly, from vehicles and weapons to computer information. The more complex the structure of an object, the more areas of regulation that its architecture affects, the larger the discussion in space between *de lege ferenda* and *de lege lata*. Speaking about such technologies, legal scholars are accustomed to mention previous precedents that can be spread (like it happened in Telegram case), but we believe it is important not to forget that in the case of technologically innovations of such kind, their nature, and not the regulatory norm, will become the primary source for the law enforcer if the legislator makes a mistake in the definition. Moreover, as practice shows, at the stage of law enforcement, expert opinion is important both in the presence and in the absence of the rule.

This, in turn, leads to a transition from the macro level of perception of the problem, including its assessment as a problem, to the micro level of private professional opinions. And it does not allow to form an unambiguous impression of the degree of destructiveness of the technology. Returning to what we talked about in the introduction to the article, this will mean the impossibility of understanding whether the system, in this case the financial one, is really facing changes similar to those that have already happened. And the paradox of innovative technologies is that if they miss the opportunity to realize their commonality, society may also miss the moment when the actual nature of the technology and its understanding will differ too dramatically.

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On the Digital Singularity: Recognising Virtual Property Through the Eyes of New Jurisprudence Over the Conflicts of Digital Goods

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ABSTRACT

The present paper focuses on the analysis of bibliography, jurisprudence, and case studies internationally such as Bragg v Linden Labs, forming an analysis of the obstacles for the recognition of virtual property as well as providing arguments for its acknowledgment on a multitude of legal systems internationally, all the while incentivizing the debate for its implementation with the use of a set of doctrines and directives. For this purpose, we will make comparisons of the different concepts of property on an international scale through the analysis of a host of different doctrines and jurisprudence from the United States, Europe, Russia, and Brazil, aiming to demonstrate the resilience or acceptance of this concept of property. Finally, we will present at the end of this article the directives that will serve to guide future discussions and implementations of virtual property.

Keywords: Digital Law, NFT, Virtual Worlds, Virtual Property, Contracts of Adhesion

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1. INTRODUCTION

Bragg v Linden labs[3] was one of the biggest breakthrough cases for the virtual world[4], contemplating the idea of ownership of virtual pieces of land, that much like actual real estate, had its own value and raised the question if what is owned in virtual worlds is an actual piece or property of the users, or if it's a mere hologram environment where a company benefits from its entertainment.

It was through this case that the debate about virtual property first started in the United States, although it couldn't be considered the first one to delve into the concept of ownership of virtual entities. However, with the awe of a new era of digital goods such as NTFs, it becomes necessary to re-evaluate the possibility of virtual property and how to define, regulate and implement it.

It is therefore the aim of this article to demonstrate what virtual ownership of goods is, how to properly define it, demonstrate its acceptance not just by consumers, but by those who take action to benefit from it, all the while displaying the consequences of resistance to these new ideas while contrasting it to the advantages offered by taking part in this new virtual market.

For our more specific goals, we shall demonstrate through the comparative analysis of not only Bragg v Linden Labs (*Bragg v. Linden Research, Inc.,* 2007), but also the use of practical cases and international jurisprudence and laws from Russia and Brazil to demonstrate the existence of a concept of virtual property, all the while illustrating the issues of the current way it's perceived as, how changing that perspective could positively impact not just the users of these virtual worlds, but the companies that host them as well.

The importance of this discussion evinces itself due to:

1. The new digital market of NFT showing its prevalence with the support of not only bands like Kings of Leon but the NBA itself, needing therefore a demand for regulation to protect and safeguard its users' new digital goods.

2. The advancement proposed by such a system, offering a new way to benefit artists, users, and all content creators alike, all the while evolving the way we interact with intellectual property on the web.

[3] Bragg v. Linden Research, Inc., 487 F. Supp. 2d 593 (United States District Court, E.D. Pennsylvania, May, 30, 2007) https://opencasebook.org/documents/1552/

[4] Horowitz, S. J. (2006). Competing Lockean claims to virtual property. *Harv. JL & Tech.,* 20, 443.

