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THE DIGITAL TRANSFORMATION OF THE LAW OR THE LEGAL ADAPTATION OF TECHNOLOGY MANAGEMENT?

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Abstract: This scientific paper aims at an integrated approach, focused on the duality of Law/Information and Communication Technology (ICT). Since the emergence of the field of Information Technology and Communications, it has been defined by the concept of perpetual change, change management, experiencing a rapid development, fundamentally transforming society and the dynamics of social phenomena. The evolution of ICT brings to the fore innovative technologies, which create new statuses and roles, for which the legal field, which is constantly expanding, needs time to react, by adopting rules of conduct that state the behavior expected by society from each individual.

Keywords: legal norm, innovative technologies, e-commerce, cybercrime, electronic signature.

1 INTRODUCTION

Resistance to change stands out as a decisive element when we analyze the causes underlying the development of public institutions in order to fulfill their full potential for progress. In the contemporary world, change is imminent due to the increase in the quality and the efficiency in all areas of activity, therefore change becomes the status quo.

The duality between Law and Information and Communication Technology occurs when civil society calls for the implementation of the concept of digitization in public administration and the reduction of differences between private/public environments. Everything is based on organizational management and how each organization creates and implements its own management strategies.

The concept of resistance to change has, among other things, a vague image of a context and purpose that would make it useful, as well as the feeling of insecurity of control and lack of skills. This is because routine requires human resources to develop a sense of security on the tasks they undertake, and change can be perceived as a threat to the comfort zone.

Thus, the development of new technologies and the management of their implementation can mean the context that imposes the need for change; the argument for change is usually imposed by new legislation that succeeds society's claims in relation to the behaviour of its members in certain social contexts.

A key feature of the information society is that it changes the parameters of productivity by replacing the information on the time, energy, labour and the physical materials required. Large-scale access to information usually has unexpected opportunities through the discovery, accumulation and sharing of new data.

There is the possibility of learning and understanding where connections of ideas can be made. (Petre, Cristescu, 2019, pp.59-68) Everything that is part of this field (ICT) is constantly expanding respectively: networks, data transfer speed, computing power, technologies, systems and applications, devices.

2 THE LAW AND THE NEED FOR STANDARDIZATION

The legal notion of the law represents "the totality of the legal rules and norms that regulate the conduct of people in social relations, which can be imposed by the coercive force of the state."

The science of law has, over time, undergone extensive stages of improvement, although the formal law system has the capacity to adapt, characterized by its own capacity to organize, reshape and order social relations.

In comparison, custom, that long rule by which a model becomes mandatory as a result of routine, once imposed, becomes rigid and resistant to change. In the literature, the legal custom is defined as the source of the rules of conduct and, at the same time, the archaic process of conducting the law.

An eloquent example of custom would be: in the case of the management system used for digitization, the workflow of drafting and managing unclassified documents, in the case where electronic archiving is not provided for, in any normative act and subsequently drafted in a working procedure, we will be in the situation where, at the end of the year, all documents in electronic format will be printed and archived in a classic way, practically cancelling the advantages of digitization such as saving time, paper and consumables.

In order to improve the legislation, as a result of these changes, our country has the obligation to adopt the legislation related to the changes in the society so that it fulfils all its functions. (Jiga, 2021, p.183)

The field of Information and Communication Technology is characterized by the concept of perpetual change, it has undergone a rapid development, fundamentally changing society and the movement of social phenomena.

Thus, the development of ICT highlights the management of innovation, which produces new statuses and roles, for which the legal field, which is constantly expanding, needs time to adapt, by implementing rules of conduct that establish the behaviour imposed by society on the individual. (Jiga, 2021, p.183)

At present, this field needs to manage the way of technological development, by setting policies that achieve clear objectives by adopting a legislative framework that expresses the transition to the new paradigm of ICT, for all basic functions.

ICT has an important role to play in counteracting behaviours that violate legal norms. It is an effective tool in combating antisocial practices, both in the public and private spheres. ICT can strengthen activities to eliminate anti-social manifestations within organizations.

