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**INTERNATIONAL UNIVERSITY  
TRAVNIK**

72270 Travnik

Aleja Konzula – Meljanac bb

Tel: + 387 30 540 597

Fax: + 387 30 540 587

Web: [www.iut.edu.ba](http://www.iut.edu.ba)

[www.iu-travnik.com](http://www.iu-travnik.com)

**Publisher:**

*International University Travnik in  
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*72270 Travnik, Aleja konzula-Meljanac bb*

*Phone: 00387 30 540 597*

*Fax: 00387 30 540 587*

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## **CORPORATE SAFETY IN BIH AND THE WESTERN BALKANS COUNTRIES FROM ECONOMIC, LEGAL AND COMMUNICATIONAL ASPECT**

Ladies and Gentlemen, distinguished participants of the Conference, dear guests and friends of the International University Travnik, the corporate security that we are conducting today at the XIV International Conference on Corporate Security is essentially the commitment of the company to contribute to the sustainability of its business and economic development, working with business partners, employees, owners and society in general, in order to improve business, protect their property and their own interests.

Institutionalization of corporate security as one very important and specific area in the company lasts for up to several years, but in that period corporate security is rarely shown with some clearly visible utility of a company, and it requires significant investments. At that time, the company's management is asked the most frequent questions such as: should such an expense be at all costs, is it a cost-effective investment? When will the funds be invested? For this reason, a number of companies abandon the design and installation into the organizational scheme of the corporate security service or, nevertheless, the positioning of corporate security managers in the company's management. Nevertheless, security needs to become increasingly present in order to reduce operating losses. So far, very few companies have complied with some forms of security service that classically deal with

the technical and physical protection of assets and facilities of the company, aimed at preventing classical forms of property destruction by illegal acts, while at the same time the absolute most important segment of corporate security, that is, business processes and the protection of business interests of the company, remains completely uncovered. Although the economic and financial crisis has taken its toll, so that some security companies have an increase in revenues, companies invest less than is needed in this sector. Nevertheless, for several years now, Bosnia and Herzegovina has made more progress on this issue. Consciousness is, most importantly, at a much higher level, because there are more corporations that give importance to this extremely important segment of business, because of the safety of products and clients, and especially of owners and employees. Much of the merit is the science and practice in the field of corporate security as well as the organization of a series of scientific meetings, such as this one, which should certainly be emphasized by the First International Conference on Corporate Security in BiH, which we are organizing today at Vlasici. Through these activities, the business community is gradually sensible about this topic in recognition of the need to introduce the function of corporate security, as one of the logistical functions that enables companies to work smoothly and develop, which is evident in the recent times in the world and in our country. Corporate security is often used in modern business practice, since companies are to a large extent responsible for their business for events and activities in that area. In order to contribute to solving the problems of corruption in the company, companies implement various forms of

security of the protection of their property, business processes, information security, and security of their customers, suppliers, owners and employees. In order to make the most successful use of the numerous advantages of fostering socially responsible behavior, companies must affirm ideas and feelings, care for their problems and society's problems as a whole, and promote all the activities for their improvement, especially in the implementation of corporate security. It is extremely important to ensure full transparency of commitment to your company, but also to the social interests.

Dear colleagues, In countries in transition, like Bosnia and Herzegovina, promoting corporate security is becoming an indispensable tool and a lifestyle to ensure the viability of its business resources in all segments of the work and business of its own company. Corporate security is essentially an awareness of the new position and importance that companies have in the contemporary, global society and the responsibilities that arise from them. This is actually a process in which they can, although not necessarily, have an impact on their business. The practice of corporate security refers to the entire sphere of business of an enterprise, as well as to the relationships it establishes: what is being produced, how it buys and sells, whether it obeys the law, how it employs, trains and influences the development of human resources, in which way it contributes to the preservation of property of owners, employees and the environment.

In other words, corporate security could be defined as a concept within which companies act in accordance with ethical principles, that is, in a socially acceptable

way, which would lead to greater security in company operations, as well as achieving better overall financial results.

In order to further raise awareness about business security, the problem of corporate security must rise to the level of society, because only in this way can we develop a security culture that is a key fact in this issue. In this way, it would become part of us, and we would be more aware of its sustainability. It should also be ensured that safety is initially treated as a need, not as an imposed measure, and that the implementation of security measures by each individual is treated as a personal participation by which it renounces part of its commodity, in favor and in order to raise the level of enterprise safety awareness. In addition, I must say that it is very important that corporate security must become part of the business culture of all employees of the company that accept it as a legitimate and necessary business function, otherwise security decisions are much more difficult to implement at lower levels.

The awareness of the need to introduce a corporate security system is higher in medium and large, but also in small enterprises insufficient, because due to their greater exposure to the impact of extensive use of information technologies, complex work technologies, dislocated operations and many other factors, they have previously faced security challenges and have realized the advantage of introducing a corporate security system as and small companies, especially those that deal with the development or implementation of information technologies.

Ladies and gentlemen, distinguished participants of the Conference, dear guests

and friends, The basic goal of every business is to create value. Corporate security is classified into logistic processes. Today's business systems must identify, categorize, model, monitor, and measure business processes according to critical performance factors. As a result, each business organization develops its own system of accountability management in business processes, which enables the continuous management and supervision of business processes. A business process can be defined as a set of activities that use one or more inputs and create a value for the customer.

The general division of the process according to the type of work performed by an enterprise is on: managerial, basic, and logistic business processes. From a security point of view, there have just been some minor damages that would be caused by dissatisfied individuals, while the situation is much worse today. We meet with the attacks of organized groups, whose goal is to endanger business operations or destroy the entire organization. In order to prevent such events, organizations must protect their managerial, basic and logistical business processes.

In this, a particularly important area of business information is any information without which all business activities and realization of business interests and goals of a business entity can not be performed. Business information is the basic resource of every business system, and the possession of information gives priority over competitors. Also, information enables the recognition and exploitation of business opportunities, making quality decisions, improving productivity, spotting and adapting to market trends, which in the

end leads to business success and better positioning in relation to competitors. For this reason, each company creates and develops its own area of business data and information, and today information security, which is achieved through the application of prescribed measures and standards of information security, and organizational support for planning, checking and finishing of measures and standards, is extremely important. Confidentiality of information means that information is only available to persons who have the authority to use it. Integrity is the protection of data from deliberate or accidental unauthorized modification, and availability is a guarantee to authorized system users that their system will be available at any time. Therefore, information security includes the protection of all information, regardless of what form they were. Within the framework of information security, the term "business intelligence", which first appeared in 1989, is especially interesting as a term that signifies the process of gathering information, that is, business intelligence in the business world. This concept is a business intelligence activity in the business world that focuses on collecting data and information needed to make best-quality business decisions in order to preserve the position in the business environment and achieve business success. Nowadays it is impossible to imagine any business process without managing business informations.

"Business intelligence" and business information in the conditions of today's business represent a strategic managerial resource without which the company's business is almost impossible. For this reason, corporate security includes the

overall security of a company with the aim of achieving business success, the "business intelligence" company makes an integral part of corporate security.

Reputable colleagues,

In today's world, crime, vandalism, terrorism, natural disasters and everyday casualties are reality. Organizations face numerous security threats, such as computer fraud, espionage, sabotage, vandalism, fire, floods, and the like. Damage inflicted on the organization in the form of malicious code, computer hacking and denial of service is an increasingly present phenomenon. Financial losses related to security downturns are increasing from year to year and amount billions of dollars. About 60% of the attacks occur outside (over the Internet), and about 40% of the attacks come from within. At the time of the global economy, the constant change in the risks to which companies are exposed, the establishment of cooperation between companies, online trade, information security is becoming an increasingly business problem that needs to be enabled and improved. Companies are struggling with regulatory requirements (banks, telecoms, operators), economic conditions and risk management. Unfortunately, the role of information security is not yet sufficiently defined in many companies. Although many see information security as a place of expense, it can be shown and proven that companies that properly manage information security achieve their goals in a quality, rational and efficient manner.

Dear colleagues,

Although Bosnia and Herzegovina has reached a certain level of preparedness in the area of security, in the recently

published European Commission Progress Report on BiH, for 2016, certain recommendations have been made to improve this

system. Namely, the European Commission asks BiH to finally meet international standards in the fight against money laundering and financing of terrorist activities, and further strengthen capacities for the fight against terrorism, through better cooperation and coordination, and exchange of intelligence data on crimes, prevention of radicalization and programs for deradicalization. Our country also seeks the implementation of an integrated border management policy, in particular through strengthening the Joint Risk Analysis Center, and greater efficiency in combating trade drugs. Unlike Bosnia and Herzegovina, the countries of Western Europe and the United States began to normatively regulate the field of corporate security at the beginning of the last century, taking into account that their government is never greater than a system of public security. Private, that is, corporate security, is not a public safety competition, nor should it become. Seeing security in Bosnia and Herzegovina is completely different and is not based on that. Police management in Bosnia and Herzegovina has recognized the potential of corporate and private security. It is now up to him to find the best possible models of this partnership, or joint cooperation. The European trend of security is the prevention of different behavior of individuals or groups directed towards the business interests and property of the company, thus contributing to the quality realization of public safety of the community. Ignoring security problems is paid too high a price - life. One of the most used abuses that brings great problems to society is money

laundering. Money laundering involves resolving, converting or purging money acquired through criminal activities (usually drug trafficking), its crossing across international borders (most notably in countries where the drug is produced) and reintegrating that money into regular cash flows. Money laundering is an exceptional threat to the integrity of financial institutions (as this is best manifested in Russia, where the mafia oversees many of the world's most important banks), which disadvantages legal entities that operate legally (as is the case in Colombia). Money launderers do not seek to achieve the highest profit rate on money that they operate, but are more important to them, or an investment that will enable them to easily and quickly recycle money. Thus, money can travel from a country with a good economic policy in which more and more benefits are gained for countries with worse policies and lower returns on invested funds. Thus, money laundering may result in the free capital being invested less rationally, which can greatly undermine existing economic flows. A change in the demand for money can cause interest rates and exchange rates at the national level. Colombian President Ernesto Samper himself has been charged with receiving large sums of narco-mafia during the election campaign. Local drug dealers seem to have offered full repayment of Colombian foreign debt in exchange for unimpeded action. There is nothing better in Mexico, where it has been discovered that Raul Salinas, the brother of former Mexico President Carlos Salinas, has 120 billion US dollars in foreign bank accounts. Corruption in Mexico, as in many other countries of South America, has become an endemic phenomenon that affects all levels of administrative and government

institutions. In conditions of legal uncertainty and developed corruption, the interest of foreign investors for investment in the country is greatly reduced. By money laundering and corruption, which is its frequent occurrence, a dangerous threat to state sovereignty is created, the authority of the state government violates democratic values and public institutions, and greatly damages the national economy.

In today's conditions of a globalized and commercially fully connected business, potential and real threats and threats to information and information systems are a priority business risk. Business analysis relies entirely on information systems and any threat can endanger the smooth running of business processes. Applying a new corporate information security approach encourages systemic information security management by applying appropriate processes and procedures in accordance with set standards and standards. For the successful implementation of corporate information security, it is necessary, among other things, to provide human potential with the necessary level of knowledge and competencies, which imposes the need for continuous education and acquisition of new knowledge, which should be used to effectively manage techniques and respond to increasingly numerous and more dangerous sources of threat .

Dear guests and participants of the Conference, What to say about security in cities and other aspects of security?

It can be said that certain successes of the police do not diminish security concerns in every city, because as long as there are unexplained murders, violence, hooligans falls with fatal consequences of narcotic crime around schools, while journalists



attack and abuse, while being threatened - insist on faster and more efficient police work. The state of security in the city is still satisfactory, especially considering that the problems of modern life are conditioned by the impact of the financial and economic crisis and adversely affect the safety of life in the city. Social protection measures for the most vulnerable are coming to light, although the development of the economy and employment is always the best social measure. Also, it is systematically trying to influence the arrangement of space and the feeling of belonging to that environment, within the capabilities of cities, investments in all urban settlements. For greater security especially for young people, it is necessary to introduce more order within the coordination of their daily "hourly hours", which is the job of parents, school and society as a whole,

while at the same time it is the role of the city to maximally support the activities that are on this trail by providing more diverse content that will leave young people out of the street. The data nevertheless show that these are the most often so-called criminal offenses against property, and

We think that we can do a lot in educating citizens to protect ourselves from burglary and theft. On the other hand, special attention is paid to the misuse of narcotic drugs, which is the problem of all cities. In this regard, systematic approach to prevention and education, especially for children and youth, and repression, that is, police activities should be accessed.

The problem of fire protection is more and more associated with security in cities. Every company that wants preventive fire protection will have to pay great attention to organizational and technical measures and actions aimed at eliminating the danger of fire, early detection of fire and its

effective extinguishing. A special aspect of corporate security is the protection of the natural environment. Today, every human activity affects the environment to a greater or lesser extent, whereby polluters are not only large multinational companies, but also small and medium-sized enterprises that, with different activities, significantly affect the environment. Each company must reduce its negative impact on the environment, in a way to reduce the release of harmful substances, reduce the amount of waste produced, and rational use of expensive and non-renewable resources. Considering the increase in awareness, the importance of reducing and controlling the environmental impact, as well as the fact that the establishment of an environmental management system has become an integral part of socially responsible business. Each company must, within its business, be committed to ecological security that contributes to a better and better quality of life for society as a whole, and thus contributes to the more economical business of each company. Starting from the current situation and issues in the field of corporate security, it is necessary to dedicate to increasing security in the company's business, which is why it is necessary to take the following measures:

1. The management of companies and enterprises must have a clear forecast of the expected state of affairs and be prepared to make quality business decisions in terms of preventing all forms of security in the business of the company.
2. Employees in corporate security services should be competent persons who will manage security processes.
3. Corporate security must become a part of the business culture of all employees in order to integrate the demands, needs and expectations of both management and

business operations of the company within its own universality.

4. For corporate security, it is important to manage security processes well, and without that, there is no successful business of the company.

5. Increasingly develop partner relations, both public and private, to bring business / knowledge of public and private sector corporations as close as possible to the government's security sector, and to cooperate with each other in the interests of overall security of society.

6. Corporate security measures shall include physical and technical protection, business protection, information system security, intellectual property protection, trademarks, and the like.

7. Through the implementation of strategic measures and procedures, a reduction in security risks should be achieved, and the planning made in the event of a risk of harm should be achieved, and legal protection of users, owners, employees and property of the firm, business information and the position of the company are planned within security measures on the market.

Implementation of these measures would result in improvement of corporate security in our companies, which would lead to a more secure operation of the company, which would create preconditions for making quality business decisions, thereby clearly and more visibly highlighting the benefits of corporate security without requiring significant investment investments. it achieves more efficient protection of the most important segments of business security in the running of business processes.

## MODERN PARADIGM OF CORPORATE SECURITY AND METHODOLOGY OF THE IMPLEMENTATION OF CRISIS MANAGEMENT IN THE WESTERN BALKANS

**Akademik prof. dr. Slobodan Neskovic, email: [slobneskovic@gmail.com](mailto:slobneskovic@gmail.com)**

University of the Academy of Economy in Novi Sad, FIMEK

Center for Strategic Research of National Security, Belgrade

***Summary:** Corporate conventional security to prevent the unpredictable acts of the corporation. In modern business conditions, corporate security is carried out in an independent and equal with other functions of the business function. Today's business in particular, always carries with it a certain level of risk for the corporation. Adequate assessment of risks and engagement in merciless competition, with custom sizes as realized profits, and therefore the role of corporate security and risk assessment, with the appropriate managerial skills, is the foundation of a successful business venture. Forms of compromising security may be different, but the specifics of that are identical to the problem for all the countries of the Western Balkans. The basic problem of the company is that the forms of threats to constantly change and transform into other forms of threats, once it finds an effective way to fight them. All this requires a high degree of material issue and especially high ability to understand these phenomena. A huge role in these activities has a crisis management, which must provide responsive and changing the existing problem in the operations of their company.*

***Keywords:** Corporate security, globalization, countries, risk, crisis management, Western Balkans*

### 1. INTRODUCTION

Corporate security is not a new security concept, but, in spite of this, it has only recently become a new science discipline discipline. Some aspects of the cases that we know today as corporate security have always been dealt with by managers and management of business entities. The changes in economic life that have occurred over the past decades have led to the large part of these aspects merely being integrated into one structure into one whole, which appears as one of the unavoidable functions of modern business units and systems.

Today's course of change comes from global processes that are not only economic, not only political, not only cultural, but also engaging all social spheres of the modern world. They are labeled as globalization with one name. It is a process of multiple and very rapid changes, which has pushed all business entities, and especially large business systems, to deal with security issues much more and more comprehensive than before, especially if they want to keep pace in the business world. The specificities and contradictions and the functioning of corporate security companies in the

Western Balkan countries are very common, with differences in the legal regulations of the region. Therefore, we consider the above topic through universal problems and requirements for their legalization.

Transition is another indispensable context without which a more precise explanation of the concept of corporate security is impossible. Rich economies were not forced to change their ownership and institutional framework from their roots, but they undertook their reforms in line with new challenges, risks and challenges that came with crises, the process of globalization, the collapse of Cold War division, and so on. Transitional countries, that is, former socialist countries, survived the collapse of the socialist system, its economic system, and some of them wars to divide the territory of new states. All of them have brought their future to the model of Western democracies. This process still takes place and leaves very difficult consequences for each social sector.<sup>1</sup> Business systems and businesses in such conditions try to make a profit. These conditions, however, brought many new challenges, risks and threats. They can be identified as threats that are a part of globalization and global crises, threats coming from within the national community in conjunction with organized crime and institutional corruption, threats coming from the competition, for corporate corruption and resulting from a low security culture and disorganization of security subsystems in corporations. Every business system (corporation) is forced to form,

structure, organize, manage and control its own security system, which protects its values from challenges, risks and threats in a competitive world, the world of organized crime, threats that share its narrow and a wider social environment. Global openness to corporate success is also the openness to the risks in which, understandably, it must enter. The emergence of business units outside the state borders and state systemic measures of the covered security challenges naturally imposed the management on the topic of protecting the value of business systems in a new context. These requirements are set, it is understood, and the legal framework, because the social risks and business risks in the same chain of causes and consequences of the contemporary risks and threats brought about by globalization and transition.<sup>2</sup> The role in such situations should take on crisis management as a special function within a particular company's business.

## **2. Corporate safety - term and functions**

Unlike the prehistoric tradition, the creation of the property and corporation institution as a community of people, whose care was taken care of by members of the corporation, in the historical era, with the development of social relations and the emergence of the state, security and protection became a function of the state. The state becomes responsible for the organization of forces and means of protecting property and proclaimed values of people in the community, and then an

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<sup>1</sup> Stajić, Lj., Challenges of corporate security in the light of modern understanding of security, Proceedings, Faculty of Legal and Business Studies, Novi Sad, 2008., p. 54-70

<sup>2</sup> Nešković, S., Korporativna sigurnost, u: Bezbednost i reforme u Srbiji, Beograd: Institut za političke studije, 2006, p. 47.

interpretation of the state of security in the state and in the society. The history of corporate development indicates that its nature of the organization and internal relationship has changed with the development of the human community, but that through time it has retained interest as a binding tissue for all members in it.<sup>3</sup> However, interest did not only retain a binding function for membership of the corporation, but imposed a need for protection, and as a state of expression defined the security of the corporation.<sup>4</sup> Today's corporations, such as, for example, a state, a union, a university, a company with limited or unlimited liability, joint stock companies, are regulated by law, recognized by law and can act as persons when it comes to contracting, protection of different interests, values and the like.

Thus, in a wide range of elements that structure the interests of contemporary corporations, it is not only gratifying to talk about economic ones, but also about other elements that mark its state, such as the identity of the corporation. It is important to speak about the identity of a corporation as a value that is protected, because it understands the notion of corporate security as a set of elements in a structure of interests that express security as its condition. This means about corporate security you can speak only when it comes to the protection of all elements in the structure of interests of the stakeholders of the corporation in relation to the sources of challenges and threats, whether internal or external. At the same time, corporate security is an expression of the firmness of the policy in the corporate social

relationship that it portrays as responsible to both itself and the environment.

The scope of the modern corporate security function is multidimensional, and can often vary from country to state in accordance with applicable legal regulations. In addition to the legal framework, the scope of corporate security is conditioned by the company's economic branch, the dilemma of its business processes, the dislocation of assets, the number and structure of employees, the level of information technology representation in business activities, and more. Corporate security, among other things, deals with the protection of company values from traditional forms of endangering and alienation of property by third parties, but also by employees who are collectively classified as criminals. These activities of corporate security are called traditional because they have not changed much of their operation since the creation of the function of corporate security itself, the only way that the way of manifesting the manifest forms of these criminal acts has been modified over time in accordance with the technical and technological progress of the society as a whole. The causal and consequential connection also transformed the systems of physical and technical protection into the forms we know today. In addition to the aforementioned corporate security features, complex systems and functions have been developed over time, which are considerably more sophisticated in their characteristics. Checking CVs for candidates, protecting against sabotage, keeping business secrets, protecting

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<sup>3</sup> Marković, S., *Corporate and Corporate Security*, Faculty of Law and Business Studies dr Lazar Vrkatić, Novi Sad, 2013, p. 14.

<sup>4</sup> Trivan, D., *Corporate Security*, Dossier Studio, Belgrade, 2012, p. 37

information systems, preventing and detecting corruption and money laundering are just some of the areas that cover the scope of contemporary corporate security.<sup>5</sup>

The organizational structure of large, often international companies, is conditioned by a large number of factors concerning diversification of its business activities, territorial representation and functional diversity of specific business activities. If the company is highly territorially dissolved, present on a large number of national markets, it certainly applies one of the forms of geographical organizational structure, where business is divided among regions that further include local markets. If it is the case that the type of business the company deals with is more closely related to the functional nature of the business activity than the market representation from the geographical aspect, then the organizational structure is adapted to the main functions of the company: production, research and development of new products or services, planning. In any applied model of the company's organizational structure, corporate security finds its place, given its role, but it is not possible to speak of a previously known position of a function within the company.<sup>6</sup> It is customary that there is an established corporate security function at the company's headquarters, and then, depending on the type and form of business, the further organizational arrangement of the corporate security function depends. It is important to note that corporate safety as a management function is a social (business) activity since it meets the general requirements of every social activity.

As noted in the previous section, corporate security services were changed and modified in time in accordance with current forms of threat, but jurisdiction remained the same. Namely, the main task of the corporate security sector is to protect the property, persons and business of companies in order to help achieve company goals from the aspect of security, and for that reason the competence of the function itself remained the same from the moment it was created to date. On the other hand, changes in the security environment, largely conditioned by broader socio-political and economic processes, have largely changed the scope of work itself within the function of corporate security.

Globalization has changed the structure and pace of corporate activity, there has been a saturation of traditional markets that directs companies to operate in risky markets. It is clear that the conditions in modern business circles are changing rapidly, and especially under the influence of the advancement of information and communication systems. This change in the business environment has also directly affected the changing security challenges, and the corporate security sector, like other company functions, has been transformed in line with current events. The function of private security that includes corporate security activities, according to Mare and McKim, are: physical protection, which is a low-risk job, includes property security, loss control and access control to objects and data; security services, which represent medium-risk jobs (parabolic activities that take police character), include active crime

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<sup>5</sup> Trivan, D., *Corporate Security*, Dossier Studio, Belgrade, 2012, p. 40

<sup>6</sup> Murray, T., McKim, E., *Police and the private security sector: What brings the future ?*, *Journal of Security* 4/03, Belgrade, 2003, p. 637.

prevention, limited patrols, the application of local legislation on the basis of contracts with local authorities; private investigations, which include civil and private investigations, surveys, checks of candidates for admission to employment; Corporate security, which represents the protection of complex operations, the prevention of crime against corporations and internal investigations, includes the work of agents employed by large corporations and criminal investigations, which include investigating fraud and suspicious business transactions, include complex tasks that typically require specialist training.

Corporate security does not abandon traditional private security services, which are now mostly ordered by specialized private security companies, but it is also responsible for a wider range of sophisticated tasks. Contemporary corporate security activities include measures and actions for detecting and preventing: bribery, corruption, industrial espionage, environmental incidents, misuse of money, money laundering, mobbing, as well as information security protection activities, crisis management operations, risk management, development of plans for business continuity in case of major incidents and other related areas. These areas of functioning of the corporate security function are well known today, and thanks to seminars and expert meetings in this field, knowledge and expertise is shared between experts.<sup>7</sup> Today, the underlying problem is to make corporate security more efficient, and what safety managers need to pay attention to. The

corporate security function must expand its operations beyond the boundaries of the traditional security portfolio in areas that include business continuity, business reputation, risk management, corporate accountability, which creates additional pressure on management emphasizing the importance of networks and changing management skills.

### **3. Risks and security of business of companies**

The business project is analyzed and prepared in the present, and decisions about their implementation are can also be made at the same time, but the concrete realization of today's corporations' business is done in the future. After realization of a particular business venture, results can be expected and planned. This future is uncertain and unknown, so the expected results of the business are uncertain or risky. Corporate risk management is one comprehensive approach to risk identification and risk management in all aspects of business. Since each risk changes in terms of its impact and urgency, corporations should respond appropriately to ensure that any damage is limited and to explore all risk-taking options through the tracking of the "hole" in the market it carries new risks. Namely, the main feature of the successful operation of the corporation is its ability to anticipate global risks and to deal with them better than other similar organizations.<sup>8</sup> In this scenario, where the roles are very high,

<sup>7</sup> Trivan, D., Corporate Security, Dossier Studio, Belgrade, 2012, p. 48

<sup>8</sup> Avakumović, J., Risk management in modern business systems, Professional paper, Faculty of

Business Industrial Management, Belgrade, 2013, p. 92-103.

the role of "risk manager" or crisis manager becomes even more important. The focus on objectivity and professionalism has created a new image of the manager, which is now accepted as a person who deals with a very important activity that really has a great impact and leads to change.

The risk includes uncertainty and the probability that something unforeseen will happen and usually something we do not want and what we did not plan. Every business venture is risky. In the work of modern corporations, there are many issues that concern most of the stakeholders, among them few of them that are absolutely predictable and that can be planned and controlled to a certain extent, such as: the expected volume of production, overheads, the purchase price of raw materials and equipment, and dr. Other business variables are unpredictable and very difficult to control. These unforeseen risks are events in the market, that is, in a closer and further economic environment, which business owners can not have any influence, and perhaps insight. These are risks that may arise due to changes in the tastes and trends of the market, competitors' activities, changes in the monetary sphere (inflation, deflation, devaluation, revaluation, etc.), changes in credit policy (expansion or restriction of loans for procurement of raw materials and equipment and purchase of goods on credit), changes in local self-government (the closure of a factory, whose employees are the buyers of goods produced by the company), etc. 11 The operations of today's corporations have become very complex and responsible and its implementation has many risks, the

owners manage to overcome or their negative impact is reduced to as little damage as possible. Efforts and struggles to reduce and eliminate risks, to win and achieve the set goals are the ideas of leading the business of such companies.

The current security situation, and especially the security environment of large business systems, is characterized by the existence of a significant number of factors and the complexity of their relationships. Risks that are active in such a weapon, under the influence of the protection function or the advancement of technology and technology, often evolve into previously unknown forms of potentially compromising company interests. The objective of risk management is to ensure that the uncertainty that the risk carries with it does not lead to a situation that would deviate from the defined business objectives. Most authors agree that the risk is an opportunity or a measure of probability of an event that may have consequences on people's lives, property and business of companies and organizations. At risk is any possibility in a particular system that can with certain probability cause an unexpected change in quality, that is, change or loss of the system.

Contrary to the rooted view, the risk is only a negative phenomenon, i.e. activity with negative connotation, the effects of risk can have positive and negative effects. In general, the consequences relate to possible chances and opportunities, or, on the other hand, threats and hazards to persons, assets and business of the company.<sup>9</sup>

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<sup>9</sup> Keković, Z. etc., Risk assessment in the protection of persons, property, and business, Center for Risk

Analysis and Crisis Management, Belgrade, 2011, p. 25.



The organization is obliged to take the necessary measures and actions in order to adequately manage the risks in terms of preventive action, neutralization of risks, reduction of negative effects of risks, transfer and acceptance of risks depending on its appearance, duration and intensity of manifestation. The primary role of risk management is to ensure an uninterrupted continuity of the business system in the event of the occurrence of the negative effects of particular risks. In particular, the function of the function is to pre-arrange, prevent, reduce or accept the risk in a manner that will not violate business processes in the company, while respecting the general principles of economic viability. With their specificities and different modes of operation, we identify five types of risks: a clear risk (whether insecure or not, and not exclusively external to the moral hazard), market risk (differences in the price of goods, different exchange rates, return on investment), common risk (probability of usual, recovery rate, exposure to usual), operational risk (employee errors, fraud, information system decline), liquidity risk (risk of non-availability with sufficient amount of funds necessary to service current financial liabilities without affecting price increases; transforms into a common risk).<sup>10</sup>Everybody, both citizens and organizations, has been affected by the work of different types of risks. From the perspective of profitable organizations, in addition to the basic principles of risk management, the need is also to define in advance the responsibility for the identified risk. This is especially important given the

economic impact of possible losses, as well as the need to make such issues possible in the company's budget for the forthcoming period.

#### 4. Crisis management

Crisis management is a process that protects the organization from certain upcoming changes that threaten its survival and vital interests. Each crisis has three basic common elements: a threat to organization, a surprise element and a short decision-making period.<sup>11</sup>

Unlike risk management that involves estimating potential threats and finding the best solutions to eliminating or bypassing hazards; in crisis management, organizations have already faced a threat and have to respond to all phases of its achievement, counting on the recovery phase. The company's success in dealing with different events will depend on the quality of its crisis management team, as well as on the well-made collection and analysis of information. Modern business inevitably imposes an obligation on the owners of capital to establish crisis management groups or departments in their companies, thus ensuring sustainable development in the moments of complex internal and external changes. The ability of leadership, personality stability and determination requires the skills that a manager wants to manage the crisis needs. However, for an organization, it is not enough to have only one capable and trained manager capable of dealing with crisis and emergency situations, but having a well-established and teamed up team

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<sup>10</sup> Keković, Z. etc., Risk assessment in the protection of persons, property, and business, Center for Risk Analysis and Crisis Management, Belgrade, 2011, p. 41-42.

<sup>11</sup> Ristić, D., et al., Strategic Management, Cekom books, Novi Sad, 2009, p. 345

characterized by high organizational performance and ability to work under extreme pressure. It is also necessary that all potential team members be tested in simulating a crisis situation in order to assess their reactions in unforeseen circumstances and the selection of executives who can implement crisis management measures.<sup>12</sup>

The crisis is defined as an unwanted incident, process or circumstance in which the key values of an organization or system are endangered. The crisis can affect people, the environment, technological processes, property or other values, and during its duration, which is always time-limited, can cause damage with different consequences. In everyday expression, the notion of crisis is often identified with similar and somewhat complementary notions, such as risks and threats, although essentially, it represents a higher level in relation to the above terms.<sup>13</sup> Namely, the potential risks and threats that are numerous in the corporate environment can, in certain conditions, demonstrate their actions in the form of a particular threat to the organization.

By putting danger and endangering the value, there may be a crisis over an organization that threatens to disturb the previous system of work and regular business activities, endanger human lives, property or corporate reputation for a certain amount of time. For this reason, in the form of a subsystem of corporate

governance, crisis management appears as an attempt to crash controls, to neutralize the negative consequences, and to successfully implement the organization from a crisis period.

Based on the above, it can be concluded that the three main stages of crisis management are distinguished by their characteristics: control of the existing situation, neutralization or reduction of negative consequences, and leading the organization in order to emerge from the crisis.<sup>14</sup> The crisis can occur due to the operation of various threatening factors. The most common, emerging forms of threatening factors can be financial, legal, political, technological, procedural or security.

Also, the crisis can also occur due to the effects of natural disasters or other forms of "force majeure". The crisis arises from the operation of various types of risks that originate from the aforementioned areas.

Action in the event of a crisis, given the limited time frame and importance of the entire process per company, requires appropriate preparation. Social security standards recognize the crisis as a sensitive period in the business of each organization, and it is therefore trying to define the way the organization and its representatives work in the event of a crisis outbreak.

International standardization in the field of social security aims to develop the capacity of the crisis management company and

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<sup>12</sup><http://www.absolutsupport.rs/bezbednosni-konsalting/krizni-menadzment.html#sthash.tdEHnKhv.dpuf>, date visits 18.11.2016.

<sup>13</sup> Anđelković, S., Corporate Security as a Factor of National Security, Faculty of European Legal Studies, Proceedings, Novi Sad, 2015 p. 111-134.

<sup>14</sup> Anđelković, S., Corporate Security as a Factor of National Security, Faculty of European Legal Studies, Proceedings, Novi Sad, 2015 p. 111-134.

enable the continuation of economic and business activities of the community in crisis conditions, through the improvement of technical, human, organizational and functional interoperability among all stakeholders with a view to preparedness for crisis situations and an adequate response to them.<sup>15</sup> It was mentioned that the improvement of connections (technical, human, organizational and functional) is a prerequisite for the process of crisis management planning and the establishment of a crisis plan. Its activity is an administrative framework for directing the organizational capacities of the company for successful overcoming and emerging from the crisis. The plan aims to define and determine the crisis headquarters, procedures, competencies and powers and channels of communication.

An organization that learns and bases its knowledge on previous events and empirical research has more chances to see in the future business on time, prevent, prevent or reduce the negative consequences of each potentially negative situation. Bearing in mind the scientific assumption that corporate security has a significant role in managing crises within the company, it comes to the conclusion that globally, in this way, it is partially managed both by economic and social crises.

The objective and basic function of crisis management is to manage and monitor the implementation of plans and procedures in the event of a crisis. He strives for the

organization to get out of the crisis for the shortest period of time and in the most efficient manner. The organization makes efforts to define the activity of crisis management in advance as far as possible in order to improve its efficiency in a limited time frame, stressful situation and pressures of different types. Crisis management involves a pre-arranged group of people with already elaborated plans for emergency situations. Plans in the event of a crisis should include the elaborated procedures that primarily promote the security of the person, property and business of the company; have the task of informing and preparing employees for specific activities and acting in times of crisis. Also, the crisis plan includes ways of communicating and informing all stakeholders, such as clients, suppliers, employees, local community, shareholders and the general public.<sup>16</sup> It is clear that in the event of a crisis, all potential crisis situations and their manifestations can not be foreseen, but it is important to point out that the plan can provide a rather precise guide to the general activities to be undertaken during the crisis.

Specifically, the crisis management plan most often consists of the following activities: prevention, preparation, response, reaction, and recovery. Crisis management consists of experts from various fields of the company, but also from the business and social environment. These are mostly managers of various business functions, primarily corporate security, and depending on the organizational structure of the company and the directors of the

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<sup>15</sup> Keković, Z. etc., Risk assessment in the protection of persons, property, and business, Center for Risk Analysis and Crisis Management, Belgrade, 2011, p. 83.

<sup>16</sup> Anđelković, S., Corporate Security as a Factor of National Security, Faculty of European Legal Studies, Proceedings, Novi Sad, 2015 p. 111-134

production, sales, logistics, human resources and debt sectors. Members of crisis management are predetermined for these jobs, especially the manager, who is usually elected from the ranks of operational managers with more work experience. Members can also be specialists from different fields and may be hired outside the organization.<sup>17</sup> The essence of effective crisis management is in good preparation, especially considering that crisis management is not organized after the crisis that has emerged, but it is convened after the emerging crisis. In addition to pre-arranged procedures and activities, this management is expected to periodically check the training. In this way, checking the training of members is done and checking the efficiency and the expediency of the existing procedures and instructions. Procedures need to be regularly updated to make them current in modern business processes.

## 5. Conclusion

Corporate security is today organized as a form of conventional security, which protects the company and its overall value from destructive phenomena, which also manifests itself on the security of the state. Corporate security as an independent business function within the organizational structure of large business systems, aims to contribute to the realization of company interests through the activities of protecting the person, property and business of the company. Its place within the national security system, corporate security is realized in two ways. Primarily, performing its basic function of protecting large (often

multinational) companies, the level of security of the local community and society in general is also increasing. Also, the indirect impact on increasing the economic safety of society affects preventively the realization of socio-political and, hence, security stability within the state. On the other hand, having in mind the ownership-organizational structure, corporate security belongs to the private security segment. In this way, it is normatively recognized and accepted as part of the overall national security system. If the company's social responsibility is viewed through the prism of the function of corporate security, the conclusion is that increasing the level of safety of economic entities as a whole, contributing to the overall level of security of society.

The scope of the contemporary function of corporate security in relation to its beginnings varies widely. The presence of the corporate security sector within the organizational structure of large business systems, its scope that extends through almost all segments of the company, the availability of a large number of tools and methods, as well as the fight against an even greater number of modern security challenges, threats and risks, is characterized by the contemporary function of corporate security as we know today. In the effort to adequately and clearly see corporate security, as well as its place and role in modern security and business relations, crisis management appears as a factor in regulating possible security risks for companies today.

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<sup>17</sup> Ristić, D., et al., Strategic Management, Cekom books, Novi Sad, 2009, p. 348.

Considering the corporate security in the Western Balkans, it can be said that there are countless controversies in its perception and implementation. The biggest problems are the lack of systematic legal acts, but also the lack of awareness in most companies of the necessity of functioning an effective corporate security concept. It is necessary to improve the normative and security and technological aspects of data processing and protection in legal entities, problems and forms of security threats that companies, institutions and the state as a whole meet. It is also necessary to upgrade existing knowledge and practical analyzes in the field of business secrets, personal data and other data related to the work of companies and institutions, that is, presenting general normative, security and technological prerequisites for business continuity. Establishing permanent education of management and employees in the field of corporate security and raising security culture represents the essential obligation of each company and society as a whole.

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# STATUS AND ANALYSIS OF SCIENTIFIC JOURNALS OF DIFFERENT CATEGORIES WITHIN SSCI CITATION DATABASE

Hon.D.Sc. Predrag Dašić, email: [dasicp58@gmail.com](mailto:dasicp58@gmail.com)

**Abstract:** One of the main citation databases (CDB) in the world are SCI-E in the field of natural and applied scientific disciplines, SSCI in the field of social scientific disciplines and A&HCI in the field of art and humanitarian scientific disciplines. For 2015 year, within SCI-E all scientific areas of social scientific disciplines are classified in 177 categories, and within SSCI all scientific areas of social scientific disciplines are classified in 57 categories. In the paper is given an attempt to explain all of the citation databases, to describe the ways for determining Journal Impact Factor (JIF) and to list other bibliometric indicators for the assessment of journals, states, regions, universities, faculties, departments and individuals. Further on, trend analysis is given for number of journals (NoJ) for five different categories: "Economics", "Law", "Psychiatry", "Psychology, Experimental", and "Social Work". within SSCI for period of 1995-2015. Highest increase of number of journals for period of 1995-2015 for five listed categories within SSCI had, also, category "Economics" with chain growth index (CGI) of 242,96%.

**Keywords:** Bibliometric analysis, citation database (CDB), Social Science Citation Index (SSCI), Journal Impact Factor (JIF)

## 1. Introduction

An old saying is known, which says: "It does not matter how much you jumped, but how much it was measured." It's similar in science: "It does not matter how much your scientific contribution is, but how it is, or how much it is estimated." For these reasons, in many countries of the world, criteria for evaluations and quantitative expression of scientific and research results of researchers and scientists have been adopted. Results of scientific research, or Contributions to science, countries, regions, universities, faculties, departments, institutes and other scientific and educational institutions and / or individuals, based on world-accepted standards, can be classified into several categories or groups:

1. Scientific monograph and monographic study of international or national importance (author, author of the chapter and / or editor);

2. A book, textbook and manual of international or national importance (author, author of the chapter and / or editor) (this category has very little or no value in the field of scientific-research results and great value in the field of educational results);

3. Thematic collection of papers, encyclopedic, bibliographic, scientific-lexicographic and cartographic publications, translation of scientific publications, critical publications of scientific material, etc. of international or national importance;

4. An article in a journal of international or national importance;

5. Editor and chief and guest editor in a journal of international or national importance;

6. Proceedings from an international or national assembly (lecture by invitation printed in full or printed in a statement, press release presented in full or printed in a statement, authorized discussion, editor of the Proceedings);

7. Technical and development solution, innovation, new product or technology,

software, industrial prototype, new material, new algorithm, new method or methodology, new genetic probe, a new production line, a new laboratory plant, a new experimental facility, a new technological process, a standardized or certified instrument, and so on. at the international and national level;

8. Patent, realized variety, race or strain at the international and national level;

9. Architectural, construction or urbanistic work, study, expertise based on scientific-research methodology, author's exhibition, curatorial work, etc. at the international and national level;

10. Other publications (tests, questionnaires, surveys, etc. based on scientific-research methodology, if they represent a methodological innovation, technical report, working article, adopted standard)

However, the most dominant contribution to science, of course, has quotations from the above publications. A quotation is a shortened alphanumeric expression embedded in the body of intellectual work that designates a source of published or unpublished work for the purpose of granting recognition of the relevance of the work of another author to the topic of discussion at the place where the quote appears. Quotes have the purpose of maintaining intellectual honesty or avoiding plagiarism, as well as pointing to an original source of intellectual work or an idea. In this way, it is possible for the reader to independently determine whether the material supports the author's arguments in the presented way and to help the reader to assess the strength and validity of the material used by the author.

In the world, the most important contribution to science, in part of publications, are international scientific scientific monographs, articles in leading international journals (indexed in SCI-E, SSCI and A & HCI citation databases), technical solutions and patents.

For example, according to the "Rules on Procedure and Method of Evaluation and Quantitative Expression of Scientific Research Results of Researchers" (Official Gazette RS No. 38/2008 and Official Gazette of RS No. 24/2016) (within the M coefficient, groups of results M11, M12, M21a, M21, M41, M81 and M91-M96) of the Ministry of Education, Science and Technological Development of the Republic of Serbia (MPNTR) of these four categories are far more valued (they are evaluated with more scientific points) than the doctoral dissertation. Also, it has long been known in the world that several articles, from the same scientific field, published in reference international journals, are arranged and integrated into one whole, and applied and defended as a doctoral dissertation. Also, a number of national state academies of science and art made the decision not to receive members in their ranks who do not have a minimum value of citations (eg at least 100, 300 or even more citations) of their publications in leading international journals indexed in SCI -E, SSCI and A & HCI citation databases (CDBs). Or, e.g. ranking of universities according to ARWU; QS-WUR; THE-WUR; THE-QS-WUR; URAP; WRWU and the like. ranking methodologies, is realized exclusively based on the number of publications and the number of citations in leading international journals indexed in SCI-E, SSCI and A & HCI citation databases (CDBs) and the

leading international awards for scientific research work.