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Hence, the problem posed by this article is a gap about the regulation of virtual goods under the light of new virtual worlds, more specifically, of virtual property inside of virtual worlds. With this we ascertain that the hypothesis of this research is to:

1. Perform a comparative analysis of different concepts of property to understand how the concept of virtual property may already exist and be easily integrated under current legal systems;

2. Analyze its acceptance internationally, all the while investigating through the use of international jurisprudence and different forms of a common law and civil law system the possibility of its practical application under a virtual environment;

3. Resolve and pacify any questions and fears that may relate to the recognition of virtual property, demonstrating current uses of these concepts with the example of practical cases not only in the United States, but in Russia as well.

4. Promote the recognition of this new concept of property while simultaneously demonstrating its advantages and theorising its future uses and applications to promote the debate about virtual goods under the new virtual market.

In short, our objective is the demonstration of new concepts that already fit into current legislation, while concurrently stimulating the discussion and promotion of new forms of regulation for virtual property.

2. PROPERTY IN THE 21ST CENTURY

According to the Brazilian author and supreme federal court minister, Marcos Aurélio de Mello, property is defined as "[...] the power of lordship that one person exerts over a thing, excluding any impedance of a third party"[5].

In contrast to Russian law, property is seen as corporeal and intangible objects of civil rights, which can be alienated and transferred from one person to another, as seen from this article of the Russian Civil Code:

[5] VIANA, M. A. S. (1996). Curso de direito civil. *Belo Horizonte: Del Rey*, *5*.

> "Art. 128 Objects of civil rights include things, including money and securities, other property, including property rights; works and services; protected results of intellectual activity and equated means of individualization (intellectual property); intangible goods.".[6]

This however is not a fixed list and the court can recognise other kinds of property under Russian Law. It's also defined as "[...] a complex of contractual relations which have a real value with participation of a known party"[7].

Moreover, the definition set forward by Brazilian and Russian Law shares a similarity to the point of view shared by traditionalists in U.S. Law such as Sir William Blackstone, which define property as the ability to possess a property without the involvement of a third party[8].

This position, while still defended today, is now contested by the idea of legal realism[9], which identifies that property simply denotes a bundle of rights defined by law and social policy (Merril, 2010). Whatever these rights may be will only be dependent on the policy that is implemented.

This brings us to the new debate amongst users of social media platforms like YouTube[10] and virtual worlds such as that of VRChat[11] and Second Life[12]. That is, the debate about User Generated Content being recognized or not as virtual property.

3. THE HISTORY OF VIRTUAL PROPERTY

To this extent, we must first understand where this concept had first arisen. The history of virtual propriety starts with the games of the MMORPG[13] genre around the 2000's. This initially started with a subscription system which would give access to players to the virtual world for around a week or even a month.

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[6] Civil Code of the Russian Federation, Art. 128 (1994). Retrieved on the 3rd of January, 2022 from: http://www.consultant.ru/document/cons_doc_LAW_5142/f7871578ce9b026c450f64790704bd48c7d94bcb/

[7] Shershenevich, G. F. (1995). Textbook on Russian Civil Law (based on an edition from 1907)., *Spark.*, 95.

[8] Penner, J. E. (1997). The idea of property in law. *Oxford University Press*.

[9] Merril, T. W., & Smith, H. E. (2010). The Oxford Introduction to US Law: Property.

[10] YouTube is a video sharing service where users can watch, like, share, comment and upload their own videos. The video service can be accessed on PCs, laptops, tablets and via mobile phones. Youtube can be found on the Internet at https://www.youtube.com/.

[11] VRChat is a free-to-play massively multiplayer online virtual reality social platform created by Graham Gaylor and Jesse Joudrey. It allows players to interact with others as 3D character models. VRChat can be found on the Internet at https://hello.vrchat.com/.