For example, it has been concluded that the management of information and communication technology development has the capacity to support the fight against

corruption by performing the function of transmitting data flow between government authorities, between citizens and government, and between citizens; innovation in technology having the capacity to promote transparency, accountability and civic participation. (Motoc, 2018, p.144)

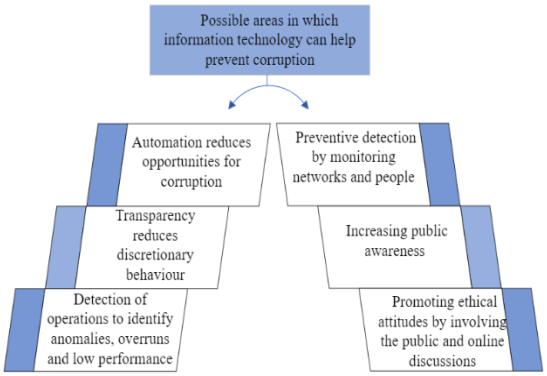

Figure 1. Areas in which information technology can help prevent corruption (Motoc, 2018)

The introduction of modern IT solutions has the advantage of facilitating the access to knowledge resources, such as the Internet, where various information resources accessed by employees for the performance of duties or the electronic transmission of documents are implemented. (Motoc, 2018, p.145)

The management of information campaigns targeting certain social categories are very useful, on the one hand, implementing social models as an example to follow and on the other hand aim to inform society to discern situations of violation of legal rules. (Machnik-Słomka, Bojar, 2013)

Developing social ties with stakeholders must be a strategic goal that has the capacity to build lasting bonds based on mutual trust. (Motoc, 2018, p.145)

Social education is done by implementing a management of large-scale education campaigns, which use modern information technologies, social marketing elements, as well as social media.

At present, due to the mass access to Internet technologies, social media is a very important area of information management, requiring a change in the methods of communication of organizations, communities, and individuals in a significant way.

Kaplan defined social media as a "group of applications based on Internet solutions, based on ideology and Web 2.0 technology, which allow the creation and exchange of user-generated content." (Kaplan, Haenlein, 2010, p.61)

Web technology 2.0 is the basis of websites, in which users perform at least one function equal to the designers and owners of the sites.
Activities to prevent corrupt practices may involve, inter alia, the following information technology (IT) and social media:

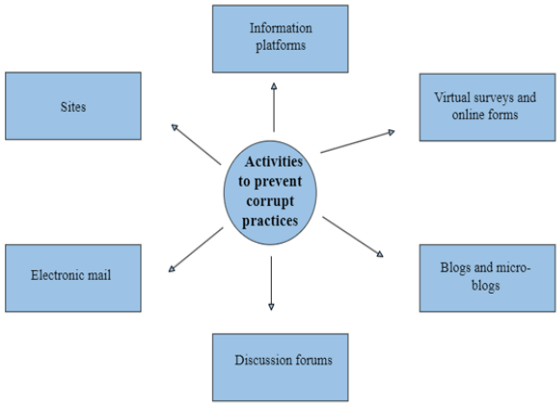

Figure 2. Activities to prevent corrupt practices (Motoc, 2018)

The evolution of the field of information and communication technology, as well as the generalization of the digital transformation process obliges the right to increase the field of action, especially since, by its very essence, the law collaborates with other sciences, the legal reality forcing the science of law to develop its explanatory and normative function. (Ake, Heacock, Sasaki, 2010, p.15) The law of information and communication technology refers to a constantly expanding area of law,

which focuses on those legal issues that arise in the emerging information society, with the object of regulating, inter alia, the protection of personal data, e-commerce, cybercrime, electronic signature, etc. (Jiga, 2021, p.184)

The rapid exchange of data and information outlines the hypothesis of knowing the legal problems and the appropriate legal answers, being able to deal even with the idea of reconceptualizing normative acts by introducing the rules of the same matter, spread in the legislation in force, in unique regulations which represent an entire field of law or a branch.