## 2. Citation database (CDB)

The Citation DataBase (CDB) or the reference or bibliographic database represents a collection of bibliographic and citation information about: article (article title, authors, author's institutions, abstract, keywords), basic information about a journal article (volume or year of publication journals, number of journals, year and / or month of publication, number of pages), article references, article quotations, indexed journals (basic information about the journal, magazine publisher, ISSN number), calculated bibliometric indicators for article, article authors and scientific journals indexed in that database (DataBases - DB), rank ranking in the category (Rank in Category - RiC), etc.

The world's most well-known citation databases (CDBs) are the ones that are written by Thomson Reuters Corp. - TR (Web site: <http://www.thomsonreuters.com/>), formerly known as the Institute for Scientific Information (ISI) (Website:). Depending on the field of scientific disciplines, Thomson Reuters Corp. the following three citation databases (CDBs):

- SCI (Science Citation Index) and SCI-E (Scientific Citation Index, Expanded) Citation Database (CDB) for the field of natural and applied scientific disciplines (available on the website: <http://thomsonreuters.com/science-citation-index-expanded/>) [1,5,11,12,30],

- SSCI (Social Sciences Citation Index) citation database (CDB) for the field of social science disciplines (available on the website: <http://thomsonreuters.com/social-sciences-citation-index/>) [6, 11.21] and
- A & HCI (Arts & Humanities Citation Index) citation database (CDB) for arts and humanitarian disciplines (available at: <http://thomsonreuters.com/arts-humanitiescitation-index/>).

The SCI-E and SSCI bases were originally created by Eugene Garfield in 1955 [14,19] and explained in his papers [14-19]. It was officially launched in 1964, for information on scientific journals from 1963, and included references from 1961 and 1962. Originally manufactured by the Institute for Scientific Information (ISI), now owned by Thomson Reuters Corp. Initially, about 600 scientific journals were included in SCI and SCI-E citation databases (CDBs), while 8802 scientific journals in the field of natural and applied scientific disciplines were included in 2015.

While initially in the SSCI citation database (CDB) involved about 200 scientific journals, in 2015, 3224 scientific journals were included in the field of social science disciplines.

Within SCI-E and SSCI citation databases (CDBs), all scientific disciplines are divided into categories or domains. Within the SCI-E citation database (CDB), for 2015, 8802 scientific journals were indexed, divided into 177 categories. Within the SSCI Citation Database (CDB), for 2015, 3224



scientific journals were indexed, divided into 57 categories. For both quoted databases (CDBs), for 2015, the total number of categories was 234.

Information from the SCI-E and SSCI Quotation Databases (CDBs) are published in the annual publications of Thomson Reuters Corp.:

- Journal Citation Report (JCR), for printed editions on both CDROM and DVD (<http://thomsonreuters.com/journal-citation-reports/>) and
- Web of Science (WoS), for on-line editions over the Internet and on-line service (Web site: <http://thomsonreuters.com/thomson-reuters-web-of-science/>).

In the world there are plenty of different citation database (CDB), such as:

- Scopus (website: <http://www.scopus.com/>) [30];
- GS (Google Scholar) (Web site: <http://scholar.google.com/>) [25];
- MEDLINE (Medical Literature Analysis and Retrieval System Online) (Web site: <http://www.nlm.nih.gov/medlineplus/>);
- PubMed (Public / Publisher MEDLINE (Medical Literature Analysis and Retrieval System Online)) (Web site: <https://www.ncbi.nlm.nih.gov/pubmed/>);
- ProQuest (Web site: <http://www.proquest.com/>);
- ProQuest-CSA (ProQuest Cambridge Scientific Abstracts) (Web site: <http://www.proquest.com/>);
- CAS (Chemical Abstracts Service) (Web site: <https://www.cas.org/>);
- IEEE-Xplore ili IEEE-Xplore-DL (Institute of Electrical and Electronics Engineers Explore Digital Library) (Web site: <http://ieeexplore.ieee.org/>);
- ACM-DL (Association for Computing Machinery Digital Library) (Web site: <http://dl.acm.org/>);
- БД-ВИНИТИ-РАН ili VINITI-RAS-DB (Rusija) (База данных Всероссийского института научной и технической информации Российской академии наук / All-
- Russian Institute for Scientific and Technical Information of the Russian Academy of Sciences of DataBase) (Web site: <http://www2.viniti.ru/>);
- RSCI (Russian Science Citation Index) (Web site: <http://elibrary.ru/>) [20];
- KCI-KJD (KCI (Korean Citation Index) KJD (Korean Journal Database)) (Web site: [http://wokinfo.com/products\\_tools/multidisciplinary/kci\\_kjd/](http://wokinfo.com/products_tools/multidisciplinary/kci_kjd/));
- DOAJ (Directory of Open Access Journals) (Web site: <https://www.doaj.org/>);
- IC (Index-Copernicus) (Web site: <http://en.indexcopernicus.com/>);
- SciELO (Scientific Electronic Library Online) (Web site: <http://www.scielo.org/>);
- CSSCI (Chinese Social Sciences Citation Index) (Web site: <http://cssci.nju.edu.cn/>) [26,29];
- TSCI (Taiwan Sciences Citation Index) (Web site: <http://tsci.scholarworld.org/>);
- TSSCI (Taiwan Social Sciences Citation Index) (Web site: <http://ssrc.sinica.edu.tw/>) [26];
- THCI (Taiwan Humanities Citation Index) (Web site: <http://www.hrc.ntu.edu.tw/>);

- SCIndeks (Serbian Citation Indeks) (Serbia)(Web site: <http://scindeks.ceon.rs/>) [28] itd.

The evaluation and evaluation of scientific journals within the SCI-E, SSCI and A & HCI citation databases (CDBs) is determined based on the impact factor of the journal or the Impact Factor (IF) proposed by Eugene Garfield in 1955 [14 - 19]. In papers [12-13, 22- 24], the analysis of JIF and top-quoted articles for different scientific fields is given.

The JIF is a numerical value that is determined as the average number of citations that the journal accomplishes in the Thomson Reuters Corp.: SCI-E, SSCI, and A & HCI cited databases (CDBs) during the current year for works published in the previous two years. Based on the JIF, an impact factor for magazines is determined, on the basis of which the grade is determined, and therefore categorizes and determines the ranking and quality of the journal. It is determined and published, for each year, by the end of June of the following year, by Thomson Reuters Corp., within the JCR publication and WoS online service. Later, several different variants of bibliometric indicators for measuring the performance of journals, articles, science and educational institutions and authors were defined. Bibliometric indicators using SCI-E, SSCI and A & HCI citation bases Data (CDB) are [2,4,7-10]:% ACI, 5YIF or IF-5, AI or AS, CHL, EF or ES; h-index, IFwJSC, IFwoJSC, II, NEF and the like. Bibliometric indicators using the Scopus citation database (CDB) are [2,4,7-10]:% NC, h-index, IPP, SJR and SNIP.

### 3. Data and methods

Data used for the analysis of five categories: Economics, Law, Psychology, Psychology, Experimental, Psychology, Experimental, and Social Work / Social work "within the SSCI for the period 1995-2015 were taken from the JCR Social Science Edition. Table 1 shows the basic bibliometric indicators for the above five categories within the SSCI for 2015. The category "Psychiatry" / "Psychiatry" within SCI-E for 2015 has 142 journals and there are 139 magazines within the SSCI or a total of 200 different journals. In this analysis only 139 magazines within the SSCI for 2015 were taken into account (Table 1). For the analysis and graphic presentation of the results, standard methods of statistical and bibliometric analysis were used [2-4,7-10,27].

*Table 1. Basic bibliometric indicators for five categories: Economics, Law, Psychiatry, Psychology, Experimental, and Social Work within SSCI for 2015*

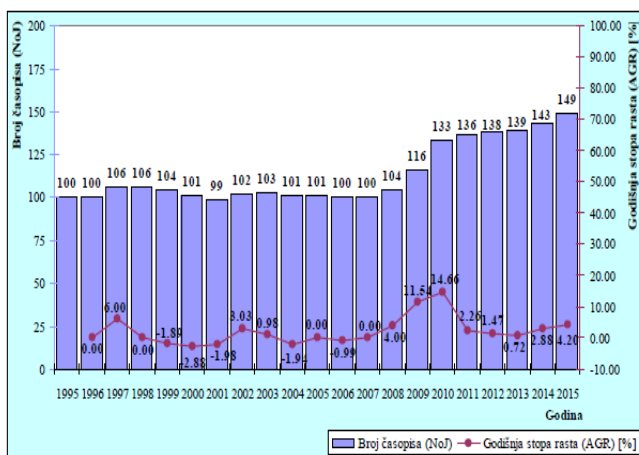
No.	Categorija	NoJ	Rang	A	Rang	TC	Rang	MedJIF	Rang	AggJIF	Rang	AggII	Rang
1.	Economics	345	1/57	17994	1/57	608521	1/57	0.829	46/57	1.336	34/57	0.298	38/57
2.	Law	149	7/57	4353	18/57	100076	24/57	0,841	45/57	1,171	43/57	0,447	15/57
3.	Psychiatry	139	9/57	11926	3/57	480539	2/57	1,737	4/57	2,988	1/57	0,649	2/57
4.	Psychology, Experimental	85	20/57	7065	10/57	320525	8/57	1,947	2/57	2,578	4/57	0,526	7/57
5.	Social Work	41	39/57	2165	39/57	45624	40/57	0.808	48/57	1.056	50/57	0.217	50/57

### 4. Results and discussion

In Figure 1, a graphic representation of the total number of scientific journals (NoJ) indexed in the SSCI citation database (CDB) and their annual growth rate (AGR) in [%] for the category "Economics" / "Economy" for the period 1995-2015. years. For the category "Economics" /

"Economics", the number of scientific journals for the period 1995-2015 increased by 203 journals (from 142 journals in 1995 to 345 journals in 2015), with a cumulative growth index (CGI) of 242.96% in compared to 1995, and had mainly a trend of increasing number of scientific journals, with the exception of 1996 and 2001 (Figure 1). The highest annual increase in the number of magazines in the category "Economics" was in 2010 for 58 magazines (from 247 magazines in 2009 to 305 magazines in 2010) or 23.48%, then in 2009 for 38 magazines or 18.18 %, then 1997, for 21 newspapers or 15.00% etc. (Figure 1). The only annual decrease in the number of magazines in the category "Economics" was in 1996 for 2 magazines, 1.41% and in 2001 for 1 magazine or 0.60% (Figure 1).

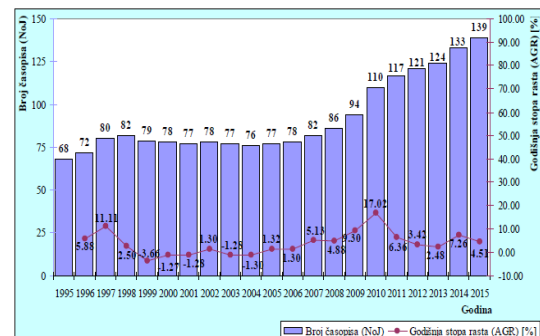
Figure 1. Graphic representation of the total number of scientific journals (NoJ) indexed in the SSCI and their annual growth rate (AGR) in [%] for the category "Economics" / "Economy" for the period 1995-2015.



In Figure 2, a graphic representation of the total number of scientific journals (NoJ) indexed in the SSCI quoted database (CDB) and their annual growth rate (AGR) in [%] for the category "Law" / "Law" for the period 1995-2015. years. For the category

"Law" / "Law", the number of scientific journals for the period 1995-2015 increased by 49 magazines (from 100 magazines in 1995 to 149 magazines in 2015), with a Cumulative Growth Index (CGI) of 149.00 % compared to 1995, and had mainly a trend of increasing number of scientific journals, with the exception of 1999-2001, 2004 and 2006 (Figure 2). The largest annual increase in the number of magazines in the Law category was in 2010 for 17 journals (from 116 magazines in 2009 to 133 magazines in 2010) or by 14.66%, then in 2009 for 12 magazines or 11.54 % etc. (Figure 2).

Figure 2. Graphic representation of the total number of scientific journals (NoJ) indexed in the SSCI and their annual growth rate (AGR) in [%] for the category "Law" / "Law" for the period 1995-2015



In Figure 3, a graphic representation of the total number of scientific journals (NoJ) indexed in the SSCI citation database (CDB) and their annual growth rate (AGR) in [%] for the category "Psychiatry" / "Psychiatry" for the period 1995-2015. years. For the category "Psychiatry" / "Psychiatry", the number of scientific journals for the period 1995-2015 increased by 71 magazines (from 68 magazines in 1995 to 139 magazines in 2015), with a cumulative growth index (CGI) of 204.41% in compared to 1995, and had mainly a trend of increasing number of scientific journals, with the exception of 1996-2001, 2003 and 2004 (Figure 3). The highest annual increase in the number of magazines

in the category "Psychiatry" was in 2010 for 16 magazines (from 94 magazines in 2009 to 110 magazines in 2010) or 17.02%, then in 2014 for 9 magazines or 7.26 %, then 1997 and 2009, for 8 newspapers or 11.11% and 9.30% retrospectively, etc. (Figure 3).

Figure 3. Graphic representation of the total number of scientific journals (NoJ) indexed in the SSCI and their annual growth rate (AGR) in [%] for the category "Psychiatry" / "Psychiatry" for the period 1995-2015.

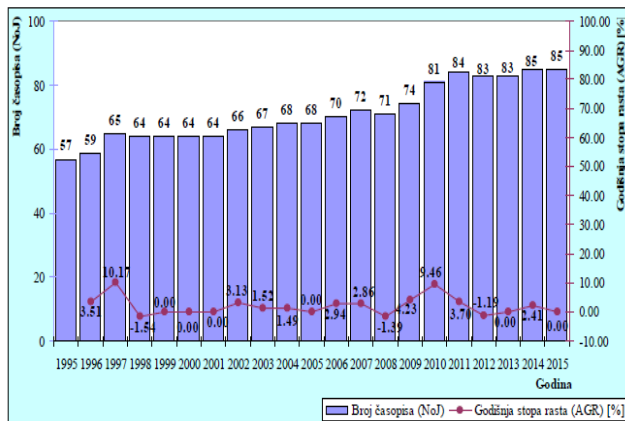


Figure 4 is a graphic representation of the total number of scientific journals (NoJ) indexed in the SSCI citation database (CDB) and their annual growth rate (AGR) in [%] for the category "Psychology, Experimental" / "Psychology, experimental" 1995-2015. years. For the category "Psychology, Experimental" / "Psychology, the experimental" number of scientific journals, for the period 1995-2015, it increased by 28 magazines (from 57 magazines in 1995 to 85 periodicals in 2015), with cumulative growth index (CGI) from 149.12% in relation to 1995, and had a mainly upward trend in the number of scientific journals, with the exception of 1998, 2008 and 2012 (Figure 4). The highest annual increase in the number of magazines in the category "Psychology, Experimental" was in 2010 for 7 journals (from 74 magazines in 2009 to 81

magazines in 2010), or by 9.46%, then in 1997 for 6 magazines or 10 , 17%, etc. (Figure 4). Figure 5 is a graphical representation of the total number of scientific journals (NoJ) indexed in the SSCI citation database (CDB) and their annual growth rate (AGR) in [%] for the category "Social Work" / "Social work" for the period 1995- 2015. years.

For the "Social Work" / "Social Work" category, the number of scientific journals for the period 1995-2015 increased by 21 journals (from 20 magazines in 1995 to 41 magazines in 2015), with a Cumulative Growth Index (CGI) of 205.00 % compared to 1995, and had a trend of fluctuating number of scientific journals (Figure 5). The highest annual increase in the number of journals in the Social Work category was in 1997 for 9 journals (from 23 magazines in 1996 to 32 magazines in 1997) or 21.88%, then in 2010 for 7 magazines or 21.88 % etc. (Figure 5).

Figure 4. Graphic representation of the total number of scientific journals (NoJ) indexed in the SSCI and their annual growth rate (AGR) in [%] for the category "Psychology, Experimental" / "Psychology, experimental" for the period 1995-2015.

Figure 5. A graphic representation of the total number of scientific journals (NoJ) indexed in the SSCI and their annual growth rate (AGR) in [%] for the category "Social Work" / "Social work" for the period 1995-2015.

## 5. CONCLUSION

For 2015, within the SCI-E, 8802 journals were divided into 177 categories, and within the SSCI 3224 were divided into 57 categories. Within SCI-E and SSCI, 11393

different journals have been indexed, which means that 633 journals are located within both quoted database (CDB). The top ranking category of the five listed was the Economics / Economics category, which according to the magazine number for the entire period 1995-2015, was always ranked as the first (top-one) within the SSCI, and also with the largest increase in the number of scientific newspapers for the period 1995-2015, with a cumulative growth index (CGI) of 242.96%.

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## **NORMATIVE FRAMEWORK CORPORATE SECURITY IN SERBIA: CURRENT SITUATION AND PROSPECTS FOR DEVELOPMENT**

Prof. dr. Milan Milošević, email: milanmilos@gmail.com

**Abstract:** *It is indisputable that the optimization of normative regulation of corporate security significantly contributes to the development of a market economy, but also the realization of security and democracy in society as a whole. This is especially true in the field of normative regulation of private security as an essential segment of corporate security. It is also known that the Republic of Serbia in the long run was the only country in the Western Balkans and the wider, which the field of private security is not formally regulated by law. The adoption of the Law on private security in 2013 was the first, and most important step in overcoming the aforementioned situation, which existed for two decades. Meanwhile, in this area and adopted a series of bylaws, but are still disputed their scope. It is unclear, namely, whether the current legal regulation really improved standards for the protection of persons and property, that the holders of private security in practice encourage the professionalization and specialization of personnel, and the standardization and modernization of means and equipment.*

**Keywords:** *Corporate security, private security, normative regulation, professionalization, standardization, Republic of Serbia*

## 1. Introduction

It is well known that the process of privatization of the security sector in the Republic of Serbia simultaneously took place in two parallel directions. Namely, "privatization from the bottom" was carried out (bottom up) because the state did not have the power to provide the necessary level of security to all its citizens and business organizations, in parallel with it, and "privatization from the top" (top-down) the state delegated some of its responsibilities to private actors, mainly private security companies. In both cases, a free and economically justified choice of an individual or company is allowed to enjoy a greater degree of security than the state itself provides for all citizens.

Privatization of the security sector in the Republic of Serbia took place in parallel with the transition process, since the opening of the country and the arrival of foreign capital conditioned the existence of private security as a supplement to the activities of state bodies. Namely, in parallel with the transformation of social property and the reduction of the share of state property, the competencies of the police in the public services sector were reduced, which led to the strengthening of the private security sector. The public sector has been increasingly selective since then, focusing on key sources of security threats, while society is increasingly left to protect itself from other "less dangerous" phenomena. In any case, the scope and responsibilities of the private and state security sector must be clearly defined and delineated.

In this regard, it should be emphasized that the legal system of the Republic of Serbia did not adequately address issues related to the specifics of the private security sector, as there was no systematic law that would fully regulate corporate security. This is a period starting from 1993 (when the 1986 Law on the Social Self-Protection System was abolished) until 2013 (when the Law on Private Security was adopted as the most important legal act in this field). In the meantime, the Law on Detective Activity has been adopted, as well as a whole series of co-ordinated by-laws, but their controversies are still controversial.

It is unclear whether the current legal regulation has realistically improved security standards, especially those that in practice encourage professionalization and specialization of personnel, that is, standardization and modernization of assets and equipment. This is especially true for private security, since the protection or self-protection activity is the most important segment of not only corporate security (integrated security that includes fire and protection protection, safety and health protection at work and other components), but also the private security sector in continent. Finally, it is known that private security is an integral part of the organization of work and work process, and that normative regulation in this case appears as a basis for efficiency, but also as a limit of the operation of its holders - internal security services and security agencies.



## 2. Corporate security and private security

Corporate security is, by definition, an integral security that includes all aspects of security and protection, including information gathering and risk assessment, fire, explosion and damage protection, and occupational safety and health, etc. In spite of this, corporate security can not be identified with private security, which, by its very nature, is a much broader concept.

On the other hand, corporate security can not be equated with the concept of private security, and especially its contents can not be identified with the tasks and tasks of internal security services in compulsory secured facilities, that is, in public companies and large technical-technological systems. Accordingly, the concept of corporate security is fundamentally different from the concept of "private security services" in the sense of the standard SRPS AL2.003: 2010.

Namely, corporate security must include all other aspects of security and protection, including information gathering and risk assessment, fire, explosion and damage protection, occupational safety and health, etc. Pursuant to the guidelines of the European Union, it is necessary to integrate security and security activities in business entities, and above all in large technical and technological systems. It is considered that merely linking all such business, either in the same organizational unit or in the form of management by a single security manager, contributes to a more effective

organization, coordination and control of the given tasks, and therefore to the rationalization and improvement of the overall business.<sup>18</sup>

There is no doubt that private security jobs, that is, protective, or self-protection activity, represent the most important content of corporate security. In doing so, private security can be defined as analyzing, detecting and preventing potential hazards and unlawful actions that impair dignity and jeopardize the life and physical integrity of persons, or reduce the value of the property that is the subject of security. This field encompasses a number of normative, operational, informative and educational-educational actions and measures that are being established: organization of physical and technical security of persons, facilities and other property; the functioning of the physical and technical security service; Personnel composition of the physical and technical security service; equipment with the necessary means and equipment; training and professional training of perpetrators of physical and technical security of persons, objects and other property, etc.

The field of private security involves the engagement of specialized workers in the implementation and expert control of security protection, the implementation of special measures in the storage and storage of weapons and ammunition, physical and technical protection of facilities - especially the premises where vital plants and facilities are located, the system of technical security of buildings and space ,

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<sup>18</sup> More details see: A. Bryden & Caparini M. (2006), *Private Actors and Security Governance*: LIT / DCAF; Ostojić A. (2003), *Law on Private Protection with Commentary*, Zagreb: IPROZ;

Andelković S. (2009), *Need for regulation of the private sector security*, *Security Review*, 3 (4), 29-35.

the issuance of official IDs and security documents, as well as special security in the keeping and transport of money and valuables ("management values"), and the like.

More specifically, the system of physical and technical security consists primarily of physical security, which includes the protection of facilities, the protection of persons and the protection of public gatherings. Equally, this also applies to technical protection that involves the use of internal television (the so-called closed circuits system), the use of anti-jam and alert systems, the use of special X-rays and detectors for detecting weapons and explosives, maintaining special-purpose links (telephony and radio link) satellite tracking (GPS).

Technical protection also includes "management values" as well as "management from a control center". Value management categories are: value transport; Cash Center (place for safe deposit, protection, processing and distribution of cash in circulation on the market for commercial banks and the National Bank of Serbia); handling ATMs for financial institutions and shops and information and communication system for cash management.

Management from the control center is defined as organized monitoring from remote locations and management of alarm received from alarm systems built into stationary and / or mobile facilities and / or attached to persons, as well as the organization of intervention by alarm using a patrol team in coordination with the competent public services. Its categories are: management from the control center by

providing stationary facilities, management from the control center by providing mobile facilities and management from the control center to the mobile intervention teams.

In the area of private security, another segment appears, which is entrusted to private entrepreneurs and agencies. Namely, the current practice and the needs of private property titles have led to the emergence and development of detective activity as an independent profession, whose general objective is to detect and prevent harmful occurrences and unlawful actions that violate dignity and endanger the life and physical integrity of persons, or reduce the value of the property that is the subject protection. The mentioned activity includes tasks of collecting and providing information in the field of private security, and its categories are: search for lost persons, activities of private investigators, detective activities in trade shops and activities of insurance agents.

### **3. State and problems of private security in the Republic of Serbia until 2013**

In practice, it is noted that states, corporations, international and non-governmental organizations, as well as individuals and communities, increasingly show confidence in the private sector and leave it to take care of their safety. According to the Confederation of European Security Services (CoS), in 23 member countries of this organization, which consists of EU member states and Turkey, there are currently 27,318 private security companies that employ over 1,200,000 people.

There is a small number of countries in the world in which the process of privatization of the security sector does not take place, and therefore the countries in South East Europe, including Serbia, "follow" this global trend. In fact, in this region, one of the most intensive processes of privatization of the security sector in the world was taking place (still taking place). It is thus estimated that just before the adoption of the Law on Private Security in Serbia, more than 580 independent private companies operated for security services and security services of large companies. Of this number, 60% dealt with physical and technical security, 15% performed money transport, while the activity of others was related to technological protection, installation of security and patrol systems.<sup>19</sup>

A 2011 report by the Confederation of European Security Services (CoESS) issued a comprehensive overview of private security services in the Republic of Serbia for the period from 2006 to the beginning of 2011. Thus, the annual turnover of the private security industry in 2010 amounted to EUR 180 million, with constant growth rates of this sector: 2007 (10%), 2008 (12%), 2009 (14%) and 2010 (20%) . However, in the conditions of the economic crisis, the annual turnover in the private security sector in Serbia is in decline and is now estimated at around 100 million euros.<sup>20</sup>

In this regard, it is considered that there are two important moments in the consideration of the current state of the private security sector in the Republic of Serbia. In the first place, this is the fact that Serbia has been the only state in the region of Southeast Europe for years, which has not been regulated by a special law of private security companies. Namely, since private companies providing security services at the same time are economic operators operating under the market rules, as well as those in the security sector that by their actions can influence the increase and decrease of the safety of citizens, the need for a special normative framework for these companies to participate freely in the market competition, while at the same time respecting minimum standards and human rights guarantees.<sup>21</sup>

On the other hand, the existing legislation on private security for two full decades has abundant voids and offenses, not only in terms of interpretation, but also in terms of application. In addition, certain issues related to the protection, that is, self-protection (and detective) activity were regulated by the Criminal Code; The Code of Criminal Procedure; The Misdemeanors Act; The Law on Public Order and Peace; The Law on Arms and Ammunition, the Law on Citizens' Assemblies; and others. The same applies to general and special internal legal acts of business and other entities related to the physical and technical security of persons, property and business (the so-called self-regulation, which

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<sup>19</sup> According to: Petrović P. (2001), Reserved domains as obstacles to the normative arrangement of the private security sector (working study), Belgrade: Belgrade Center for Security Policy, 11.

<sup>20</sup> Private Security Services in Europe - CoESS Facts and Figures, op. cit. pp. 103-106

<sup>21</sup> Maravic D. (2008), On the need for legal regulation of the private security sector in Serbia, Serbian Legal Review, 4 (8), 79-99.

appears in the form of rules, strategies, plans, decisions, procedures, etc.) .

The literature correctly pointed to the absurd situation in which the social practice of private security in Serbia went ahead of social regulation (in terms of norms and legislation). In the meantime, many private companies in this sector have obtained ISO certificates of standardization of their work. Although these standards do not apply in particular to the activity of private security, but to the service activity in general, this information, in fact, tells how much the owners of these companies have to care for their professional and quality performance.<sup>22</sup>

The same goes for the national standard for private security services, which are classified and categorized in SRPS A: L2.001, and adopted by the Standardization Institute of the Republic of Serbia in 2008. Although this standard has been applied selectively, there is no doubt that its use has contributed to establishing or checking the quality of the processes in which private security services are provided and used. Namely, the standard provides the basic elements that must be fulfilled by the organization that is the provider or beneficiary of these services - when it determines for the security service, or the insurer - when it concludes a contract for insurance against the estimated risk.

Indicators of positive trends in the development of private security in Serbia by 2013 include the association of subjects

of that sector on a guild principle, with the aim of more successful appearance on the market of security services, gaining a better image in the public and limiting negative external influences on private security. One of the first steps was the founding of the Group of Companies (later: Association of Enterprises) for physical and technical purposes within the Serbian Chamber of Commerce. In the meantime, some private security companies from the Republic of Serbia have joined the membership of two international voluntary regulatory mechanisms in the field of private security: the International Association for Personnel Security and Security Services (IBSSA) and the Code of Ethics of the American Society for Industrial Safety (ASIS), whose training and professional development programs are in line with international standards.<sup>23</sup>

#### **4. Current situation and problems of private security in the Republic of Serbia**

It has already been pointed out that after two full decades of hesitation, the National Assembly of the Republic of Serbia finally adopted the Law on Private Security as one of the most important legal acts in the field of corporate betability. After the adoption of this systemic regulation, the relevant by-laws in this area, which primarily relates to the regulations: on conditions and manner of implementation of physical and technical security; on the manner of training, the

<sup>22</sup> Davidović, D. & Kešetović. Ž. (2007), Professionalization and Partnership of the Public and Private Security Sector in Serbia - Preconditions and Obstacles, Science, Security, Police (NBP), 12 (3), 17 -32.

<sup>23</sup> SALW and Private Security Companies in South East Europe: Causation or Impact of Uncertainty ?, - UNDP Report and the Stability Pact for SEE (2006), Belgrade: Center for Small Arms Control in South-East Europe (SEESAC), p. 111.

program and the manner of taking the professional examination for the provision of security of persons and property; on the forms, contents and method of keeping records in the field of protection of persons and property; the content and appearance of the security officer's identity card; on the conditions of carrying out the tasks of escorting and securing money, securities, precious metals and other values; and similar.

It is indisputable that the current legal regulation of private security in the Republic of Serbia is contained in chapters III, IV and V of the Private Security Law, adopted in 2013 and amended in 2015 ("Official Gazette of the Republic of Serbia" No. 104/2013 and 42 / 2015). It consists, in general, of a total of 12 chapters, with the essential importance of the provisions regulating the manner of performing private security activities, including: physical protection tasks; security operations with weapons; technical protection tasks; planning, design, technical supervision, installation and maintenance of the technical protection system; tasks of providing transportation of money, value and other items; tasks of the regular service; control center, and self-protection activity (Articles 21-45 of the Law on Private Security).

Chapter V of the said Law also regulates the type of weapons that legal entities and entrepreneurs can use to perform physical protection tasks. The above-mentioned chapter of the law sets out in detail the manner of providing various private security activities, first defining the types of activities that a particular area of private security implies. This is accompanied by technical details, such as the characteristics

of special vehicles for the transport of money, value and other shipments; a suitcase for the transfer of money and valuable items for pedestrians; control center equipment and the like. It is also prescribed that private security operations are conducted in a manner that does not interfere with the work of state bodies and does not violate the peace of citizens, and that private security officers, who are employed as operators in the control center, are obliged to immediately inform the police about information indicating that a criminal offense is prosecuted *ex officio* or a violation of elements of violence.

The Law on Private Security prescribes the conditions that legal and natural persons should fulfill in order to be able to legally perform tasks in the domain of private security. Among other things, mandatory vocational training as well as the issuance of work permits (so-called licenses) are prescribed for companies, entrepreneurs and employees in this sector. Different types of licenses have been introduced in order to take into account the specifics of business. After successfully mastering the training it is necessary to pass a professional examination before the commission of the Ministry of the Interior of the Republic of Serbia, thus obtaining the conditions for obtaining a license for carrying out activities in the private security sector.

In this important segment of the implementation of the Law on Private Security, it is very late. Namely, by February 2016, 489 candidates passed the professional exam, and by the end of January 2016, they had 136 natural and two legal entities. This is a very small percentage compared to the estimated

number of over 30,000 persons currently employed in private security agencies in Serbia. Bearing this in mind, it is unrealistic to expect that the extended deadline for the implementation of this law (now 01.01. 2017) will be respected. There are also estimates that the process of training and licensing of employees in companies in this field could only be realized in the end of 2018.

In anticipation of the beginning of implementation in practice, the provisions of the Law on Private Security continue to operate under the conditions of the general legislation in force. Otherwise, data from the Statistical Office of the Republic of Serbia indicate that in the Republic of Serbia in 2013, 626 companies were registered for security services, with a total of 5127 employees. This data shows that the number of employees in these companies does not closely correspond to the actual state of the number of employees in the private security sector in Serbia. In fact, these are the persons that the owners of the companies reported to the tax and social authorities and for which all the prescribed benefits are paid (work, social security).

In the meantime, standardization in the field of private security has been upgraded in the Republic of Serbia. At present, the standard SRPS A.L2.002: 2015, Social Security of Private Security Services - Requirements and instructions for conformity assessment (replacing standard SRPS A.L2 .002: 2008), then standard SRPS A.L2.001: 2008, Social Security - Private Security Services - Vocabulary, as well as standard SRPS A.L2.003: 2010, Social Security - Assessment of risks in the protection of persons, property and

business . However, even after the adoption of these standards, as well as after the adoption of the Law on Private Security, the state of private security in Serbia did not change significantly. Thus, for example, labor costs and salaries of employees in the private security sector in Serbia remain among the lowest in Europe. In this respect, it is undoubtedly that only by the recovery of the national economy can an increase in the prices of services and labor be expected, provided that the appearance of unfair competition is eliminated. In addition, cooperation between public and private security actors in the Republic of Serbia is still not satisfactory. Namely, there is still no operational partnership built, there is no defined scope of cooperation, profit analysis, obstacle detection, barriers, model of partnership, model categories and application of best practice principles. The causes that do not allow the development of full scope and quality of cooperation are: lack of resources, lack of projects and programs, lack of commitment to support and support of higher levels of management, overregulation of social aspects of cooperation and underestimation of aspects of security as business functions.

## 5. Conclusion

Political and economic transition processes in Serbia have brought changes in the sphere of private security in general, especially in the sphere of securing persons, property and business. Over the last two decades, primarily due to ownership transformation and sudden increase in private property, the private security sector has grown from a secondary to one of the key subjects of protection of personal and property security. Such a condition

imposed the need for professionalization and standardization, but in the first place it imposed the need for a comprehensive and high-quality normative arrangement of this area.

The successive legacies of the normative disorder of the private security sector in Serbia, on the one hand, were derived from legal regulations made up of ten obsolete laws that did not recognize the specificities of private security. Namely, this regulation was part of Serbia's legal system, but did not regulate its security responsibilities and powers. That is why the establishment of security services in Serbia was the same as the establishment of any economic entity. On the other hand, security services firms, by adopting "positive practices" promoted by various international documents and organizations (CoESS, ASIS), have created a state of "actual self-regulation of business activity" by incorporating such experiences through their general acts.

Even after the adoption of the Law on Private Security, the state of private security in Serbia did not change significantly. It is characteristic that private high-security security service providers are still losing their jobs in the services market due to unfair competition, which has a cheaper contracting offer for lower quality services on the market. In practice, market reasons suppress the reasons for safety, that is, there is a "dumping" of labor costs. On the other hand, there may be competition between the state (MUP) and the private sector in the security services market, as the police can perform on the market by providing certain services offered by the private security sector - since the Regulation on types of services is enabled police to make additional resources using state resources.

It is rightly expected that the full implementation of the Law on Private Security will lead to the elimination of a significant number of companies that will not be able to comply with legal requirements for work. Some of the existing entities will have to either employ an additional number of staff or re-register with detective agencies, since a minimum legal minimum of ten full-time licensed officers is prescribed for the provision of physical security services. Finally, in order to successfully implement the functions of private security and to maximize their role in the security system of society, among other things, it is necessary to take the following steps: to ensure full standardization of security and protection services, incorporating positive solutions of foreign legislation; achieve full cooperation and determination of the responsibilities of the private and state security sector in order to achieve public interest in the long run; reach the required level of security culture in all categories of employees in the private security sector; ensure the continuous development of the mechanisms of supervision and control of the private security sector, and more.

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## **RELATIONS BETWEEN CORPORATE SECURITY IN REPUBLIC OF MACEDONIA AND THE NATIONAL SECURITY SECTOR**

**Prof. dr. Atanas Kozarev, email: [kozarev.atanas@yahoo.com](mailto:kozarev.atanas@yahoo.com)**

***Abstract:** The security of a state is a condition that includes all security institutions in the activities which are related to the absence of instability, a stable national security, human security, and moreover, including professionalism in the private security sector. In conditions of this kind, special relations between the institutions of the public (state) and private (where corporate security is included) security sector is established. These relations support the achievement of a strategic national interest defined in the key security documents. Relations between these two sectors are conveyed from a special legislative regime which is created to regulate their activities and to fulfill their authorization. Corporate security as a part of the private security sector, is an immensely important security dimension and if we take into consideration its importance, it gradually occupies an influential position in the overall social system. Security functioning of corporations of today appears to be a major determinant for the successful functioning of the security sector. Relations between the corporate security and state security sector are multidimensional and grasp attention in the academic, scientific and professional community. This article deals with a comparison between the normative, organizational and functional design of these two sectors as the best way to define their relations and to improve future relations.*

***Keywords:** National security, corporate security, regime, interests*



## 1. Introduction

In general, science and the academic community have the task of investigating and studying the relations between phenomena and institutions that are part of the social system and which are in the function of achieving their goals. The methodological approach enables the complex and multidimensional study of the relationships and relationships that exist between particular cases, phenomena and institutions. The science of science must enter the nature of special subsystems of the security system in order to define and explain their relationships and functioning. By extending the significance of security from traditional to non-traditional (non-state) areas and actors, the area of security intervention in the field of civil security has been expanded, and in the practice of modern states, state (public) and non-state (private) partnership is becoming more and more present. In addition, there is a growing commercialization and specialization of security services, in which, although the place and role of the state has not yet been questioned, it can be concluded that the security industry and the defense industry are part of the work.<sup>24</sup> Namely, more details are needed to elaborate concepts of public and private, so that the very conceptualization and justification of the basic prerequisites of "giving up" or delegating traditional state security powers to private hands and their relationship would be clearer. According to the logical division, the terms public and private are the question of defining the

basis of ownership and it is necessary to conceptualize the concepts to take into account that: - the boundary between these terms is the one that indicates the difference between public and private bodies, - when defining the essential concepts publicly-private it is necessary to comprehensively and thoroughly investigate multidisciplinary meanings that are hidden below the surface of concepts that can be labeled as "public" and "private."<sup>25</sup> Also, the development of scientific thought about this traditional and contemporary human phenomenon has contributed to creating a new approach to understanding and change the evaluation of contemporary forms of security threats, ranging from human rights and human ambitions, to the security of business and IT systems on Earth. In the emergence of new social relations significantly relieved of ideological contradictions in the international community, instead of the extreme importance of military threats, the understanding of the "new" spectrum of security risks has been extended to the peaceful and sustainable development of the human species, production relations and the service sector.<sup>26</sup>

This division of security services, one of which is located in the state and the other in the non-state system, occupies the intersection of theorists with the aim of defining these security spheres, determining the limits of their competencies, common characteristics and differences. Starting from this, the term "private security sector" is used more often

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<sup>24</sup> Savić A., Stajić Lj., *Fundamentals of Civil Security*, USEE Faculty of Legal and Business Services, Novi Sad, 2006, p. 55.

<sup>25</sup> Ahić J., *Private Security Systems*, Printer, Sarajevo, 2009, p. XXXI.

<sup>26</sup> Marković I. S., *Osnovi korporativne i industrijske bezbednosti*, USEE Fakultet za pravne i poslovne usluge, Novi Sad, 2007 godina, str. 9.

to distinguish it from the state security sector, although in practice it means a term that is somewhat narrower than a term designated as "non-state security sector". "It can be concluded with certainty that the NSA is the carrier of one of the subsystems in the security system, with this subsystem containing the basic contours, but also the specifics of the security system as a whole."<sup>27</sup> "The non-state security sector is considered to have found itself a suitable position in several areas that are actually predetermined for the private sphere in the area of crime prevention."<sup>28</sup> "It should be noted that the non-state security sector is expanding the notion of private security because it is essential, in addition to the activities of private firms and agencies to provide various security and on commercial basis, includes specific corporate security tasks carried out by internal organizational units and independent executives in corporations, public enterprises and other business entities, without the external engagement of competent government services and PSC services by the outsourcing model."<sup>29</sup> Due to the development of the awareness of every individual, organizations and other entities can take responsibility for their own security, so there is an increasing number of private property owners engaged to get as high a degree of protection as they are offered by the state. They expect additional protection from the non-state, ie, private

security sector.<sup>30</sup> In the developed countries of the West, the main incentive for the privatization of security functions relates to the demand for increased efficiency in state institutions, to which it is responding with the outsourcing of security operations traditionally carried out by the state sector.<sup>31</sup> The process of privatization of the security sector was also greatly influenced by the transition processes, ie, establishment of a market economy model. This led to the creation of a special market for certain services in the field of security, especially in the area of protection of property and persons, as one of the most important factors of economic activity.<sup>32</sup>

This requirement to establish the position of a private, non-state security subsystem, where corporate security is also of its nature, places a special intensity on the Macedonian scientific, academic community because the Macedonian security system has been subject to numerous reforms that have led to a new institutional design since its creation and new relationships between security institutions. Lately, relations between the public (state) and the private security system come in particular, experts carry out an analysis of the level of professionalism between them, and emphasize the need for greater cooperation and building a relationship of trust and integrity. The private security security should be viewed

<sup>27</sup> Daničić M., The Role of the Non-State Security Sector in Contradicting Contemporary Terrorism, Proceedings, VI Scientific Conference "Security Days", Sinergija University, Faculty of Security and Safety, Banja Luka, 2012, p. 88-89.

<sup>28</sup> Compare: Henderson J. H. Public Enforcement, Private Security and Citizen Crime Prevention: Competition or Collaboration, The Police Journal, vol. 60, no. 1 (Fall 1987), p. 48-57.

<sup>29</sup> Trivan D., Detective work, Dosije Studio, Belgrade, 2014, p. 36.

<sup>30</sup> Veić P., Nadj I., Law on Private Protection with Commentary, Naklada Žagar, Rijeka, 2005, p. XI-XIII.

<sup>31</sup> Toyne Sewell Patrick, Private Security Companies: The Reasons Why, Military Technology, Vol. 31, Issue 3, Monch Publishing Group, Bonn, 2007, pp. 60-61.

<sup>32</sup> Trivan D., Detective Activity, Dosije Studio, Belgrade, 2014, p. 65.

in the ambience of overall global security challenges, regional and global security environment, changes in the catalog of new security risks and threats. In order to realize this goal, it is necessary to develop a research and applied activity that is related to private security and its theoretical and empirical research and study.<sup>33</sup>

## **2. Relations between the private security system in the Republic of Macedonia and the state security system - normative aspect**

The normative dimension of the relation between the private and security system confirms the determination of its subjects towards the establishment of the rule of law as the primary principle in their functioning. The legal order guarantees legal security in both segments of the security system, which is the basis of its further development.