[12] Second Life is an online virtual world, or metaverse, developed and owned by the San Francisco-based firm Linden Lab and launched on June 23, 2003. Second Life can be found on the Internet at http://www.secondlife.com.

[13] MMORPG's are massively multiplayer online role-playing games that combines aspects of a role-playing video game and a massively multiplayer online game.

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Since then, the popularity of games increased and concepts changed, and with that, developers decided to opt for a new model of what it's currently called Free-to-Play Games[14], where the game itself is free, but the most powerful weapons and other items are sold in the game for real money, completely abandoning the subscription service model.

With these changes of concepts, a new debate would start about the idea of User Generated Content inside these virtual worlds, that is, content made by the community of that game or platform and that would add value to that virtual world. The idea of UGC's (User Generated Content) was first coined by the article "Web 2.0 and User-Generated Content: Legal Challenges in the new frontier"[15] and with that article came the debate about the value of these UGC's and how to properly regulate them.

At the time, the foremost concern was that of the lack of control over the content which is produced by users on websites. One of the examples of that case was none other than YouTube itself, which, at the time, suffered from constant DMCA strikes[16] directed at their platform by companies such as Viacom[17].

The suggested course of action then was to push the responsibility of the stolen content onto the users via some sort of internal policing method. That would then come to inspire what is currently known as the current YouTube Content ID system[18], which has proven itself able to take the target away from the company and onto its users.

During the same year, content creators[19] were getting introduced into the YouTube Partnership Program (YPP), a program aimed at getting users paid for the videos published by them, opening new ventures in creative video making as a career to incentivize the production of UGC's in the YouTube platform, and thus, maintaining the platform through its users' creations.

[14] Free-to-play (F2P or FtP) video games are games that give players access to a significant portion of their content without paying or don't require paying to continue playing. Free-to-play is distinct from traditional commercial software, which requires a payment before using the game or service. It is also separate from free games, usually referred to as freeware, which are entirely costless.

[15] George, C. E., & Scerri, J. (2007). Web 2.0 and User-Generated Content: legal challenges in the new frontier. *Journal of Information, Law and Technology*, *2*.

[16] For YouTube to retain DMCA safe harbor protection, it must respond to copyright infringement claims with a notice and take-down process. YouTube's own practice is to issue a "YouTube copyright strike" on the user accused of copyright infringement. More info on DMCA Takedowns and the Youtube Strike system can be found on the internet at https://www.eff.org/issues/intellectual-property/guide-to-youtube-removals

[17] ViacomCBS Inc. is an American diversified multinational mass media and entertainment conglomerate corporation formed through the merger of the second incarnation of CBS Corporation and the second incarnation of Viacom on December 4, 2019.

[18] Content ID is YouTube's automated, scalable system that enables copyright owners to identify YouTube videos that include content they own. More info on the Content ID system can be found on the internet at https://www.youtube.com/watch?v=9g2U12SsRns&ab_channel=YouTubeCreators.

[19] Content creation is the contribution of information to any media and most especially to digital media for an end-user/audience in specific contexts.

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Meanwhile, the first real case about virtual property would be decided in Bragg v Linden Lab (*Bragg v. Linden Research, Inc.,* 2007) in 2007, involving a virtual real estate property inside the virtual world of Second Life, a virtual game that simulated reality, creating a virtual ecosystem where UGC's would thrive with its own market, including property taxes and events hosted by big banks such as Wells Fargo.

These events have all culminated into an ever-growing example of how virtual property and UGC's have already become a part of society and how it's already accepted not just by consumers, but companies as well. However, there is still the elephant in the room to be addressed: Virtual Property is still being seen as Intellectual Property.

4. THE CURRENT CHALLENGES OF VIRTUAL PROPERTY

The biggest issues with Virtual Property can be separated in two questions:

1. How to define the regime for Virtual Property?

2. Is there value in Virtual Property?

While the value of Virtual Property today can be exemplified with cases such as Bragg v Linden Labs (Bragg v. Linden Research, Inc., 2007) we still, currently, lack a proper regime for Virtual Property. This in turn can give into leeway for interpretations and assumptions for companies and developers of Virtual Worlds and Virtual Platforms.