3 THE MECHANISMS BEHIND INFORMATION TECHNOLOGY

Digital development has an impact on the lives of people around the world. At the beginning it usually affected the industrialized states and in the last ten years there has been a process of accelerating digitization around the globe. The process of digitization management has the opportunity to change not only people's daily lives, but also to revolutionize social relations and provide public services. (ICT, 2017) Although there are different approaches to enhancing the capacity of modern information technology to prevent and combat infringements, the outcome of these tools is usually different. (ICT, 2017) The widespread digitalization of public services has been advanced in many countries globally. Its purpose is to increase efficiency in the provision of public services. Administrative electronic systems and tools have the ability to shorten the waiting time, provide remote services and in particular reduce costs. (Motoc, 2018, p.147) One of the benefits is that the person has the opportunity to petition or apply for public services online, using personal computers or e-government terminals at government offices. This benefit reduces the possibility of favouritism of civil servants or corruption. As in the case of e-commerce, e-government is the implementation of a large amount of technological innovation, as well as government reinvention. Tapscott and Caston (1993) argue that information and communication technology is causing a "paradigm shift" by introducing the "era of network intelligence" to reinvent business, government and individuals. (Ndou, 2004) E-Government provides the opportunity to obtain information on the professionalism of civil servants and how to provide public services. In this situation, the benefit of IT technology is to increase bottom-up transparency. At the same time, the state can get feedback from citizens and has the opportunity to improve the work of lower-level bureaucrats. Upward transparency can be found in the following IT tools: online referrals, tools that promote the agglomeration of advertising, e-government tools (automated services and online services), as well as other initiatives to collect citizen feedback. (Motoc, 2018, p.147) In recent times, anti-corruption actors and policy makers have increasingly used blockchain technology as a tool to support anti-corruption activity. Another very important application that uses blockchain technology is smart contracts, which are contracts that are automatically executed when the conditions agreed by both parties are met. (Nakamoto, 2008) This technology provides an increase in security management in public procurement and financial transactions against fraud. Electronic signatures complement the role of handwritten signatures in electronic documents, providing the opportunity for both parties to fulfil their obligations with confidence in the electronic environment. Given the probative value of signatures, the selection of signature technologies must be carefully determined. The role of the digital signature is to identify the person who signs a document in electronic format while ensuring the integrity of the data. An electronic digital signature is intended to ensure the integrity of the document, to properly confirm the author, and to provide evidence. The digital signature ensures a high degree of data

security which is a very important element in the fight against digital espionage and the existence of different methods of data interception. (Țurcanu, Popovici, 2020) Documents bearing a digital signature have legal value only if they represent an agreement of the parties or are protected by a legal framework and are assimilated to paper documents. E-government is the use of information technology to provide more efficient and high-quality government services to citizens and businesses. Its basic features are efficiency and effectiveness and its role is to facilitate access to government operations, opening up new opportunities for accountability and supervision of citizens. The efficiency of e-government is ensured by the management process of the automation of certain services. By eliminating the discretionary behaviour of the official, more equitable and less prone to corruption processes can be obtained. Governing instruments must take into account in a balanced way both the usefulness of citizens and the civil servants who use these instruments. As a rule, they are created only in relation to the citizens. However, civil servants are the ones who implement the e-government management process. The tools should be designed in such a way as to supplement or replace existing workflows, rather than working with or in addition to them. (Motoc, 2018, p.149)

4 THE BLOCKCHAIN TECHNOLOGY

Blockchain is a technology that stores information in units called blocks in a digital register, and in each block is stored encrypted data relating to a particular transaction with the property that these blocks cannot be modified without all the blocks in the ditch being changed. Copies of a set of blocks are stored on servers around the world in the form of a decentralized per-to-per-network.

Transactions and documents stored in blocks cannot be changed without changing subsequent blocks in the chain. In this way there is a complete situation of changes. However, the new blockchain technology is having difficulty implementing it successfully.

This technology is a departure from established IT standards. Governments tend to get bogged down in reputable IT strategies, and officials with responsibilities in implementing new technologies are usually reluctant to test technology solutions outside of these strategies. The implementation of such solutions can be a problem if the management process is carried out without specialized training. (Motoc, 2018, p.153) In the last period of time we could not imagine that an agreement of will would not be drawn up by a person as a subject of law or without any regulation, or even more so that this agreement of will would be designed on the basis of mathematical "rules" and computer science to the detriment of rules of law. The development of technologies and in particular the emergence of blockchain technologies and "smart" contracts have been a new approach to current regulations. Social relations have developed before the law and currently usually apply technologies that have not been regulated or cannot be controlled. According to Alexander Savelyev, contract law is in jeopardy and will no longer be regulated when these technologies become popular, especially in the case of smart contracts. (Savelvev, 2016) Nick Szabo defines the smart contract as a computerized transaction algorithm that meets the terms of the contract, and later Gideon Greenspan defined the smart contract as: “A smart contract is a piece of code that is stored on a Blockchain, triggered by Blockchain transactions and reads and writes data to the Blockchain database".