The basics of the private, non-state security system in the Republic of Macedonia are connected with the adoption of the Law on Security of Persons and Property of December 14, 1999<sup>39</sup>, which created legal preconditions and bases in relation to the subject matter as an introduction to the process of practical implementation of legal solutions in this sphere. The first private security reform dates back to 2007, and the next was implemented in 2011. The goal of the reform was to create equal conditions for the participation of all stakeholders in this new market.

The beginning of the major reform of 2011 led to the creation of conditions for the adoption of the new Law on Private Security.<sup>34</sup> The 2012 reform, among other things, was in the function of delineation and definition of terms for creating conditions for the practical application of legal provisions.

The establishment of a detective's profession was accomplished by the adoption of the Law on Detective Services in 1999, thus creating the basis for the development of corporate security, because in this same Law, the responsibilities of detectives that are connected with the functioning of modern corporations are determined. In addition to these laws, other laws and bylaws, which also apply to the state security system, are important for the successful functioning of the non-state security system.

The public security system is part of a state apparatus that has the authority to apply legal force. *Differentia specifica* between these and other state institutions consists in the fact that the first are authorized to apply and use force on behalf of the state<sup>41</sup>. As a separate administrative area, the security system (and therefore the Security and Counter-Intelligence Administration) is subject to the norms of general administrative and legal regimes and norms that are part of special legal regimes. From a legal point of view, a special legal regime is built up through special or special laws (*lex specialis*), in the form of different legal solutions that deviate from the general legal regime, i.e. from the established by general laws (*legi generali*). When this is not the

<sup>33</sup> Kozarev A., Private security in the Republic of Macedonia - current state and perspectives, Proceedings - First international scientific meeting:

Private security - situation and perspectives, USEE, Novi Sad, 2008, p.177.

<sup>34</sup> Official Gazette of RM no. 80/99.

case, then the rules of the general law (*lex speciali derogate legi generali*) apply. In order to make the matter more interesting, when some services, for example the police, have a special legal order (suppression of organized crime or terrorism), in that case we come to a new degree of specialty, to something that can be called conditionally *lex specialisimus*.

In such a case, a special one is first applied, followed by a special and ultimately general regime. The particularities of the normative security concept are particularly evident in the functioning of the police, which in European continental law is portrayed as "the police of the rulers", while in Anglo-Saxon law it is "the police of the people." In the first legal system, in the first legal system, there are more special features (*lex specialis*) in the regulation of the state apparatus apparatus, and in the second, there is a tendency for this apparatus to be subordinated to the general legal regime (*lex generalis*), in order to minimize deviation from general law law) And for him again as well as wherever possible, the same applies to persons-private law. <sup>35</sup>

J. Spaseski states that "the reformed national security system in the Republic of Macedonia consists of: legal norms regulating relations in the field of human security, between people and society and the state; institutions that have the rights, duties and responsibilities to act on security issues, including: the public (state) sector,

the non-public (private) sector and the civil sector, and the measures - preventive and repressive, which are legally envisaged for resolving security issues. <sup>36</sup>

The key laws relating to the public, state security system are as follows: Law on Organization and Operation of Public Administration Bodies,<sup>37</sup> Law on Police, Law on Internal Affairs, Criminal Procedure Code, Criminal Code, Law on Communication Monitoring, Law on Prevention of Laundering money and other income from criminal acts and financing of terrorism, the Law on the Intelligence Agency, the Law on the Financial Police and other laws and bylaws.

### **2.1. Relations between the private and security system in the Republic of Macedonia and the state security system - a functional aspect**

"Increasingly abandoning the traditional concept of national security, the processes of socio-economic transition, i.e. changing the dominant form of social and state property into a private one, along with a general increase in the crime rate, create a need for the part of the more prosperous population to engage professionals outside professional civil services to further protect their security. It is noticeable that the protection of personal and property security, which was once provided exclusively by the state, was replaced in some segments by the services of private companies for security services and

<sup>35</sup> Record of the public debate on the Bill on security of persons and property, 26.11.2011, drafted by the Ministry of Interior of the Republic of Macedonia.

<sup>36</sup> Timothy Edmunds, "Security sector reform and transforming societies: Croatia, Serbia and

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<sup>37</sup> B. Milosavljevic, "The Constitutional Law of the Sector for Security and Power Machines in Serbia after the adoption of the Constitution of 2006", Faculty of Political Sciences, Belgrade, 2007, p.9.

detective agencies. It is a system of non-profit and profit-making entities created by non-state actors in order to provide specific security services to interested clients."<sup>38</sup> Private security services are implemented through: a) proactive (reducing and / or eliminating the cause of the occurrence of adverse events) measures and procedures; and b) reactive (reduction and / or elimination of consequences of adverse events) measures and procedures.

Private security is an industrial branch that produces services designed to secure persons, property and labor. This branch includes the following forms of activity: protective activity, self-protection and detective activity. With the services of protective and self-protection activities, persons, property and work can be provided to the following Ways: physical protection, technical protection, value management and management from the control center.<sup>39</sup> In the Republic of Macedonia, the functioning of the state and non-state security system is connected with the implementation of certain competencies for which their members are legally authorized. According to the nature of these competencies, it can be stated that there are evident relations in this direction, and as a confirmation of this paragraph I present the following classification:

Police authority	Private security authority	The authority of private detectives
Verification and identification of identity of persons and objects	Check identity of the person at the entrance	Collecting data and information

Collecting information	Warning	The provision of evidence in connection with the criminal offense or perpetrators of the criminal offense
Invitation	Prohibition of entry and unauthorized recording	Finding faint or hidden faces
Deprivation of liberty	Keeping	Identification of the face identity and its location-address, or place of residence
Invocation	Examination of faces, objects, vehicles and luggage	Finding stolen or lost items
Keeping	Use of compulsory funds	Collecting evidence relating to the protection or determination of the truthfulness of proceedings before a court, another state body, institution exercising public authority or a legal person that decides on the special rights of a party
Search by faces and objects	Use of firearms for physical security	Collecting information on the relationship of workers to the protection of business secrets
Covered police action	Telescreen protection	Collecting information

<sup>38</sup> J.Spaseski et al., "Private Security", Skorje-Ohrid, 2008, p. 29.

<sup>39</sup> Институт за стандардизација на Србија, Друштвена безбедност-Услуге приватног

обезбедења-Захтеви и упутство за оцењивање усаглашености, прво издање, Београд, 2008 година, стр. 3-4.

		on the success and legal activities
Overcoming, diverting or restricting movement of persons and vehicles over a given space over time	Provision of transport and transfer of money and other valuable items	
Warning and ordering	Monitoring-patrol and monitoring security	
Temporary seizure of items	Technical assistance	
Review or search of certain offices and premises of state bodies, institutions exercising public authority and other legal entities and insight into certain (their) documentation	Providing public gatherings and other events	
Entering another's home and other enclosed spaces		
Stop, view or scan of persons, luggage and means of transport		
Provide, view, and inspect at the venue		
Receipt of complaints and appeals, submission of reports and reports		
Recognition		
A prize awarded publicly		

Shooting in public places		
Polygraphic testing		
Collecting, processing, analyzing, using, evaluating, transmitting, storing and deleting data as well as processing of personal data under the conditions and in the manner determined by this and a special law		
Application of pim measure		
Protection of persons covered by the law on protection of witnesses		

Similarly, the reform had the basic function - increasing the efficiency in carrying out everyday tasks for security personnel, as well as for authorized officials and police officers of the Ministry of Internal Affairs. In this context, it is necessary to provide unified access-modus operandi for these categories of workers, which would be a step forward in improving the situation in this area, which would ultimately reflect the higher level of security of persons and property being provided.<sup>40</sup>

The key relations in the daily functioning of the public and non-state security system confirm the role of primacy of the first in relation to the other. The overall functioning of the non-state security system is restricted to the activities of the state security system. Thus, in relation to the functioning of detective activity, a detective

<sup>40</sup> Law on Organization and Operation of Public Administration Bodies, "Official Gazette of RM" No. 58/2000.

can only work if he has a license issued by the Ministry of Internal Affairs, which is by its nature a key state security institution; the professional exam is taken by a detective before a test committee established by the Minister of the Interior; license-private detective issued by MIA; the records of the detective are kept by the MUP; supervision of the work of the detective is carried out by the MUP. In relation to private security, the Ministry of Internal Affairs issues a license for security in the form of providing services to a legal entity and for its own purposes; training for physical and technical security is organized by the Chamber, and executed by the Physical Security Training Commission and the Technical Security Commission established by the Minister of the Interior; the firearms handling capability check as part of the physical security examination is conducted by the Commission for verifying the capability to handle the firearms of the MIA, which consists of three police officers and their deputies; about the issued security clearance, the Ministry of the Interior shall report to the Chamber, and shall provide it with information on the name and head office of the legal entity to which the license was issued; about the performed retention and the use of means of coercion, the security worker and the legal entity are obliged to compile a written report and submit it to the MUP; regular supervision of the work of the Chamber for private security and legal persons for security is carried out by the MIA at least once a calendar year.

### **3. Future directions of corporate security development**

The fundamentals of corporate security in the Republic of Macedonia are established at the theoretical level, while in practice only the attempts to function it appear. "The

research of the representation of private security cases in the higher education system of the Republic of Macedonia has shown that they are in the initial phase and are studying at various levels of study, predominantly as elective subjects with a small number of ECTS."<sup>41</sup>

Practicing the content of corporate security needs to be linked to providing the conditions for the successful work of modern corporations, in terms of achieving: safety and protection in work, the attitude of employees towards the protection of business secrets and the performance and business performance of legal entities and performs other tasks determined by law. In these directions, at the initial level, the way to introducing corporate security in Macedonian companies should be paved. First of all, it is necessary to refresh the acts on the systematization of jobs in those companies by introducing the position of the corporate security manager, something that is so far unknown and non-existent in the practice of the Macedonian business world. In analyzing the common goals of all corporations and their importance to society, there may be a key missing link in trying to understand the contemporary character of corporate security. In an attempt to perceive corporate state security in the practice of new internationalism, one should firstly say that corporatism, as a political theory, starts from the fact that society and the state need to be regulated on the basis of the existence of corporations as basic institutions. According to this learning, the security of the state depends on security business organizations based on the existence of corporations. 49 On the other hand, the intensity of the development of the theoretical design of this activity is connected with the need to raise the educational, educational and cultural level among the members of this activity. In connection with this, the first faculties for education of highly educated personnel for

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<sup>41</sup> Buzan B., *People, States and Fear: An Agenda for International Security in the Post-Cold War Era*, Harvester Wheatsheaf, London, 1991, p. 363.

the performance of private security and detective activity were formed, as well as with shy attempts to introduce corporate security to study as a compulsory subject. The final outcome of this process is to direct attention towards: maintaining a constantly high level of knowledge as a top priority; Enabling continuous development and academic development; constant improvement of the education process by applying best practices in security education from renowned higher education institutions and establishing cooperative relationships with international educational institutions.

## Conclusion

The relationship between corporate security and the state security system is the relationship between the general and the special, including the continuing conflict between them. Realizing a security function in society is a complex activity involving a number of institutions: state, private, some of which are key, secondary, and so on. Irrespective of their position, they all have a contribution to strengthening national security as a whole. There has always been a distinction between the private and the state security system in the theory, and besides that they appear as sub-systems in relation to the social system. Bearing in mind this fact, it can be concluded that there are special and significant relations between them on several levels: regulatory, where special laws regulate these areas; institutional, where relations and relations are more complex given the primacy of the state security system that is competent to control the functioning of the private, not the other way around. In this line of relationships, special relationships are created, which, although they are the direction of improving corporate security, can still be taken to the surface and their animosity. In general, the functioning of corporate security is determined in a large number of state security system activities in practice. Namely, in spite of the fact that

modern corporations through the detection of certain unlawfulness can lead to the activation of internal control mechanisms, in some cases they are in accordance with the law in charge of informing the police that can further prosecute the case to the competent public prosecutor. In the area of criminal justice protection, the role of a public state security system that is authorized to comply with the Criminal Procedure Code is to take on the activities for detection, clarification of criminal acts and their proving, which is not in the domain of private security, nor is it the case with corporate security. However, for the successful functioning of the protection of the rights and interests of citizens and for the legitimate work of the business world, the existence of both these systems should coordinate and harmonize their work and develop the next overall social development.

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## CRIMINAL RESPONSIBILITY AND CORPORATE SECURITY

Doc. dr. Sedžad Milanović, email: [sedzadmilanovic@gmail.com](mailto:sedzadmilanovic@gmail.com)

*Abstract: This paper shows the relationship between criminal responsibility and corporate security by analyzing the responsibilities of physical, licensed and legal persons in corporations. These two institutes are interesting and challenging area of research, given the changes in the criminal legislation of Bosnia and Herzegovina and normative framework in which business entities exist today. Corporate Security is one of the core strategic functions of any serious legal entity, and therefore the question can be asked whether the performance of these functions make certain acts or omissions that could lead to criminal responsibility of both individuals and legal entities. With the entry into force of the new criminal codes in Bosnia and Herzegovina, was introduced in our legislation for the first time and the responsibility of legal persons for criminal offenses, so it is important to determine which criminal provisions are applicable to legal persons and for which crimes. The development of new scientific and practical technology leads to such forms of crime in the context of a corporation in which, in addition to the individual or individuals as responsible persons, and more important and criminal liability of legal persons. Also, very important concern is the responsibility of the responsible person within legal persons and other individuals in the legal entity, all with respect to their assigned duties and responsibilities set forth by law and other regulations.*

**Keywords:** Criminal responsibility, corporate security

## 1. Criminal liability

### 1.1. In general, responsibility

Criminal liability is one of the most important criminal justice institutes and has been differently defined throughout history. The notion of liability in the linguistic sense indicates that a person is responsible or should be responsible for certain actions he makes, and even for some actions he has failed to do. In this paper we are talking about the criminal responsibility<sup>42</sup> of the reconstructed social norms in a certain social organization (or corporation) or, more precisely, of the criminal responsibility: an individual, responsible persons, a group of persons and a legal person as perpetrators of criminal offenses in a particular social organization. There are several theories on criminal responsibility about criminal responsibility in the criminal law science, the most important of which are psychological, theories of vigilance, normative and psychological normative. Psychological theories have arisen in Germany and according to them the guilt is in a psychic relationship, which encompasses the work as an event in the outside world, and does not include awareness of the unlawfulness of the work. According to these theories, virtue and guilt are reduced to the purely psychological attitude of the perpetrator towards the act as a factual event, to his presentation of the act as such. The basic objection to these theories is that the notion of "guilt is difficult to reduce to a bare psychic attitude towards the work done

without involving any normative content in it."<sup>43</sup>

Normative theories of vigilance see the substance of the guilt in the narrative that the perpetrator is sent for the perpetrated criminal offense. "The cause of the emergence was some extreme cases in which the exclusion of the unlawfulness, but also the conviction of the perpetrator, could not be justified."<sup>44</sup>

According to these theories, virtue or guilt is not reduced to a psychological relationship, but to a value-logical evaluation given by an impartial evaluator, which is purely of a normative character. Psychological - normative theories or normative - psychological theories include two types of guilt elements: psychological and normative. These theories are based on the view that guilt includes awareness of the committed crime and awareness of the unlawfulness of the offense committed.<sup>45</sup> "According to these theories, guilt involves accountability, intent and neglect, and awareness or the possibility of having awareness of the unlawfulness of the act." Criminal responsibility is a set of subjective assumptions that need to be fulfilled to impute an unlawful and unlawful act to the perpetrator or to it could be burdened. This in criminal law means the application of the principle of subjective responsibility and objectively-subjective concept of the criminal offense, and because of its importance, it has become one of the basic criminal principles that is expressed in a way that does not have a punishment without guilt (*nulla poena sine culpa*). The

<sup>42</sup> The last changes and amendments of the CC of BiH instead of the term criminal responsibility adopted the term of fault ("Official Gazette of BiH", No. 8/10). With the amendments of the CC of F BiH, this term was replaced by the term of guilt ("Official Gazette of F BiH", No. 42/10). The same was done

in the CC of the RS in 2010, while in the BD of BD the remainder of the criminal responsibility.

<sup>43</sup> Babich M and Markovich I., op.cit. p.27

<sup>44</sup> Novoselac P., op.cit. p.236

<sup>45</sup> Kambovski V., op.cit. p.387

notion of criminal responsibility in BiH criminal law is determined by law, in the manner that the perpetrator is accountable and responsible for the committed criminal offense.<sup>46</sup>

Analyzing these provisions it can be concluded that the criminal responsibility in our law consists of two components or two subjective elements: his mental state and his mental attitude towards the crime, i.e. accountability and guilt or vindictiveness. Since the founding of the social community, man has been responsible for violating set social norms, but with this responsibility different from the responsibility that is now set in contemporary social order. The development of the social community developed and changed the perception of the basics, the limits and rules of human responsibility, but they also tried to establish certain principles and rules of responsibility as a significant condition for the application of the criminal sanction. The generally accepted principle of punishment in older times was the principle of objective responsibility with certain and small exceptions. Modern crimes are based on the principle of subjective responsibility, which implies that, in addition to the unlawfulness of the offense, the punishment of a perpetrator also requires the existence of his guilt for the offense committed. Unlike the subjective concept, in the case of objective responsibility for punishment, it is not important what the

subjective attitude of the perpetrator towards prohibited behavior and the resulting consequence is, because for his responsibility it is sufficient for his actions to cause the given effect. Objective responsibility in the old legislation was the rule, and some cases of subjective liability were an exception.<sup>47</sup> Today, the situation with regard to subjective responsibility is completely different. Exceptionally, the principle of objective responsibility is still present in some countries, with minor offenses (England, USA). Our criminal legislation, like most modern legislation, stands in the classical positions regarding the establishment of criminal responsibility,<sup>48</sup> i.e. accepts the principle of subjective responsibility. This means that criminal responsibility exists only when the perpetrator at the time of the commission of the criminal offense had such a psychological property and such a psychological attitude towards the work that he could be charged. The guilty is therefore an individual category and it is a set of conditions under which the perpetrator can be declared responsible for a particular criminal offense, but without which his work can not be attributed or charged.<sup>49</sup>

This expresses the view that guilt is a personal category and is based on individual abilities and abilities of a particular perpetrator, which is one of the essential features of today's modern criminal law. The crime is a very complex

<sup>46</sup> Čl.33.KZ BiH

<sup>47</sup> Ćirić J., op.cit. p. 68-69. In one chapter of the book, the author deals with accountability and objective responsibility, and raises the question of whether, through the objectification of psychological phenomena of normality and accountability, an objectification of responsibility comes into play. It further states that the relationship of rights on the one hand, psychology and psychiatry

on the other hand, in practice, is often reduced to the relation of pure formalism, which indirectly introduces objective responsibility in law.

<sup>48</sup> Szrentić N. et al., Op.cit, p.67.

<sup>49</sup> More guilty see Jovasevic D and Petrovic B., The New Concept of Crimes in Criminal Law of Serbia, Proceedings of the Law Faculty in Nis, No. XLVII / 2006str.36-40.

subjective category in which the evaluation in criminal proceedings must take into account several elements such as: the personality of the perpetrator, the way in which he decided to commit a particular act, his motivation, internal reasons, and so on.<sup>50</sup> Criminal liability is a necessary precondition for the application of an appropriate penalty for the perpetrator of a criminal offense or criminal offense, and it is the subject of various theoretical attitudes and debates. According to the generally accepted attitude, criminal responsibility (guilt) exists when the perpetrator had such psychic characteristics at the time of the commission of the criminal offense and such a psychological attitude towards the work that he could be charged. Criminal liability presupposes, therefore, accountability and virtue, as a set of subjective conditions without which there is no criminal liability. In addition to this definition of criminal responsibility, which consists of psychic elements, there is a wider understanding of criminal liability according to which the content of responsibility is determined objectively-subjectively and consists of two components. Objective component constitutes a criminal offense, and subjective accountability and virtue.<sup>51</sup> The law negatively determined the issue of the existence of imprudence, and the same applies to the notion and the existence of significantly reduced accountability.<sup>52</sup> Accountability and wineiness are subject to scaling (greater or lesser computability and greater or lesser vinicity), and depending on

this, criminal responsibility is susceptible to scaling. In the criminal law of the Anglo-Saxon countries it is necessary that the perpetrator be guilty and bear responsibility for the consequences of his deed, to satisfy two criteria: that he committed the criminal act (*actus reus*) and that he possesses the necessary intent to do this work (*mens rea*).<sup>53</sup>

*Mens rea* is usually defined as a psychological relationship to the work, but also as a mental state of the perpetrator in function according to the act. The perpetrator of a criminal offense may be released from liability in situations where the law prescribes it. The reasons for the release may be different, but today most often prescribe the situations when the offender committed the act in the utmost urgency, the necessary defense, imprudence, and the like. According to the Criminal Code of BiH, there is a guilty if the perpetrator at the time of the perpetration of the criminal offense was countable and acted with intent. The criminal guilt for a criminal offense exists even if the perpetrator has acted out of negligence, if this is explicitly provided for by law.<sup>54</sup>

The personality of the delinquent and his criminal responsibility are exposed by the different actions of the social, personal and biological factors that condition his behavior. By responding to various external factors, individual manifestation of personality and its action in the social environment arises. From the reaction that a person expresses on the influence of

<sup>50</sup> Loc.cit.

<sup>51</sup> NešićLj., Criminal Law: opštideo, VŠUP, Belgrade, 1999, p.147.

<sup>52</sup> Buturović J., The Importance of Affects of Criminal Responsibility, JRKK, No. 8, Belgrade, 1980, p. 30

<sup>53</sup> See more: Peau J., MentalyDisorderedOffenders, in: TheOxfordhandbookofCriminology, ClaredonPress, Oxford, 1997, pp. 661-701

<sup>54</sup> Criminal Code of BiH, "Sl. Glasnik BiH ", number 03/2003, Article 33, paragraph. 1st and 2nd.

objective and subjective factors, the responsibility for such a reaction arises, which, depending on the reaction, can be moral, political, criminal, and so on. When it comes to responsibility for the commission of criminal offenses, only the criminal offense and its perpetrator are the two sides of the same issue. Both sides are linked in an objective process and must be treated in a related way. Namely, the responsibility for the commission of a criminal offense must be based on the study of the offense and on the dismissal of the personality of his perpetrator, that is, on the study of the psychic structure and all other personal elements that can be judged in connection with the committed act.<sup>55</sup>

If this is a normal person, i.e. about a person with sound psychic functions, a crime is a conscious act, but an act that has certain causes for which it is committed. Accountability is one of the most important institutes of criminal law and is most closely related to guilt and criminal responsibility. A high degree of legal theoretical concordance has been reached on this criminal law institute, as evidenced by the approximate definition of this institute in the BiH legislation and the countries from the immediate environment. Thus today, accountability in criminal law is defined as the capacity for guilt, and in order for a particular person to be responsible, she must have the ability to understand the significance of her deed and to be governed according to that ability.

The function of accountability is precisely to determine the constitutional abilities of the perpetrator for guilt, bearing in mind, in this respect, that guilt is the responsibility of the offense committed, and not a set of some of the negative personality traits, or *down et culpaecapacitas*.<sup>56</sup>

Accountability is such a state that is not of a lasting character and in criminal law it represents an individual's relationship to one of the prohibited acts. Criminal behavior varies in different groups of perpetrators of crimes and the causes can be sought between the individual and the community. Multidisciplinary efforts and integrated research into psychiatry, law, forensics, criminology would lead to better discoveries about the causes of delinquent behavior.<sup>57</sup>

Criminal Laws in Bosnia and Herzegovina foresee that a criminal offense can be committed only by an incriminated and guilty offender. The condition for the pronouncement of a criminal sanction is wine, but as an unbearable person can not be a wine, it can not be punished either.<sup>58</sup> Due to this model, the dual concept of punishment and security measures has been abandoned: a punishment for a faulty and vindictive offender, and a security measure for an incurable perpetrator.<sup>59</sup>

Since accountability in criminal law is presumed, it is proven in each specific case where there is a suspicion that it is excluded, reduced or significantly reduced. In order for a person to be guilty and

<sup>55</sup> Janković N .; Jovanović A., op.cit., P. 406 and further.

<sup>56</sup> Bačić F., Criminal law, general part, Informator, Zagreb, 1995, p. 194.

<sup>57</sup> Dahlin K et al., Mentally disordered criminal offenders: Legal and Criminological Perspectives, Volume 32, Issue 6, November-December 2009., Pages 377-382, International Journal of Law and Psychiatry, Canada

<sup>58</sup> Simović, M., Simović, V .: Basic problems in criminal proceedings in Bosnia and Herzegovina with persons with mental disorders, Pravni život, no. 9, Belgrade, 2007, p. 677.

<sup>59</sup> Compare: Simović, M., Simović, V .: op. cit., p. 677; Zadžić M., Protection of the rights of persons with mental disorders, Pravna misao, iss. 11-12, Sarajevo, 2006, p. 100

punished, he must possess first, certain intellectual and willing ability, capacity. More precisely, he must possess a normal mental or willful disposition that allows him to understand the compulsory norm and follow its command.<sup>60</sup>

Starting from this, it is considered that the institute of criminal responsibility is expanding from the institute of accountability, and it can be said that accountability is only one of its elements. On the other hand, guilt is at the same time narrower than accountability, because accountability is a capacity for guilt, while the very fault is the realization of this ability.

## **2. Corporate Security**

### **2.1. Conceptual definition**

Corporate security is a relatively young science discipline. In the historical discourse, she was already known in the first human communities. Protection of personal property, tribal organization of the community, etc. examples are that it is as old as society itself. Although this institute has been present for a long time in Europe and the world, the same in our environment and in BiH, from a scientific and practical point of view, has only existed since two decades ago. Corporate security is a small part of the national security of each country, but it has not yet found its place in full capacity, both in theory and in the practice of most of the countries in the region. Corporate security is one area of security that has a significant place in any community with less or lesser knowledge about it. From the earliest times to the formation of the first organized communities - the state, security was an

expression of the state of social relations and a question that is constantly being sought for answers. In conditions of high progress and globalization in international markets, as well as increasing technological challenges, especially in some social processes or branches, such as IT and telecommunications, corporate security is a logical step in the development of each company in order to protect all forms of corporation business and smooth development and promotion. The threats that every company faces today, such as organized economic crime and various financial malversations, but also "traditional" problems such as theft or negligence of workers, require that they face them by establishing a separate sector within the firm or by engaging external associates with the rich experience in solving such situations. The terminological name itself tells us that it is a region composed of two terms or concepts and two areas that denote a group of individuals organized in economic terms as a corporation that can have a social or private type of ownership.

The other term or area we are talking about is security that is also composed of multiple security systems and can be and is organized as public or social and private. Today, there are many definitions of corporate security from different authors with different content. In this paper we will distinguish several of them from the authors from our environment. What they all include is that corporate security is a set of measures and actions to protect property and persons in a particular corporation, whether it is owned by a state or a private entity. Each of the definitions will help us

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<sup>60</sup> Drakić D., op.cit., P. 49, 50.

better understand both the term of corporate security and the relationship between corporate security and criminal liability. These are two institutes that have a mutual relationship and a mutual consequence, standardized both at the international and national level. Corporate security, by definition, is an integral security in which various content, activities and activities and numerous entities within the business system are combined, using different procedures, tactical authorization procedures, etc., perform a number of necessary security measures and activities in achieving a single goal.<sup>61</sup>

According to some authors, "corporate security is a strategic function of the company, which aims to achieve the security of the business success of the corporation, which means: eliminating all risks and threats that can affect business activities and achieve business success; minimizing the harmful effects; business operation in crisis management (crisis management), crisis overcoming and normal business operations."<sup>62</sup>

Milan Milosevic points out that corporate security is, by its very definition, integrated because it involves performing several different functions that need to be synchronized. As such, it represents the function of a corporation that controls and manages the coordination of all activities within a business entity concerning security, continuity and security. The existence of an efficient corporate security system protects the company against all

threats, establishes the basis for making management decisions, provides top-management access to confidential information and forms processes and procedures that prevent the outflow of protected data from the corporation.<sup>63</sup>

Every social problem has its own area in which both the entities associated with it and the corporate security work. Such areas are a challenge for various groups of scientists and researchers with the goal of detecting problems and finding a quality response. The research that is being done can have its broader and narrower social significance with regard to social interest. Consequently, corporate security has the object of its research that can be broader and narrower. The subject of research in the broader sense encompasses all the works and activities planned and organized by the employees, internal organizational units, services of the sector, etc., managers of the company or business system, as well as the activities of external entities (state bodies and agencies) in order to create the more favorable conditions for the normal operation and business of that undertaking, including the identification of possible risks, threats and risks, their pre-emption or the elimination of their consequences. In the narrower sense, the subject of the research is the system or model of organization of security and protection of persons, property and business within the economic system, where this system is regarded exclusively as self-protection activity. After determining the subject of

<sup>61</sup> Komarčević M et al., Corporate Security, Belgrade, 2011.p. 16

<sup>62</sup> Ivandic Vidovic Darija, Karlovic Lidija, Ostojic Alen, op. cit., p.

<sup>63</sup> See: Milan Milosevic, "Concept and Content of Corporate Security", in: Scientific Meeting

"Security Days" on the topic "Corporate Security - Risks, Threats and Measures of Protection" (Proceedings), Faculty of Security and Security of Sinergija University, Banja Luka 2010, p. 59-60

the research itself, it is necessary to determine exactly and in this connection precisely define the boundaries, that is, to accurately dimension its coordinates and the subject framework. Accordingly, the subject of corporate safety research includes the following elements: design and planning of corporate security systems, risk assessment, risk assessment, development of plans and elaborates for the implementation of security procedures and procedures, development of security policy and strategy, organization of specific organizational units, services (or formation of special reports or designation of responsible persons) for performing various security and safety tasks, for example, security service, occupational safety, fire service, environmental protection, classified information, etc.<sup>64</sup>

Today, corporations in BiH are exposed to various types of threats and threats that can be catastrophic in some segments. Sources and forms of endangering the security of corporations can be: technical and technological accidents; natural disasters; criminal acts that inflict damage on a business entity (diversion, terrorism, sabotage, destruction or damage to products for the production and destruction of products); criminal acts of classical crime; crimes of economic crime committed by employees, most often in conjunction with business partners (abuse, corruption, bribery, embezzlement, robbery, contracting or doing business at the expense of the company); criminal acts of causing general danger and crimes against human health and the environment; criminal offenses using information technology;

traffic accidents and accidents; casting confidential data; violations (violation of working discipline, deviation from the prescribed organization of work, overstepping or usurping of competences and authorities, non-implementation or partial implementation of prescribed procedures, unsafe business); social and other unrest within the corporation.<sup>65</sup>

### 3. Criminal liability and corporate security

By performing certain actions entrusted to them by the laws of the authorized person, individuals and legal persons in the corporation, as prescribed by the new criminal codes in BiH in the performance of regular tasks, they may commit certain criminal offenses. For such forms of illegal activities, the Criminal Code prescribes criminal responsibility and penalties for unlawful acts. More specifically, such forms of illicit treatment in literature are referred to as corporal crime. Although there is no precise definition of this form of crime, it can be defined as property crime or "white collar crime".

Zlata Đurđević estimates that the areas where criminal activities are carried out by corporations are heterogeneous, and that this type of crime is most often manifested in the field of economic business (tax evasion, embezzlement, forgery of money, abuse of bankruptcy, credit and accounting fraud, forgery of business books for the purpose of fraud shareholders, violation of competition rights, money laundering, insider trading, trade corruption, etc.). It also indicates the so-called organized

<sup>64</sup> Komarčević M et al., Pp. 18 and 19

<sup>65</sup> Trivan D., Corporate Security, Belgrade, 2012str., 42 and 43



crime, that is, to the situation in which more business subjects, who otherwise legally do business, when they are given a suitable opportunity, jointly and plannedly perform a certain kind of organized criminal activity.<sup>66</sup> The organizational structure established within the corporation is based on the breakdown of its overall tasks into individual tasks, on the establishment of organizational units as holders of certain joint tasks, and on the establishment of such coordination mechanisms that enable the performance of tasks at all levels of business process linkage.<sup>67</sup>

In such an organizational structure, companies are responsible for corporate security: top-managers (management) and managers at all levels of decision-making; Supervisory Committee, ie. expert, whose task is to monitor and improve the security aspects of the business; security managers (CSO - Chief Security Officer), operating teams, designers and implementers of security business principles components, and all employees of the company. In some companies in Serbia and Bosnia and Herzegovina, mainly those who do not have a separate organizational unit of corporate security, there is also the function of the Director of Security.<sup>68</sup>

This position in a particular corporation carries the highest responsibility in the processes of corporate security, including criminal responsibility for the acts prescribed by the Laws of BiH. In addition to the responsibility of natural persons,

lately, the issue of criminal and other responsibilities of legal persons, which is not based on subjective guilt, is more and more important than the gravity of the consequences observed in connection with the act or omission of a legal entity. In contemporary criminal law, a theory of fiction has long been abandoned, according to which legal persons can not be held criminally liable because they are not able to realize the essential elements of the notion of a criminal offense - action and guilt.<sup>69</sup>

According to some authors, the consistent implementation of the guilt principle of a legal person is only possible if the liability of a legal person is justified by the guilt of the responsible person. Practically this means that a legal person could be convicted of a transgression or a violation only if all the ingredients of guilt are proved to the responsible person, and that means pliability, intent or failure and awareness of the unlawfulness.<sup>70</sup>

The basis for the responsibility of a legal person is the guilt of the responsible person for a criminal offense (criminal offense, offense). The liability of a legal person for offenses must not be a substitute for the liability of a natural person. Given that these are two completely different legal entities, criminal repression in the broader sense must be maximally adapted to the specificities of each of these entities. The criminal liability of a legal entity, unlike the same to individuals, will not be based on the degree of subjective guilt, but on the

<sup>66</sup> Đurđević Zlata, "Criminal liability and criminal proceedings against legal entities in the Republic of Croatia", *Croatian Journal of Criminal Law and Practice*, Vol. 10, no. 2, Faculty of Law, Zagreb 2003, p. 722-725.

<sup>67</sup> Ivandić Vidović Darija, Karlović Lidija, Ostojić Alen, *op. cit.*, p. 67.

<sup>68</sup> Trivan. D., *Corporate Security*, Belgrade, 2012, str. 125

<sup>69</sup> Derenčinović. D., *Responsibility of Legal Persons in Croatian Criminal Law*, *Croatian Legal Review*, 2012. p. 20

<sup>70</sup> Novoselac. P., *Crimes in penal and misdemeanor law*, *Croatian Yearbook on Criminal Law and Practice*, Vol. 8., no. 1/2001, p. 52. 35

severity of the consequences observed in relation to the act or criminal offense of the legal person.<sup>71</sup>

## Conclusion

Criminal liability and corporate security are two legal concepts and institutes that often appear in criminal law. As we have seen in this paper, these are two institutes that comprise two areas, causally and consequently, in a legal and security sense, interconnected in the theory and practice of criminal law. The management of corporations is unthinkable without the responsibility regulated by several normative acts in the corporation itself, as well as in the criminal legislation of each community. Sources and forms of corporation endangerment may be different that we have talked about in the work, as responsibility can vary with the weight of the violated social norm and the consequences arising out of unlawful action. Criminal liability for corporate security of companies has primarily: managers (management) and managers at all levels of decision making, supervisory or administrative bodies in the corporation, security managers, operating teams, designers and implementers of security components and all employees in the company. In addition to the responsibility of natural persons, the issue of criminal and other responsibilities of legal entities, which is not based on subjective guilt, is more recent than the weight of the consequences observed in connection with the act or omission of a legal entity. The provisions on criminal responsibility of a

legal entity were introduced into our legislation in 2003, but in practice it has not yet been brought to full capacity.

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<sup>71</sup> Derenčinović. D., Responsibility of Legal Persons in Croatian Criminal Law, Croatian Legal Review, 2012. p.22

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# SCIENCE AND EDUCATION IN THE FUNCTION OF PROTECTION OF LIFE ENVIRONMENT

Akademik prof. dr. Rade Biočanin, e mail: rbiocanin@np.ac.rs

**Abstract:** *In the formation of ecological culture of modern man has an important role of the ecological system of education. Environmental education represents the understanding of the problem of general greening of material and spiritual activities of the company. Subject of this paper is theoretical approach to motivation system of employers (proffesors) wich is one of the key preconditions for accomplishment succesfull motivation of students, as and a role of lider in process of motivation with reference to his k aracteristics. True the empirical part of the paper we will reasearche stands of professors and students with next questions: personal communication, curriculum, sadisfaction and succes in the work and studies. Motivation is very importante for the process of education because it can affect on the other factors wich are inevitable in the educational process.*

**Keywords:** *Science and education, ecology, eco-safety, communication competence, assessment of learning, sustainable development*

## 1. Introduction

Technological and technological development follows the basic goal of our civilization - Continuous growth of materials. The physical growth and development of industrial production are in correlation with: human desire for enrichment, acquisition of material goods, industrial production, countless different industrial products stimulate the desire for their own ownership. As this material stimulates the growth and development of large infrastructure support systems, they are the largest polluters of the environment.

Ecology as a science, a broad field of study, can be divided into several major and minor subdisciplines: the main subdisciplines are:

- ecology that studies the ecological and evolutionary basics of animal behavior and the role of animal behavior and adaptation to their ecological habitats;

- ecology (autoecology) that deal with population dynamics within species and their connection with environmental factors.
- ecology (synecology) that studies relationships between species in the ecological community; landscape ecology that studies the less visible parts of the landscape;

- ecosystem ecology, which studies the exchange of energy and matter through the ecosystem, etc. The ecosystem consists of two parts, life (biocenosis) and an environment in which life exists (biotope). In the ecosystem, living species are linked and dependent on each other through the food chain, and the exchange of energy and matter between themselves and with their environment. Each ecosystem can consist of subjects of different sizes.

## 2. Evaluation of ecosystem capacity

Biocenosis is a community, group of animals or plants and microorganisms. Each population is a result and it makes reproduction in individuals of the same species and live together in a particular place at a given time. When in a given population there is not a sufficient number of individuals, then this population faces extinction, and species extinction can start at the moment when the number of biocenosis drops (community) consisting of representatives of particular species. In small populations, breeding between close relatives can lead to the reduction of genetic diversity that can weaken the very communities.

Biotic ecological factors also affect community resilience. These factors can work within a particular species and between several species. The main questions in the ecosystem study are: - How effective can the colonization of arid areas be? - They must also change the diversity of the ecosystem? - how do ecosystems behave on the local, regional and general levels? - Is the current situation stable? - What is the significance of the ecosystem? What benefit can a person have from the relationship between ecosystems, especially in the effort to provide safe water?

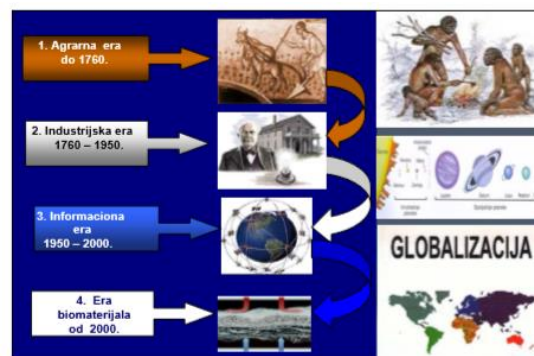


Figure 1. Monitoring of the state of the environment through centuries to date

Ecosystems are often classified as biotope for this study. In this way, the following ecosystems can be defined: - continental ecosystem (terrestrial), as well as forest ecosystem, meadow ecosystem (meadow, steppe, savannah) and agro-ecosystem (agricultural ecosystem); - Terrestrial aquatic ecosystems, such as lentic ecosystems (lakes, ponds) or lotic ecosystems (river, stream); - Oceanic ecosystem (in seas and oceans).

## 3. Pollutants in the air

From the moment the prehistoric man began to maintain fire and used it to meet his needs, to this day, mankind has progressed technologically in a threatening eco-system. To date, man has not understood the overall mechanism and risk of the combustion process. Public attention, especially professional, is focused on CO<sub>2</sub> gas, but not overall combustion products. Today, little is known about nanoparticles, they monitor CO<sub>2</sub> in the combustion process, and their properties affect human health and climate change.<sup>72</sup>

When increasing the share of biomass in the combustion process, CO<sub>2</sub> will be in

<sup>72</sup> The man breathed an average of 26,000 times during 24 hours and consumed 10m<sup>3</sup> of air, or 13kg of air (at medium stress)

balance, as it will consume CO<sub>2</sub> for its growth, as it gets released in the combustion process, leaving the atmosphere polluting. Basic air pollutants are: aerosols (rough and fine-dispersing systems), CO<sub>2</sub>, nitrogen oxides, sulfur oxides, hydrocarbons, halogen-containing gases (chlor-fluorine hydrocarbons, hydrofluoric acid, hydrochloric acid, vinyl chloride) and other substances (benzene, hydrogen sulfide, sulfur carbon, ammonia). Aerosols are 0.001 to 100 μm in size, made up of particles: silicon oxide, aluminum oxide, phosphate, iron oxide, potassium oxide, calcium, magnesium, sodium and sulfur compounds. The most important particle properties are size, concentration and chemical composition. Particle size is the most important factor in deposition rate. Deposition rates are influenced by the shape, particle density, charge and air flow.

Based on the rate of precipitation, the particles are divided into: - Substances that can be deposited  $d > 10 \mu\text{m}$  - Particles that are suspended continuously

Characteristics of aerosols: particle size, fractional composition of particles, particle concentration, chemical composition of particles, dimensional dimension and aerodynamic diameter. Of the pollutants that occur in the combustion process and which are little talked about are: NO<sub>x</sub>, nano particles, sulfur oxides, dioxins, etc.

Nitrogen oxides - NO<sub>x</sub> are responsible for activating secondary reactions of the present pollutants, t.z. photocatalytic effect. NO<sub>x</sub> works harmful to humans, making it more difficult to breathe (increase resistance to respiratory tract) causing a fall in arterial blood pressure, acting as a mild anesthetic. The atmospheric life span is

more than 100 years. The sources for combustion NO<sub>x</sub> are: high flame temperature, consumption and fuel type (chemically bound nitrogen), oxygen quantity in flue gas, combustion air temperature and furnace temperature. There are different structures burners that reduce the NO<sub>x</sub> content in flue gases: an ultrahigh NO<sub>x</sub> burner and a porous structure burner.