As a result, these rights-holders, preoccupied with maintaining their intellectual property rights, have come to see that all content on their platform as part of their Intellectual Property, even if it was generated by its users, consequently creating an obstacle for the debate about Virtual Property.

That is, the issue for companies is the preservation of their intellectual property, the software and game developers, the protection of their company's logo, image, designs, and ideas, much like to prevent what happened with Warcraft 3, Bragg v Linden Lab (*Bragg v. Linden Research, Inc.,* 2007) and with YouTube.

Nevertheless, before we address why these issues are important, we must first answer the first two questions previously mentioned. That is, how to recognize virtual property and how we can identify its value.

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5. THE RECOGNITION OF VIRTUAL PROPERTY

A virtual object can be described as an intangible object of the virtual World which consists of binary code[20]. A program (a computer) outputs this code as something with a form and appearance.

However, even though they exist in the virtual world, these objects do not really exist in the real world. In some cases, as we've seen before, being treated as intellectual property and not as property attained by users. Be it because of jurisprudence or a disinterest of legislative assemblies internationally which acts as obstacles that hinders the recognition of virtual property as an object of ownership outside of virtual worlds. And because it is not officially recognised, its value becomes questionable.

This however results in consequences under different branches of law. Take the case of theft or robbery for example: the thief can at best be banned from that virtual world, which in most cases won't be a effective form of deterrent for the thief, since he or she may be able to just create another account and continue to perform illicit acts under a unregulated, and yet profitable, virtual world.

Those and other issues arise because of the unclear regime of Virtual Property, and for the solution of this issue we must look at the doctrine of Russian Civil Law[21], which itself identifies different approaches to a virtual property.

5.1 Virtual property as real property

According to the position of English philosopher John Locke, any person can be the owner of the result of his work as physical and mental efforts were put in[22], which results in a favourable position for virtual property, meaning that it does not matter if the item in question is an NFT or an virtual item of any sort, as long as the user has to exert effort to achieve it in any shape or form, it is his property.

This position is already supported by other countries, for example, in 2011 the Taiwan Ministry of Justice released an official Notation No. 039030 (90) where objects of virtual property were equaled to the real objects and valuables[23].

European countries also made a lot of progress on the recognition of virtual property. In 2007, in the Netherlands, a group of people used violence and threats to make another player send them virtual

[20] Erlank, W. (2012). Property in virtual worlds. *Available at SSRN 2216481*.
[21] Arkhipov, V. V. (2019). The Internet Law. *Urait*, 211.
[22] Locke, J. (1988) The Works of John Locke. *Thoughts*, 277-280.
[23] Fairfield, J. A. (2005). Virtual property. *BUL Rev.*, *85*, 1047.

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items from his account to theirs, resulting in a decision from 2012 of the Supreme Court of the Netherlands[24] saying the following:

> "1) those items have value because the player spends time and real money to obtain it"
>
> "2) those items were owned by the only one player who could use it as he wanted to"
>
> "3) when those objects were transferred to the criminals, they got an opportunity to use it and the previous owner lost a status of ownership"

With this, the Supreme Court of the Netherlands sentenced the criminals for robbery, resulting in one of the first European countries which recognized virtual property through a court decision, further showing how this concept and its value is already recognized on at least an international level.

With these questions answered, there still remains the question about the user influence on these virtual worlds, and more importantly, if these UGC's can add value to not just the experience of being inside the virtual world, but also to the value of the items obtained or created by users.

6. USER IMPORTANCE ON VIRTUAL WORLDS

Way before the current pandemic, these virtual worlds were already a big part of the international market, with the market of virtual worlds such as that of online games in 2008 being expected to bring over $556 million dollars in revenue[25].