It follows from this definition that one of the characteristics of the Smart contract is blockchain technology. (Savelvev, 2016)

5 CONCLUSIONS

As the issuance of normative acts represents a thorough knowledge of the

economic and social realities to be subjected to the legislative process and taking into account the complexity of the field of information and communication technology, as well as the need to maintain technological neutrality of legal provisions, it is necessary to remove communication barriers legal professionals and ICT; this objective can only be achieved through active communication, aimed at achieving the fundamental principles that define the activity of public administration officials, of which we mention the priority of the public interest in the exercise of the function held.

IT tools can be successful by raising awareness and mobilizing citizens, as well as by reforming public services. In order to be truly effective, it is necessary to create an independent judiciary, freedom of the press and an active society.

This may include a more transparent and decentralized system of governance, which could be supported by blockchain technology.

It should be noted that the use of modern information technologies must be implemented with changes in the overall management of the organization, as well as through the infusion of trust in ethical practices in organizations.

A significant role in the public administration sector is played by universities, which have the opportunity to adapt their educational and management programs to the demands of changes in the business environment, thus applying efficient networking solutions through modern internet and IT technologies.

Blockchain technology is an area that must continue to be observed and studied for its potential.

Information and communication technology is a field in which knowledge becomes obsolete in a short time and training and qualification programs should be carried out without interruption, they are an essential condition for supporting employees in this field and for their performance with major impact in achieving cyber security.

I believe that human resources are essential to any business and can mean the greatest advantage or threat to the organization when it comes to managing the security of sensitive data and information.

It is considered necessary to implement a single international strategy on the legality of smart contracts and blockchain technologies because insecurity will create situations in which traders will use new technologies with reservations, which will slow down the development of this sector.

BIBLIOGRAPHY

Alexander Savelyev, (2016), *Contract Law 2.0: «Smart» Contracts As the Beginning of the End of Classic Contract Law.* Higher School of Economics Research Paper No. WP BRP 71/LAW/2016, Available at SSRN: https://ssrn.com/abstract=2885241, http://dx.doi.org/10.2139/ssrn.2885241

Gronlund, Ake, Rebekah Heacock, David Sasaki, Johan Hellstrom, Walid Al-Saqaf (2010), *Increasing transparency and fighting corruption through ICT: empowering people and comunities*, SPIDER ICT4D Series No.3/2010,p.15. https://docplayer.net/83897324-Increasing-transparency-fighting-corruption-through-ict.html

International Telecommunication Union, Geneva, (2017), *ICT Facts and Figures.* https://www.itu.int/en/ITUD/Statistics/Documents/facts/ICTFactsFigures2017.pdf

Jiga R,I. (2021), Adoptarea juridică a tehnologiei. *Biroul de Informare Documentare,* nr.4, ISSN 2065-9318

Joanna Machnik-Słomka, Matylda Bojar, (2013). *The role of social interactions in designing and management of complex undertakings in the context of global sustainability*. (pp.57-72)

Kaplan, Andreas, Haenlein, Michael (2010) *Users of the World, Unite! The Challenges and Opportunities of Social Media*

https://www.researchgate.net/publication/222407 03_Users_of_the_World_Unite_The_Challenges_ and_Opportunities_of_Social_Media

Motoc V, (2018), Aplicarea tehnologiei Informației Moderne la prevenirea practicilor corupte dintr-o organizație, *Biroul de Informare Documentare* nr.6(149), ISSN 2065-9318

Nakamoto Satoshi, (2008), *Bitcoin: A Peer-to-Peer Electronic Cash System,* https://bitcoin.org/ bitcoin.pdf

Ndou Valentina, (2004), *E-government for developing countries: opportunities and challenges.* https://onlinelibrary.wiley.com/doi/10.1002/j.1 681-4835.2004.tb00117.x

Petre Ionuț, Cristescu Irina, (2019), Cetățeanul și provocările societății informaționale*, Romanian Journal of Information Technology and Automatic Control*, Vol. 29, No. 1, pp. 59-68.

Regulamentul (UE) NR. 910/2014 al Parlamentului European și al Consiliului,

https://www.researchgate.net/publication/222403 703_Users_of_the_World_Unite_The_Challenge s_and_Opportunities_of_Social_Media

Țurcanu Dinu, Popovici Serghei, Țurcanu Tatiana, (2020), Digital signature: advantages, challenges and strategies, *Journal of Social Sciences*, nr.4, ISSN2587-3490,

https://doi.org/10.5281/zenodo.4296327

https://ro.wikipedia.org/wiki/Dreptâ