Nano particles due to their size during inhalation can not be excreted from the body. They can be: hydrophilic, hydrophobic, charged. They can attract various dangerous and polluting substances, viruses and bacteria on their surface ... In the structure of the clouds they behave like a mirror, preventing the passage of sunlight to the surface of the earth. Therefore, they may be equally threatened by the health of people and the climate.

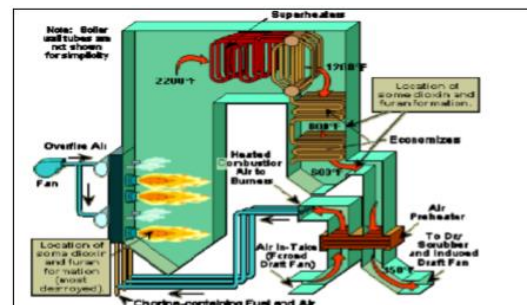


Figure 2. The pathways for the release of dioxins in the working and the environment

Sulfur oxides comprise sulfur dioxide (SO<sub>2</sub>), sulfur trioxide (SO<sub>3</sub>), and sulfuric acid (H<sub>2</sub>SO<sub>4</sub>). Sulfur dioxide is a colorless gas and is moderately soluble in water and other liquids, sulfur can be in the form of inorganic sulphides, organic sulphides and pyrites.  $S + 1/2 O_2 \rightarrow SO_2$  at sufficiently high T, 0.5 to 2% of SO<sub>2</sub> SO<sub>3</sub> + H<sub>2</sub>O → H<sub>2</sub>SO<sub>4</sub> at temperatures below 300 °C, very strong acid

They make up most of the volatile organic compounds that a person releases into the atmosphere from vehicles and industrial processes using solvents such as surface coatings, printing materials (ink) and petrochemical processes. Volatile organic compounds are organic compounds that can evaporate and participate in photo-chemical reactions when the gas current is released into the atmosphere. Almost all compounds used as solvents and chemical raw materials are in volatile organic compounds. All volatile organic compounds are not toxic. Let them inert when they enter the atmosphere. The main source of emissions of volatile organic compounds is the evaporation of organic compounds used in industrial processes. Vaporizable organic components are not created in industrial processes, they are lost in them.

Dioxins and furans are dangerous compounds formed primarily by burning waste, cement production, combustion of fossil fuels and forest fires. These very toxic and cancerogenic substances arise in the process of improper combustion, combustion of waste, biomass, plastic primarily PVC, lead gasoline ... Some dioxins and furans are formed and destroyed (ie oxidized) in a flame on a burner in a combustion chamber. Most of the chlorine compounds from which dioxins and furans are formed, existing in fuel and waste, evaporate and move together with the gas stream until they reach the part where temperatures suitable for their formation are controlled. A small amount of dioxins and furans are generated in boilers where heat exchangers and economizers are located. Since it is most dioxins and furans are generated in control devices, a gas stream that leaves the combustion process.

In combustion of any kind of fuel, the combustion products are: CO<sub>2</sub>, NO<sub>x</sub>, particles which, depending on size, rapidly precipitate and permanently air (PM-10 and nano-particles P No). In urban areas, pollutants include hydrocarbons (C<sub>m</sub>H<sub>n</sub>), and traffic is the main emitter. The most widespread are aromatic and polycyclic aromatic hydrocarbons.

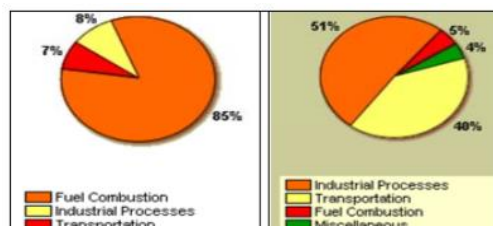


Figure 3. The share of sulfur oxides and hydrocarbons in the urban environment

Carbon monoxide (CO) is one of the highly toxic compounds, a gas without color, odor and taste that is difficult to identify. It is lighter than air, it belongs to a group of chemical "quenchers" and causes general hypoxia (reduced oxygen concentration in blood) due to binding to hemoglobin (Hb) and other respiratory agents containing the hem (component of the hemoglobin) prosthetic group. Toxic effects (after contamination) CO occur very quickly at low concentrations. The toxic effect of CO on the human organism depends on exposure time, concentration, and potentiating factors: breathing time, muscular work, organism resistance, CO concentration, and degree of previous hypokrisia in tissues. After contamination (MDK - 50 ppm), a clinical picture is developed, which is atypical. Due to the inability of low carboxy hemoglobin concentrations to provide a rich symptomatology, and that COHb concentrations are asymptomatic over 40%, the diagnosis is difficult to diagnose, and therefore treatment as well.

Table 1. Percentage of bound hemoglobin for CO in everyday life

N0	Concentration CO	Related Blood COHb (%)
1.	Clean air	1
2.	Smokers after 20 cigarettes	6
3.	Workers in the garage after 8 o'clock	3-15
4.	Inhaling air (50 ppm) after 30 min	3

The concentration of COHb depends on the intensity of hypoxia, and the clinical picture of the poison depends on the intensity. In principle, the concentration of COHb in the blood of 10 to 20% causes nausea, headache and fatigue, 30% dizziness, disorientation, fatigue and muscular impotence, 40 to 50%, impaired cardiac and respiratory function, decerebration and death. In 18% of poisonous, there are disorders of other organ systems, and in 40% of cases, permanent neurological outbreaks, characteristic of diffuse spongiotic demyelination of the brain, have been reported.

Table 2. Clinical picture of poisoning with CO depending on COHb concentration

N0	COHb (%)	Clinical picture
1.	4	Reduced visibility and ability to target
2.	10-20	Nausea, headache, fatigue and decreased visual abilities
3.	30	Dizziness, disorientation, malady, helplessness
4.	40-50	Coma, disturbed heart and breathing, decay and death

Halogens are compounds of chlorine and fluorine. They arise in processes in the chemical industry, the production of acids, electronic components, ore mining and combustion of fuels with fluorine and

chlorine. HCl and HF are produced. They are both strong irritants that are soluble in water. HCl is strong while HF is a weak acid. The fluorine occurs particularly in the production of aluminum, enamel, glass. H<sub>2</sub>F<sub>2</sub> and SiF<sub>4</sub> cause plant damage to leaves, and in humans and animals bone damage.

Hydrogen sulfide (H<sub>2</sub>S) is a compound formed in the production of coke, distillation of tar and in the pulp industry. It is also found in urban wastewater and in all cases where there is rotteness. It is poisonous as cyano-hydrogen and paralyzes the human respiratory center.

Lead belongs to heavy metal, which significantly pollutes the air in the form of metal particles. Most commonly when combustion of gasoline containing antidetonators. Fuels that do not produce pollutants and particles are: wind energy (VE), hydro and nuclear power plants (HE, NE) and photovoltaic panels (FN). Combustion of gas in cogeneration plants, significantly reduces NO<sub>x</sub>, and particles insignificant, less than 10%.

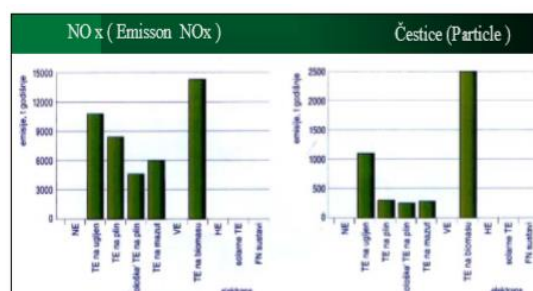


Figure 4. Emission of NO<sub>x</sub> and particles during combustion of solid fuel

Radon is in nature and can hardly avoid its exposure.<sup>73</sup> The natural concentration of

<sup>73</sup> Radon is a hem. element, whose symbol is Rn and atomic number 86. Colorless, chemically important, inert, but radon gas, whose ionisation energy is 1037

kJ / mol, and one of the heaviest gases at room temperature. At a standard temp. and the radon pressure is a colorless gas, but if you gamble below



radon in the atmosphere is low, because water rich with radon in contact with the atmosphere loses radon by evaporation. Groundwater has a higher concentration.  $^{222}\text{Rn}$  than surface water, as radon continuously produces decay.  $^{226}\text{Ra}$  is present in rocks. Because of the soaked soil zone with water, they often have more radon concentrations than unsolved, because radon is lost by diffusion in the atmosphere. On average, there is one atom Rn in  $1 \times 10^{21}$  molecules of air. It is emitted from the earth's crust all over the world, and especially in the regions that contain soil granite or clay and silt soil (but not all of them). Radon from the earth accumulates in the air if there is meteo-inversion and weak wind. The atmospheric emission depends on the type of soil and the surface content of U, so that the outer radon concentrations are of limited character for a particular radon concentration and can only be used by good experts - metrologists, physicists or physicochemicals.

There are 20 known isotopes of radon. The most stable isotope is the  $^{222}\text{Rn}$  isotope, which is a descendant (daughter) of  $^{226}\text{Ra}$ , which has a half-life of 3.83 days, and emits alpha particles.  $^{220}\text{Rn}$  is a natural product of thorium decay (Tr) and is called "Toron", whose half-life lasts 55.6 seconds, and emits alpha particles.  $^{219}\text{Rn}$  running from Actinium (Ac) and called "Aktinon", time of half-life 3.96 seconds, and also emits alpha particles.

The series - the  $^{238}\text{U}$  breakdown chain, with natural RN being  $^{238}\text{U}$  (4.5x10<sup>9</sup>g),  $^{234}\text{Th}$  (24.1 days),  $^{234}\text{Pa}$  (1.18min),  $^{234}\text{U}$

(250,000g),  $^{230}\text{Th}$  (75,000g),  $^{226}\text{Ra}$  (1.600g),  $^{222}\text{Rn}$  (3.82 days),  $^{218}\text{Po}$  (3.1min),  $^{214}\text{Pb}$  (26.8min),  $^{214}\text{Bi}$  (19.7min),  $^{214}\text{Po}$  (164Ms),  $^{210}\text{Pb}$  (22.3G),  $^{210}\text{Bi}$  (5.01 days),  $^{210}\text{Po}$  (138 days)  $^{206}\text{Pb}$  (stable form).

Radon gas and its solid product are a carcinogen. The greatest risk of performance. exposure to solid radon emanation breathes.

Polonium-218P and  $^{214}\text{P}$  are solid offspring Rn, which is present. Significant health hazard, because once they breathe in the lungs, they continue to have a longer radioactivity. decomposition, releasing powerful energy in the form of alpha particles, which can cause DNA breaks, or create free radicals. Radon is in nature and can hardly be avoided. exposure from our houses, but it is considered that if the concentration Rn decreases, or the level of "action guideline level" of 148 Bqm<sup>3</sup> (4 pCiL-1), or below the level when Rn is "no effect", the disease can be reduced by one-third. After separation of the effects of smoking, there is very strong evidence of the emergence of lung cancer caused by the endpoint of 148 Bq / m<sup>3</sup> (4 pCi / l) and the lower 74 Bq / m<sup>3</sup> (2 pCi / l) in the home atmosphere. in the home environment, it covers about half of the non-medical exposure to ionizing radiation, and this is in fact radiation, where the public is most exposed.<sup>74</sup>

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its freezing point (202 K; -71 ° C; -96 ° F) it becomes very fluorescent, and the color turns yellow in as the temperature is lower, and eventually becomes almost red, at a temperature of air (below 93 K; -180 C) when it becomes liquid.

<sup>74</sup> Tests in nine European countries have shown that the hazard arising from high concentrations of Rn coming from the home atmosphere, especially for smokers as well as ex-smokers, is responsible for about 9% of total mortality from lung cancer and about 2% of mortality cancer in Europe.

In relation to the inhaled dose Rn there is a linear correlation, and that it is evident that the upper limb is. of 148 Bqm-3 (4 pCi / l) was not safe because it appeared in the home atmosphere at lower levels of Rn (74 Bq / m<sup>3</sup> (2 pCi / l).

What about our country? Is there a study to assess the impact of Rn on the health of our population? Who will measure and who will control Rn and the consequences of Rn on health of the population in the future in our country? This is particularly emphasized as a result of the consequences for the health of hives by the use of depleted uranium for military purposes, or if "depleted uranium" is used as a "silent killer". Where's the exit? In a faster growth of knowledge and faster development of basic research. To all of the above questions, the answers must be given by a multidisciplinary etiology. This work was at least touched by the tip of the iceberg, where health problems arising from Rn, most often with fatal outcome, have been rolled back.

#### 4. Treatment of contaminated air

In order to purify contaminated air from aerosols of high-toxic substances, the filtering agent contains fibrous aerosol filters (PA filters) and adsorption charge (activated carbon, silica gel, alumino gel, zeolites). Aerosol and particulate filters can have the following classes: low-efficiency, medium-efficient and highly efficient filters. Aerosol and gas filters can have the following classes: Low filters, medium filters and high capacity filters. Filtering protective agents include: - Respirators against particles: particle filter + faces; filtering particulate matter - Respirators

against vapors and gases: filter against gases + faces; filtering faces against steam and gases. - Respirators against steam and gaseous particles: a combination of filter + faces; filtering faces against steam and gases.

Human respiratory protection filters provide: - high adsorption of highly toxic compounds, - low breathing resistance (which makes it easier to work), - performance of industrial and agricultural works, where toxic substances appear, - solid filter construction and earthquake resistance, - favorable conditions for storing and maintaining filters.

Of the above mentioned filter types (A, AH, B, E, K, CO, Hg, NO, P) properly selected, they fulfill favorable conditions of protection under conditions: when the composition of toxic compounds is known, when the concentration of O<sub>2</sub> in KonA is greater than 16% , and the concentration of toxic compounds at most 0.5% vol, the content of particles in KonA up to 200 MDK.

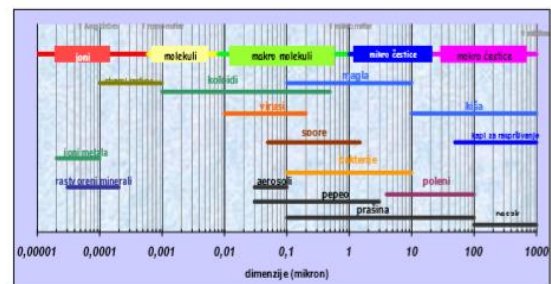


Figure 5. Types and dimensions of pollutants

The amount of toxic compounds that can be introduced into the body through respiratory organs with the use of a protective filter depends on: the amount of inhaled air (0.5 to 1.5 dm<sup>3</sup> / breath), air humidity, temperature, concentration of the toxic compound, and the like. The aerosol filtering process consists of two stages

(approaching the surface of the fiber and bonding to the fiber), where the role of adhesion caused by the dispersion effect of the interaction of molecular forces plays a significant role. The approaching of fiber particles can be due to diffusion (Braun's motion), direct particle adhesion to the fiber, inertia, precipitation, electrostatic action, and attraction of fiber particles by the action of Van DerVals forces. In practice it is difficult to notice the difference between certain types of aerosols (especially between dust and smoke), and the reason for this is the formation of airborne systems consisting of particles that are educated in different ways (dispersion, condensation). In addition, due to the direct interaction between the system particles themselves, the agglomeration process and the demolition of the agglomerated agglomerates, the size is constantly changing. Dust can be defined as a dispersed system consisting of fine and coarse solid particles with a diameter of 1 nm to 100 nm. The aerodynamic system is composed of solid particles, the size of which ranges from 0.1 to 5  $\mu\text{m}$ . The magla is an aerodynamic particle system liquids floating in the gaseous phase, which were formed as a result of the condensation of over-saturated steam. Their size is less than 10  $\mu\text{m}$ .

## 5. Sorption characteristics of protective filters

A large number of substances are extraordinarily contaminated on activated carbon. The most common way to use a filter for purifying contaminated air is in the form of a cylinder. A mixed method for the formation of sorption layers is proposed here in order to increase the utilization of

filling. Active coal can be used to purify air that is contaminated with toxic vapors and gases. Purification is based on the principle of sorption. The term sorption includes adsorption and absorption as a whole. Materials that have developed porosity are used as good sorbents. One of the best sorbents is active coal. Active coal is filled with filters that need to perform the sorption of toxic substances from the air. The carbon atoms interact with covalent bonds, arranged in the plane in the form of hexagonal rings. The distance between the levels is higher than for graphite. The higher number of levels set one above the other forms the crystallite. Crystals of activated carbon differ in size from one another, they are not properly arranged to one another, and therefore a great heterogeneity of the surface occurs. Spaces between layers of activated carbon form depressions-pores of various sizes. The most severe classification of pores is on micro, transient and macropores. The micropores are the smallest and the diameter is below  $15-16 \cdot 10^{-10} \text{ m}$ . A large number of microporous coals have micropore diameters in the interval  $48 \cdot 10^{-10} \text{ m}$ . The size of these pores coincides with the size of the sorbing molecules. The surface of these breeds is 1000-2000  $\text{m}^2$  per gram. The transverse pores are larger than micropores and have diameters up to  $1000-2000 \cdot 10^{-10} \text{ m}$ . The area per gram is in the interval of 20-70  $\text{m}^2$ . Macro pores are the largest, and their surface is in the range of 0.5-2  $\text{m}^2$  per gram. Depending on whether pores and gases are sorbed by physical or chemical sorption (not), impregnation of activated carbon is carried out. We distinguish physical, hemorrhaging and catalytic sorption. Vapors and gases with air currents pass through the sorbent and are sorbed in a relatively thick layer. The layer

in which the concentration of steam and gases decreases from the initial to the minimum value is the working layer. In order not to break the active charge, the height of the layer must be greater than the height of the working layer. After forming the working layer its value becomes constant and gradually moves equally rapidly to the last limit of active charge. When the working layer reaches the last limit, the concentration of steam and gases begins to grow.



Figure 6. Selection of personal respiratory protection devices

Sorption layers can provide a more homogeneous concentration front for each part separately, thanks to the mutual gas / vapor space, which significantly increases the degree of utilization of the available sorption layer. When replacing the used layer with a fresh layer (with the same amount of activated carbon), there is a significant increase in the utilization of the sorption capacity relative to the same height of the compact layer. Replacement of individual layers leads to considerable savings on activated carbon by achieving the same sorption capacity relative to the compact layer of activated carbon. A filter composed of compact layers provides much greater sorption capacity than conventional filters.

## 6. Conclusion

Starting from the fact that the area of environmental protection, from the position of modern understanding of this phenomenon, is one of the basic postulates of the national interest of the country, suggests that the only fundamental change in human relations towards the environment provides further progress of human society. In that sense, environmental education and education has a crucial role to play. The Environmental Education and Education Strategy should provide: the understanding that environmental education lasts a lifetime, creates a sense of responsibility for the state of the environment, ranging from local self-government to the very top, to take appropriate legal measures, ensure all accurate and complete information, sustainable development, develops partnership of all relevant stakeholders and uses all available resources and explores the most optimal methods in education and environmental protection and applies them. The strategy of the national defense of security, as a comprehensive and lasting program in contemporary conditions, should provide the unique bases for engaging the intellectual, spiritual and material potentials of the state, with the cooperation and successful functioning of foreign and internal politics and security from all forms of armed and unarmed forms of threat. Reducing air pollution impossible is increasing the trend of energy consumption. It is not necessary to increase the share of energy that does not significantly affect the eco-system in the combustion process.

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### GLOBAL INSTITUTIONAL ASPECTS OF CORPORATE SECURITY

Doc. dr. Mimo Drašković, email: [rookie@t-com.me](mailto:rookie@t-com.me)

Dr hab. Yuriy Bilan, email: [yuriy\\_bilan@yahoo.co.uk](mailto:yuriy_bilan@yahoo.co.uk)

Prof. dr Veselin Drašković, email: [veso-mimo@t-com.me](mailto:veso-mimo@t-com.me)

**Abstract:** *The paper discusses some aspects of corporate security, which are related to the effects of globalization and institutions. It proves that corporate security is permanently located in the field of action by two groups of significant factors: global, representing a multiplier of various risks and threats in all human activities, and institutional, which should represent a generator of a stable corporate environment. The focus is on the possibility of forming the negative effects of alternative institutions. The conclusion is that the dominant corporate security depends on the degree of its institutional foundation.*

**Keywords:** *Corporate security, corporate governance, globalization, institutions, business strategy*

## 1. INTRODUCTION

Corporate security is explained on the Internet as a term used to explain the modern practice of protecting businesses, employees, physical assets and related information systems. The subject of our analysis in this paper is the issue of corporate governance in the part of its security, which is realized under the influence of global and institutional factors of influence. After all, in many of its documents, the European Union defined the principles of legality, security and transparency as the key principles of corporate governance. Of course, corporate security must be seen as part of a general corporate culture. Also, it is clear that in modern conditions corporate security is emerging as a paradigm of any serious business strategy.

Regardless of the fact that the power of corporations (and their owners) grew out of the exploitation of social resources, wherever they were (which in economic jargon meant that Pareto Optimum was not just institutionalized, because the private interest was forced to the detriment of the public), when in terms of corporate security, it does not seem that the financial community (formal and informal) and economic institutions do not take into account. This again obviously speaks of the existence of double standards in the behavior and business of modern corporations. In other words, respect for institutional frameworks by corporations is selective - as needed and according to dominant profit interests. This is another proof that corporations are "pathologically disturbed", as many authors claim. In any case, contemporary approach to corporate

governance implies the integration of corporate security concepts with three traditional (basic) concepts: the profit concept, which comes from the chief responsibility of management and business managers and the maximization of profit, the stakeholder concept, which advocates that management must keep track of on the impacts of the company's activities on its stakeholders and respect their interests in the decision-making process and the social power / social responsibility concept, which starts from the fact that a company and a business must have a certain social responsibility for possessing power. We remember the seven principles of corporate social responsibility: accountability, transparency, ethical behavior, respect for stakeholders' interests, respect for the rule of law, respect for international norms of behavior and respect for human rights. They are certainly not a substitute for legal obligations, arising from the so-called. The "rule of law" of a state. They have the role of "helper", in addition to the legal, responsibility would have a moral component. The aforementioned statement enters the institutional zone, which generates the behavior of all participants in economic activities and their relationships. Because they are realized within limits of constraints, which are conditioned by the institutional structure of the society and which constrain the field of individual and corporate elections. An effective institutional environment is certainly able to reduce the negative consequences of corporation opportunism. There are too many institutional factors (ownership, control, institutional investors, laws, standards, economic policy instruments, etc.) involved in corporations in order to leave a voluntary principle to such an important and propulsive area as the

institutional conditions that constitute the institutional environment.

Corporate governance is dominantly conditioned by the character of the relationship between the two environments: corporate (voluntaristic, based on market laws) and institutional (binding, regulatory, regulations and standards based). We assume that in the future, all corporate governance models that prefer sustainable development will increasingly leave the first zone and accept the rules of another environment (Bilan, 2013, p. 689). On this background is also insisting on corporate security, which surely prefers both of these zones. That is exactly why Toffler's so-called. The "adaptive corporation" has to change in the direction of an increasing acceptance of institutional changes. For, corporate security is the general interest of all stakeholders.

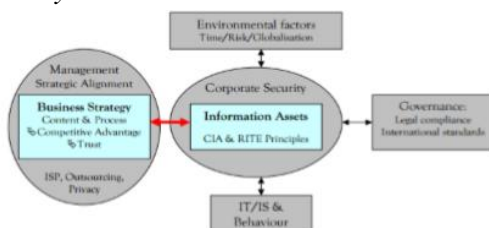
## **2. GLOBAL ASPECTS OF CORPORATE SAFETY**

Risk factors influencing global character are by their character, scope, depth and intensity very active and continuously acting in the direction of endangering corporate stability. The destructive arsenal of measures, resources and opportunities that are being realized in the forefront is rapidly and rapidly growing: from information wars, through economic contradictions and political conflicts to communication influences through the media (especially the Internet). Globalization is, in an ontological sense, too "open" reality, that is, a process in which the quality of productive forces and production relations is rapidly changing (Drašković et al., 2010, Doncov and

Zinčenko, 2011, p. 12). In the gnoseological aspect, global processes create many specific (and even virtual) categories and institutions, which have a general character and impact, which often reduces, neutralizes or even paralyzes the functioning of key macroeconomic categories in individual regional and national environments (which are a set of corporate activities). Many instabilities in these environments are the result of the current actions of contradictions between various geopolitical and geoeconomic values and interests. They directly represent the sources of many risks of corporate security. Globalization inevitably changes the economic, social, institutional, cultural and information environment of people. It has a dual effect: on the one hand it contributes to the growth of mutual dependence and cooperation, and on the other hand leads to economic and other inequalities and instability. The above-mentioned turbulent and complicated processes must adjust the corporate security system, which is not easy, as traditional protection measures have become insufficient and inadequate in conditions of extremely sophisticated threats. Of course, all this must be seen through a prism of dominant ecological hazards, which are quite turning into a complex corporate level. The basic global aspects of corporate security arise from the field of competition, and are manifested in the areas of personnel, information, commercial secrets, autonomy, business fraud, and so on. Therefore, corporate security must be based on the principles of complexity, timeliness, continuity, legality, planning, combining publicity and secrecy, and personnel competence (Zerkalov, 2011, p. 165). We believe that the above principles should certainly add to the strategic and

institutional dimension of corporate security. Without it, it is not possible to provide unhindered functioning of the basic components of corporate security (economic, legal, information and social), which are aimed at neutralizing internal inspirational threats (risks). In conditions of growing trends of networking and virtuality of business, the need for adequate adjustment in the field of measures, methods and strategies of corporate security is growing. They have to be focused on protecting the interests, stability and independence of corporate governance as the main aspects of corporate security. In this, according to the logic of things, the basic elements (facilities) of corporate security are: business processes, staff, assets (financial assets, material values, technologies and information resources) of the corporation, its image and other important components. The basic components of corporate security, according to A. Sitta (1998, p. 21), are: safety know-how, information technology security, business and continuity security, material security and general security. Some authors, for example, L. Georg (2007, p. 5) demonstrated a wider initial concept of corporate security, starting from its basic functions it performs, including the central role of information technology (Figure 1).

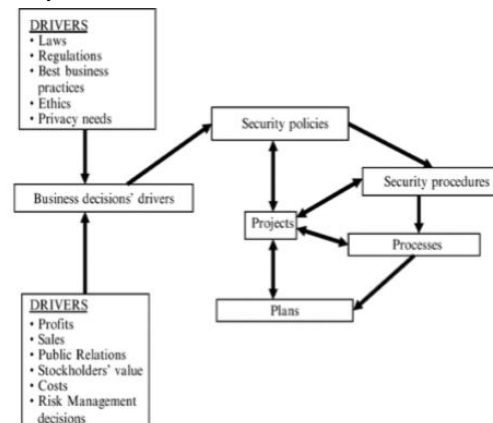
Figure 1: The broader concept of corporate security



Source: Georg, 2007, p. 5.

Some authors, for example, A. Blyth (2006, p. 123) attempted to provide an analytical framework of flows and corporate security functions, through which they sought to define the term (see Figure 2) roughly. However, most authors are unique in the assessment that corporate governance must create organizational efficiency, specify the rights and obligations of owners (shareholders), employees and third parties, but also corporate security (see for example: Woidtke, 2002; Miller, 2004).

Figure 2: Flows and functions of corporate security



Source: Blyth, 2006, p. 123.

### 3. INSTITUTIONAL ASPECTS OF CORPORATE SAFETY

Institutional aspects were emphasized at the beginning of the introduction of corporate governance and the formation of a modern corporation. Namely, from the moment the owners were no longer personally liable for obligations or any other obligations that a company can create (limited liability), i.e. the separation of



ownership functions from the function of administering company resources. This phenomenon was marked by A. Berle and G. Means (1932) as one of the most important in economic history. In this way, a modern corporation has formed management as a central institutional mechanism, which has the task of diversifying risk and reducing the cost of capital, although it causes a natural conflict between those who bear the risk (shareholders) and those who manage it (managers).

Figure 4: Subordinates and objects of corporate security (according to the Berle and Means model)



Source: adapted to M. Drašković, & A. Lojpur, 2013.

The analysis of various theoretical models (ownership, stakeholder, agency, managerial and institutional theory) of modern corporations and corporate governance clearly indicates the dominant role of institutional factors in their formation and development. Supporters of the stakeholder approach criticized the ownership model as unrealistic, because it is both normative and institutionally unacceptable. They asked the question: why would shareholders have more rights than others interested in the company? The company is comprised of everyone who participates in its functioning and who are

interested in its success (workers, syndicates, the public, the local community, customers, suppliers, strategic partners, the state, investors, financial institutions and supranational institutions). In essence, they insist on respecting the complex institutional environment of corporate governance, in which they identify various economic institutions - market, state, ownership and control type (Fiss, 2008; M. Draskovic & A. Lojpur, 2013; At the end of the 20th and the beginning of the 21st century, a stronger corporate social responsibility movement is strengthened, which implies the protection of the interests of all institutional actors and all institutional levels of corporate governance.

Institutional players outside of the corporation can greatly influence corporations. M. Roe (2004, p. 16) explains the way in which outsiders can intervene through political institutions, in cases where corporate arrangements are formulated unjustly. Political institutions may prohibit some arrangements, increase the costs of others and subsidize the third. When they do, Roe believes, they can significantly affect corporate governance institutions. Corporate governance functions objectively in the external institutional environment, which constitutes social and global governance (M. Draskovic & J. Stjepcevic, 2012). From this aspect, an interesting research by R. Apreda (2008), which provided a unified and integrated view of governance. He identified seven common, interrelated terms, which he considers to be the core of corporate, public and global governance, such as: the founding constitution, a system of rights and obligations, a mechanism of accountability and transparency, control

and performance measures, rights of stakeholders, good management standards and independent intermediaries.

It is clear that in addition to global factors, the external institutional environment of corporate security is comprised of private sector actors, legislation, various stakeholders, legal acts, various standards, agents that influence the company's reputation, financial sector, various types of markets and activity control corporation. For our theme, the definition of J. Tirole (2001, p. 4) is of importance: "the design of institutions that provoke or force management to internalize the welfare of stakeholders." As a prerequisite for market economy and corporate governance, A. Dixit (2009, p. 5) believes that there should be specificity, security and protection of property rights, contract implementation and effective collective action. Figure 5 shows the general structure of the institutional environment of corporate security.

Figure 5: Institutional environment of corporate security

Institutionalno okruženje	→	Meta-konstitucionalna pravila najopštija i teško promjenjiva neformalna pravila, koja imaju duboke istorijske korijene u životu različitih naroda, tjesno su povezani sa stereotipovima ponašanja
	→	Konstitucionalna pravila definišu hijerarhijsku strukturu države, pravila donošenja odluka o formiranju državnih organa vlasti, kao i oblike i pravila državne kontrole
	→	Ekonomska pravila pravila koja direktno određuju oblike organizacije privredne djelatnosti, u okviru kojih ekonomski agenti formiraju institucionalne ugovore i donose odluke o korišćenju resursa
	↓	Prava svojine pravila koja propisuju individualni izbor načina korišćenja rijetkih dobara.

Source: M. Draskovic & A. Lojpur, 2013.

#### 4. CONCLUSION

On the contemporary stage of globalization, which is a key determinant of the development of institutionally pluralistic market economies, business processes are dominantly conditioned to respect a

number of new phenomenological factors, whose understanding requires overcoming boundaries of classical economic theory.

Efficient company management involves building not only mutual rational relationships and constructive communications with all business process participants, but also providing maximum degree of corporate security. The financial success of the corporation depends on this. Under these conditions, corporate security has become a significant research phenomenon, but also an economic institution, which among other things serves as an important indicator of the sustainable development of corporations.

It represents an imperative part of the general institutional framework of corporations at local, regional and global level.

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## CORPORATE SECURITY THREATS WITHIN THE COMMUNICATION ASPECT

**Assist. Prof. Sabahudin Hadžialić, Ph.D. candidate Email: [sabahudin.hadzalic@iu-travnik.com](mailto:sabahudin.hadzalic@iu-travnik.com) International University Travnik, Bosnia and Herzegovina Communication Science Faculty (II cycle), UNINETTUNO University, Rome, Italy**

***Abstract:** The future of business lies within a wholly digital network through interactively connected world. Without the right systems, but also without high level of social responsibility based on cultural, social and all other sensitive human existence related issues within the understandings of management of the firm and also without focusing in place to manage and protect the firm, businesses are faced with challenges of problems with data security. Through this paper-case study will be shown how Human errors; Disgruntled employees; Property Theft / Misplacement of the records; Cyber criminals; Insufficient Network security; Accessibility to information and Social Networks might jeopardize security of the enterprise, regardless if we are talking about small and/or big business in Bosnia and Herzegovina. The importance of the final outcomes lies not only in protecting the firm from all kinds of security threats, but also in establishing of the proper systems through adequate use of new communication technologies and through education & information security trainings, adequate recovery plans and constant evolving of the risks with which firm might be faced.*

**Keywords:** Corporate security, communication, business, protection, security threats

If you think technology can solve your security problems, then you don't understand the problems and you don't understand the technology."

– Bruce Schneier

### Introduction

Enormous technological advancement in the development of computer networks and information systems has given to us great possibilities of processing, storage and transmission of digital data, both in small and in big business in Bosnia and Herzegovina. Changes in communication and information technology and their application have caused a number of issues that are related to the security of business assets in the firm. Reaching the consensus in the security of information system, among various stakeholders of corporate security within the organization has become more difficult than solving many technical problems.

We are witnessing the appearance of strong external coalitions that change the traditional centralized and hierarchical organizations in loosely organic networks.

These organizations are based more on cooperation than on control. To be more efficient, more effective and to be able to better respond to external influences, organizations give great importance to the application of computer networks and computer information systems and in the same time forgetting the human factor. The problem is that many firms, without careful planning and understanding of security concerns, implement IT in their organization of work. "Security blindness" on the issue of IT security is not a new concept of today.

Due to the unpredictability of what's coming in the future and on the basis of existing competitive trends, security managers are only seemingly key figures that determine the success or failure of the wellbeing of the company. Their role is evolving, depending on the entire culture of communication within the firm, or its entire

employees. In this paper I would like to show the model how to give guidelines on which aspects we must have an influence to be able to have more integrated security of information and communication system and to have that become constituent part of the business organization.

## 1. Contemporary challenges of assumptions of solutions for the future

Researches up to now have led to the conclusion that technological factors are not the only key factors within the effectiveness of information security, and that we must involve human factors, but also the factors of internal organization of the firm. Exceptional, first challenge that I would like to underline is the lack of education of employees, in other words - their indifference for the common good in today's Bosnia and Herzegovina in regards the security movements in and around the firm. The problem is now already within the human and cultural characteristics/natures, and especially when employees who deal with information and communication security communicate with other employees. One study showed that communication about the risks has a significant role for the most goals in the management of security.<sup>75</sup> Other types of challenges are related to the organizational challenges<sup>76</sup> associated, both directly and indirectly with Property theft / misplacement of the records; Cyber

criminals; Insufficient Network security; Accessibility to information and Social Networks. Because of too many obligations for employees who deal directly with information and communication security, it often happens that employees make mistakes and come up with deviations from optimal security.<sup>77</sup> To control access to sensitive data that are distributed through the firm is often not an easy job and present a significant challenge. Cloud computing<sup>78</sup> according to its main determinants facilitates activities that ensure the availability of the system and its maintenance. These are the grid computing, virtualization, computer enterprise as a service (utility computing) and autonomic computing. The advantages of using cloud services are: a) Centralization - The data are centralized and stored in one place where they are always available, which allows the mobility for user; b) Permanent availability - Towards the service is possible to approach from different locations where there is an Internet connection (and it is now available almost everywhere); c) Model of the rental services - For the services in the "cloud" there is no need to invest in expensive IT infrastructure, train and recruit personnel for maintenance of the services. Cloud services are used only when you need them, and about the administration, support and development of business applications concern is taken care by the side of service providers (such as Webit<sup>79</sup> 1). In the service are included the upgrades, all security mechanisms,

<sup>75</sup> Koskosas, I. V., Paul, R. J. (2004): The interrelationship and effect of culture and risk communication in setting Internet banking security goals, Proceedings of the 6th international conference on Electronic commerce, pp. 341-350.

<sup>76</sup> Werlinger, R., Hawkey, K., Beznosov, K.: Human (2008), Organizational and Technical Challenges of Implementing IT Security in Organizations, HAISA '08, Human Aspects of Information Security and Assurance, pp. 35-48.

<sup>77</sup> Kraemer, S., Carayon, P. (2007): Human errors and violations in computer and information security: The viewpoint of network administrators and

security specialists, Applied Ergonomics, 38(2), pp. 143-154.

<sup>78</sup> Cloud computing is a revolutionary concept that offers a new way to access personal data and applications, which are no longer located on the computer but on the "cloud" - which means that you can access the program, records and documentation from multiple devices, anytime and from different locations and all you need is an internet connection. As a result of mentioned, users of services in the "cloud" can, in a better, faster and easier way, use and modify data. (Comment S.H.)

<sup>79</sup> Webit (first seen on 21.11.2016): <http://www.webitcongress.com/>

archiving, co-location of data, user support, etc...; d) Controlled user access – Through the user administration is easy to restrict access to users (such as internally at the premises of the firm, look only at the part of the data), as well as the possibility to change, delete and/or export data; e) The security of your data - When using program services in the "cloud" the possibility of data loss is very small - if the service provider uses a range of security mechanisms (example: co-location - data within multiple places), daily data backups, etc., there is practically no risk.

Studies have shown that financial organizations (such as banks, insurance companies, retirement' funds) are investing more resources in security data from other firms and that larger firms are investing more resources than smaller firms.<sup>80</sup> Also, researches have shown that the quality of the implementation of information and communication security depends largely on the support of top management.<sup>81</sup> One paper even determine this factor as a critical factor One paper even determine this factor as a critical factor<sup>82</sup> and some studies shows that management of the firm does not know about all security measures that can be implemented and that management is prepared to introduce these measures, only if they know for them. Because of the mentioned it has been an importance of education of the management in regards security measures<sup>83</sup> One of the critical

factors is certainly the allocation of resources, which is especially difficult in the field of IT activities by the reason of the presence of the business environment surrounding it, which is full of rapid changes in the very new technologies<sup>84</sup> The third category of challenges relates to technological problems.<sup>85</sup> The main challenge in addressing technological problems is the complexity of the system itself. Complex computer networks with many nodes and users, the use of different technologies (firewall, intrusion detection system, anti-virus programs) are creating a major challenge in the management of the system. Information and telecommunications security has spread to the whole business, the protection of information in all aspects of the firm. We need to expand the existing principles of confidentiality, integrity and availability towards business objectives in the context of security within the firm.<sup>86</sup>

## **2. Model of integration of security within the information technologies with the aim of annulling of eventual threats to the security environment of enterprises**

Just the mentioned title connects communication aspect of self-corporate security into a single unit combining immediate, human factor, as well as

<sup>80</sup> Kankanhalli, A. (2003): An integrative study of information systems security effectiveness, *International Journal of Information Management*, 23(2), pp. 139-154.

<sup>81</sup> Chang, S. E., Ho, C. B. (2006): Organizational factors to the effectiveness of implementing information security management, *Industrial Management & Dana Systems*, 106(7), pp. 345-361.

<sup>82</sup> Knapp, K. J. (2006): Information security: management's effect on culture and policy, *Information Management & Computer Security*, 14(1), pp. 24-36.

<sup>83</sup> Straub, D. W., Welke, R. J. (1998): Coping with system risk: security planning models for

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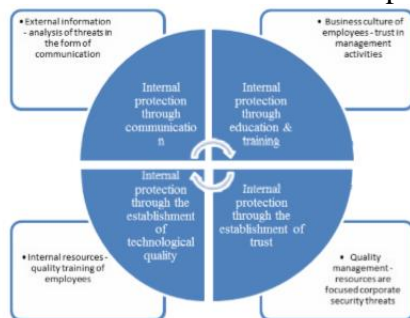
<sup>84</sup> Ashenden, D. (2008): Information Security Management: A Human Challenge?, *Information Security Technical Report*, 13(4), pp. 195-201.

<sup>85</sup> Werlinger, R., Hawkey, K., Beznosov, K. (2009): Human, Organizational and Technical Challenges of Implementating IT Security in Organizations, *HAISA '08, Human Aspects of Information Security and Assurance*, pp. 35-48.

<sup>86</sup> Ashenden, D. (2008): Information Security Management: A Human Challenge?, *Information Security Technical Report*, 13(4), pp. 195-201.

technical shaping of the relations in the firm, but also towards external audiences, as businesses, as well as to the comprehensive contacts of different forms and content. The situation analysis is one of the most important ways of considering the problems in and around the security system of a one firm also in Bosnia and Herzegovina. It requires the establishment of procedures for monitoring and follow-up activities in and around the communication system, the process of valorization of internal strengths and weaknesses, as well as the timely response of decision makers. Risks threatening the company instigate the firms to protect themselves in as much as possible manner to protect its business, employees, assets and capital, clients and associates, and documentation and knowledge.

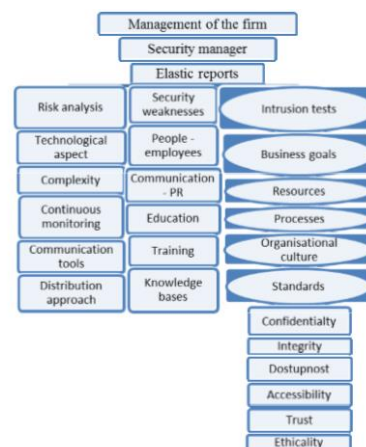
### 2.1. Graph/Chart – Interaction of security protection within communication aspect



Through the above chart/graph, as well as the communication of the graph/chart down below that follows this model I want to show how to integrate the security of the information and communication system in the organization in order to achieve security framework that would encourage management of the firm (on the top of the executive chain of decision-making) to make security information system become an integral component in all aspects of business operations of the firm. Personal experience in the management of firm, but also coordination, both public and private sector during the decades-long presence as an owner and / or the director or coordinator of communications relations within one and / or more companies, allowing me

expanded access of understanding, but also upgrading of the existing security threats if we look at communication forms aimed towards appropriate protection and security in Bosnia and Herzegovina. High-quality forms of internal interactions with external forms of communication aspect of the security is the presumption of upgrading of the own vision for the survival of one firm within the Scylla and Charybdis of doing business in the market, but only if the game of the interaction within the business plan in the legislative and given forms of open market where we have a free market not only in the aspect of respect for the game business where the goal is not only "cheat, outplay and/or overcome" the other one (it is in Bosnia and Herzegovina very much present case in the past twenty years and more), but to create a presumption that the just "game of business" should be based on respect the other and different one when it comes to business ethics, as far as, of course, it is possible in the world of the neo-liberal economy where the corporate form of business operations stifles small and with the security and communication aspects unprepared firms through different forms of appearances - manipulating with prices, buying of staff, and similar.