While it can be said that Second Life was the predecessor of these virtual world markets, with it's application of taxes on virtual land[26] and of its UGC market, a better example is found by looking at the virtual market created by Steam, giving its name "Steam Community Market"[27], with news articles of

[24] Hoge Raad der Nederlanden, LJN BQ9251, Supreme, J. 10/00101, January 31st, 2021. Retrieved on the 6th of October, 2021 from: http://uitspraken.rechtspraak.nl/inziendocument?id=ECLI:NL:HR:2012:BQ9251.
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[26] Chein, A. (2006). A practical look at virtual property. . *John's L. Rev., 80*, 1059.
[27] The Steam Community Market is a digital marketplace that allows users to buy and sell certain in-game items, in addition to digital trading cards, emotes, profile wallpapers, and other things that are designed for use with Steam. It can be accessed on https://steamcommunity.com/market.

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2017 reporting over $5 billion dollars[28] being wagered in the videogame cosmetics we've come to know as *skins*.

More importantly, these environments also offer an ability for users to contribute with their UGC's in order to have their creation selected and distributed in that virtual marketplace, receiving some of those earnings back as compensation for their work not just for the community, but for the market itself (Grubb, 2021). This can be better exemplified with the case of Warframe[29] *Tennogen* cosmetics[30].

The importance of UGC is arguably the biggest key-feature of virtual worlds nowadays, with developers today having to recognize users not just as consumers, but as a potential boost for their product, that is, their virtual world.

This can come in the form of mods that aim to modify or enhance the experience originally provided by the virtual world, bringing a breath of fresh air in the form of new content to that virtual world and further expanding it at no cost to developers, other than supervising these creations.

Moreover, rather than limiting transactions so they only happen between the company and a user, these companies could further broaden their ability to receive a financial return from their community engagement by actively recognizing the contents attained by users and sold to other users with real world value, retaining some of the resold value as a "tax" for providing the ability to trade virtual properties.

Therefore, incentives brought by UGC's may be the current biggest argument for virtual property to not just incentivise consumption, but also production of content that will further enhance the experience of these virtual worlds, all the while providing royalties to those who helped publish it in a way that couldn't be as easily compensated if done in the real life.

[28] Assael, S. H. A. U. N. (2017). Skin in the game. Retrieved on the 31st of October, 2021 from: https://shaunassael.com/wp-content/uploads/Skin-in-the-Game-Counter-Strike.pdf.

[29] Warframe is a free-to-play action role-playing third-person shooter multiplayer online game developed and published by Digital Extremes. More information on Warframe can be found on: https://www.warframe.com/.

[30] TennoGen is a collection of community-created content that are selected by Digital Extremes and subsequently implemented in the in-game Market. These contents can only be purchased with bought premium currency on Consoles, and can only be purchased through the Steam client on PC. Revenue generated from the in-game Market will then be split between Digital Extremes and the creator, with the creator getting 30% of the cash revenue. More information on TennoGen cosmetics can be found on: https://forums.warframe.com/topic/549103-steam-workshop-launch-faq/.

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7. CONCLUSION

As demonstrated, the potential for the recognition of virtual property is immense, bringing benefits for users, creators and even companies, if well understood by all parties, that is giving the ability to trade users' virtual property is a gigantic step against piracy, making these websites useless since these transactions could happen in a safer and more familiar environment, all the while providing a financial return. As seen with situations like what happened to Bragg v Linden Lab's (*Bragg v. Linden Research, Inc.,* 2007), it becomes necessary to point a general direction in which to take this debate. For this, we stipulate the following directives for the progress of Virtual Property and its recognition not just by legal entities, but by companies and users as well. These are:

7.1. Virtual Property is Not Intellectual Property

If this debate is to go forward, it must first be understood that Virtual Property cannot be confused with Intellectual Property, and that includes the rules applied to them. Therefore, Virtual Property should not receive the same protections and rights that intellectual property does, and vice-versa, and therefore, Virtual Property should be seen and interpreted with the lenses of Property Law.