#### 2.1.1. Model of security integration within information technologies



## 2.2. Management of the firm

Management the firm is, faced with threats to the corporate security within communication aspect, responsible for the protection of assets (all its forms) of the firm. However, due to bad personnel policy, lack of education, nepotism and banal lack of understanding of the significance of threats to corporate security within the communications aspect comes to the various, if we can call it like that, incidents due to failure within the frame of the management and chain business policies, directives, and the actual implementation of the above.<sup>87</sup>

## 2.3. Security manager

Security manager is extremely important person in this model. He is a mediator between the company's management and lower levels which are dealing with security of the firm. The qualities that are necessary for security managers are: experience; knowledge regarding the incidents, weaknesses; risk analysis and risk management; planning; knowledge of policies and standards; processes and procedures; methodologies and frameworks.<sup>88</sup>

## 2.4. Elastic reports

The advantage of elastic reports is that the information within the report are shaped and compiled in accordance with users of the reports. Also, during the framing and unifying reporting towards the managers of

the firms, I suggest that should not be exaggeration at the beginning within the report when it comes to its scope, but to make a brief summary and overview of all, with as little information as possible, and the details to be provided on request by the side of management of the firm. That has to be done to have well-prepared summary, as well as a report on demand, might help in understanding the priorities. According to ISO / IEC 27001<sup>89</sup> risks need to be evaluated, processed, selected and implement controls, observe, and again re-evaluate and revise them.

## 2.5. Technology

The complexity is the characteristics of technology, when it comes to security of information and communication systems. Studies have shown that tools should have the possibility of cooperation among users of the tools<sup>90</sup>. Through these tools would be improved communication between employees who are working on security together with the management of the firm and by that will make better, faster and better decisions.

## 2.6. Employees of the firm

When the employees of the firm are in question in regards security, a critical success factor is internal communication (including internal PR). Why is there this difference in approaches to this issue? Most likely because the language used by employees who deal with security is often the technical language and in that form

<sup>87</sup> Humphreys, E. (2008): Information security management standards: Compliance, governance and risk management, Information Security Technical Report, 13(4), pp. 247-255.

<sup>88</sup> Purser, S. (2004): A practical Guide to Managing Information Security, Artech House.

<sup>89</sup> ISO/IEC 27001 - Information security management – „The ISO 27000 family of standards helps organizations keep information assets secure. Using this family of standards will help your organization manage the security of assets such as

financial information, intellectual property, employee details or information entrusted to you by third parties. ISO/IEC 27001 is the best-known standard in the family providing requirements for an information security management system (ISMS)“ - First seen on WWW - 15.11.2016: <http://www.iso.org/iso/iso27001>

<sup>90</sup> Barrett, R., Prabaker, M., Takayama, E. (2004): Field Studies of Computer System Administrators: Analysis of System Management Tools and Practices, In CSCW '04, pp.388-395.



difficult to reach the company's management. As I mentioned, it is necessary to bypass the problem with receptive language within the communication. Why not also apply the theoretical and cultural approach that refers to understanding the superior knowledge of the person you are addressing as security managers and by that making closer the substance in a way to adapt the interaction profession language, business relationships and everyday communication. Education and training can help to overcome all the mentioned main problems because in that way it raises awareness about the importance of security in the firm. Human errors in disposition of available data, without focus on a particular security, are certainly a security threat to the firm and its overall assets. By storing knowledge and through its accumulation is built security of the information and communication system, and as we have already mentioned that security manager should be "The player of changes", but to be able to become that, there must be certain prerequisites created by (I called them with sporting terms for easy understanding of broader picture of the appearance): □ "physical therapists" - these are, due to my opinion, figures in engineering, maintainers of software and hardware of the security system □ "fitness coaches" who care for the bigger picture, that the work of "physical therapist" being in the right place, at the right time. "The players of changes" are the ones who can lead and make applications at the strategic level. Because of this, without "physical therapist", or security experts, there is no good security. But there must be a "fitness

coaches" who directed the entire security and worry about security from upper levels (from the management of the firm).

## 2.7. Organization

As I already mentioned, the focus on business goals is important because of the communication, having in mind that without guiding on business objectives, we will never be able to convince management that the security of the information and communication systems is extremely important link in the organization of business activities of the firms. Through reports and security managers, tools for security and communication, should be given emphasis on business goals and in that case we will get more support from the company's management, without whose support and allocation of resources, there is no good security.<sup>91</sup>

Management definitely needs to look at the costs and benefits of having the information and communication security. It is best to invest as many resources as needed - no more and no less - because if you invest less, security suffers, if you invest too much, we spent the resources and have not received a significant added value.<sup>92</sup> What is neglected in Bosnia and Herzegovina is certainly organizational culture explained and defined by scholars who are engaged in the management as samples of assumptions, or heuristics<sup>93</sup>, that individuals will use as a directive in response to the situations in the firm in which they have not been previously involved.<sup>94</sup> In my opinion, communication, also within public relations, inner part of

<sup>91</sup> Kankanhalli, A. (2003): An integrative study of information systems security effectiveness, *International Journal of Information Management*, 23(2), pp. 139-154.

<sup>92</sup> Humphreys, E. (2008): Information security management standards: Compliance, governance and risk management, *Information Security Technical Report*, 13(4), pp. 247- 255.

<sup>93</sup> Heuristic, is any approach to problem solving, learning, or discovery that employs a practical method not guaranteed to be optimal or perfect, but sufficient for the immediate goals. Where finding an optimal solution is impossible or impractical, heuristic methods can be used to speed up the process of finding a satisfactory solution.

<sup>94</sup> Johnson, G., Scholes, K. (2002): *Exploring Corporate Strategy*, Prentice Hall.

the mentioned in firms, at all levels of responsibility, is also extremely important for the implementation of just ISO standards. At the same time, free time, which employees have and spend on social networks during the working day<sup>95</sup>, through using their mobile devices, iPod's and / or computers<sup>96</sup>, must be regulated through the code of conduct for online behavior, education, training and / or direct conversation security experts with employees, it has been created the necessary conditions to circumvent the "innocence" of cheaply communication within social networks and finally come to an understanding of security threats in the comprehensiveness of the above - there are no small and / or major threats to the security. There are just threats, because, should not be forgotten that "the avalanche was the snowflake at the beginning."<sup>97</sup>

## 2.8. General principles

The traditional principles of security of information systems are confidentiality, integrity and availability. But they are quite limited. They refer to the data contained on the computer, where confidentiality is relating to the prevention of unauthorized access, while integrity refers to the prevention of unauthorized modification of data while under the availability it refers to protect against unauthorized long-term ownership of data or resources. As it was suggested<sup>98</sup>, these principles should be extended to several other principles relating to employees in the firm, in accordance with the extended understanding of information and communication security. Responsibility is the first additional principle. Security experts agree that at

least a third of security incidents occurred and was caused by employees of the firm and it is necessary to create an internal environment of the active participants of business operations in such form of interactive participation that the employee, but also the company are satisfied with their own positions and activities in this field. Trust is a principle in modern organizations where there is less emphasis on external control and greater self-control and the responsibility also becomes an important factor. The equally relevant are data as well as data users, and therefore we must have all in mind in order to fully provide security at the level of the firm.

## Conclusion

Corporate security threats within the communication aspect of it as a form of information and communication systems evolirala with the technical level of the entire company. The responsibility extends from the top to the bottom of the organization. The integration of information and communication security organization is still a problem because it is not yet taken seriously enough within the business. I have tried, in this paper, to show the model, which initially tries to point out the important aspects on which we need to consider how to better integrate information and communication security in the corporate governance of companies, while taking into account that, as far as possible, annul the threats that we have listed in the introduction to this work. There are three important things that the focus should be: □ Technological factors

<sup>95</sup> In Bosnia and Herzegovina even more than should and could (Comment: S.H)

<sup>96</sup> Thus, even an innocent form of direct communication between employees and people close to him, can, through social networks (FB, Twitter, LinkedIn, MySpace, Instagram, etc.) be a potential source of disruption of corporate security of the firm. (Comment, S.H.)

<sup>97</sup> Sabahudin Hadžialić – thoughts – First seen on WWW - 21.11.2016: <http://sabahadzi.weebly.com>

<sup>98</sup> Dhillon, G., Blackhouse, J. (2000): Information System Security Management in the New Millennium, Communication of the ACM, 43(7), pp. 125-128, 2000.

(Computer enterprise in the cloud as the current form of the attraction interactive-seat space); □ b) People-employees □ The organization of the enterprise. In further work, it is necessary to present the proposed model and security experts, with appropriate survey, get feed-back on the proposed model in order to improve the above, but also how, within the area of operations in Bosnia and Herzegovina.

Next to it was the institutional integration proposed, the Model T to higher quality, targeted comprehensiveness, problem solving corporate security threats within the communication aspect. The key to success is communication with company management to ensure resources for safety and after that guided them as concrete, real measures of information and communication security. Either way, from human resources, through direct communication of public relations, both internal and external, may well depend on the totality of the business, but also the security of a company in Bosnia and Herzegovina.

And last but not least, my thought that might be the initiation better security within the enterprise, and it especially within the system permanentnog tehnološkog development: "It is not enough to have knowledge within the security skills - more than that we need skills within the knowledge of security" .

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## CORPORATE SECURITY IN BUSINESS OF THE COMPANY

Alisa Salkić, MA, email: [alisa.salkic@gmail.com](mailto:alisa.salkic@gmail.com)

Prof. dr. sc. Rajko Kasagić, email: [prof.rajko.kasagic@gmail.com](mailto:prof.rajko.kasagic@gmail.com)

**Abstract:** *Corporate security in the business of the company requires a number of conditions that profit company must fulfill. In the first instance it must be a good organization of the company as an organizational form according the market conditions and internal organization of work so that each profit entity has sufficient independence in decision-making to fit the laws of the market in order to ensure dialogue between the machines in the production and workers, including intellectual ability of each employee for higher profits. The operating results of the company does not only involve its owners but all employees and institutions outside the company (credit organizations) that are interested in the business of the company. Employees participate in management of the company, especially when it comes to detect of its shortcomings in the process of work or investment. In this way, it is a significant contribution of employees in obtaining and transmitting information to the appropriate center. Therefore, all participants in the supply chain process overall relations of social reproduction are interested in the business of the company and contribute.*

**Keywords:** *Corporation, labor organization, market, management of a company, transition, implementation, single internal market*

### INTRODUCTION

Modern society operates in conditions of intense changes, general globalization and the challenges it brings. It faces rapid technological changes, enhanced by the competition of companies in the world market, and demands a modern market for different customers. Hence, the issue of the survival and development of certain companies and the selection of competitive assets in environmental conditions is becoming more and more important. Technology, organization, flexible structure and quality of products and services play a key role in this. In stable environments, companies operate programmatically, implementing a high-level specialization by separating the line of authority and responsibility.

In an environment that is rapidly changing the organization of the business of corporations, it is based on the special skills and knowledge, the affinities of their leaders and the ability to communicate. The necessity is to adapt to the rules and standards of the world process. Transformation leaves no one aside. With different successes of the state, they turn on and influence the process of transformation. The developed part of the world is the bearer of change, the leader of economic development.

The key role for the market is the concept of quality of products and services, the phase of implementation of market changes. Accordingly, it is necessary to adapt to certain stages of quality implementation. Quality produces knowledge. The corporate society will provide security in the business with the

organization of work, fitting in the overall relations of social reproduction with its products, but also with the services.

Corporate business corporation safety is based on motivating teams to perform certain tasks using different methods. These methods are based on knowledge, moral values, and experiences. They can be oriented according to the task or oriented towards the team. The use of corporate business corporation methods depends on internal personal factors, but also on many extreme factors.

Transition as a general concept of transformation and inclusion in the world process must go in an accelerated way. Goals must be transformed into tasks, restructure the entire social being. Insufficient knowledge, relying on experience from the previous period contests the conditions of change. It is still a preoccupation in thinking about jobs that need to be provided for individuals, not for collectivity. The structure of the previous period can not be incorporated into the new system - value system. Self-employment in its own corporate societies is the foundation of the progress of the social community, whereby it is obligatory to create legal and economic conditions for personal entrepreneurship. The basis for this is mastering new knowledge, using information technology and effectively applying existing professional knowledge. Informatics, genetic engineering, lasers change the functioning of the economy. Accurate, timely and effective use of information in the corporate governance system, its reciprocal parts and market and environment functions are important for corporate safety in business operations. Without such information, they would not

be able to make quality, important decisions, as well as the process of monitoring and implementing decisions and the consequences of deviation.

The most important decisions about investments, about profit and its distribution, about covering losses are in the company. Decisions are preceded by a series of analytical expert analyzes of the relevant services, and even professional or scientific analyzes. Therefore, a wider range of institutions and persons are engaged in making important decisions for the business and development of the company, and meeting the needs of not only interested (owners, employees, creditors and consumers), but also the social community. All of them have an interest in the business of a company, so depending on that, the way of managing a society is deprived.

The end of the previous century has passed in the reorientation of the production of material goods based on the large share of material and energy in production, in the production of goods based on knowledge and high technology. This kind of economic development was conditioned by the breakthrough of informatics. The success of the company depends on how organized and represented the processing of information. Economic growth must be qualitative and not disruptive for the social environment. The European Union may be the model for this. By removing all obstacles to the transition from a common to the internal market, the Union has harmonized trade-law norms. The harmonization of regulations on corporate companies at Union level aims to ensure an equal level of protection for shareholders, employees, creditors and third parties

throughout the Union. In this way, the differences in national laws are overcome, and the Council of the European Union has made a significant contribution. The second approach is the introduction of a uniform law at the Union level that would replace or complement national laws. The first approach to the harmonization of national laws of status character in Bosnia and Herzegovina has been completed, although in the ongoing process.

## **1. Characteristics of the company in transition countries**

Countries in transition have or are still doing the process of privatization and reorganization of their economic system and corporations. This creates the necessary precondition for the creation of a new legal system and, consequently, of a new system of corporate governance that ensures the corporate safety of the business community. However, in the process of transition, there are childhood diseases such as: inconsistent legal system, dispersed shareholder, poor protection of minority shareholders, weak judicial system with insufficient independence from economic and executive authorities, insufficiently developed professional management, undeveloped business practice. In the domain of corporate governance, the problems are: managerial irresponsibility and weak control from dispersed shareholders, lack of staff for corporate governance, conflict of interests of

controlling and minority shareholders, underdeveloped capital market, interventionism of state authorities in the economy, numerous law violations.<sup>99</sup>

How and in what direction will you opt for the corporate governance model in a transit company that would ensure the successful business of a business? The answer to this question is as follows: through managers, shareholders, social democracy, state-oriented model, multigroup interest model. Adjusting the interests of shareholders, management, creditors, employees, corporations and societies in a sociological sense is the concept of corporate social responsibility. Under such conditions, the concentration of shareholders will be based on banks and other investors, on groups of companies, on rich and powerful shareholders and participation of employees in the capital of the structure of the company. Such a model provides an equilibrium balance with good prerequisites for economic success and satisfaction of the basic needs of every person who participates in the business of a company.<sup>100</sup>

## **2. Management of the company at the implementation stage**

Different stages of implementation of the overall quality require a different method of managing a company. In the phase of giving initiative, or creating conditions for

<sup>99</sup> More: Lojpur A. (2004), Corporate governance in theory and practice of privatization, Podgorica, p. 59 - 109.

<sup>100</sup> According to the teachings of the American industrial psychologist Maslov, the human need is protection, security, contact with people, homesteading - for their own self. When a person

achieved this, there was a need for self-actualization. These are physiological needs. The basic physiological needs are: oxygen, water, food, ejection of waste materials from the body, temperature control, rest. What a man gets more and more. Maslov's desires are: satisfaction, success, satisfaction, money and power.

change, in which gradually creating awareness of the necessity of implementing the quality in which the coalition for change is constituted, the issuing of orders in the process of managing the society dominates. At the stage of moving or changing the existing philosophy of quality and the way it is applied, or transfer into practice, teamwork and team organizational structure are dominated. Accordingly, different ways of acting, making changes and directing the organization of work are different.

Corporate security in the business of a company is closely linked to the choice of management style, which is influenced by a number of factors, whose intensity and influence are altered according to the nature of changes in the organization and programs that are realized according to the defined goals. In the case of the implementation of the quality concept, mutual harmonization of individual phases and leadership styles in the company arises, which results in the efficient application of leadership, quality, implementation, TQM in different organizations, with different production programs and technological potentials, production volume and quality values.<sup>101</sup>

The basic goal of every business is its efficient functioning, because only then do they maximize incomes, employment and general well-being. This requires a good management of a business, and business decisions that are made to suit the given circumstances - adapting to market

requirements. The method of management and control of labor, that is, the set of the most important rules under which the internal organization of the company operates and the control of their application is the basis of the safety of the company.

Implementation of the quality of the work of the company is the implementation of standards conditioned by market demands, which means managing a company that achieves its safety on the market. The basic prerequisite for making valid business decisions is a well-established corporate governance system. We have two types of companies. The first group of companies are those managed by the owner or a small number of them. The second group consists of large companies with a large number of owners who are not directly managed by the owners, but on their own behalf are professional managers. Thus, the main cause of the problems of the safety of the company from the point of view of management: the separation of ownership and management. Only in large companies with a large number of owners appear problems of corporate governance, while the societies of the first group have a favorable status - the owners manage the firm and the difficulties of the standard-defined safety of the company from the point of view of management does not appear here.

How to ensure that professional management in companies with dispersed ownership works in the interests of the owner, not in their own?<sup>102</sup> Owners usually

<sup>101</sup> Leadership Style in the Concept of Quality, Leadership in Theory and Practice, Faculty of Economics, Banja Luka, 2006.

<sup>102</sup> The mentioned problem appears in the economic theory as the so-called. agency problem: there are

two persons - principal and agent (his employee). The question is how the principal can ensure that his agent works for his benefit, not for his own benefit. The problem is of a general nature, so it arises in the form of a question, for example how to ensure that a



do not have enough information, they are not professional to properly monitor the work of a person (manager) managing a company. How does the owner not only lose the principal of the investment, but also to make a profit in such circumstances? It is a question of trust that is proving to be the most dynamic in the developed countries. A possible solution is usually sought through different mechanisms: a support for the tendency of managers to preserve and gain their own reputation; aligning the interests of the managers with the interests of the corporation and its owner by encouraging a reward scheme for managers; delegating control over the management board; clearly defined duties of the manager etc. Another issue is that in a concentrated-owned business, it ensures that the controlling owner does not abuse his control over the company in order to extract more from it than it belongs to. The classic way of abuse of control over the company is the excessive salaries of the manager / controlling owner, the affairs of the controlling owner, related persons or his other company with societies that are unfavorable, the use of insider information in the personal interest.

There are various systems for protecting the business of the company: strengthening the position of minority owners; the lack of special voting privileges that would be owned by individual owners, the convening of the shareholders' assembly, which should enable the launch of the action on

occasional occasions; right of pre-acquisition of shares from new issue; strengthening of internal management; timely informing the shareholders about the business of the company.

The issue of ensuring the safety of business operations through management is a rather old question. Adam Smith in the 12th century noticed the passivity of shareholders and the wastefulness to be afraid of in their management of others, not their own capital (separation of property, shareholders from management, managers).<sup>103</sup> This is the first agency problem of corporate governance (the first conflict of interest of shareholders and administration - agency costs).<sup>104</sup> The problem of corporate governance (control of shareholders over the management of the company) is not so much in the separation of ownership<sup>105</sup> from management as it is in the fact of dispersive shareholding, which neutralizes the power of shareholders and affects their passivity. The answer to the solution of this issue is the takeover of joint stock companies publicly, as a constant threat to the poor and uncompetitive governance of corporations and the inoperative responsibility of the shareholders' management.<sup>106</sup> Quality management of the company with the possession of useful timely information, knowledge of the market and harmonization of the quality of work at all levels provides good business results or corporate security of the company.

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policeman, a customs officer or a minister are working in the general interest, not in their own interests. However, this is solved by general legal norms. - Begović B. et al. (2008), Corporate Governance, Belgrade.

<sup>103</sup> Smit A. (1726), *La richesse des nationis*, ed. Flamarion G. F. (1991), t 2, pp. 366.

<sup>104</sup> Paillusseau J. (1990), *L efficacite des entreprises et la legitimacy du pouvoir*, RIDE, pp 289.

<sup>105</sup> Protection is possible through majority voting, co-ownership of the board, non-voting shares, pre-emptive right purchase agreement, deposit agreement agreement.

<sup>106</sup> Vasiljević M. (2007), *Corporate Governance*, Belgrade, p. 20.

### 3. Developmental tendencies

The globalization of the economic system is done by companies acting on the domestic market as domestic, which condition the opening of international borders. By creating the conditions for a pacific equalization of domestic and foreign companies, the European Union has organized an internal market.

The key issue of the globalization of the economic relations in the world is a kind of reform of the economic and political system of countries in the process of transition. The market is increasingly being replaced by cooperative cooperation between business entities. The tendency is the establishment of very small companies, and within large societies smaller autonomous cells are created. Due to the favorable purchasing power, cultural level, free time, man offers a greater opportunity to influence his environment, but conditions are created for his individualisation. Supplying basic components into a product or raw material is largely solved, which is greatly assisted by the information system, so that a company can turn to quality, such as the use of options for its own development and the development of opportunities for participation in the organization and running of the company. We distinguish several tendencies of organizing and running a company: the rationalization of the traditional system, the mechanistic trend and the trend of self-organization.

Rationalization of the traditional system exists in cases where the company has a special market and special production. The growth of the assortment enables the production of machines with no flaws,

which provides precise control of planning and adjustment of conditions. This is a division of tasks into a precisely defined large number. This wave is spreading to retail and catering. This results in the competition of man and machine, because human labor replaces the machine. In the end, this development trend ends with factories and trade without people - without labor.

The mechanical trend requires the provision of a new qualification structure for workers, a new technology with focused and precise production. This tendency diminishes the importance of reducing production costs by products and we get individualized markets where mass products can not be sold. This results in directional production at the discretion of the customer. As a result, autonomous types of experts are related because marketing and production can not be separated.

The trend of self-organization is based on dialogue. Instead of moving orders vertically, we arrive at a direct basic cell dialog in the form of self-organization. It is closely related to the shifting of product initiatives to the workplace itself. The dualism between man and machine leads to a new division of labor, according to which there are no factories without people.

### 4. Organization of the company as a basis for business success

The appropriate organization of a company with a fair degree of autonomy for each profit cell is the basis for a successful business operation. The basic cells must be entrepreneurial independent teams that are small enough with a combination of a

mechanicalist system and a system of self-organization, with vertical connection. These may be small companies or parts of larger companies. On the contrary, there are central services that make decisions about a common problem solution. They have to look for markets for these societies. The services are organized by small companies, or belong to the services of the group, or more services by specialization, for several small companies.

The organization of the company is focused on the creation of small specialized companies, and within them, they are divided into narrower organizational parts, with interest, in order to achieve greater profits and increase the employment rate, because wealthy citizens form a rich society. Such an organized company ensures successful business and good business results, while respecting the regulations on unfair competition. It does not have the need for monopolistic behavior at the expense of other companies because it is able to enter into competition with other companies. This is created by the conditions of a single internal market of the European Union, and in case of violation of equal conditions of business by individual economic entities, the European Union is a participant in the internal market, protected by the principle of equal conditions of employment, which is conditioned by the principle of the right of residence for economic purposes.

As Bosnia and Herzegovina has an economic interest to be integrated into the single internal market of the European Union, it is its economic and political obligation to create conditions for the integration of the economic, political, security and autonomy of the judicial

system and foreign policy.

## CONCLUSION

The social community is responsible, through its authorities, to create a prosperous society and conditions in order to achieve this. The key role in this is the economy and the financial market with corporations as key players.

Since its inception, the financial market has been the dominant mechanism for the redistribution of ownership rights. The strategic goal of developing the financial market is its training for the basic industry. This can be achieved by adjusting the basic framework that would enable the issuance of securities of the corporate and public sector. The main goal is to harmonize laws with European Union standards (89/298 EEC Directive).

An important goal is to strengthen the regulatory and supervisory function. It is necessary to redefine the competence of the regulatory body and increase its real ability to control the supposition of the independent, without any influence from the side. An important task is to strengthen self-regulatory bodies and professional associations that enable the strengthening of market discipline and the improvement of ethical standards of the profession, the increase of professional knowledge and skills, and increased responsibility for undertaken commitments in companies.

Transparency, or a high level of disclosure of company information, represents an important segment of participation in making timely and right decisions, or important strategic decisions.

Publication of information enables potential investors to make a reliable decision on investment, ie purchase of securities.

Transparency should not lead to the discovery of business secrets and deterioration of the competitive ability of the company.

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## THE INTRODUCTION OF ELECTRONIC SIGNATURES IN BUSINESS PROCESSES - CONTRIBUTES TO IMPROVING THE BUSINESS ENVIRONMENT IN BIH

Doc. dr. Maida Bećirović, email: [becirovic.maida@hotmail.com](mailto:becirovic.maida@hotmail.com)

Azra Bećirović

**Abstract:** *The eBusiness has become an important tool in doing business that gives a competitive advantage in the European and global markets. Prerequisites for the successful implementation of eBusiness are resolved legal regulations and interoperability, clearly defined business processes, regulated master data and flexible information system capable of rapid adaptation to changes in environment. The adoption of the Law on Electronic Signature, Law on Electronic Legal and Business Transactions and the Law on Electronic Document and their by-laws, created the legal framework for the functioning and development of information society in Bosnia and Herzegovina. The implementation of the law of e-services, there will be a significant change in the ease of doing business in Bosnia and Herzegovina, and will create conditions for further investment and development of small and medium enterprises in BiH.*

**Keywords:** *Bosnia and Herzegovina, laws, e-Business, business environment*

## 1. Introduction

E-business as a segment of the information society, has become an important tool in the business of companies that gives them a competitive advantage on the European and global market. Bearing in mind that the application of information and communication technologies (ICT) and the construction of an information society is fundamental to the overall development and the future of Bosnia and Herzegovina, the authorities of Bosnia and Herzegovina have recognized the importance of developing electronic business, which has a direct impact on the improvement of the investment environment. The countries of the region have already moved along this path, and the first positive results are already visible in them.

The document of the Information Society Development Policy states that the Council of Ministers of Bosnia and Herzegovina, or the entity government, will influence the creation of favorable conditions that will lead to the creation of an environment suitable for the development of electronic business, and to adopt the necessary regulations for this purpose. Legal infrastructure will be set up as an integral and open system, which does not endure the territorial and political division. The goal is to create an electronic business environment for the circulation of electronic documents in the state administration, the judiciary, the economy and other areas, thus creating conditions for the development of a competitive economy, more efficient and rational state administration, and through the establishment of eServices, to achieve better mutual communication between

business entities, state administration, because it reduces business costs, contributes to savings, creates greater added value, reduces the gray economy and minimizes corruption. Also, the goal is to enable business entities to perform their obligations or requirements towards the administration in the most efficient manner, with minimal costs and number of physical contacts with the administrative bodies, through several different electronically based channels for service delivery. By adopting the Law on Electronic Signature, the Law on Electronic Legal and Business and the Electronic Document Act as well as their bylaws, a legal framework for the functioning and development of the information society in Bosnia and Herzegovina has been created.

## 2. Legal framework

The Information Society marks a set of rules and procedures that distinguish a knowledge-based society and the widespread use of new information and communication technologies, and the regulation of the information society is an important part of harmonizing the legal framework of Bosnia and Herzegovina with the European Council of Ministers in 2004 adopted the Policy, Strategy and Action an information society development plan for BiH for the period 2004-2010. In 2006, the Law on Electronic Signature of BiH and the Law on Electronic Legal and Business Traffic of BiH were adopted. Decisions regulating the use of electronic signatures and the provision of certification services that provide the necessary legal aspects for the implementation of digital signatures were also adopted. In order to introduce an electronic signature into the business

processes of the information society, it was necessary to fulfill the following requirements and implement the following steps:

1. Establish the legal framework for e-business by drafting laws and by-laws in accordance with the *acquis communautaire*;
2. Establish the institutional framework necessary for the safe and successful use of e-signatures in business processes in BiH;
3. To harmonize all laws and by-laws in the field of electronic commerce at all levels of government in accordance with the relevant EU legislation, and ensure the harmonization of other legal regulations relevant to the field of ePrint application in BiH.

The authorities of Bosnia and Herzegovina have adopted important regulations in this area, and the following legal acts are currently in force:

- Law on Electronic Signature
- Law on Electronic Legal and Business Traffic
- Law on Electronic Document
- Decision on the basics of using electronic signatures and the provision of verification services
- Decision on electronic commerce and e-government;
- Decision on the office operations of ministries, departments, institutions and other bodies of the Council of Ministers of BiH
- Instructions on creation and maintenance of official websites of BiH institutions
- Law on Electronic Signature of BiH

The law greatly overrides the achievements and the regime of electronic signatures in a manner similar to that of the European Community document. Although the Law

on Electronic Signatures of BiH has been in force since 2006, many unresolved institutional issues have arisen that have prevented or slowed down the process of implementation of the Law, and consequently the development of the scope of e-Signatures in BiH. However, by adopting the Proposal for the Establishment of the Office for supervision and accreditation of certifiers (hereinafter: the Office) by the Council of Ministers of Bosnia and Herzegovina, and whose formation according to the Law on Electronic Signature has created preconditions for the implementation of all laws related to electronic commerce and electronic services in the field of business and e-government. The establishment of the Office will enable faster and easier establishment of the electronic administration, which implies the introduction of various electronic services (eServices) intended for citizens, business entities and public administration. - Law on Electronic Legal and Business Traffic of BiH This Law regulates the legal framework for certain aspects of electronic legal and business transactions, which includes the provision and provision of information society services, the obligations of information service providers, the conclusion of contracts and the responsibility of the service provider. - Law on Electronic Document of BiH The Electronic Document Act is fully harmonized with the legislation of the European Union, as well as with the current best practice in the world, and its adoption is in line with the EU Directives according to which Bosnia and Herzegovina must create all the prerequisites for electronic access to information and e-commerce. The importance of the Law is primarily related to the creation of conditions for

equalization of the electronic form of a document in a written form, and in the conduct of legal transactions between natural and legal persons, between those persons and public authorities, as well as between themselves. Of course, the importance is also that it creates preconditions for involving domestic entities in international organizations and flows.

The Law on Electronic Document has completed the legal framework in the field of information society and enabled the establishment of electronic legal and business traffic in Bosnia and Herzegovina. The law establishes the legal basis for using the electronic form of a motion / document, with the same legal effect as a written document, in administrative proceedings, which is conducted before the competent authorities of Bosnia and Herzegovina. The use of an electronic document, as officially valid, will shorten the time required for the conduct of proceedings, and a positive impact is expected on the cost reduction that is currently produced when sending documents in written form. Republika Srpska In accordance with the 2009-2011 e-Government Strategy, the Government of the Republic of Srpska has adopted the following laws: - The Law on Electronic Signature of the RS This law regulates the use of electronic signatures in legal affairs and other legal actions, as well as rights, obligations and responsibilities related to with electronic certificates (certificates). In addition to the law, a number of by-laws were adopted that regulate areas such as records of electronic signature certification service providers, a unique register of providers of electronic signatures certification issuing qualified certificates, measures and procedures for the use and protection of electronic signature,

electronic signature creation tools, compulsory insurance of the issuer of services for issuing qualification certificates - RS Electronic Document Act This law regulates the right of natural and legal persons to use electronic documents in all business activities and activities, as well as in procedures conducted before the organs of the republic administration in which electronic equipment and programs can be apply in the creation, transmission, storage and storage of information in electronic form. The law also regulates the legal importance and the use and circulation of electronic documents. - Law on electronic commerce of the RS This law defines the provision of services and rules regarding the contracting in electronic form. Federation of Bosnia and Herzegovina - FBiH Electronic Document Act. This law regulates the right of federal and cantonal administrative bodies and federal and cantonal administrative organizations, local self-government bodies, companies, institutions and other legal and natural persons to use electronic documents in business operations and activities, as well as in procedures conducted before competent authorities in an administrative procedure where electronic equipment and programs can be used in the creation, transmission, receipt and storage of information in electronic form, the legal validity of the electronic document, and the use and circulation of an electronic document. By implementing these laws and other regulations with the sign "electronic", a new form of official communication is introduced, and it enables the official exchange of electronic documents between business entities and institutions themselves. In this way, BiH becomes a step closer to the EU in terms of creating the possibility for Bosnia and

Herzegovina to implement the same e-services that have been uniquely implemented for all EU Member States, as well as to enable the recognition of e-signatures and e-commerce between Bosnia and Herzegovina, the European Union and third countries.

### 3. The benefits of e-business for companies

The benefits of introducing e-commerce tools are not so much in the application of technology as in facilitating and speeding up the conduct of business processes and facilitating access to new markets. Some of the benefits:

- Regarding the registration of business entities, it is quite certain that the time required for registration will be shortened.
- Electronic signature means faster, simpler and cheaper business
- E-service will enable the domestic economy to perform various administrative procedures over the Internet. This will result in saving money to businesses, increasing the efficiency of institutions transparency, and facilitating control and data analysis
- The introduction of e-Government will contribute to reducing the bulky and costly administration, which is a major burden.
- The degree of efficiency of institutions will increase
- E-business contributes to saving time, speed, globalization, improving productivity, acquiring new customers and sharing knowledge, all for the sake of gaining advantage over competition.

### 4. E-registers of business entities and tax returns

In Bosnia and Herzegovina, the search for business entities from both Entities and the Brčko District has already been enabled at the web address <http://bizreg.pravosudje.ba>. The establishment of an e-register of business entities in the Republic of Srpska has already begun (<http://bizreg.esrpska.com/>) so it is clear that technical possibilities exist. For the online registration of economic entities, it is necessary, as already mentioned, to first establish the appropriate PKI infrastructure, which will be enabled by the establishment of the Office for Supervision and Accreditation of Certifiers at the state level. The Tax Administration of FBiH has already established certain electronic services, so it is possible submit applications for profit tax, and applications for payment of contributions through their websites (<http://www.pufbih.ba/v1/page 7>). The Tax Administration of the RS also offers electronic services (<https://eusluge.poreskaupravs.org/>)

### 5. Experiences of the region

For many years the EU has been using e-government and e-commerce. Regarding the environment, Serbia has already introduced many e-services by state institutions for the economy and population - such as the issuance of electronic building permits, company registration, issuance of certificates and certificates, submission of final accounts, etc. In Montenegro, since 2011, electronic registration of companies is possible, as well as electronic submission of tax returns. In Macedonia, among other services, e-health has been introduced



through e-government, which involves electronic schedules for reviewing and issuing recipes, which has increased the number of services three times and ten times the waiting time. In Croatia, the registration of business entities via the Internet is partially enabled. Through the service [www.hitro.hr](http://www.hitro.hr) (a site that is the platform of the Government of the Republic of Croatia), under the option of an e-company, electronic creation of a "limited liability company" and "simple limited liability company with core capital in cash from any notebook or office [www.hitro.hr](http://www.hitro.hr) within 24 hours.

## CONCLUSION

The introduction of e-registry and e-government is an upgrade of the ICT infrastructure that positively affects the business or improvement of the business environment. Aware of these facts Bosnia and Herzegovina has adopted modern legislation in order to create an efficient framework for modern electronic services and finally by adopting implementing regulations created conditions for full implementation of e-business. Laws on electronic documents are fully harmonized with EU legislation, as well as current best practice in the world, and their adoption is in line with the EU Directives according to which Bosnia and Herzegovina must create all prerequisites for electronic access to information and e-commerce. Since the legislation in the field of electronic commerce of Bosnia and Herzegovina is harmonized with EU directives, this can additionally build confidence in the economic, both domestic and foreign. In this way, BiH becomes a step closer to the EU in terms of creating the possibility for

Bosnia and Herzegovina to implement the same e-services that have been uniquely implemented for all EU Member States, as well as to enable the recognition of e-signatures and e-commerce between Bosnia and Herzegovina, the European Union and third countries. Implementation of the Law and other regulations with the sign "electronic" adopted at the state level will introduce a new form of official communication, and enable the official exchange of electronic documents between the institutions themselves. Establishment of the Office for Supervision and Accreditation of Certifiers, as well as the drafting of the Rulebook on the Application of the Electronic Signature, is expected to be fully implemented by the Law on Electronic Signature, the Law on Electronic Legal and Business and the Electronic Document Act. The use of an electronic document, as officially valid, will shorten the time required for the implementation of procedures, and a positive impact is expected on the cost reduction currently being produced when sending documents in written form. E-service will enable the domestic economy to perform various administrative procedures via the Internet. This will result in saving money to business entities, increasing the efficiency of transparency of institutions, and facilitating control and data analysis. By simplifying the business community's interaction with the state, ie by measuring and accelerating the process through e-services, the difficulties identified by the investors as the most important ones will be removed. Implementation of the e-services law will bring about a significant change in the ease of doing business in Bosnia and Herzegovina, and preconditions for further investment and development of companies in BiH will be created.

## Literature

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## CONCEPT OF LIABILITY OF LEGAL PERSONS IN CRIMINAL LEGISLATION OF BOSNIA AND HERZEGOVINA

Selma Otuzbir, MA, email: [otuzbir.selma@gmail.com](mailto:otuzbir.selma@gmail.com)

**Abstract:** *With the introduction of corporate liability in criminal law, the same rank in a significant number of countries in which the law provides for liability of legal persons in accordance with a number of documents of the Council of Europe, European Union, United Nations. Since the state is possible to introduce liability for legal persons, the requirements are based on the increase of crimes committed with activities of legal persons, as well as the difficulties that are based on the complexity of the organizational structure of the legal entity of the identification responsible for the criminal. To consider and that only punishment individuals to such a perpetrator can be easily compensated by a legal person, in whose name and whose behalf the offense. The criminal legislation of Bosnia and Herzegovina accepted the accessory liability legal persons for criminal offenses, according to which the liability of legal persons is based on the responsibility of physical person, acting in the name and for the account or benefit of a legal person. In the following work will be presented base and limits of liability of legal persons.*

**Keywords:** *Legal person, criminal law, the liability of legal persons*

## INTRODUCTION

BiH Criminal Legislation regulated the application of criminal legislation of BiH under the responsibility of legal persons by Article 11 of the CC BiH and Article 13, paragraph 3 of the CC BiH.

Criminal legislation of BiH applies to legal entities in accordance with chapter XIV (refers to liability of legal persons) of criminal legislation as well as other laws of Bosnia and Herzegovina. Also, Article 13, Paragraph 3 regulates that the provisions of the general part of the law apply to legal entities, unless otherwise provided by law.

Article 13, paragraph 3, of the CC of BiH sets out the subsidiary application of the general part of the criminal law to legal persons in relation to the special provisions on the liability of legal persons contained in Chapter XIV of the CC of BiH. This means that the provisions of the general part of the law can be applied only if the provisions of chapter XIV of the CC of BiH do not specify otherwise. With subsidiarity only applies to the application of the general part of the law, but not to the criminal law provisions contained in other laws.

The application of BiH criminal legislation on the liability of legal persons for criminal offenses with regard to the place of perpetration of a criminal offense is of particular importance, especially when determining in which cases domestic criminal legislation is applied at the same time, it is determined when domestic courts have jurisdiction. This means that in cases where the application of domestic criminal law has been determined, the jurisdiction of

domestic courts for the conduct of criminal proceedings is also determined.

It follows from the legal provisions that the basic principle of the validity of BiH criminal legislation on the liability of legal persons is the territorial principle, and that in cases where the offense is committed outside the territory of BiH, the principles of passive and active personality are applied. The question arises about who constitutes a circle of legal persons who may be responsible for criminal offenses, the answer to this is in Chapter XIV of the CC of BiH which, with the exclusions specified in Article 122, paragraph (1), apply only to social structures considered to be legal entities in accordance with the meaning of the term defined in Article 1, paragraph (13) of the CC BiH. According to the provision of Article 1, paragraph 13 of the CC BiH, a legal entity, within the meaning of this law, is:

- Bosnia and Herzegovina
- Federation of Bosnia and Herzegovina
- Republic Srpska
- Brcko District of Bosnia and Herzegovina
- Canton;
- City;
- Municipality;
- Local community;
- Every organizational form of a company;
- All forms of business association;
- Institution;
- institutions for performing credit and other banking activities;
- Institutions for insurance of property and persons;
- Other financial institutions;
- Fund;
- Political organizations;

- Citizen Associations;
- Other forms of association that can acquire assets and use them in the same way as a second institution or authority that exercises and uses assets and is legally recognized as a legal entity.

The provisions of Article 122 paragraph (1) exclude certain legal persons from liability for criminal offenses, which are:

- Bosnia and Herzegovina;
- Federation of Bosnia and Herzegovina;
- Serbian republic;
- Canton;
- City;
- Municipality;
- Local community.

The above mentioned legal entities are legal entities of public character and their responsibility for the offenses is excluded irrespective of whether the *ius imperii* or *ius gestionis* acted.<sup>107</sup> Accordingly, the following legal persons may be responsible for the criminal offenses:

- Every organizational form of a company;
- All forms of business association; - Institutions;
- Institutions for performing credit and other banking activities;
- Institutions for insurance of property and persons;
- Other financial institutions;
- Funds;
- Political organizations;
- Citizen Associations;
- Other forms of association that can acquire assets and use them in the same way as any other institution or body that realizes

and uses assets and which is recognized by the Law as a legal person.

The question arises as to how the status change of the legal person affects its liability for criminal offenses. Chapter XIV of the CC of BiH contains provisions on responsibility for changing the status of a legal person. These provisions relate to the responsibility of a person for the criminal offenses of a legal person in bankruptcy and at the responsibility of a legal entity that has ceased to exist.

Pursuant to the provision of Article 126 paragraph (1) of the CC of BiH, it is evident that a legal person who is in bankruptcy may be responsible for a criminal offense regardless of whether it was committed before the bankruptcy or during the bankruptcy proceedings. This means that the legal person will be responsible for the committed criminal offense. However, a legal person in bankruptcy can not be sentenced, so as not to reduce its bankruptcy estate, but a measure of the security of confiscation of objects and measures of confiscation of property gain obtained by the criminal offense can be imposed.<sup>108</sup>

The provision of Article 126 paragraph (2) of the CC of BiH regulates that if the legal entity ceased to exist before the final conclusion of the criminal procedure, the criminal liability of the legal person, the penalty or the criminal sanction is imposed on the legal successor of the legal person to whom the liability was established, if the managing body of the legal successor before the termination of the legal person

<sup>107</sup> Lj. Filipović, V.Ikanović: Educational Model "Criminal Procedure Against Legal Persons" High Judicial Prosecutorial Council, p.18.

<sup>108</sup> Ibidem., P.22.

knew about the committed criminal offense.

The provision of Article 126 paragraph (2) of the CC of BiH regulates that if the legal entity ceased to exist before the final conclusion of the criminal procedure, the criminal liability of the legal person, the penalty or the criminal sanction is imposed on the legal successor of the legal person to whom the liability was established, if the managing body of the legal successor before the termination of the legal person knew about the committed criminal offense.

The condition for the application of this provision is that the managing or supervisory authority knew about the committed criminal offense. According to the provisions of Article 126 paragraph (3) of paragraph (4), the criminal sanction shall be executed according to the legal successor of a legal person, but if the managing body knew about that sanction before the termination of the legal person, which implies the conduct of a special procedure for determining this circumstance.

However, the law does not regulate the manner in which the measure of confiscation of property gain obtained by the criminal offense is executed in the event of the termination of a legal entity after the final conclusion of the criminal proceedings.

There is also another dilemma when it comes to the termination of a legal entity before the end of the criminal proceedings related to the content and form of the indictment and judgment. With the fact that there was an unresolved issue with legal

entities that ceased to exist before the end of the criminal proceedings and have no legal successor. Because if there is no legal successor, who is to be pronounced a criminal sanction, there are no conditions for prosecution or criminal procedure, and the procedure is terminated. Legal persons may be liable for criminal offenses under the Criminal Code of BiH as well as for other criminal offenses ascribed by the law of Bosnia and Herzegovina. This does not limit the liability of a legal person for certain criminal offenses, legal persons may also be responsible for the criminal offenses prescribed by the criminal legislation in force in the territory of Bosnia and Herzegovina.

### **1. Basis of liability of legal persons for criminal offenses**

Article 124 of the CC of BiH regulates the bases of the responsibility of the legal entity, in the manner that the responsible legal person is responsible for the criminal offense committed by the perpetrator in the name, for the account or for the benefit of a legal person in the following situations:

- When the meaning of the criminal offense arises from the conclusion, order or approval of the managerial inspectorates of a legal person;
- Or when the managing or supervisory body of the legal person influenced the perpetrator or allowed him to commit a criminal offense;
- Or when a legal person disposes of unlawfully realized property benefits or uses the objects created by a criminal offense;
- Or when the managerial or supervisory bodies of the legal entity fail to observe the

supervisory work by the legality of the workers.

In order for a legal person to be responsible for a criminal offense, it is necessary to determine: Existence of a criminal offense - a physical person, the commission of a criminal offense by the perpetrator in the name, for the account or for the benefit of a legal person and the existence of some contribution to the commission of a criminal offense.

### **1.1. Limits of liability of a legal person for a criminal offense**

Although Article 124 of the CC of BiH states that the commission of the criminal offense is related to the perpetrator of the criminal offense, the legal person is also responsible and when the perpetrator is not guilty of the criminal offense committed. Also, Article 375, paragraph (2) of the Criminal Procedure Act prescribes that criminal proceedings may be instituted against a legal person, and its liability for a criminal offense may be established, and when criminal proceedings can not be initiated against the perpetrator.<sup>109</sup>

These reasons are, for example, the death of the perpetrator, the mental illness after the act of which he is not able to participate in the procedure. Since the precondition for the responsibility of a legal person for a criminal offense is the criminal offense of being committed on behalf of, for the account or for the benefit of a legal person, the factual basis of the indictment by which the legal person is accused, as well as the factual basis of the judgment by which the legal person is declared responsible for the

criminal the act in such a case must contain the facts and circumstances from which the characteristics of the criminal offense and the circumstances that confirm that the perpetrator committed the act in the name, for the account or benefit of a legal person, as well as one of the legal contributions of the legal person to the perpetration of the criminal offense from the perpetrator.

The actual impediment to instituting criminal proceedings may also be considered as the absence of evidence for a reasonable suspicion that a person who is a perpetrator of a criminal offense for whom there is sufficient evidence is capable of lodging an indictment against a legal person for a criminal offense for an unspecified (unrecognized) person and after carrying out the procedure the judgment by which the legal person is declared responsible for the criminal offense.<sup>110</sup>

The provision of Article 125 paragraph (2) of the CC of BiH stipulates that the liability of a legal person for a criminal offense does not exclude the guilt of physical or responsible persons for the committed criminal offense.

The liability of a legal person for a criminal offense therefore does not exclude:<sup>111</sup>

- the guilt of a physical person who is the perpetrator of a criminal offense for which the legal person is also responsible,
- on the guilt of a responsible person in the management or supervisory bodies of a legal person who, through his actions, undertaken within the framework of the activity of a managerial or supervisory

<sup>109</sup> Ibidem., P.42.

<sup>110</sup> Ibidem., P.43.

<sup>111</sup> Ibid.

body of a legal person who contributed these bodies to a criminal offense committed by a legal entity, have achieved the characteristics of a committed criminal offense.

Pursuant to Article 125 (3) of the CC BiH, a legal person may be responsible for offenses committed by negligence under the conditions referred to in Article 124, point d) of the Law, and in this case a legal person may be punished less severely (optional basis for mitigation punish the legal person). On the basis of these provisions, it can be concluded that other forms of contributions of the managerial or supervisory bodies of a legal entity, as prescribed in subparagraphs a) - c) of Article 124 of the Law, in view of their content, presuppose the intentional activity of the perpetrator.

By the provision of Article 125, paragraph 4 of the CC BiH, it is prescribed that, in the case of a legal entity other than the perpetrator, there is no other person or body that could direct or control the perpetrator, the legal person shall be responsible for the committed criminal offense within the limits of the responsibility of the perpetrator. The provision therefore relates to the responsibility of two types of legal entities:

- legal entities that do not have other persons in their membership other than perpetrators and
- legal persons who in their membership have other persons other than the perpetrators, but do not have organs personally different from the perpetrator who could direct or control the perpetrator.

In the case of one of these two types of legal entities, a legal person shall be responsible

for the criminal offense committed in the name, for the account or benefit of the legal person within the limits of the perpetrator's responsibility. If for some reason, the perpetrator's guilt is excluded, the responsibility of the legal entity for the perpetrator's criminal offense is also excluded. Here, there are two types of legal entities: there is a complete personal overlap between the perpetrator and the legal person, ie the perpetrators and the managerial or supervisory bodies of the legal entity, so that the responsibility of the legal person can not be considered separately from the teacher's responsibility.

Criminal proceedings against legal entities in the criminal legislation of Bosnia and Herzegovina

The liability of a legal person for a committed criminal offense in our law must be determined in the law prescribed by the procedure under the provisions of the criminal procedural law. The course of the criminal procedure is regulated by the BiH criminal legislation, and many of its species can be noticed.

The law knows:

- General or regular criminal proceedings;
- Special procedures (procedure for issuing a criminal order, procedure against juveniles, procedure against legal persons, procedure for pronouncing court reminder, procedure for applying security measures, procedure for seizing property gain and for revoking suspended sentence) and
- Special non-criminal proceedings (procedure for issuing a decision to remove convictions, or termination of security measures and legal consequences of conviction, procedure for providing international legal assistance and execution

of international treaties in criminal matters, procedure for compensation of damages, rehabilitation and realization of other rights of persons without grounds both unfoundedly deprived of liberty and the procedure for issuing a warrant and publication).<sup>112</sup>

## 2.1. Legal nature of the proceedings

The position of legal science is that in BiH a criminal procedure is used which is not a pure mixed procedure, nor an accusatory but compromise, because it takes forms and elements from both criminal procedural systems and tries to merge them into one whole.<sup>113</sup>

The BiH legislation accepts the solution of the "middle path" consisting of:

- Changing the criminal procedure only to the extent necessary for its attachment to a legal entity as an accused;
- All Criminal Laws indicate that proceedings against legal persons are conducted according to the provisions of the Criminal Procedure Code (Article 122, paragraph 4 of the CC BiH, Article 125, paragraph 4 of the CC RS, Article 126, paragraph 4 of the CC FBiH and Article 122 4. BC BDBiH);
- In the Criminal Procedure Code, special chapters have been implemented that make special procedures against legal persons;
- These provisions prescribe that, if not otherwise decided, against the legal entities, the appropriate provisions of the CPC are applied accordingly, even if the procedure is only conducted against the

legal entity (Article 387 of the CPC of BiH, Article 393 of the CPC RS, Article 408 of the FBiH CPC, Article 387. ZKP BDBiH).

- The party's legal capacity of the legal entity was introduced on the side of the accused;
- Legal entities have the ability of the participants in the procedure, since they can appear in the capacity and with the rights of the injured party.

## 2.2. Phases of the procedure

The procedure against a legal entity has its own outcome. The legislator did not consider it necessary to omit, introduce or modify certain stages of the procedure, especially for legal entities. Given the unity of the proceedings, he has the same stages as the proceedings against a natural person. Regardless of the differences in relation to the previous procedural legislation and in the valid one, we can distinguish two stages of the first instance procedure:<sup>114</sup>

- The first stage: the process of detection, investigation and accusation;
- The second stage: the main procedure.

The main proceedings are: preparation of the main trial, main trial and rendering the verdict.

## 2.3. Objectives of the procedure

The purpose of conducting criminal proceedings against legal persons is:

<sup>112</sup> M. Simović, *Criminal Proceedings*, Third and Revised Edition, Banja Luka, 2009 p.438.

<sup>113</sup> M. Simović, *Criminal Proceedings*, Introduction and General Part, Bihać, 2009. Year, p. 78.

<sup>114</sup> Lj. Filipović, V. Ikanović: *Educational Model "Criminal Procedure Against Legal Persons"* High Judicial Prosecutorial Council, p.81.



- To take the decision of the competent court about the criminal offense, the responsibility of the perpetrator and the sanction by undertaking, legally prescribed acts of process entities; - This goal is achieved by following its general and special rules; - Criminal offenses and sanctions are prescribed by the Criminal Code; - The legal entity is subject to its general but also specially prescribed rules.

## 2.4. Entities of the proceedings

In criminal proceedings, it is necessary that certain procedural entities take more criminal procedural actions. These entities individually dispose of a set of rights and duties that practically determine their process position. On the basis of the characteristics they have, it can be said that the subject of the procedure or the criminal procedural entity is a process-able natural or legal person who, according to the legally prescribed rights and duties, performs a certain function in the criminal procedure with the aim of accomplishing a criminal procedure task - lighting and solving the criminal matter.

Criminal processors can be divided into two groups: a. main and b. secondary.

Main Subjects:<sup>115</sup>

The holders of the main criminal procedural functions that have a direct interest in the implementation of a criminal procedural task are the main subjects. These include: a) an authorized prosecutor (function of the charge); b) Accused physical and legal person (defense function); and c) Court (tanning function).

The prosecutor and the accused natural and legal person are criminal parties.

Supporting or auxiliary entities: Supportive or auxiliary criminal processors have only a side-by-side or indirect interest in illuminating a criminal matter. They are responsible for supporting or auxiliary criminal procedural functions, and they are still called criminal process participants.

Criminal procedure participants: a) Defendants, b) Representatives of legal persons, c) Legal representatives, d) Witnesses, e) Experts, experts, interpreters, f) Corrupted and proxies.

The Prosecutor is an authorized body to whom the right and duty to initiate criminal proceedings belongs, if there are grounds for suspicion that a criminal offense has been committed. It is its duty to immediately take into account the existence of the basis for suspicion that the committed criminal offense has taken the necessary measures for its detection and conduct of the investigation, finding the suspect, to supervise the investigation, proposing the issuance of a criminal order, raising the indictment and issuing a remedy (Article 35. CPC BiH, Article 43 of the CPC RS, Article 45 of the FBiH CPC, Article 35 of the CPC BDBiH).

Principle of legality

- Criminal prosecution of legal entities is based on the principle of legality of prosecution;

- The Prosecutor is obliged to prosecute if there is evidence that a criminal offense has been committed, unless otherwise provided by the Criminal Procedure Code (Article 17

<sup>115</sup> Ibidem., str.83.

of the CPC of BiH, Article 17 of the CPC RS, Article 18 of the CPC of BiH, Article 17 of the CPC BDBiH) ;

- As a rule, the prosecutor is obliged to initiate criminal proceedings whenever there is a reasonable suspicion that the criminal offense of a natural person has been committed on behalf of, for the account and for the benefit of a legal entity, and that one of the four mentioned conditions has been fulfilled;

- This means that the prosecutor is obliged, if the above assumptions are fulfilled, according to this principle to prosecute all criminal offenses because the law did not prescribe special criminal offenses that can be committed by legal persons.

**Principle of opportuneness** In the prosecution of legal entities, the principle of legality is more limited in relation to the prosecution of natural persons, and the limits of the application of the principles of opportunity are considerably wider than those of legal entities;<sup>116</sup>

- From the principle of legality, the law of legal persons nevertheless permits exceptionally the departure and application of the principle of opportunity;

- The Prosecutor's authority to assess the integrity of the prosecution of a legal entity, although all legal requirements for its prosecution have been met.

### 3. Conclusion

Criminal legal liability of legal persons is one of the key topics of European criminal justice in the recent period and has been faced with the criminal justice theory and legislation of all European countries. The disturbance was twofold: criminal-political

needs and the development of international and European law. Criminalization of legal persons often has extremely serious consequences for the life and health of people, has taken the lead in front of individual perpetrators in the economic area, has been linked to criminal associations, and in recent times, the danger posed by the criminal activity of companies is growing. Although the domestic criminal justice system has regulated the criminal responsibility of legal persons, it is necessary to constantly contribute to the improvement of the same and incorporate into the national legislation of the European Union guidelines and directives. Namely, legal acts adopted within the Council of Europe and the European Union, as well as the activities of the European expert bodies and authorities, showed that the need was at the European level and a strong will for the criminal sanctioning of legal persons was formed. Numerous theorists agree, and the current dynamic legislative changes in European countries confirm this, that the initiators of the introduction of criminal responsibility of legal persons into national criminal justice orders were precisely the obligations imposed in this respect by international and European regulations. Of particular importance are the Second Protocol of the Convention on the Protection of Financial Interests of the European Union. The result is that today in Europe the principle *societas delinquere non potest* has been replaced by the principle *societas delinquere potest* because the vast majority of European countries have introduced the criminal liability of legal persons, all of which prescribe a certain form of liability of legal persons for criminal offenses as well as

<sup>116</sup> Ibidem., str.85.

sanctions for legal persons. By analyzing the existing theoretical and legislative models of criminal liability of legal persons, it has been concluded that there are three fundamental distinctive material-legal features that depend on their content. The main question is whether the criminal responsibility of a legal entity is performed or autonomous, whether it is subjective or objective and is ultimately subsidiary or cumulative. In most of the criminal law regulations, a model of realized responsibility of legal persons was accepted in which the liability of a natural person is accounted for by a legal person. However, it is increasingly penetrating, both in theory and in legislation, a model of autonomous accountability. In order to make the liability of a legal person independent of the guilt of a natural person, it was necessary to create new criminal law institutes that correspond to the delinquent behavior of a legal entity, among which the most well-known responsibility is due to defects in the organization and misdiagnosis.

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## SAFETY PROTOCOLS IN E-BANKING

Almedina Hatarić, MA, email: [almedina\\_tr@hotmail.com](mailto:almedina_tr@hotmail.com),

Imran Kasumović-student, email: [imran.kasumovic@gmail.com](mailto:imran.kasumovic@gmail.com)

**Abstract:** *Safety Information System includes actions, measures and procedures in order to protect data and information system from unforeseen events with undesirable consequences. In this direction is the increasing need for disabling any accidental or deliberate distortions and prevent the functions of computer systems. We should also create the necessary conditions for the proper use of predefined functions of information systems. As a basis for finding a satisfactory answer to the question of protection of information systems, we start from the classification of threats that can jeopardize the same accident, crime and error. On the basis of this classification, there are given four answers to questions where a partial response is received, and by their synthesis received a fuller response: the value of hardware and software; versatility of computer systems; characteristics of computer systems.*

*First, it is necessary to define the purpose of the protection system, that any system of protection has meaning only if something, somewhere, and for some reason needs to be protected, and in order to achieve the goal, we need to execute something in some way on the function. The solution of these set goals is that question is possible with logical units, and according to the "golden questions" of criminology, the corresponding "golden questions" of information protection and which require full answers.*

**Keywords:** *Protocol, security, information systems, banking, technologies*

## 1. INTRODUCTION

E-commerce is a modern form of business organization that involves the intensive application of information technology and especially Internet technology. E-commerce is the conduct of business on the Internet, which does not only mean buying and selling, but also for the care of clients and business partners, as well as the organization of business in its online company and organization of business towards clients. From the definition, it can be seen that the basis for electronic commerce consists of information communication technologies that merges into the Internet that makes the global multimedia infrastructure. Today's development of the Internet has enabled new dimensions of organizational and business processes that are created by creating opportunities provided by:

A new, interactive way to access the market and business partners, both locally and globally.

Possibility to perform certain business processes outside the company.

Accessibility to a multitude of information, with powerful search elements and automated analysis.

New modalities of business association, financial transactions and business processes.

Business has always depended on technology, but today it is more pronounced than ever. It could be said that technology today manages all human life and work, and not just production facilities and service activities. Technology has changed the way we are doing jobs today, the very nature of jobs and the reasons why we are doing it. Today, customers want

access to products and services at any time from 0 to 24 hours a day. Firms that provide the most functional, reliable and user-friendly product or service have the greatest prospect of success in the long run. Investing in technology is inevitable in order to find a way to create new business opportunities, to mend trends in the shortening of the product life cycle, and to speed up the acquisition of new markets. Business moves in sometimes unimaginable directions and performs in ways that could not be assumed in the near past. The best example that confirms this is the Internet that today sets a business strategy in the world's largest companies, but also in those small ones who are aware of both its advantages in application and inevitability for that application, all for the sake of business sustainability.

Areas where the most commonly used e-business:

Online sales of their own goods and services,  
 electronic trading,  
 online entertainment and recreation,  
 electronic banking and online financial transactions and  
 electronic publishing.

## 2. INTERNET AS A PLATFORMA OF ELECTRONIC BUSINESS

Internet is a global multimedia network that connects computers around the world. It consists of the infrastructure of network servers and communication channels between them that are used to transport information between client PCs and WEB servers, as well as the creation of the servers themselves. Internet is a network of all

networks that all interact with each other in an agreed language called the protocol. This protocol is known as the TCP / IP (Transmission Control Protocol). There are literally millions of networks that are connected to Internet, and it continues to grow steadily.

The basic concept of an internet operation is client / server architecture. This concept is based on the fact that any user can request a network server from a service, and this server provides it, if he has the right to access that service. Each computer within the network, which has some information that it may wish to provide in its own memory to other users on the network, is called a server.

While on the other side, each user device (such as a user PC or workstation in a local area network) that can request and accept data from a server is called a client. The most significant feature of the client / server architecture is that users do not need to take care of where the information is in the network system, where the form is stored, and which communications paths (telecommunication lines) will reach it. What the client needs to know is that there are many standard and non-standard network (internet) services (services) that will initiate the search and obtain information, or perform some information business (data transfer and processing).

### **3. SECURITY IN E-BUSINESS**

Data security and data transmission is an old problem. The simplest form could be crawling - only one person gets the information, and others do not know the content of the message. The advantage is

simplicity, and the shortage is the short distance that can be transmitted through this way of communication. The emergence of the letter opened new possibilities, primarily sending messages to the messenger at, at that time, arbitrary distance.

The biggest application was for military purposes, which brought greater danger to the messenger and message. The messenger could save a lot of speed or combat skills, but once mastered, then the message comes to hand to the enemy. The simple trick of the Romans was to write the message on a tape wrapped around a stick of exactly a certain diameter, so such a message could be understood only by the owners of such a stick. The enemy received only a tape with an incomprehensible sequence of characters, and the message was not even known to the messenger.

Once it is learned that the message is protected in this way, it is relatively easy to try to reach the appropriate size rod. Another way is, for example, to replace each letter with someone else. The recipient and sender of the message must have the same replacement table in order to write the message or read it. No one can try it, but for thirty letters there are  $30!$  (factorial) of possible tables.

The disadvantage of this kind of protection is that some table must also be sent, so if the enemy is lucky to have intercepted a messenger with a table, he can read all the messages in the future. Moreover, he can write himself a encrypted message, and send a false messenger. If the recipient of the message knows the handwriting, at least the sender's signature, he will know that the message is fake. It can also ask the

messenger to identify, for example, a special ring of medallions, and best personal potency. With the advent of mass communication, especially internet, the need for secure transmission has grown sharply. It is now needed, not only to generals and rulers, but also business people, and ordinary citizens. Whether it's a military industrial secret, a credit card number in a love letter, data protection has become an everyday need. As we mostly do not know which way our data travels and through which hands pass, secure data transfer is necessary for every job where privacy is sought.

### 3.1. SSL protocol

Secure Sockets Layer (SSL) is a secure messaging (communication) protocol via Internet, which allows you to send confidential data (such as a credit card number) through Internet in encrypted and secure formats. The SSL protocol provides a special communication layer, which is placed on a trusted transport layer (eg TCP / IP), while an application layer is placed on the SSL.

It receives the message from the application layer, disassembles it into smaller parts suitable for encryption, adds a control number, encrypts, possibly compresses, and then sends those parts. The recipient receives parts, decompresses, decrypts, checks the control numbers, compiles the message sections, and submits them to the application layer. In this way, a secure channel of transmission through the network is realized through SSL. If the client and the server are inactive for a long time or conversation with the same security

attributes takes too long, the attributes change.

The SSL protocol was designed and built by Netscape Communications Corporation to be used with Netscape Navigator. The first version, 1.0, was developed in 1994, however, it was just a trial version of the use within this corporation. Version 2.0 was the first to be released to the public and shipped with Netscape Navigator, versions 1 and 2.

The SSL protocol was created in response to the growing demands for secure data transmission on the Internet. Due to timely emergence, and because of the market role of Netscape Communications, the creator of this protocol, SSL has become very extensive. SSL, apart from being approved as standard by the www consortium (www.w3.org), has become a de facto standard.

With SSL, other solutions that secure secure data transmission across the network were developed. The success of SSL is further emphasized by the lack of other good solutions that would replace it. S-MIME is one of the other solutions. 3.1.1. S-MIME

Secure-MIME protocol has been developed by RSA and is an extension to an already existing MIME protocol. It uses the public key system as the basis for validation and encryption. Algorithms for encrypting and working with certificates are identical to those used in SSL, so the same certificates can also be used in this protocol. MIME users, SMIME, provide the same protection described by SSL in this work.

## 4. PUBLIC KEY SYSTEM

Through computers on Internet, numerous data are continuously passing, and in normal situations, the owners of these computers do not check their content. But there are many data that require protection from the dangers that lurk from a global network. With the task of protecting data in such conditions, a technique called the Public Key Cryptography was established, which accomplishes the following protection tasks: Encryption and decryption allows two participants in communication to hide the content sent to each other. The sender encrypts the data before sending them, until the recipient decrypts them after receiving them.

Encryption represents the process of transforming data into a form that is incomprehensible to all but the intended recipients. Decryption is a reverse process, transforming encrypted data into an understandable form. The encryption algorithm was determined by a suitable mathematical method. Often, two linked methods are used, one for encryption, and the other for decryption. In the latest encryption methods, a series of alphanumeric characters are used, called the key, which use the algorithm to encrypt the data. Decryption with the corresponding key is simple, while without it it is very complex, that is, it is usually impossible for all practical applications. By separating the algorithm from the key, it allows everyone to be familiar with the algorithm, but without the key data the data is still incomprehensible.

### 4.1. Key length and protection strength

The protection power depends on the complexity of the key detection. The easiest way is to get the key directly from the owner, by stealing it or by some way of compelling it to convince him to give it to us. By such techniques, we are in danger of being identified and endangering ourselves. Another way is to calculate the key based on the encrypted data, which freely pass through the network. The complexity of this task depends on the length of the key and the encryption algorithm. The protection force is often described by the length of the key being used, and in general the following applies: a longer key - better protection.

The key length is measured in bits. Thus, when using an SSL protocol, you can also find the use of a 40-bit key, but also a 128-bit, which provides significantly better encryption with the same algorithm. The algorithms used are based on mathematical methods that have the characteristic that make it difficult, almost impossible, to decipher without knowing the key. Different algorithms for encryption can require different key lengths.

### 4.2. Confirmations

A certificate is an electronic document that identifies an individual, computer, company, or other entity that owns a private key. A certificate with the name of the entity also contains its public key. As an ID card, driver's license or other document is used for identification, certificates in computer communications provide evidence of the identity of the respective

entity. Certificates are used to protect against imitation, representation as someone that the entity actually does not. Receipt of confirmation is based on the same concept as the confirmation in the real world - certain conditions must be met. In order to obtain an identity card, we have to report to the police to determine our identity, take the fingerprint, the address of the dwelling and determine the time of validity of the ID. If a driver's license is to be obtained, a driving test must be passed first to prove the ability to drive a vehicle of the appropriate category.

Working with digital certificates as used by the SSL protocol is organized in a very similar way. As each person in his wallet has different documents (certificates) for different purposes (personal, health, driver ...), and for identification via the network, according to purpose, appropriate certificates are used. Slanderers are the institutions that verify the identity of other entities and issue certificates about it.

These may be either independent entities in the communication of the two entities, that is, a third party, or the subject in communication, who also issues certificates (for example, the bank checks the identity of its clients with its own certificates). The method for verifying identity depends on the policy of the particular issuer of the certificate, just as it is in a different way in the real world - it depends on its use. In any case, prior to the issuance of the certificate, its issuer must conduct its identity verification procedure of the person to whom it is issued. This procedure is published so that anyone who receives such a confirmation can determine whether this is a sufficient sigma method for his needs.

The significance of a digital signature is comparable to the significance of a personal signature used to sign papal documents. In some situations, a digital signature may be as correct as a personal signature. With the public key and name of the identity, the certificate contains the date to which the certificate is valid, the name of the issuer of the certificate, the serial number and some other information. The certification itself that travels over the network can be an attack object. That's why it is digitally signed. As the issuer of the certificate enjoys our trust, all offers of the affirmative issue can be trusted.

### **4.3. Identity authentication methods**

In communicating with identity verification data, there is a reliable mutual identification of two subjects in communication. This can be done in several ways, where the use of certificates is one of them. In a network environment, they communicate with the most common client (for example, some communication software on a personal computer) and the server (for example, software and hardware that contain web pages). Client identification refers to confirming the identity of a client by the server, or checking the person who is supposed to use the client software. Server identification refers to confirming the identity of a server by a client, or identifying an organization that is assumed to be responsible for the server (at the appropriate network address).

Client identification is one of the basic elements of security in the communication



network. There are two types of customer identification:

### **4.3.2. Identification using certificates**

Identification by certificates is considered more appropriate than password-based identification because it is based on:  
something that the user has (private key);  
something the user knows (a code that keeps his private key);

It is very similar to identifying ATMs where the user has to have a card and know the secret number. However, it is necessary to emphasize that these two assumptions are true only if the user's computer and password are protected from unauthorized access. The code is required to access the private key that stores the client software.

## **4.4. Types of certificates**

There are several types of certificates. Confirmations can also be used in other situations, not only within the SSL protocol, but their use goes beyond the scope of this work.

### **4.4.1. Client SSL certificates**

They are used to identify the client through the SSL protocol. It is common to identify the client's identity with a person. Except for identifying people when accessing a server, client certificates can be used for other purposes, e.g. for digitally signing digital forms.

Examples: 1. The bank gives the client a client SSL certificate that enables the bank server to identify the users and allows the

use of a bank account. 2. An enterprise may provide each new employee with a client SSL certificate, which allows access to the enterprise server.

### **4.4.2. Server SSL certificates**

They are used to identify the server by the client through an SSL protocol. Server identification is mandatory in the SSL protocol to achieve secure data transfer while client identification is not. Example: Internet business, e.g. online stores, most often use server identification through server SSL certificates to establish a secure SSL connection and convince users that it is the appropriate enterprise with which the user wants to do business. Encrypted SSL connections ensure that sensitive data sent across a network, such as credit card numbers, is protected.

### **4.4.3. Certificates of the issuer's certificate**

They are used to identify the issuer's certificates. Client and server software uses certificates of the issuer's certificate to determine which other certificates can be trusted. This simplifies the work of both the client and the server, because it is sufficient to administer the work with only one certificate issuer, and it can be accessed by servers whose certificates are part of the system of that single certificate issuer. An example of the certificate of the issuer's certificate kept by the client decides which client will believe. The information system administrator within the company can organize a secure communication policy based on certificates from each user in the company. Examples of other types of certificates are S / MIME certificates that are used for digital signing and encryption

of e-mail, then certificates for signing objects that can serve as a confirmation that the software is sent via Internet, we are creating the product of the corresponding company.

#### 4.5. Content confirmation

The content of the certificate used in the SSL protocol is organized according to the X.509 v3 specification for the certificates produced by the ITU. Users do not have to be overloaded with the content of the certificate, because the handling of them most often goes automatically. The primary task of the certificate is to verify the relationship between the public key and a specific entity (for example, individuals or businesses) designated by its own name. Thus, one of the more important data is the name of the holder of the certificate (distinguishedname). The name of the certificate holder is a structured set of attributes that uniquely describes the entity that identifies the certificate.

Typical confirmation: Each X.509 certificate consists of two parts: data and signature.

The data part contains:

- The serial number of the certificate that is unique to each certificate issued by that certificate issuer.
- Information about the user's public key, using the algorithm and the key itself.
- Name of the issuer of the certificate (structured as well as the name of the certificate holder).
- Validity period (eg between 1:00, 15/11/1998 and 1:00, November 15, 1999).

- The name of the entity, the bearer of the certificate.
- Additional, optional, data can provide useful information to either the client or the server.

The certificate signature part contains:

- The encryption algorithm, used by the publisher of the certificate for its digital signature.
- A digital signature, made on the basis of the control number obtained from all the data in the certificate, is encrypted with the private box of the issuer of the certificate.

## 5. CONCLUSION

Information technologies represent a very important factor (resource) in the process of strategic positioning of companies. The process of transition, which includes the processes of globalization and market integration, provides companies from our area to enter the foreign market, but at the same time it opens the boundaries of our country for the inflow of foreign capital, investments and products. In such an environment, enterprises, like the country and the economy themselves, must be transformed. A large number of information must be provided to the management team of the company in order to carry out the processes in the company at the optimum level.

Knowing the problem of protection of information systems through protection objects, threats, consequences, measures and risks are a precondition for the successful organization of the security of the information system itself by persons

dealing with this issue. So far, in all major conventions on the issue of security on the internet network, the most important problem is the man as a user, who is insufficiently addressed in the possibilities of using the security service, better education of users of information systems is necessary, and through organizational measures (an example that every employee has a pass ECDL and the like) and education in the basics of security, what this work contains in itself.

In addition to the above, the aim of this paper was to point out the obligation of data protection that is transmitted through the computer network and show the basic mechanisms for their protection. This work provides only the framework of cryptography, the use and significance of applied algorithms without specific examples of mathematical operations. As a science that is developing rapidly, with the development of computers, it is expected to upgrade and implement it in the security measures of modern information systems.

## IMPACT OF NEW TECHNOLOGIES TO PROTECTION AND ROAD SAFETY

**Prof. dr. sc. Sinan Alispahić, email: [sinan.alispahic@iu-travnik.com](mailto:sinan.alispahic@iu-travnik.com); Doc. dr. Tihomir Đurić, email: [mrdjtih@teol.net](mailto:mrdjtih@teol.net); Hata Mušinović, [hatka95@hotmail.com](mailto:hatka95@hotmail.com); Irfan Zec, [irfan.zec@outlook.com](mailto:irfan.zec@outlook.com)**

***Abstract:** The purpose of this paper is to point out the importance of the impact of new technologies on protection and road safety. The use of certain technological solutions in practice has many advantages, but also shows a number of problems and phenomena that negatively reflect on the protection and safety in road traffic. The consequences of the application of new technology and communications solutions today are reflected in a growing problem distraction, and distraction to driving. The problem is present in all the frequent use of various technological devices, whose use during driving can be dangerous, affecting the safety of driving. Most often when driving using mobile devices to talk or write and read messages. A number of relevant research on the dangers of using mobile phones while driving a vehicle, which are discussed in the paper, indicating their deleterious effects on road safety. Implementation of new measures to protect participants, and first and foremost the driver while driving a vehicle requires a minimum standard and the adoption of the legislation, which will affect the reduction in risk and increase protection and security during driving.*

**Keywords:** *New technologies, communication devices, distraction, hazards, safety and security*

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## 1. INTRODUCTION

The concept of protection and safety in road traffic implies a technical and technological approach to the development of sustainable transport, the requirements of which are related to sustainable mobility, that is, to the transport process, which is related to economic, social, social and environmental aspects. The focus is on human life and health, environmental protection and resource protection. For example, in English, the term security implies protection, as well as the notion of protection, while the notion of security implies security. Both of these terms mean different aspects of care for man, environment and resources. Protection and security in this context is a different set of influences on all three basic drivers of road safety, man, vehicle and road, with the aim of ensuring that traffic is safe, reliable, timely and without danger and consequences for traffic participation. In this context, the concept of protection and security is understood to mean measures that should result in reducing traffic accidents and increasing safety of traffic flows, in order to protect the lives and health of people, their property and the environment [1]. Based on this, it can be concluded that traffic protection is a set of methods, measures and procedures, the primary goal of which is to protect all traffic participants from the influence of different factors that act during the traffic, which results in the occurrence of a traffic accident. This implies the elimination of causes leading to the occurrence of a road accident, in order to ensure the conditions of protection in the traffic process. From the viewpoint of organizational measures and procedures of protection, the organization

of the state transport system, traffic flows, information systems, assistance and protection, road maintenance systems, traffic control and traffic prevention are important. From a social point of view, relevant legislation, protection plans, traffic education system, health prevention and protection of traffic participants are important. From a technical and technological point of view, traffic safety involves an interdisciplinary approach, and it understands a set of methods, technical norms and technological procedures, which aim to ensure safe traffic, in order to protect human lives, material goods and the environment. Based on this, it can be concluded that safety and security in the transport process is a scientific discipline whose primary goal is the protection and safety of all traffic participants within the framework of their psycho-physical possibilities, with a good organization of traffic flows and applied technical-technological traffic systems and minimum costs.

## 2. PRIORITIES OF THE EUROPEAN COMMISSION FOR THE FUTURE

The European Commission (EC) published its review of Road Safety Policy Guidelines, Road Safety Policy Orientations (RSPO), as a framework for action to reduce road traffic mortality by 50% by 2020. It was concluded that the seven strategic objectives of the RSPO remain relevant. However, in an independent study commissioned by the EC, a number of improvements have been proposed that have not been considered. Numerous security issues addressed in the road safety policy guidelines for measures

and EU performance indicators set in the strategy are very limited. The main conclusions of the evaluation of the assessment of the framework road safety policy of the EC are explained in the following [2]:

1. A framework policy remains a relevant strategic goal;
2. The strategic goal of reducing mortality is an important tool for reducing the number of deaths, which has proven to be an important and useful tool for monitoring and evaluating progress;
3. The goal is always at your fingertips, but it will be a challenge for the rest of the implementation period of the strategy. The average annual death toll of road deaths of 7.8% will be necessary if the target of 50% of the total reduction in traffic deaths from 2010 to 2020 is to be achieved;
4. More attention should be paid to the most vulnerable traffic participants and serious injuries. The mortality rate is slower among the most vulnerable traffic participants (pedestrians and bikers) and older participants (over 65 years) compared to other groups;
5. Future Challenges: Aging Aging, confusing technical devices. Work on road traffic safety in the coming years must begin to take into account new events such as population aging, increased use of potentially confusing technical devices in the traffic and the development of new security technologies such as cooperative Intelligent Transport Systems (ITS) and automated driving systems.

The EC priorities set for the period from 2015 to 2020 with ETSC analysis and recommendations [2] are: reducing the number of seriously injured persons, cooperative ITS and Advanced driving assistance systems, the most vulnerable

road users, secure infrastructure, the implementation of traffic regulations, the achieved results are the basis of the approach to improving the safety of road traffic and gender and road safety.

## **2.1. New development of traffic safety from 2015 to 2020**

In order to take additional measures to improve road safety and safety, the EC has accepted some of the recommendations of the European Traffic Safety Council (ETSC) [2] as a priority for the new development from 2015 to 2020. One of the key priorities for new developments is the increased investment of EU funds for road safety and safety. The second priority of the new development research is the occurrence of distraction, that is, distraction, because the use of mobile phones and other electronic devices while driving a vehicle significantly reduces the driving ability. This is one of the emerging issues that are troubling, and whose research is in progress. ETSC recommended that consideration be given to the adoption of the law on the prohibition of the use of mobile phones (both hands and hands-free) during the operation of the vehicle. The third priority of the new development is the creation of the European Road Safety Agency, which ETSC fully supports. The fourth priority relates to driving prohibition under the influence of alcohol and drugs. The data suggest that about 6,500 lives would be saved annually if all drivers were to keep the permitted amounts of alcohol while driving. Drinking problems under the influence of alcohol can be resolved by reducing the permissible amount of alcohol in the blood and using the engine blocking device. However,

driving under the influence of alcohol is still the second biggest cause of road accidents on EU roads. Therefore, the ETSC suggests the adoption of the Directive driving under the influence of alcohol, setting zero tolerance rates for all drivers, introducing alcohol locks, engine blocking devices for recidivists and professional drivers, and adopting common minimum standards for driving under the influence of drugs.

## **2.2. Significance of new technologies for protection and safety in transport**

The rapid development of the needs for general mobility and the transport of material goods can no longer be solved only by physical construction and reconstruction of roads. In the 21st century engineering engineering, there are new requirements for achieving transport goals: safe, efficient, reliable and transport with minimal harmful impact on the environment. In doing so, the fundamental feature is reflected in the growing demands with the imperative of lower costs. Traffic safety is a key priority. On the basis of United Nations General Assembly Resolution 64/255, which defines the Decade of Road Safety Action (2011-2020), with the overall objective of reducing the number of people killed by 50% worldwide by 2020 and the European Commission adopted 2011 "White Book ", a Single European Space Plan - A Road to a Competitive Traffic System within which to manage resources effectively [3]. For the period up to 2020, the EU has set a very ambitious goal, reducing the number of road deaths by 50% starting from 2011. In the EU Member States, 500 people per week die in road accidents, of which the

largest number of drivers, 105 pedestrians and 38 cyclists, and about 2600 people are seriously injured [4]. According to the lowest number of people killed in road accidents, Sweden is ahead of 2.8 and Britain with 2.9 deaths per one hundred thousand inhabitants. At the European Union level, the estimated total costs generated by the death of a person in a car accident are estimated at EUR 1.1 to 1.3 million. It is estimated that social costs (rehabilitation, health care, pecuniary damage, etc.) arising from fatalities and injuries on roads amount to at least 100 billion euros. The current stagnation of road traffic safety in relation to previous years is the reason for increased efforts and taking additional measures that will contribute to improving traffic safety.

In order for the EU to achieve its goal and halve the number of people killed on the roads by 2020, it is necessary to continue to operate in areas where visible improvement can be achieved. Innovative technologies and technological advances have increasingly taken on the impact on road safety, with significant potential for future improvements in road safety. Pursuant to the EU road safety policy guidelines for the period 2011-2020 and the General Safety Regulation [5], innovative technologies and research have a primary role to play in improving road safety in the future. The most effective new technologies to improve road safety in the area of active vehicle safety can bring significant benefits, including Intelligent Speed Assistance (ISA), Automated Emergency Braking (AEB), a warning in the event of a traffic lane leaving ( Lane departure Warning-LDW / LCA), Alcohol Interlocks, engine blockers if the driver is under the influence of alcohol and the belt tie-reminders system on passenger seats, which are needed as

necessary technologies and already available on the market under effective conditions of use [6]. The advantages and disadvantages of intelligent use of particular technologies can significantly affect the improvement of road traffic safety [7]. Through the conclusions of the evaluation of the assessment of the framework road safety policy and the priorities for action in the next five years, the EC also emphasized, among other things, the importance of increased use of "confusing technical devices", that is, distractors in traffic as challenges to be addressed and whose use endangers the safety of vehicle management. A new challenge is the development of new security technologies such as cooperative Intelligent Transport Systems (ITS) and automated driving systems. In order to consider and undertake additional measures to improve road safety and security, the ETSC proposed, and the EC accepted recommendations as priorities for new developments and security improvements from 2015 to 2020. The intention is to devote more attention and research to the phenomenon of distraction, that is, distractions, because the use of different technical devices, and especially mobile phones and other electronic devices while driving the vehicle significantly reduces the driving ability. Therefore, the need to diagnose and investigate the dangers that jeopardize traffic safety, in particular safe vehicle management and safe travel, in order to consider and propose concrete measures to prevent the threat of traffic safety and improve the protection of road users.

### 3. DISTRACTIONS DURING DRIVING A VEHICLE

The use of new technologies, in addition to numerous advantages, can have a negative impact on traffic safety, in particular on safe vehicle management. In particular, it is about information and communication technologies that are being used intensively in recent times. The previous methodology for investigating traffic accidents and the causes of starvation in the foreground highlighted the improper and unadjusted speed of driving conditions, driving under the influence of alcohol and insufficient use of innovative technologies and elements of passive vehicle safety. However, numerous research and problems related to vehicle safety and the use of various devices while driving indicate the need to diagnose the hazards that in such circumstances endanger traffic safety. On the importance of this problem, it was also pointed out at the International Conference of the European Traffic Police Network, held on 16.11.2016. in Zagreb.<sup>117</sup>

#### 3.1. Distraction while driving

The use of various, and especially mobile devices, during the vehicle's management, has the effect of deterring or distracting the situation in front of the vehicle, causing a potential danger that may have fatal consequences. In practical terms, it is inattention or distraction that causes attention when driving a vehicle from a situation in front of a vehicle [8]. In such a situation, the driver's concentration decreases, it prolongs the reaction time,

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<sup>117</sup> The International Conference of the European Traffic Police Network (TISPOL) was held on 16.11.2016. in Zagreb, Hrvatska.

reduces the ability to make timely decisions and secure responses. Along with the notion of distraction, the notion of a distractor (object, person, object, image, situation, device) is related to something that distracts the attention and concentration of the situation in front of the vehicle during the control. Except for drivers of motor vehicles, this problem is present both for cyclists and for pedestrians. Devoting attention, except when using a cell phone, is also due to the preparation for charging cell phones in the car, drinking water or drinking coffee while driving, then smoking, eating, searching for radio programs, or changing a CD / DVD / contact, listening to music or searching for a destination. The results of the research of this phenomenon, and especially research in the field of psychology, indicate the significant influence of mobile phone conversations on safe vehicle management. There are numerous studies about the negative impact of mobile phone conversations on safe vehicle management. However, traffic participants, and primarily drivers, are not sufficiently informed, nor are they aware of the dangers and consequences of such behavior. [9] From a psychological point of view, the driver's disturbance, the dangers and consequences of cell phone conversations, and the writing of messages while driving, indicate an adverse impact on driving. However, the key issue concerns the fact that drivers can not make it happen because a large number of drivers are consciously using a phone conversation during a vehicle's control, considering it as a "normal" procedure. According to authors [10], there are various forms of distraction based on the psycho-physical characteristics of the driver, such as the sense of vision, hearing, sniff, taste, smell and balance.