7.2.Future Contracts must take the user's UGC's and Property into consideration

This does not mean that all contracts must immediately recognize virtual property, but that at least, they should start considering the contributions of users as part of their legal and creative team's responsibility to oversee, work with and incentivise, rather than forbidding, limiting or taking advantage of, much like the cases with EULA's.

7.3.Virtual Property Should be Seen as a Benefit, not a Hindrance

Many were the benefits that we've stipulated if virtual property was to be recognized, for users, companies and even content creators, even more if all of it were to be done in a blockchain, where multiple transactions and top-notch cryptographic security could further enhance the monetary gain and control those users and developers would have.

This step should be the easiest to come by and will have the most benefits for developers, possibly incentivising the owners of these virtual worlds to continue experimenting with these new ideas of virtual ownership.

7.4.Virtual World Markets must be sustainable.

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Users must work to earn their due. That is, they must prove that they've earned their property, and thus, if this idea is to be recognized, the virtual world economy must be healthy enough for it, otherwise it could have an inflation problem, as it is the case with most MMORPG's[31].

It is important to understand that just because recognizing it could bring benefits, it does not mean that this should be easy to implement. If a virtual world desires to implement this idea, it must first understand its own economy to apply it. This should be inherent to the previous directive.

7.5.Virtual Property should prevent illegalities, not incentivise them.

While the benefits of recognizing virtual property might be enticing, the steps towards it must be taken with care to prevent the surge of websites outside of the virtual world that could want to benefit from users' property.

This directive is to also be taken in consideration with the two previous ones because of its impact outside of the virtual world. If the virtual world economy begins to fail because of an outside source funnelling or receiving money, we could have situations like that akin to laundering money. It is of utmost importance that developers make this an in-house situation where they can control what happens inside that virtual world.

With these directives, the international understanding and recognition of virtual property throughout the world, the concrete and hard cases presented, we hope to have been able to just show not just the viability of the recognition of this new area of law, but to also have been able to show its benefits and further enhance the debate about its application in the future. We hope that with the aid of the examples provided such as YouTube's Content Creator Program and more recent concrete cases from Europe will be enough to shed some light on this prospect and further continue the debate and improvement for the application of Virtual Property.

[31] Lahti, N. (2015). Inflation Control in Virtual Economies.

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[13] For YouTube to retain DMCA safe harbor protection, it must respond to copyright infringement claims with a notice and take-down process. YouTube's own practice is to issue a "YouTube copyright strike" on the user accused of copyright infringement. More info on DMCA Takedowns and the Youtube Strike system can be found on the internet at https://www.eff.org/issues/intellectual-property/guide-to-youtube-removals

[14] Free-to-play (F2P or FtP) video games are games that give players access to a significant portion of their content without paying or don't require paying to continue playing. Free-to-play is distinct from traditional commercial software, which requires a payment before using the game or service. It is also separate from free games, usually referred to as freeware, which are entirely costless.

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[27] The Youtube Content Creator Program, previously called Google's AdSense program, was aimed at compensating content creators on the platform via the use of advertisement on their videos, rewarding users for continuously creating content for the website. More on the Youtube Content Creator Program can be found on: https://www.youtube.com/creators/

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[29] VRChat is a free-to-play massively multiplayer online virtual reality social platform created by Graham Gaylor and Jesse Joudrey. It allows players to interact with others as 3D character models. VRChat can be found on the Internet at https://hello.vrchat.com/

[30] ViacomCBS Inc. is an American diversified multinational mass media and entertainment conglomerate corporation formed through the merger of the second incarnation of CBS Corporation and the second incarnation of Viacom on December 4, 2019.

[31] Warframe is a free-to-play action role-playing third-person shooter multiplayer online game developed and published by Digital Extremes. More information on Warframe can be found on: https://www.warframe.com/.

[32] YouTube is a video sharing service where users can watch, like, share, comment and upload their own videos. The video service can be accessed on PCs, laptops, tablets and via mobile phones. Youtube can be found on the Internet at https://www.youtube.com/

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