### 3.2. What is distracting the driver's attention?

Distraction "deviation from the mind, attention, etc., due to a particular object or course; a fact that has somebody's attention or something disturbing concentration ". Although this definition is devoid of context, this means that distraction involves distracting something from something and that it is "something" disturbing someone's concentration on something else. The Expert Team at the International Conference on Traffic Disruption in Canada, 2005 (Hedlund et al., 2005) proposed the following definition: (1) "distracting driving because the driver is temporarily focused on an object, person, task, or event that does not apply to driving, which reduces driver awareness and decision-making ability, leading to an increased risk of corrective action, almost to an accident or accident "(page 2). The second approach is reflected in the systematic review, comparison, and analysis of the definition in the literature, which has been done in at least two known works (Lee et al., 2008; Pettitt et al., 2005). This has revealed the following two definitions: (2) "Distraction of the driver's attention is to draw attention from activities critical for safe driving towards the opposing activity" (Lee et al., 2008, p. 34). (3) "Distraction of the driver's attention is: delay by the driver in identifying the information necessary for the safe maintenance of lateral and longitudinal control of the vehicle (driving task); due to some events, activities, buildings or persons, inside or outside the vehicle; compels or intends to induce the driver to draw attention away from the basic tasks of driving; endangers driver's auditorium,



biomechanical, cognitive or visual abilities, or combinations thereof. (4) Distraction of driver's attention occurs "whenever a driver is delayed in recognizing the information necessary to secure the accomplishment of the driving task because an event, activity, object, or person in the vehicle or outside his vehicle is forced or is likely to cause the driver to shift from task to task in the drive" (Treat, 1980, p. 21). (5) Distraction of the driver's attention results "from the interference between the driver's task and external stimulation that has nothing to do with driving (for example, steering the vehicle and adjusting the radio)." (Hoel et al., 2010, page 576). These different approaches, in combination, reveal some of the key elements that are thought of in defining the distraction of the driver's attention or driver distraction: there is distraction from driving or safe driving, attention is diverted towards the opposing / competitive activity, inside or outside the vehicle, which can or does not have to be related to the ride, the opposing activity may force or induce the driver to divert attention accordingly and there is an implicit or explicit assumption that this has a negative effect on safe driving. The results of the survey about distractions while driving of the American Automobile Association<sup>118</sup> (AAA) motorcycle clubs in North America, which has 55.6 million members in 2014, indicates that writing messages while driving (86%) comes first when it comes to distractions, reading messages (81%) second, makeup, combing, shaving (58%) in third place, mobile phone conversation (in hand) (57%) in fourth place, followed by use of GPS (30%) (22%), in-car luggage (20%), other DVD

systems (20%), food and drinks (19%), CD replacement (16%), vehicle interference (14%), children in the car (12%), listening to audio books (10%) and talking with a companion (6%).

### 3.3. What is the driver's negligence?

A convenient starting point in defining "carelessness" is defining "attention." Attention is defined as "the concentration of the mind on the object, the maximum integration of higher mental processes" [11]. However, there is a great variety of thoughts in defining attention, among which a definition that encompasses the essence, as offered by the author [12], "... is a process of concentration or focusing of limited cognitive possibilities in order to facilitate perception or mental activity" (page 3). "Invalid", on the other hand, is defined as "failure to pay attention or receive notification" (shorter Oxford English Dictionary on historical principles, 2002, page 1340). Of course, this is not the definition of the driver of neglect, because it is devoid of context. However, it is interesting to understand (a) that a person has control over their care and (b) that it is careless to be somewhat negligent. Of course, this is not a definition of driver's negligence, because it is devoid of context. However, it is interesting that it is implied that (a) a person has control over their attention, and (b) that this is a negligence which is in some way negligent. In the literature there are very few definitions of driver carelessness, and those that exist as well as driver distraction differ in meaning.

<sup>118</sup> The American Automobile Association is a federation of moto clubs throughout North America. AAA is a non-profit organization with a

membership of 55.6 million members in the US and Canada.

For example, authors [13] define the driver's carelessness as "the reduced attention to activities critical for safe driving in the absence of opposing activity" (page 32). Or Victor et al., 2008, defines driver's negligence as "incorrect selection of information, or lack of choice, or selection of irrelevant information "(page 137). In a new collision study, driver's failure was defined as an event" when the driver's mind drifted away from the driving task for some unconvincing reason ", such as when the driver focusing on inner thoughts (ie, dreaming, solving problems, taking care of family problems, etc.), and not focusing on the task of driving "(Craft & Preslopsky, 2009, p. 3). Talbot and Fagerlind (2009), in a paneurope study of 1005 collisions, define driver's negligence as "low alertness due to loss of focus" (page 4). Based on these definitions, it can be concluded that there are different forms of driver negligence. On the basis of an analysis of the above definitions, the authors [11] suggest that driver's negligence can be expressed in the following forms or subcategories: limited attention, priority attention, neglected attention, superficial / feminine attention and redirected / distracted. In doing so, diverted attention may be related and not related to the operation of the vehicle. When distracted attention is related to the driving of the driver's mind, they are related to the task of driving. In diverted attention not related to driving thoughts are not related to the task of driving (internal / unintentional, internal / intentional, external / intentional, external / unintentional) and are related to dreaming.

### 3.3. The impact of distracting the driver

It is known that the use of mobile phones while driving is a compromise on the performance of driving and safe driving, in both cases, in a real and stimulating driving environment. Depending on the mode of use of the mobile device, it was found that the phone conversation was associated with poor maintenance of the speed adjustment (Charlton, 2009; Haigney et al., 2000), failure to maintain the proper position of the vehicle (Charlton, 2009; Rosenbloom, 2006) load (ALm and Nilsson, 1995 Kirscher et al., 2004, Matthews et al, 2003; McKnight and McKnight, 1993), and the failure to detect relevant traffic signs (Strayer and Johnston, 2001). Numerous studies have also found that getting into a cell phone conversation during a vehicle's management (either hands-free or holding a phone) can result in danger of increasing the reaction time of the braking driver (Consiglio et al., 2003) on common traffic signs (Hancock et al, 2003; McKnight and McKnight, 1993; Strayer and Johnston, 2001), and vehicle decelerations (ALm and Nilsson, 1995; Strayer et al, 2003). An epidemiological study showed that a mobile phone conversation was associated with an increased risk of car accident occurring between four and nine times (McEvoy et al., 2005; Redelmeier and Tibshirani, 1997; Violanti, 1998; Violanti and Marshall, 1996) . The influence of distraction on the driver during driving is dependent on his characteristics (age, psycho-physical condition, fatigue, etc.), conditions and driving requirements (night, rain, fog, sun, ice, pavement condition, driving speed), demands of opposing activities (intensity, interest, complexity)

and his ability to control his behavior in a situation of distraction. There are studies whose interpretation of the results suggests different treatment when it comes to using a cell phone, as the most common device that disturbs the driver's attention. An example is a new study published by the British BBC, conducted in London at the Carnegie Mellon University in the School of Economics, shows that using a mobile phone in a car while driving is less dangerous than it actually is. The study included an analysis of more than eight million road accidents in eight US states between 2002 and 2005 at 21 o'clock. Analyzing telephone calls and appropriate traffic incidents, professors Saurabh Bhargava and Dr. Vikram Pathania concluded that traffic accidents were not caused by telephony. At that time, a large number of Americans on the road and statistics say that at that time the number of traffic accidents has not increased. In other words, telephone calls in the car are not recognized as the cause of traffic accidents. It has been revealed that the number of phone calls has increased, but not more traffic accidents. Another example of mobile phone-related research conducted by psychologist Strayer D., Utah University, conducted using driving simulators suggests slower response times for drivers to unforeseen circumstances. Drivers who participated in the survey occasionally chatted with the cell were unaware that they were "uncertain" and risked driving, and when asked how they drove, they responded. no error. It is clear that if drivers talk to a cell phone and drive a vehicle, some of the driving situations during the conversation are not aware or remembered at all. This is because their brain does not process peripheral information as needed. Peripheral

information includes the identification of traffic signs, other vehicles and the contents around and along the road. It has also been proven that the same situation does not happen in cases where the driver is listening to music or talking with passengers in the vehicle, while the interference is significantly less. Writing and sending messages while driving is even more dangerous than talking to your cell phone. This procedure requires visual processing of the situation on the road and content on the cell phone, while simultaneously writing the message and managing the vehicle. It also requires thinking about the content of the message and the situation on the road that it controls. These tasks in the form of tasks are quite demanding and conditioned by attention and interference. The use of mobile phones during driving is conditioned by poor vehicle control, risk and inadequate driving speeds, poorer traffic signs, misspellings, increased response times, which can increase the risk of a car accident four to nine times (Charlton, 2009). In today's conditions, the use of mobile phones while driving a vehicle to solve specific problems is some of the psychological and social factors that motivate drivers to use mobile phones. Furthermore, research has shown that talking to a mobile phone while driving a vehicle has a negative impact on safety, as it poses a risk of shifting attention from the driving situation to the conversation, as well as demanding activity. Numerous research and scientists did not find a significant difference in cellular phone conversations during vehicle management, hands-held hands-free use, and hands-free devices (Hallet, Regan, 2011, Charlton, 2009, Ishigami, Klein, 2009). Overall, at least when it comes to researching personal car drivers, the use of hands-free mobile

phones does not reduce the risk associated with the use of cell phones while driving a vehicle (Ishigami and Klein, 2009; Lamble et al, 1999; Strayer and Johnston, 2001 ).

### **3.5. Arranging according to the regulations on the prohibition of the use of mobile devices**

The purpose and purpose of using technology and its advancement should have a positive impact on improving the quality of life of all users. So it should be with the use of mobile devices, without which in today's conditions life is almost unimaginable. Their key tasks, allowing users to communicate easier and faster, have changed completely. In certain situations, users as well as traffic participants, and primarily drivers, can risk life when driving a vehicle. The law in Croatia should not use a mobile phone or other devices during the operation of a motor vehicle in a manner that would lessen the ability to react and safely manage the vehicle. A mobile phone can be used while driving if a device is used that allows its use without the use of hands. As part of the "Rule 7" project, co-financed by the World Automotive Organization (FIA), conducted by the Croatian Autoclub, based on the "10 golden rules", in July 2016, the results of a survey on the use of cell phones during the vehicle management [14 ]. The project is aimed at raising the danger of driver and passenger in the vehicle from using a mobile phone while driving a vehicle. The survey was conducted on-site and through an online poll, and public competition collected short films about the dangers of using the cell phone while driving. Short film authors were pupils of primary and secondary schools throughout Croatia and

students and young people under the age of 24. The survey was conducted in the period from 14.03. until 06/03/2016. during business days and Saturdays at 45 locations in 25 cities. There were 11,504 drivers, 24% female drivers and 76% of drivers. It was noticed that 10% of drivers used a cell phone to talk while driving, and 2% typed it on the cell phone. Women talk about the cell phone about 27%, talking about 73%, while men type about 20%, and talk about 80%. It was also noticed that some 93% of drivers who used the mobile phone while driving were alone in the vehicle, which leads to the conclusion that drivers don't talk on the cell for business or family reasons, but because they are alone in the vehicle. The survey question in the online survey, whether driving mobile phones is dangerous, almost all respondents (96.3%) answered positively. By examining the behavior of drivers in traffic, it was noticed that they deliberately ignored the danger of talking to a mobile phone while driving. They have no fear either of the events of a traffic accident or of possible payment of fines. Such a position is confirmed by the data of the Ministry of the Interior about 39,000 recorded violations of the use of mobile phones during the operation of the vehicle. The danger of talking to a cell phone represents a large number of cognitive processes, from the understanding of another person, the memory of the content of the conversation to the observation of the spoken word. It is considered that the conversation with the passenger is not significantly dangerous, as the passenger changes the conversation depending on the situation on the road, weather conditions and unforeseen circumstances. This means that the conversation with the passenger can act favorably on the driver, because it keeps

him aware, alert, concentrated, and can, for example, advise him to pay attention to reduced road conditions or to reduce the speed of movement or to increase the distance. Because of the proven dangers of using a mobile phone while driving, the best solution for the protection and safety of drivers and traffic participants is to exclude a mobile phone and not use it. In addition to this solution, existing computer-aware applications that can be activated and automated send messages that the driver is managing the cell phone and will report later. In the event of an urgent conversation, turn off the vehicle, stop it, and make an interview.

#### 4. CONCLUSION

In the literature used, there is a lack of the necessary consensus on the equalization of the meaning of the term "driver's negligence" and "distraction of the driver's attention," as different definitions are observed in the definitions. In this work, we tried to point out the theoretical framework for defining and understanding the role of inadmissibility of drivers in traffic accidents and possible hazards that lead to the occurrence of traffic accidents. In this way, he attempted to differentiate the meaning of the definition of driver's negligence and distraught driver attention, that is, distraction. It can be concluded that inadvertent driver involves insufficient attention to activities that are risky for safe driving, which can be a diversion of the driver's attention.

Important next steps in developing the meaning of the definitions of these concepts should be confirmed in practice in theoretical and practical sense, by

developing a comprehensive framework for the uniformity of interpretation and understanding of terms. Future activities should focus on research that will try to find out why a mobile phone conversation has a negative impact on driver safety and vehicle management.

In order to implement the recommended measures, it will be necessary to establish and adopt appropriate legislation, which will define the application standards and enable the improvement of traffic safety. Future research is needed to determine if legislation is a successful method in creating changes in behavior and perception of risk during a conversation with a mobile phone while driving, and if not, what measures can affect such a change.

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## ASSESSMENT OF BUSINESS RISK IN ORDER TO PREVENT MONEY LAUNDERING

Lejla Skopljak, MA, e-mail: [lejla.skopljak@iu-tavnik.com](mailto:lejla.skopljak@iu-tavnik.com)  
Aida Vrbanjac, MA, email: [aida.vrbanjac@iu-travnik.com](mailto:aida.vrbanjac@iu-travnik.com)  
Adela Mujinović, email: [adela.mujinovic@gmail.com](mailto:adela.mujinovic@gmail.com)

*Abstract: Risk is main part of business, and if it is not timely detected and not taken appropriate control activities, risk with its damaging consequences could prevent a successful business. New trends in the exchange of goods, services, money and capital, and the movement of people, get new forms and lose numerous of the existing restrictions. New opportunities are created but also more unknown risks that can not be viewed to the end. More vulnerable national security requires new approaches and solutions of the state against money laundering and abuse of illegal actions. Bosnia and Herzegovina is recognized as a risky country for acquiring illegal assets or the money laundering. Innovation and imagination of people who are dealing with money laundering is unlimited. The variety of possible process of converting illegal money into apparently legitimate, points to the fact that money laundering has complex structure. Banks and other financial institutions occupy first place in the prevention of money laundering, they are also the most exposed to risks of money laundering activities. Prevention measures in this case include the identification of cash and suspicious transactions through risk assessment. The risk assessment approach should be used by all participants in the market trends in order to assess the risk of money laundering that accompanies clients, financial transactions, geographical area, looking for potentially suspicious activity.*

**Keywords:** Money laundering, business risk, financial transactions, suspicious activities

### INTRODUCTION

Bosnia and Herzegovina is recognized as a risky country for money laundering. The diversity of possible processes of converting illicit money into seemingly lawful points to the fact that money laundering is complex in its structure. In order to determine the risk exposure of a taxpayer and to effectively manage this risk, the taxpayer himself must identify each segment of his business in which the threat of money laundering can arise and he must assess his vulnerability in relation to that threat. Risk is continuously identified at all levels of government - from operational to strategic level - all the organizational units of taxpayers are included in this process.

The size and complexity of the obligor's business plays an important role in deciding how attractive or at risk of money laundering is, if the enterprise is large, it is less likely that it will personally know the client, and that client can be significantly more anonymous than if is a client of a small business.

### 1. MONEY LAUNDERING

According to Article 2 of the Law on the Prevention of Money Laundering and Financing of Terrorist Activities in BiH<sup>119</sup>, money laundering involves the replacement of property or the transfer of property if it is acquired through criminal activities, with the aim of concealing or covering up the illegal origin of property or providing

<sup>119</sup> "Official Gazette of BiH" No. 47/14

assistance to a third person involved in such activities in order to avoid legal the consequences of the acts committed. Money laundering allows criminals to use their illegally acquired money, without incurring any doubts. There is a wide range of activities that can be undertaken to conceal the origin of assets acquired through the commission of a criminal offense. Anyone providing services or delivering certain products that can be used for storage or transfer of value can be misused as an instrument in the money laundering process. Money can be tracked through business in the financial sector, as well as through operations outside the financial sector. The Law on Prevention of Money Laundering and Financing of Terrorist Activities of BiH (Article 4)<sup>120</sup> prescribes taxpayers for the implementation of measures for detecting and preventing money laundering, which are: banks, insurance companies, leasing companies, microcredit organizations, authorized intermediaries, companies dealing with electronic money changers, pawnshops, persons performing professional activities (notaries, lawyers, accountants, auditors, legal and physical entities performing accounting and services tax consulting), real estate agencies, legal and natural persons (dealing with the reception and distribution of money or property in humanitarian, charitable, religious, educational or social purposes, money transfer or value, factoring, forfeiting, keeping, investing, holding, managing or by giving advice on the management of third-party assets issuing, managing and

operating with payment and credit cards and other means of payment, issuing financial guarantees and other guarantees, commitments, lending, offering and mediation in loan negotiations, organization and management of bids, trading of precious metals and precious stones and their products, trade in art objects, vessels, vehicles and aircraft) and the privatization agency.

### 1.1. Phases of money laundering

Money laundering is usually described as a process that takes place in three phases:<sup>121</sup>

1. Investment;
2. layering (concealment);
3. Integration.

The basic components of money laundering are: moral, psychological, social, criminological, historical, legal, economic and political<sup>122</sup>

At the investment stage, assets acquired through the commission of a criminal offense are placed in the financial system. Large amounts of money are scattered into smaller parts to arouse less suspicion, and then deposited in accounts at various financial institutions for a certain period of time. In addition, unlawfully acquired funds can be invested in securities, insurance policies can then be mixed with revenues from legal business or can be shown as revenue from false or "phantom" companies that, in fact, do not do business but solely serve for the deposit cash on accounts. In the stratification phase, funds are transferred from the account where they

<sup>120</sup> "Official Gazette of BiH" No. 47/14

<sup>121</sup> Teofilovic N., and Jelacic M., (2006), Prevention, detection and proving of criminal acts of corruption and money laundering, Police Academy, Belgrade, p. 1

<sup>122</sup> Vesić D., (2008), Economic and political component of money laundering corruption, UDK: 343.352 Bibliid 00258555, 60 Vol. LX, no. 4, pp. 481-501, p.493



were deposited to other accounts in a whole series of transactions, and these other accounts are located in various institutions around the world. Many of these transactions have no economic logic and virtually remain unintended in business. The main goal of these transactions is to conceal the connection between monetary funds and the criminal activity by which these funds have been acquired. The purpose of the transactions in question is to hide the trace of money and to hinder all those who try to investigate the origin of these monies. In the third stage, the integration stage, the money is invested in legitimate business, works of art, stocks, real estate, luxury goods. It is very difficult at this stage to clearly distinguish between legal and illegal funds.

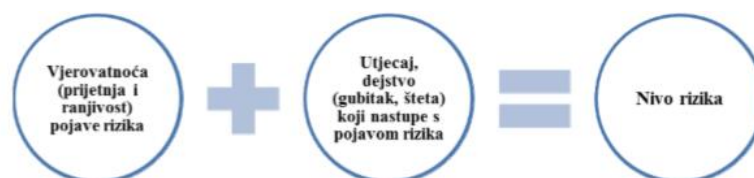
These three stages do not necessarily take place in that order because criminals sometimes choose to directly invest illegally acquired assets in luxury goods or real estate. Similarly, in the case of some criminal offenses, such as frauds and frauds in the field of investments, cash funds of criminals are already in the financial system, and then there is no need to be added to the system. Moreover, before the unlawfully acquired money is introduced into the financial system, that money is often only transferred from place to place.

## 1.2. Estimation of the risk of money laundering in business

Risk is a function of probability of risk events and the impact of risky events. The probability of events is a combination of threats and vulnerabilities, that is, in other

words, risky events occur when a threat takes advantage of vulnerability. The level of risk can be reduced by reducing the fluctuations, vulnerabilities or their influence.

Figure 1. Risk of money laundering

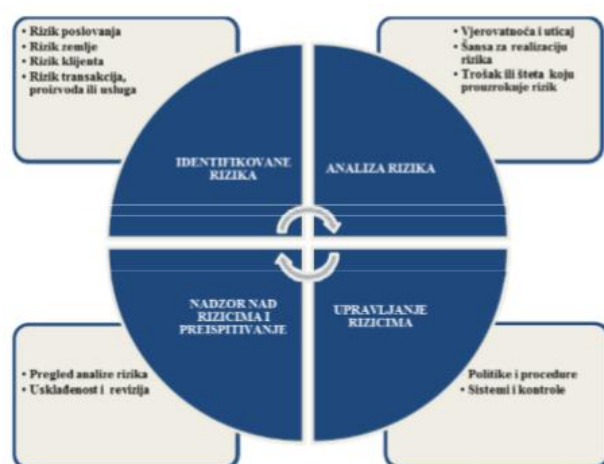


Source: Authors' creation

In order to determine the risk exposure of a taxpayer and to effectively manage this risk, the taxpayer himself must identify each segment of his business in which the threat of money laundering can arise and he must assess his vulnerability in relation to that threat. Risk is continuously identified at all levels of government - from operational to strategic level - all the organizational units of taxpayers are included in this process. The size and complexity of the obligor's business plays an important role in deciding how attractive or at risk of money laundering is, if the enterprise is large, it is less likely that it will personally know the client, and that client can be significantly more anonymous than if is a client of a small business. Once the risk of money laundering is identified, it is necessary to estimate the negative impact on the realization of the business objectives. Risk analysis and identification should be implemented on all existing and new products, activities and processes. It is necessary to focus on those clients, countries, products, services, transactions and delivery channels that represent the greatest potential risk.

The risk assessment process has four stages: 1) identifying areas of business that are susceptible to money laundering; 2) conducting an analysis to determine the likelihood of money laundering and, in that case, its impact; 3) risk management; 4) control of risks and their re-examination.

Figure 2. Money laundering risk assessment procedure



Source: Authors' creation

The first phase involves identifying clients, products, services, transactions and geographic locations that are specific to the taxpayer. Depending on the specific characteristics of certain clients, products, services and transactions, as well as the delivery channels, there is a danger of money laundering and susceptibility to these phenomena. In the second phase, analysis is carried out as a combination of the probability of the occurrence of this phenomenon and the impact of the costs or damage that could be caused in the given situation. This impact may consist of a financial loss for doing business due to the commission of a criminal offense or of fines imposed by the authorities in a given situation. It can also be done to damage our business reputation or the whole sector. The

analysis of certain risk categories and their combinations is specific for each entity of the taxpayers individually, so that the conclusion on the overall level of risk must be based on all relevant information. In the third phase, the taxpayer will apply risk management strategies based on the analysis and implement the appropriate sectoral policy and apply the appropriate procedures. In order to effectively mitigate and mitigate the risk, adequate systems and control mechanisms will be applied. In the end, in this process, the risks and risk management should be monitored and re-examined. The taxpayer can do this by developing a supervisory regime through compliance and auditing programs. The assessment of the risk of money laundering must be periodically revised based on the extent to which the extent of the risk has changed or the extent to which the business types or strategies of the taxpayers have changed. The risk assessment of money laundering is carried out at the company level, macro assessment and at the level of organizational units so called micro risk assessment. On the basis of the information generated by this assessment, the company decides on the scope and type of tests to assess the risk of money laundering. In the case of micro risk assessment, company management should take into account the following tipoverisics as well as their mutual relations (Pickett Spencer, 2006: 153): 1. Inherent risk - a risk that is part of self-activity, 2. Control risk - the risk of failure to function of controlled controls to be have the greatest importance for risk assessment planning 3. Residual risk - the risk that remains after posting takes all measures, including interim controls, to reduce the likelihood of occurrence of risks and its consequences, 4.

Audit risk - the risk arising from the non-professional performance of internal audit, the vulnerability of her objectivity and independence. An important prerequisite for a good risk assessment is a good understanding of the risk itself and well-developed procedures that will be applied by trained staff. Where a macro assessment of the risk of money laundering takes account of the country's risk or geographical risk, the client's risk and the risk of a transaction in a product, product or service.

There are four risk categories, a low, medium, high or unacceptable risk for doing business. When determining the risk category, institutions should take into account different types of risks such as country, client and transaction risks, products or services.

Figure 3. Risk of macro risk assessment of money laundering

Rizik zemlje ili geografski rizik	Rizik klijenta	Rizik transakcije proizvoda ili usluge
<ul style="list-style-type: none"> <li>• Rizik zemlje ili geografski rizik, u kombinaciji sa ostalim kategorijama rizika, daje korisne informacije o potencijalnoj izloženosti pranju novca i finansiranju terorizma.</li> <li>• Zemlje koje ne primjenjuju standarde borbe protiv pranja novca i finansiranja terorizma (crna lista).</li> </ul>	<ul style="list-style-type: none"> <li>• Stranke koje svoje poslovne odnose ili transakcije obavljaju (ili su ih obavljale) u neuobičajenim okolnostima.</li> <li>• Teško identifikovati pravog vlasnika ili onoga ko ima kontrolni interes.</li> <li>• Poslovanja u kojima se u velikoj mjeri koriste gotovinska sredstva, uključujući i (neformalne) agencije za prijenos novca, menjačnice, kockarnice, kladionice itd.</li> </ul>	<ul style="list-style-type: none"> <li>• Primjena novih tehnologija.</li> <li>• Transakcije ili usluge u kojima nema neposrednog kontakta između učesnika.</li> </ul>

Source: Authors' creation

Figure 4. Categories of money laundering risk



Source: Authors' creation

## 2. RISK MANAGEMENT OF MONEY LAUNDERING IN BUSINESS

The objectives and principles of risk management of money laundering should enable taxpayers to establish appropriate policies and procedures, including rules on measures and actions undertaken for the purpose of knowing and monitoring the party, promoting high ethical and professional standards and preventing the intentional or unintentional misuse of entities for criminal activities. It is desirable that managers who are responsible for risk management at the level of their organizational unit develop procedures for managing the risk of money laundering, so that these procedures are appropriate to the specific tasks of the organizational unit in question, all of which must be consistent with the objectives and principles of the assessment the risk of money laundering at the level of the institution as a whole. Management must encourage regulatory compliance and ensure that employees strictly respect internal procedures, sectoral policies,

practices and processes aimed at mitigating and controlling money laundering. Management should also encourage ethical business culture and ethical behavior. Ethical behavior is a professional, individual responsibility when individuals are aware of their rights, interests and desires

of other actors and consciously take them into account, open to new ideas and ready to solve tasks in a transparent way, and at the same time they are willing to assume responsibility and to be considered responsible for the decisions they make and the moves they take.

The bondholder must make sure that each employee understands his role in the risk management process of money laundering so that it is possible to ensure proper detection and proper risk control. Therefore, training for employees who are in direct contact with clients or who perform transactions are of crucial importance in the process of managing the risk of money laundering. A limiting factor in this process may be the lack of appropriate personnel or if appropriate training has not been carried out. All employees from the level of executives to the top management must be aware of the risk of money laundering. The best way to provide appropriate training is to create an annual program of vocational education, training and improvement of employees.

Measures for risk reduction are:<sup>123</sup>

- Increasing the level of awareness about the danger of high risk situations in business relations,
- Finding a license to establish a business relationship even when not mandatory,
- Increasing the level of business partner knowledge by implementing enhanced depth analysis measures,
- Implementing enhanced ongoing control and business relationship revisions .

### **2.1. Monitoring and reviewing risks**

The bondholder should establish an appropriate and lasting process of monitoring and reviewing the risk of money laundering. This process should be implemented as part of the business control function, to ensure that all envisaged procedures are applied on a regular basis, whether the established sectoral policies are respected and whether all systems are in function and within the framework of the audit, when determining whether sectoral policies and processes in accordance with the Law and are implemented in an adequate manner.

Regular reports submitted to the Anti-Money Laundering Administration should include data on the results of the monitoring process, the findings of internal controls, reports of organizational units in charge of supervision and risk management, internal audit reports, reports of persons authorized to detect, monitor and report all suspicious transactions, as well as the conclusions of the supervisory authorities set out in the reports on the field inspection of the

measures for the prevention of money laundering.

The institution may have a special organizational unit for managing the risk of money laundering, ie a licensed person. An authorized person is appointed at the level of administration. An Authorized Person has an important task in determining the risk assessment process and in the process of monitoring and reviewing the management of money laundering risk.

In addition to continuously monitoring and reviewing money laundering risks, the taxpayer should also have an internal audit in order to be able to independently assess the system for managing the risk of money laundering. Independent verification may be carried out by internal auditors, external auditors, expert consultants or other qualified persons who are not directly engaged in the operation or functioning of the risk management system of money laundering.

### **2.2. Effects of risk assessment of money laundering on business**

The effects of risk assessment of money laundering on business can be positive and negative. Positive effects include:

- Cost Efficiency - A good risk assessment leads to efficient spending of limited funds. What is important is the fact that it is not about cutting costs and other similar radical measures, but about a good allocation of funds without unnecessary losses.
- Flexibility - It is essential that taxpayers, as well as regulators and supervisors,

<sup>123</sup> Vinšalek Stipić, V., Blažević, L., Managing the Approach Based on Risk Assessment and Money

Laundering Risk, Practical Management, Vol. II, no. 3, p. 73-79

constantly adapt to the reality surrounding them, since criminal milieus constantly adjusts its "business" and strategy depending on the risk that it surrounds. - Proportionality - means that steps need to be taken to identify and strengthen weak points and shortcomings, while concentrating on really weak points in order to make criminals more difficult to deal with money laundering.

The negative effect of business risk assessment is precisely the risk of judging the degree of risk associated with business partners, products or services, transactions and the geographical area. The careful caution, or the classification of business partners who are not at high risk, entails an increase in costs and the wrong allocation of resources. On the other hand, the light evaluation of business partners or organizations leads to a negative effect on the state and the society as a whole.

### **2.3. Threats to new technologies that enable anonymity**

In establishing policies and procedures to reduce the exposure to money laundering and criminal acts arising from new technologies that enable anonymity (Internet banking, electronic money), financial institutions including other companies that perform certain payment or money transfer services should ensure the application of technological solutions that provide:<sup>124</sup>

- undoubted identification of the customer who is the user of electronic banking,
- the authenticity of the signed electronic document,
- Reliability of measures against counterfeiting of documents and signatures of documents,
- systems that are protected against modifications and provide technical and cryptographic security, the processes of using electronic banking,
- other requirements in accordance with the positive regulations governing this business area.

All participants in payment or money transfer are required to collect accurate and complete information about the payer and include them in a form or message accompanying the electronic transfer of monetary assets sent or received in any currency. In doing so, these data must accompany the transmission all the time during the passage through the payment chain.

## **3. MONEY LAUNDERING IN INTERNATIONAL FRAMEWORKS**

International bodies that regulate the introduction and implementation of a risk-based approach are:

FATF<sup>125</sup> is a body that develops and improves policy at the national and international level to combat money laundering and terrorist financing. FATF monitors the progress of its member states in implementing the necessary measures, carries out a reviewer to combat criminal

<sup>124</sup> Vinšalek Stipić, V., Blažević, L., Managing the Approach Based on Risk Assessment and Money Laundering Risk, Practical Management, Vol. II, no. 3, p. 73-79

<sup>125</sup> The FATF (Financial Action Task Force) is an intergovernmental body established in 1989 at the G7 Forum in Paris. In this membership there are 31 states and two international regional organizations and the European Commission.

activities and promotes the implementation of measures on a global level.

MONEYVAL<sup>126</sup> is a committee for the evaluation and implementation of measures to prevent pranayos in the Council of Europe. The goal of MONEYVAL is to ensure that Member States have an effective system for combating financial crime. The bureaucrats are harmonized with international standards such as, for example, recommendations of the FATF, the UN Convention, and the Directive of the European Parliament of the Council.

The Wolfsberg<sup>127</sup> Group aims to develop standards applicable to the financial industry and timely-based approaches to preventing money laundering and criminal activities.

European Union directives on preventing the use of the financial system for the purpose of money laundering clearly show the development path of the definition of the concept of suspicious transactions. The first attempts to set up a preventive action framework in the field of laundry prevention are outlined in Directive 91/308 / EEC. With the definition of credit and financial institutions, the obligation to verify, with particular attention, of any transactions deemed to be associated with money laundering, it is clear that its content is uncertain and the necessity of legislative reform at the national level. The second directive - Directive 2001/97 / EC did not go much further on the elaboration of the definition of suspicious transactions, although it recognizes independent professions and professions that, in certain

cases, exclude commitments from suspicious transactions. Unlike the first two directives, Directive 2005/60 / EC on the prevention of the use of the financial system for the purpose of money laundering and terrorist financing is based on estimating the language, and hence the issue of recognizing suspicious transactions is accessed in a completely different way. The Third Directive gives suspicious transactions a completely new role by setting them as the backbone of money laundering through a risk assessment system, although not directly.

#### **4. MONEY LAUNDERING IN THE FRAMEWORKS OF BOSNIA AND HERZEGOVINA**

By adopting the Law on the Prevention of Money Laundering and Financing of Terrorist Activities, Bosnia and Herzegovina became one of the countries that, according to internationally recognized standards, undertakes measures and responsibilities for detection, prevention of money laundering and financing of terrorist activities, which was also one of the conditions set by international community, and therefore should not be placed on the gray list. "Gray Money" Moneyval is very problematic for every country in the world, because it destroys a country's credit rating, ie it raises all financial transactions that one country implements in international financial relations.

Within the State Investigation and Protection Agency - SIPA, the Financial

<sup>126</sup> MONEYVAL is a special committee of the Council of Europe founded in 1997. years. The members of this committee are all member states of the Council of Europe, as well as candidate countries, which are not members of the FATF.

<sup>127</sup> The Wolfsberg Group is an association of 11 global banks founded in 2000 with Transparency International with the aim of working on anti-money laundering prevention guidelines for the private banking sector.

Intelligence Unit has been established. The parties must ensure that their financial institutions have established appropriate procedures for identifying clients in accordance with the international standards established by the Basel Commission for Supervision of Banks and the Financial Action Task Force money laundering (FATF). Financial institutions in accordance with Article 13 of this Law<sup>128</sup> are obliged to report to the Financial Intelligence Unit on suspicious transactions, ie to parties whose transactions have or exceed the value of KM 30,000.

The MONEYVAL statements for BiH are the following: that BiH is a suitable ground for money laundering and financing of terrorism, the BiH investment sector is not completely safe from the abuse, BH authorities have not assessed the risk of financing terrorism, the establishment of material evidence in the criminal offense of money laundering in all four CCs in line with the Vienna and Palermo, a framework has been set up to allow the freezing of funds of persons and bodies established under UN Security Council Resolution 1267, but it is still not applied in practice, the effectiveness of the system for controlling physical cross-border currency transport is a cause of concern, the authorities are not clear their powers, the adoption of the law on the prevention of money laundering and the fight against terrorism financing, the level of compliance of the anti-money laundering framework and the fight against terrorism financing improved, to improve the system of

coordination of money laundering prevention and the fight against terrorism financing at the policy level.

## CONCLUSION

According to the findings of MONEYVAL BiH, the ground is suitable for money laundering and terrorist financing, and the investment sector in BiH is not completely safe from the abuse. It is therefore necessary for each company to establish a system for managing the risk of money laundering, to establish appropriate policies and procedures, including rules on measures and actions undertaken for the purpose of knowing and monitoring the party, promoting high ethical and professional standards and preventing the intentional or unintentional misuse of entities for criminal activities. Taking into account all efforts to define an effective money laundering based on risk assessment, comprehensive statistics that primarily mirror practices suggest several conclusions: - An effective risk assessment system requires an appropriate legislative basis with a defined definition of suspicious transactions, effective supervision and appropriate sanctions in the event of non-compliance with legal provisions; - The risk assessment system requires an increasing share of suspicious transactions reported by non-financial institutions as a confirmation of raising awareness in that sector, - Permanent education of all institutions involved in the implementation of anti-money laundering measures at the national level.<sup>129</sup>

<sup>128</sup> Law on Prevention of Money Laundering and Financing of Terrorist Activities of BiH "Official Gazette of BiH" No. 47/14

<sup>129</sup> Cindori, S., (2013), Money laundering: correlation of risk assessment and suspicious transactions, selected translations no. 16/13, Institute of Public Finance, p.19



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## HOMELAND SECURITY IN THE CONTEXT OF STATE LIABILITY FOR THE DAMAGE CAUSED BY TERRORIST ACTS

Siniša Bilić, email: [sbilic.mostar@gmail.com](mailto:sbilic.mostar@gmail.com)

Safet Subašić, email: [safetsubasic58@hotmail.com](mailto:safetsubasic58@hotmail.com)

Vedrana Macanović, email: [vedranamacanovic@gmail.com](mailto:vedranamacanovic@gmail.com)

*Abstract: In this paper the authors discuss the essential aspects of establishing material responsibility and conducting the pecuniary damage caused by terrorist acts. This paper is trying to clarify the specific point of view of its international legal peculiarities by taking into account that this matter is not deepened in the scientific and professional literature. After years of vacuum, and frequent acts of terrorism, many countries are beginning to normatively edit these relations. There is a need for international legal codification of legal standards that would regulate the mentioned area and the need for unification of procedural, legal actions and proceedings damages. The authors elaborate the general principles and requirements of damages, putting them in the context of the specifics of terrorist activities damages and making a distinction between the principle of compensation for material damage in ordinary civil proceedings and the application of those principles in proceedings of terrorist act damages. This is necessary due to the nature of terrorist acts and the problem of determining the offender, and determining the holder of the reparation obligation for the damages. In addition, how will a person who commits a terrorist act, and has no property, compensate the damage, and to whom to alienate its obligation to make damages reparation. The paper accepts two options, one of which involves the state reparation and the other involves responsibility to repair the damage by other legal and natural persons. To illustrate these concerns and alternatives authors give clear examples for adverse events of a terrorist character without coverage.*

**Keywords:** *Terrorist act, accountability, compensation*

## 1. INTRODUCTION

The general issue of life and property security in the context of terrorist activities is increasingly dominant from various aspects. Modern terrorism is constantly increasing, renewed and perfected at a growing technical and technological level, and its efficiency is constantly increasing. This problem is multidimensional because it contains elements of both public and private law areas, and the key issue that arises is the issue of fundamental conceptual, theoretical, legal and procedural-factual assumptions of the state's responsibility for the damage from terrorism. Apart from these issues, the possibility of securing property and persons for those acts and delicts that result from terrorist activities is also doubtful. Can a State or another entity accept the obligation to insure assets and persons if they know the specific nature of terrorist activities. On the other hand, if there was no obligation of a state that would force citizens to protect its citizens with their organization and powers, then a greater amount of legal and total social uncertainty would be created. Accordingly, there is a need where a State or some other public entity undertakes to assume the obligation to insure property and persons for terrorist acts. For these reasons, which can be labeled as fairness and solidarity, the European Convention on the Compensation of Victims of Violent Crimes, of 1983, arose. The objective of the Convention is to inaugurate the obligation of the state to compensate for the damage that citizens and other legal entities have from the grave consequences they have

suffered when committing intentional crimes. It should be emphasized that the Convention does not directly refer to terrorist offenses, but it can be concluded that it contains them, and secondly, the Convention foresees mainly measures for the reparation of bodily and other damage sustained by the victim rather than the material damage suffered by a person in a terrorist act. The Convention only refers to the possibility of compensation for damage to personal belongings which the victim used or had on himself at the moment of committing the crime. Based on the Convention, some states are defined and defined in their laws.<sup>130</sup> Considering the time when the Convention came in, it is understandable that it did not directly identify terrorist acts as a special segment of compensation for damages.

The question of responsibility of the state for damage caused by a terrorist act at the end of the 20th century it was extremely controversial. The reason and cause of the dispute is the existence of a legal vacuum in this area. This issue was not legally established. The legal vacuum dominated until the beginning of the 21st century. Only when terrorism has assumed greater proportions, the need to protect citizens and their property has increased, and define the rights and obligations of the state in cases of terrorist attacks and large-scale violence, which usually arises during the gathering of citizens at demonstrations. In cases of terrorist attacks, greater material damage is created which should be compensated for by legal and physical persons.

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<sup>130</sup> For example, the chapter "Compensation for harm to nanotech cases", Article 14 of the Law on Financial Benefit for Victims of Violent Crimes of

the Republic of Slovenia, while Croatia passed the Law on Financial Benefits for Victims of Criminal Offenses (Official Gazette No. 80/08 and 27/11).

After many years of vacuum, and especially after frequent terrorist acts, many countries have tried to regulate the area of compensation for damages in the event of a terrorist attack. The purpose of this arrangement of relations was the protection of the interests of individuals, but also the public interest. Namely, the constitutional and legal principle of protecting the physical integrity of citizens and protecting their property is related to the inauguration of the right to compensation, the assumption of the obligation by the state, the procedure for filing the application and the jurisdiction of the administrative bodies for acting upon the claim for compensation of damages, and at the end, the limit of the maximum amount is determined which is obliged to pay the state in case of a terrorist act. Such solutions are based on the principles of solidarity, uniform burden of public freedoms, and fair and prompt redress. The damage caused by acts of terror and other acts of violence undertaken with the aim of serious violation of public order, intimidation and provocation of feelings of insecurity of the citizens, including the demonstrations of citizens with manifest forms of disturbance of public order and peace, and the safety of citizens and their property, is being reimbursed. There is a dilemma, if the public authority is obliged to protect the safety of citizens and establish public order and peace, then logically it can be concluded that the state is obliged to provide conditions and protect citizens from terrorist and other harmful activities.

<sup>131</sup> In Russia, responsibility for the damage of a terrorist act is extended to the family. See: Федеральный Закон о внесении изменений в отдельные законодательные акты Российской Федерации, <http://asozd2.duma.gov.ru/addwork/s cans.nsf/ID/106BCCDBDCFADABB43257BF300>

The constitution of most states defines citizens' right to property security, and logically follows that the state has taken over the protection of property and persons.

The question arises, who is responsible for terrorist acts? In particular, it can be considered as the material material liability of the perpetrators of terrorist acts. Apart from her theoretical and legal dilemmas, she also has practical doubt. How a person who commits a terrorist act, and does not have assets, will compensate for the damage that has occurred. To whom to transfer his obligation, that is, how to reparation of damage to legal and physical persons in terrorist acts. There are two options, the damage is settled by the state and the other, the liability for damage is extended to other legal and natural persons.<sup>131</sup>

In the further part of the paper, it is questioned whether there are legal theoretical foundations for determining liability for damage caused by a terrorist act, and points to some important dilemmas in determining the character and character of the terrorist act and the liability for the damage that arises. There is another significant discourse of the topic related to the occurrence of the obligation to compensate damage as well as its specificity. The compensation for damage caused by a terrorist act belongs to the domain of non-contractual obligations, because their manifestation does not require consent or manifestation of party will.<sup>132</sup>

2A59C9/\$File/3476676.PDF?OpenElement, (28.11.2016.)

<sup>132</sup> For example: Whoever inflicts a bodily injury on someone else is obliged to compensate him on the basis of the fact that already by the occurrence of a bodily injury a compulsory relationship of liability for damage to the author has arisen.

Legal writers agree that liability for damage is the most typical extra-contractual relationship created to protect existing situations.<sup>133</sup> In the event of liability for damage resulting from terrorist activities, it can be stated that liability for damage is not completely identical to the elements of property rights and obligations. The notion of liability for damages, as a mandatory term, contains in itself the determination of liability for damage as a liability of one party which caused the damage to the other party to repair it. In the case of a terrorist act, there is no one party, and that party that is obliged to compensate. It should also be noted that legal theory and positive law in most legal systems defined the preconditions for the existence of liability for damage. Therefore, in order to have a liability for damage in the event of a terrorist attack, it is necessary to fulfill the conditions: (1) The existence of the person responsible for the damage (pest) and the entity claiming compensation (damaged). In every case, even in the case of a terrorist act, the pest is a natural person, and only one who can individually answer for the damage. Her belonging to a terrorist organization does not mean that responsibility for damages can be attributed to that terrorist organization because they are not legal entities. An entity that can be responsible for damages must have intelligibility, which in this case is actually a delictal ability, that is, it must have at least 14 years of life and mental health. The specification of terrorist acts is in the fact that a small number of perpetrators survive the act itself and that there is a significant

number of extremely young people under 14 years of age in the service of a terrorist organization for the execution of terrorist acts. In this context, it can be understood that in this case, any person committing a terrorist act can be a pest, but not every pest has to be personally liable for damage. Therefore, there is a pronounced problem of determining the person responsible for the damage. (2) Pests harmful, which is at the same time the legal basis of liability for damage, although the legal theory stands at the point of view so that the legal basis of liability for damages should be the factual state of damage. The terrorist act, on its basis, aims at creating fears that result from killing and causing material damage to people who are targeted by terrorists.<sup>134</sup> Namely, the object of terrorist activity is the property of the people, if we neglect it, the damage to property of people is a consequence of terrorist acts. The legal theory is not unique in determining the character of the harmful action in this case. The terrorist act is, in its essence, a criminal offense and is processed by a criminal law of most legal systems. Unlike a criminal offense, a civil offense is defined in regulations in general, for example, because it is not important for a civil offense what is a harmful act, but it is essential that it is the act that caused the damage.<sup>135</sup> It is understandable then that an act may at the same time be a criminal and civil offense, most often if the offense is caused at the same time by a criminal offense. (3) The existence of damage that must arise on the side of the injured party. All damages are divided into property and

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<sup>133</sup> See: Vedriš, M. (1976) Fundamentals of property law. Zagreb: Informator, p. 295

<sup>134</sup> Almost all definitions of terrorism agree that terrorism results in the killing of people and causing material damage to individuals and the state. See:

Mijalković, S., Bajagić, M. (2012) Organized crime and terrorism. Belgrade: Criminal Police Academy, p. 300-331.

<sup>135</sup> Any criminal offense may not necessarily be a civil offense at the same time. op. author.

non-immovable property. In the event of a terrorist act, both types of damages occur. The focus of the topic is property damage, in which the property is reduced. However, it should be noted that in the wounding of people in a terrorist act there is a reduction in the working ability of wounded persons, and loss of earnings or loss of maintenance is a property damage that has a property character. (4) A causal link (causal nexus) in which a harmful act has been committed must cause a certain damage as a consequence. Without causality there is no pest liability. It is almost completely clear that there is a causal link in the case of a terrorist act, regardless of the fact that the legal theory holds that the causal link is never suspected, because if the causality was assumed it would mean that the injured party, proving a harmful act and damage, could have been harmful to seek the responsibility of the pest. (5) The unlawfulness of the harmful activity and the resulting damage. Each unlawfulness has its own objective and subjective elements. An objective element is when a harmful act is contrary to some legal rule, and the subjective, the guilt of the pest. The question, whether there is a terrorist act or not an unlawfulness as the presumption of liability for damage is almost irrelevant. When it comes to guilt, in the case of terrorist acts, it has an entirely different dimension than that defined by criminal law. One of the features of terrorist acts and all serious forms of violence is wickedness as the highest level of intent, where the perpetrator of the terrorist act has knowledge of the unlawfulness and still exhibits a certain joy in seeking to inflict special damage. It should be emphasized that liability for damage is only caused if the harmful act is unlawful, and as soon as the harmful act is unlawful, the damage is

also unlawful as a consequence of such an action. However, the question arises, what is the criterion for establishing responsibility for damages in general, and in particular the liability for damage caused by a terrorist act.

Accordingly, the underlying assumptions of liability for damages are: harmful action, damage, causal relationship and unlawfulness. However, even when all of these assumptions are fulfilled, we still do not know if the pests were responsible. It must be determined whether in a particular case the unlawfulness is based on objective or subjective elements. Through the history of the law, we see how the damage first corresponded to an objective criterion, so in the primitive legal systems the pestilent is responsible for the damage, regardless of guilt and intent. Over the course of history, she has been overwhelmingly responsible for the damage under the criterion of guilt. If so, then the question arises as to how the guilt can be ascertained for the damage that arises and which is realistic if a terrorist act is carried out by a person who is mortally suffering and who is either an unknown identity or a foreign citizen. Illusion is the transfer of guilt to the state, because then we are moving away from the fundamental principle of subjective guilt and personal responsibility. If the State assumes responsibility then it deviates from the principle that there is no pest liability as long as it is not guilty of the damage or reparation of its damages, and seeks to prove the harmful acts of the pest, damage, causal link and unlawfulness, and within the last and pest of the pest. This is, as the legal theory states, the criterion of proven guilt. In practice, the basic problem is how to prove the guilt of a pest, which must be proved by the injured party. In the case

where the State assumes responsibility for the damage resulting from a terrorist act, the guilt is not proven, or the fault is on the side of the state that is judging by it, it should logically prevent the occurrence of the damage. As it did not, the guilt is due to omission, or failure to prevent the occurrence of damage. The legal history and the present state the cases in which the state assumes responsibility for the damage that arises. But to date, this responsibility was for damage resulting from unlawful or unknowing work.<sup>136</sup>

The damage was compensated by the organization in which the person who did the same caused the work, while the organization later compensated.

In accordance with the above, a question of an international legal character may be raised, and it relates to the possibility of state responsibility for the damage caused by a terrorist act by a citizen in another country, and later regressing damage from the perpetrators of a terrorist act. International law currently has no position on this, nor do there exist any analogous solutions to this. The right of foreigners to enter another country and the freedom of their movement in that country are unquestionable. When staying in another state, the party enjoys certain rights guaranteed by international law. The subject of these rights is an individual, but the cover is the countries that enter into contractual relations and define rights and freedoms. By assigning travel documents and giving freedom of movement outside the borders of a state, the question arises as

to the obligations of that state which gives the opportunity to their citizens to travel. They enjoy the protection of the state they come from. However, foreigners who commit terrorist acts that cause material damage by returning to their home country can avoid that responsibility, that is, if mortal deaths arise, the question arises as to whether it is justified when the material damage of foreign nationals would be compensated by a state. Current solutions, for example in the Republic of Croatia, are accountable to the state for damage caused by terrorism, and are not based on the state's obligation to prevent terrorist acts, which was the case until 1996. It is quite certain that the state can not be a cover for the prevention of terrorism nor be fully responsible for the non-incitement to commit terrorist acts.

The adoption of the law regulating this matter has determined that the pecuniary damage is compensated in a way other than that which is foreseen for damages in contractual and other relationships. Instead of financial compensation, the injured party is entitled to compensation, which involves the construction of a damaged facility or the purchase of items that are damaged. In the legal theory, this type of compensation is called a natural restitution, which denotes a procedure in which the damaged person returns the previous state, that is, returns everything that is seized or damaged by the harmful act.

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<sup>136</sup> This responsibility in our legal system dates back to the 1963 Constitution, which stipulated in Article 69 that: "Everyone has the right on compensation for damage which, in connection with the performance of a service or other activity of a state body or

organization affairs of public interest, inflicts on them by illegal or irregular work by persons or bodies performing that service or activity ", op. author.

## 2. SPECIFICATIONS OF THE TERRORIST ACTION

In determining the right to compensation for damage, as well as the liability for damage caused by a terrorist attack, it is of utmost importance to define the terms and their clear use. Terrorism is, as we have already mentioned, an extremely complex and difficult concept, both from the point of view of the definition of the term, as well as its origin and historical development. The difficulty in its conceptual determination is related, among other elements, to the problem of differentiating terrorism from similar phenomena. Namely, terrorism is often used as a synonym for fear of violence, insurgency, street violence, civil strife, rioting, street guerrilla, coup d'etat, and the like. Also, from the notion of terrorism, it is necessary to distinguish a much wider term of terror, which essentially refers to the psychic state of constant and intense fear associated with psychophysical excitement. Terror does not have to have political content, although it is in many cases present in some systems of governance.<sup>137</sup>

Terrorism, as a phenomenon, within the framework of a political strategy, implies the use of violence, terror, in order to achieve political goals. Terrorism is one of the most important security, but also political phenomena of our time. This feature in the modern world seems to remain identical in the coming period. As a central national, international and global threatening phenomenon of today, terrorism poses a significant threat to security, understood as a structural element of survival and action of an individual,

society, state and international order, but also basic life functions and basic social needs. Despite the existence of a broad scientific-research interest and the fact that terrorism is the subject of interest of many scientists, theorists, journalists, and professional members of the national security institutions of many countries, there are still a number of ambiguities and dilemmas regarding terrorism. Therefore, for a more complete understanding of terrorism, its interdisciplinary scientific research is necessary. Terrorism certainly affects the overall social, economic, political, military, environmental and other trends and processes, as well as the way, quality and living conditions of a modern man.

Topics from the spectrum of terrorism are topics that, in political, economic, and in the overall social context, attract the attention of contemporary man. For this reason, the issue of terrorism deserves scientific research attention, study and teach other scientific laws, standards and achievements from the field. In the context of the topic, we will be interested in the link between the factors of insurance and the ability to secure property from terrorist acts, and the logical sequence of state responsibility in the system when there is no security and certainty of protection and prevention of terrorist acts. In this regard, we consider the emergence and determinants of property insurance. Insurance pulls its origin from the first forms of the exchange of goods between people, where, in pre-old times, a tribal society has appeared a division of responsibility in order to more easily resist

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<sup>137</sup> Gaćinović, R. (2011) Antiterrorism. Belgrade: Official Gazette, p. 366.

life threats. Although the first manifestations of association and mutual help for the purpose of a certain survival were not an organized system of protection against the risks to which the community was exposed, the problem of risk occurrence was solved so that the destroyed goods were replaced by the creation of new ones.<sup>138</sup> The first known distribution of greater risk to less is found in the ancient cultures of the Old Ages, that is, 3000 BC, in China, with the purpose of dividing the risk of travel, when transporting goods across the Yangtze River.<sup>139</sup> A similar practice occurs in traders in ancient Babylon in order to cover the risks of exposure to the robberies of desert bandits, as evidenced by the first written evidence of insurance as a binding regulation of the Book of the Law of Babylonian King Hamurby - Codex Hammurabi, 1729-1686. p.n.e., by which caravan participants had to share the losses suffered by each participant.<sup>140</sup> The Marriage Law contained the provision as damages caused by the removal of cargo into the sea, in order to save the ship and the remaining property, all the participants in the maritime undertaking accepted by the Greeks and Romans, and they are also incorporated into modern laws adapted to the spirit of our time.<sup>141</sup> The development of the company leads to the emergence of an insurance

institution, which, through two basic forms, property and non-property <sup>142</sup>, presupposes a number of risks and thus different kinds of insurance. From an economic point of view, we can say that the insurance of a set of risk pools is based on statistic laws and other scientific facts which by granting the premium, through mutual guarantees and under certain conditions, allow the provision of certain restrictions in the event of a situation that is capable of causing trouble.<sup>143</sup>

Modern society exposes us to a number of risks, including the risk of terrorism. Although terrorism dated to the beginning of a new era, only by the globalization and development of the media terrorist organizations achieve their goals and become a global problem.<sup>144</sup> Terrorism, through the deliberate use of violence or the threat of violence against innocent persons or groups, for the purpose of intimidation and coercion of some other individuals or groups,<sup>145</sup> affects the personal and collective level by causing shock, fear, panic, suffering and victims, a disturbance of social values, a threat to the destruction of society, affects the mobility of people, economic processes, movement of goods and capital.<sup>146</sup> It is difficult to have a ready response to the terrorist threat and the consequences of acts of terrorism, and therefore, as with other risks, investing in

<sup>138</sup> Kozarević, S. (2009) "Risk Management and Insurance in Crisis Conditions", Proceedings, International Conference: How to Manage in Times of Crisis, Tuzla: Faculty of Economics, p. 71-81.

<sup>139</sup> Aržek, Z. (1995) Transport and insurance. Zagreb: Faculty of Economics, p. 23.

<sup>140</sup> Kozarević, S. (2009) "Risk management and insurance in conditions of crisis". Proceedings, International Conference: How to Manage in Times of Crisis, Tuzla: Faculty of Economics, p. 71.-81.

<sup>141</sup> Kilibarda, M. (2008) Spedition and agency business. Beograd: Saobraćajni fakultet, str. 37.

<sup>142</sup> Art. 30. st. 1 of the Law on Insurance Companies in Private Insurance ("Official Gazette of FBiH", no: 24/05)

<sup>143</sup> Aržek, Z. (1995) Transport and insurance. Zagreb: Faculty of Economics, p. 23.

<sup>144</sup> Marić, S. (2012) "Terrorism as a Global Problem". Medianali, vol. 6 (11), p. 87.-102.

<sup>145</sup> Primorac, I. (2007) "Contemporary Terrorism as a Philosophical Theme". Polemos, vol. 10 (1), p. 11.-26.

<sup>146</sup> Andrijević, B. (1997) "Terrorism as a global problem of all regions with developed tourism". Acta Turistica, vol. 9 (2), p. 109.-135.



security is not a loss of profit, but an investment in the future.<sup>147</sup>

### 3. HARMFUL EVENTS WITHOUT SECURITY COVER

Madrid, 30.12.2006. Two police officers were injured in a vehicle bomb explosion. Two Spanish police officers were injured when a car exploded in a car park at Madrid's Barajas airport. Prior to the explosion, the authorities received a telephone warning that an explosive device was placed in one of the cars. It is unofficially learned that the responsibility for the explosion of the bomb was taken over by the Basque separatist organization ETA.<sup>148</sup>

Mostar, 11/20/2015. In the evening, in front of the vehicle of General Ante Jeleć, the head of the Joint Staff of the Armed Forces of BiH, an explosive device was activated by making a crater in asphalt: The tunnel was closed and the wider area blocked, the police were on the spot. According to police sources, the device was most likely thrown out of the vehicle on the move, and a vehicle that was moving away quickly was noticed.<sup>149</sup>

Ankara, 02/17/2016. In the Turkish capital Ankara on Wednesday, a powerful explosion arose, a Turkish television CNN

Turk reported. According to the first information, at least 28 people were killed and more than 60 were wounded. Local officials told the Associated Press that it seems that the cause of the explosion is a car bomb. The explosion occurred near the barracks, and the target was a military bus.<sup>150</sup>

Berlin, 03/15/2016. Police spokesman Carsten Mueller said the explosion occurred around eight o'clock in the morning in the western part of Charlottenburg in the western part of Berlin. Investigators are acting on the assumption that it is an explosive device that is placed inside a moving vehicle, said Mueller. The identity of a dead man is not known. The police secured the area, and the pyrotechnics examined the vehicle. The surrounding population was invited not to leave the apartments and to close the windows. The car exploded while driving, and after that it got caught in parked cars.<sup>151</sup>

From these and many similar events, it can be seen that there are no rules that would indicate the risks of terrorism and that cars are often the means used by terrorists in the execution of terror. For this purpose, insurance companies exclude certain risks from the coverage of risk insurance, thus not covering the risks in individual cases of risk occurrence and harmful events. As such cars are subject to liability insurance,

<sup>147</sup> Bilandžić, M. (2012) "Security is a precondition for every development". <http://www.poslovnih.hr/domacekompanije/sigurnost-je-preduvjet-svakog-razvoja-204870>, (October 26, 2016)

<sup>148</sup> "At the Madrid airport two policemen were injured in an autocomb explosion." <http://www.index.hr/vijesti/clanak/na-madridskom-aerodromu-dva-policajca-ozlijedjena-u-eksplozijaubombe/336090.aspx>, (08/26/2016)

<sup>149</sup> "BiH Police Denies Terrorism: General Jeleć hit by Gun Cannon?". <http://www.kurir.rs/region/bosna-i-hercegovina/terorizam-u-bih-eksplozivom-na->

[hrvatskog-generalabacen-eksploziv-na-automobil-ante-jeleca-clanak-2027485](http://www.hrvatskog-generalabacen-eksploziv-na-automobil-ante-jeleca-clanak-2027485), (26.10.2016.)

<sup>150</sup> "Chaos on the streets of Ankara: A bomb attack in Turkey's capital, a greater number of victims: This is terrorism." <http://www.jutarnji.hr/vijesti/svijet/kaos-na-ulicama-ankare-bombaski-napad-u-glavnom-graduturske-vecibroj-zrtava-ovo-je-terorizam/100852/>, (26.10.2016)

<sup>151</sup> "Detonation shook Berlin: The bomb blew up the car while driving, the driver died on the spot." <http://net.hr/danas/svijet/teroristicki-napad-muskarac-poginuo-u-eksploziji-autobombe-u-berlinu/>, (10/22/2016)

the question arises as to whether the risk of these cars is at risk. In compulsory motor vehicle liability insurance, the risk of terrorism is excluded from the insurance and unauthorized use of the insured vehicle as a means of committing a terrorist act and the causing damage by automobile explosion is not a risk covered by compulsory motor vehicle liability insurance held on the road or part of the road closed for traffic to other drivers, aimed at achieving the highest or highest average speed, ie exercises for these events, due to the action of nuclear energy during the transport of radioactive material, due to war operations, rebellion or terrorist acts, in which case the insurance company must prove whether the damage has been caused such an event.<sup>152</sup> The Law on Asset Insurance and Members <sup>153</sup> 67 and Art. 71. the right to compensation for damage arising from compulsory motor insurance liability is defined, where the owner, co-owner, user and driver of a motor vehicle whose use was caused damages, as well as the person who participated in the unlawful seizure of a motor vehicle whose use of damages has no right to the basis of damage from compulsory insurance, but also when the insurance against motor liability is covered and the damage caused by the use of a motor vehicle that was used, or that was managed by a person who did not have authority for that. It means a person who manages a motor vehicle without an appropriate driver's license, who is trained without the supervision of an instructor in the management of a motor vehicle, who,

without the knowledge and approval of the owner or the user of the motor vehicle, uses the vehicle and the person who comes into possession of the motor vehicle in an unlawful manner. The driver of the vehicle himself who is responsible for the damage he has taken, his relatives and other legal and physical persons for damage due to the death or bodily injury of the driver are also not a third person and are not entitled to compensation for damages. At the same time, the driver does not have the right to compensation for the damage he caused himself or herself with the consequences of death or serious disability to his close person.<sup>154</sup>

From this it can be seen that the driver is not considered a third person in the context of insurance coverage. The owner of the car causing the damage, if the driver is not considered a third person, in the sense of non-pecuniary damage, while for the damage sustained on the goods there is no right to compensation. The attitude of a volunteer passenger and an unauthorized driver also affects the right to compensation. If it is proved that the passenger was aware of the fact that the driver was unauthorized, according to Article 71 of the Law on Insurance of Property and Persons, he will not be entitled to compensation for damage under compulsory insurance. This law is the same even if it has known the fact of an uninsured car and a car without registration marks.

The Law on Obligatory Relations from War Risks Excluded from Insurance lists only

<sup>152</sup> Law on Compulsory Insurance in Transport (Official Gazette, No. 151/05, 36/09, 75/09 and 76/13)

<sup>153</sup> Law on Insurance of Property and Persons ("Official Gazette of RS", No. 14/00, 20/00 and 17/05)

<sup>154</sup>Belanić, L. (2007) "Third persons in insurance against automobile liability", Proceedings of the Law Faculty of the University of Rijeka, p. 551-600.

war operations and riots, which do not include other war and political risks and the risks of the strike, especially the risk of terrorism is not included.<sup>155</sup>

For damage from terrorism, special regulations are applied for the purpose of compensation for damage to citizens by a terrorist act. After the terrorist attack on September 11, 2001, the United States. The Law on Insurance Against Terrorist Risks was adopted in 2005 to provide a unique program for the resulting losses arising from certain terrorist attacks and to protect themselves from market disturbances and to ensure coverage of the risk of terrorist attacks.<sup>156</sup>

The Republic of Croatia passed the Law on Liability for Damage Caused by Terrorist Acts and Public Demonstrations<sup>157</sup> in order to regulate liability for damage caused by acts of violence or terror and during public demonstrations and manifestations, which the State is responsible for for damage caused by acts of terror and other acts of violence committed by with the aim of serious violation of public order by intimidation and provocation of feelings of insecurity of citizens, and due to demonstrations and other forms of mass expression of mood in public places. The law abounds with significant ambiguities that have been left to the judicial practice. Specifically, the determination of whether a particular case of war damage or an act of terror is in question is directly dependent on

whether the state is liable for compensation of damages or not, since the state does not respond to war damage until the damage caused by the act of terror is responsible if it is a damage caused as a result of death, bodily injury or damage to health.<sup>158</sup> Under the said law, the state does not compensate for damage to property claims, except for the restoration of damaged or destroyed goods, in accordance with the Law on Reconstruction.<sup>159</sup>

#### 4. CONCLUSION CONSIDERATIONS

From the standpoint of international law, there are no legal documents that regulate the field of compensation for damage due to a terrorist act. Already at the beginning of the work is the European Convention on the Compensation of Victims of Violent Crimes of 24 November 1983. and, as the Convention does not directly refer to terrorist offenses, but it can be concluded that it contains them, and secondly, the Convention provides for mainly measures to compensate for bodily and other damage sustained by the victim rather than material damage suffered by a person in a terrorist work. Considering the circumstances of the increase in terrorist activities, which mainly have an international character, and as some countries have already regulated these relations, there is a need for this area to be regulated internationally, where the codification and unification of legal acts, contracts and laws, and forms for

<sup>155</sup> Pavić, D. (2009) "War risk insurance", Proceedings of the Law Faculty in Split, p. 465.-492.

<sup>156</sup> "Terrorism Risk Insurance Act". [http://www.naic.org/cipr\\_topics/topic\\_tria.htm](http://www.naic.org/cipr_topics/topic_tria.htm), (October 26, 2016)

<sup>157</sup> Law on liability for damage caused by terrorist acts and public demonstrations ("Official Gazette", No. 117/03)

<sup>158</sup> Zrilić, Z. (2004) "Responsibility for war damage and damage caused by a terrorist act". Croatian Legal Review, vol. 11 (1), p. 1-32.

<sup>159</sup> The Law on Reconstruction ("Official Gazette", No. 24/96, 54/96, 87/96, 57/00, 38/09, 45/11 and 51/13)

conducting the procedure for compensation of damage from terrorist activities.

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## THE IMPORTANCE OF REGISTRATION OF JOINT-STOCK COMPANIES' REALTIES IN TERMS OF LEGAL SECURITY

Jasmina Tahirović, MA, email: [jasimat@gmail.com](mailto:jasimat@gmail.com)

Irma Hodžić, MA, email: [irmakaziya@hotmail.com](mailto:irmakaziya@hotmail.com)

**Abstract:** *The source of capital is one of the most important segments of a joint-stock company as a company of capital, considering that the joint-stock company acquires its business assets in the manner of issuing of shares. One of the positive elements of security, or stability of this type of business organization, would include the ownership of realties that are registered in accordance with the valid legislation. In this manner, a legal and economic security of the joint-stock company would be achieved, in addition to the interest of foreign investors. Therefore, the manner of realties registration, as well as keeping records on realties up to date, is an important condition for the possibility of any loan debts in banks, since only such realty would be safe collateral of ensuring loan payments. This would achieve a proper legal security on both parties involved. Namely, joint-stock company that own realties which are registered in accordance with the proper legal regulations, emits a positive public image, and in this manner becomes a subject of interest for the potential investors, who would through share purchase enable and enlarge its capital. Through the sale of new shares, the joint-stock company would acquire additional money that is a guarantee of economic stability and survival on the capital market.*

**Keywords:** *Realty, joint-stock company, registration, legal security, capital*

## 1. INTRODUCTION

Speaking about the legal and economic security of joint stock companies, the emphasis is on both the proper application of legal regulations and the capital of the company. This is because capital is the main driver for gaining profit, which is the basis for its economic stability. Capital is also realized through new investments. In this regard, it is important to note that the joint stock companies in their possession should have a property. When talking about the concept of property ownership, then it is assumed that the real estate is recorded both through the cadastre records and the land registry records. An adequately booked real estate can serve as a means of obtaining additional capital through a loan arrangement, which would expand the existing capital of the company and provide security for further operations. Thus, adequately booked real estate can serve as a lien right in the process of obtaining a loan from banks. In this way, legal security for both parties is represented. The Bank has insurance for repayment of loaned funds, and the company has additional capital for further operations. Economically stable stock company attracts attention for the purchase of its shares and thus contributes to the creation of additional capital. Additional capital of the company creates the basis for the maintenance of the existing, and thus the possibility of expanding it, all for the sake of economic stability.

## 2. SHAREHOLDERS 'SOCIETY

When talking about a joint stock company, then it is necessary to emphasize that this is one of the forms of societies, as a legal entity. The establishment, operation, management and termination of companies in the Federation of BiH is regulated by the Law on Business Associations of the Federation of BiH.<sup>160</sup> The very name of this form of society refers to the term share. Therefore, the equity of a joint stock company is represented by shares. Shares represent the capital that the owners of those shares own in that legal entity. A joint stock company, as a business entity, has rights and obligations as may be natural persons. It is imminent that joint stock companies are involved in certain civil law relationships. Failure to comply with legal norms as well as contractual relationships may result in court proceedings. Depending on the legal relationship in which they participated, they also get a certain role. Namely, joint stock companies may appear in the capacity of prosecutors, defendants, prosecutors, executors, bankruptcy creditors, bankruptcy debtors, etc.

### 2.1. Equity securities of a stock company-shares

In order to understand the operations of a joint stock company, it is necessary to define the term share. The stock is proprietary, securities, ie. the ideal share of the issuer's company. The size of the shares depends on the total number of issued shares, and the shares are the securities on the basis of which the one who paid it proves its stake in the company's share

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<sup>160</sup> Law on Business Companies ("Official Gazette of the Federation of BiH", no. 81/15).

capital. The stock gives its holder certain rights, and obligations to society. One of the basic characteristics of the share is to make a dividend. The dividend allows the payment of the profit of the company to the shareholder. It is precisely the motive of the shareholder, that is, the owner of the same, that is a dividend payment that represents a profit to its owner. When it comes to paying off profits, then it should be noted that profit is determined in proportion to the share of shareholders in the company. Stocks may also be the subject of buying on stock exchanges as securities. Namely, ownership of a share means that a shareholder has the status of co-owner of a society as a shareholder. This is because the shares are part of the company's core capital, as a set of membership rights and obligations. The important activity of a joint stock company is precisely the use of working capital, that is, money. Using funds can create a condition for further investment in new investments. When it comes to investments, they are needed to be able to do business. A logical sequence is to ensure everything necessary for undertaking activities related to participation in new business relationships as well as the possibility of presenting in the business markets. It is important for society to have as much money as possible, since with that money it can invest further, all for the sake of profitability. The way a society gets money is just by issuing shares, by selling them at a certain price. Given that capital is necessary for the survival and development of a joint stock company, the main goal is to ensure business stability. This is accomplished by owning sufficient capital for both regular management and

profit. In this respect, it is important to note that in order to achieve the stability of a joint stock company, it is necessary for the company to be interested in purchasing its shares. A company that owns real estate in its own right would just be interesting for that reason. According to the Law on Ownership Legal Relations, the right of ownership is protected by the objective right of the broadest authority to possess, use and dispose of a thing in accordance with its nature and its purpose. The content of property rights constitutes the powers of possession-factual authority of things, use-economic use and service of their belongings, including harvesting of fruits and disposal-spending their belongings to destruction and alienation of things.<sup>161</sup>

When a joint-stock company owns a property, security is reflected not only in terms of the right to property, but also the possibility of extra money through leasing relationships and the possibility of obtaining loans from banks. In this regard, it is important to note that the ownership of the real estate, its titular, gives the opportunity to use the real estate as a means of securing the loan. In this way, banks, as potential creditors, would have the security of securing claims. The result of this legal relationship is the realization of additional funds for further investments. When talking about real estate, it is assumed that these are real estate that is booked in accordance with adequate legal regulations. This is precisely because the real estate could in this sense be a means of securing the repayment of the loan. So in this form it would be used to raise loans with banks, and in order to eventual credit indebtedness. Apart from the sale of shares of companies and in this

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<sup>161</sup> Zecevic, E., (2008), Land books, Sarajevo: Logos.

way it is possible to increase the capital. The same would create economic conditions for further investment in certain projects. In this way, a positive picture would be broadcast in the public of the company that would be interesting for potential investors. However, when it comes to real estate and its usability as a means of securing credit arrangements, it is necessary to prove ownership of it. Just an adequately booked real estate proves ownership right.

### 3. REAL ESTATE

Property<sup>162</sup> in real property means a particle of the surface of the earth, including everything that is connected with it permanently on its surface or below it (primarily buildings, houses, etc.). One property, in legal terms, can also comprise several land parcels registered in the land register in the same land register. They are legally united in one body (land register body), which is as such a real estate. All the useful things the country produces on its surface is an integral part of this property until it is separated from the country. Everything that is on the surface of the earth, above or below it, is constructed for permanent survival on the same or is otherwise permanently connected to it, it is a part of this property until it is separated from it. When talking about real estate, it is important to note that the importance of real estate was evident precisely in the period of development of the productive forces that followed the transition from feudalism to capitalism. During this period, the land did

not only serve for processing, but had the function of the safest asset that provided mortgage creditors. According to the above, realities have been important since the very beginnings of capitalism. 3.1. Land cadastre When dealing with the subject of the concept of real estate, it is important to note that the cadastral operation and the land registry are closely related. These are the two institutes that regulate real estate data. Namely, in order to form one land registry body in the land registry, the data according to the cadastral records are necessary. Cadastre plot, as the basic unit of the cadastre system, is precisely the basis for the formation of a land registry body. So, the land registry uses the cadastre data to define real estate data. The basis of the land register is the cadastre. The land cadastre consists of cadastral plans and cadastral opera. The cadastral plans allow to find individual land plots and to determine their position in relation to other land. This is of great importance for the land register, because the land registry office has the form presented on the cadastral plan and is located between those neighbors as it is exposed in the cadastral plan. The cadastral operation is a collection of regulations and a survey in which data on the area of cadastral parcels, on the culture (method of use) of fertility, land classification, cadastral income and users are collected. The basic unit in the cadastre system is a cadastral plot.<sup>163</sup> 3.2. Procedure for posting real estate In order to present a clearer picture regarding the procedure for registration of real estate through appropriate official records, it is necessary to explain the procedure of registration

<sup>162</sup> Law on Real Rights ("Official Gazette of the Federation of BiH", no.66 / 13).

<sup>163</sup> Stjepanović, S., Šaćirović, S., Miljević, N., (2010), Vanparnica, theory-practice, Land Register

Addendum, Banja Luka: Association of Lawyers of Republika Srpska



through the cadastral operation. This is because, primarily, according to these records, is the starting point for the legal existence of a real estate.<sup>164</sup> For the purpose of defining the property, according to the cadastre records, it could be said that the cadastre has the role of resolving the previous issue in the process of posting a real estate. Namely, the survey of land, buildings and other objects, the creation and maintenance of land cadastre, buildings and other objects, records and registration of real estate rights is defined by the Law on Cadastre and Real Estate Survey. In order to register the facility in the cadastre and land registry services, a request has been submitted to the competent cadastral office. Upon request, the creation of the recording report is made. The record of the recording is the determination of the factual situation in the field, represented by the drawing of the survey and the creation of the application form. The sketch of the survey defines the position of the real estate on the land, ie its surface, shape and culture. Changes in the technical sense that changed the situation in cadastral plans and the layout of previously built buildings and auxiliary buildings (changes in shape and surface and cadastral culture of the park, changes in buildings and other objects in the construction sense) is shown in the application form. The application form is a prescribed form on the basis of which a technical change is made in the cadastral operation.<sup>165</sup>

This is because the competent Cadastre Service carries out all the changes that relate to the Real Estate Cadastre. The

obligation of the user or the owner of the real estate is to report all changes related to their real estate to the competent municipal administration for geodetic affairs and real estate cadastre. When the municipal administration for geodetic affairs and cadastre receives a request for a change in the real estate on the request, it makes a decision. The decision contains a statement on the implementation of a change in a particular property. During the process of adopting a decision on the change of real estate, the registration sheets are formed, on the basis of which the situation in the cadastre and in the land register (land registers) is changing. 3.3. The importance of posting real estate The importance of adequate bookkeeping of real estate is reflected in particular in the fact that the legal regulation is primarily applied, and on the other hand, such a property can be used as a means of obtaining funds through a loan arrangement. The adequately booked real estate in this way has its identity. The identity of the real estate means that there is a number for it with which it is registered in the appropriate cadastral offices and that as such there is a mark on the cadastral plans, and consequently also its place in the land registry records. Therefore, it is necessary that the real estate be marked, that is, with the name, the number, the place where it is, as well as with all other data on the basis of which the identification can be determined. It is precisely in the context of increasing the capital of the company that real estate can be the basis for additional cash, through credit arrangements. Namely, in order to enable banks, as potential money-makers to companies, through credit arrangements,

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<sup>164</sup> Dolovac, A. et.al., (1986), Proceedings of the Law - Law on Survey and Real Estate Cadastre, Sarajevo: Association of Geodetic Engineers and Geometers of Bosnia and Herzegovina.

<sup>165</sup> Lukić, V., Begić, M., Imamović, J., (1991), Theoretical and Practical Commentary on the Real Estate Survey and Real Estate Cadastre, Sarajevo: SID "STRUKA".

have trust in a company that needs additional capital, that is in the form of a loan, it is necessary to guarantee that this money will be returned. Therefore, the requirement for granting a loan is that the bank has the means of securing the return of the loan. It is precisely the importance of posting a real estate, that is, the up-to-dateness of the same in the relevant land register records, the security for the eventual burden of a particular real estate mortgage. In this way, the owner's property would be a means of securing the return of it. Therefore, apart from registering the cadastre, the real estate should also have its place in the land registry records. However, there are frequent situations that objects are not recorded (scrambled) in the cadastral opera. In this form, it is not recorded in the Cadastre of the Cadastre service plans, they do not have their number, position, surface. As a result, they do not have records in land registers. In this regard, it is important to get acquainted with the procedure of registering real estate in the appropriate cadastral and land registry records. Using the adequately booked real estate, its owner would have a basis, in terms of financial support through the application of credit arrangements, while complying with the legislation. This ensures the safety of companies and their stability, as well as the conditions for further work, the system of maintaining its solvency. In this context, a legally defined real estate can be of interest to credit providers, banks and other legal entities that deal with those transactions. This is also important when it comes to resolving certain property legal relations, the sale of real estate, etc. Property titles have legal protection in accordance with applicable legal regulations. The consequences for the owners of unregistered real estate are primarily

reflected in the fact that this type of real estate represents illegally built objects and as such do not enjoy legal protection as it is enabled for its owners. The importance of posting real estate is also reflected in the fact that when it comes to cadastre and land registry, the principle of accuracy applies. Therefore, what is recorded in the records of the cadastre and land registers implies that it is true. This is especially important for the purpose of concluding legal transactions, for example, buying and selling, lease agreements, where registration in the land register guarantees to the contracting parties the truthfulness of the data. The integrity of the data is important for all parties, signatories of a contract, and especially for the possible future disputes of the contracting parties.

#### 3.4. Acquisition, Transfer and Restriction of Real Estate

Acquisition, transfer, restriction on real estate is conditioned by the entry into the land register. Land ownership is the situation that the real estate is not registered in the cadastre and land register, and it is actually located on the plot, that is, a real estate that has no identity. When talking about a real estate, then this term should be precised to the fact that it is a specific type of housing or object of some other purpose. A property that has not been booked, as it is derived from the very name of "vancouver", is a problem, both for the landlord himself and for those who are not. Namely, the plot as such is actually located on the land or a particular plot, but it is not recorded through the appropriate land records, specifically the cadastral operation. In this regard it is necessary to mention the importance of posting real estate as well as the multiple possibilities of their use. The importance of posting real estate, since legal entities may also be owners of property rights, can also

be defined in terms of legal security of companies, due to some unforeseen situations that might occur. This is especially the case for judicial relations, for example, if a company closes in close proximity with some other company. In this situation, if there are certain concerns about the property, for example, who owns it, proof of ownership would define it. The title holder has legal certainty to avoid unwanted proportions with adjacent titles if certain legal issues arise from them. In the context of this paper, adequately booked real estate owned by a company can serve as a basis for getting capital for future investments that would expand the existing capital of the company and thereby provide security for further operations. Potential creditors, if possible due to default of the borrower, would have a basis for enforced execution from the pledged real estate. In this way, the basis for initiating settlement procedure from the loan securing facility would be created.

Mortgage is a lien on real estate that authorizes a pledge (mortgage) creditor to settle from a pledged real estate if its maturing claim against the pledged debtor is not met. The pledge in general, and even the mortgage, implies two legal relationships, and this is the previous obligatory legal relationship in which the monetary claim is based and, on this occasion, a lump-sum legal relationship in order to secure the settlement of this monetary claim.<sup>166</sup>

The object actually located on the plot, but which is not registered according to the

cadastre records, nor can it have legal protection against the land registry records. The owners of such real estate in this way can not prove the right of ownership of them, that is, they legally exist at all. On the contrary, such a type of real estate represents illegally built objects. When talking about a real estate as a means of securing a loan, it is important to note that it is precisely by the system of registration of a pledge that the possibility of a possible initiation of the enforcement procedure is secured, in order to collect the claims provided by the hopitkom. So in the records of the cadastre or land registers a mortgage is registered. According to the above, it follows that if the real estate is not adequately booked, it can not serve as a means of securing a loan. The registration of the pledge right and the recording of the enforceability of receivables have absolute effect: execution on this real estate can also be carried out against the third person who acquires the property later.<sup>167</sup>

When talking about the importance of property and its legal protection, then we need to state that every natural or legal person is entitled to the unimpeded enjoyment of his property, and no one can be deprived of his property, except in the public interest and under the conditions provided for by the law and the general principles of international law. The preceding provisions, however, do not in any way affect the State's right to apply such laws as it deems necessary to control the use of property in accordance with the general interest or to secure the collection of taxes or other contributions or penalties.<sup>168</sup>

<sup>166</sup> Zecevic, E., (2008), Land books, Sarajevo: Logos.

<sup>167</sup> Triva, S., Belajac, V., Dika, M., (1984), Court Executive Law, Zagreb: Informator.

<sup>168</sup> Article 1 of Protocol No. 1, with the European Convention for the Protection of Human Rights and Fundamental Freedoms, Rome, 4. November 1950

This is also one of the evidence that draws attention to the fact of the importance of the property and legal certainty of its titulary.

#### 4. CONCLUSION

The application of legal regulations primarily points to the fact that there is legal certainty. This essentially means that in the situation of non compliance with legal norms, the possibility of legal sanctions exists. When talking about companies, it is important to mention the fact that the nominees may be owners of movable and immovable things. In the business world, whatever they are organized, they may appear on the side of those who need to exercise some right to others and in the opposite way. However, having in mind that both companies as legal entities enter into certain civil legal relations, they also have a certain degree of responsibility. They are responsible for obligations as well as natural persons, for every valid claim. When talking about responsibility in this context, the basis of responsibility can arise both from the legal and contractual or non-contractual obligations. Therefore, it is necessary to comply with legal regulations in any segment. In this paper, it is important to note that the focus of legal certainty is also mentioned from the aspect of using the property as a means of securing capital for possible investments. The property has legal protection and, therefore, the legal safety of its owners. Namely, by applying the legal regulation system, a secure legal environment is provided for potential investors in companies that own their property. This is because these companies could have an adequate means of securing loans as capital for further investments and

thus stability in the business market. In this way, the conditions for the sustainability of institutions that place credit arrangements, specifically banks, would be acquired. This is important because when we are talking about a joint stock company, that is, the capital company whose structure is made up of shareholders, it is necessary to strive to maintain the level of solvency. In addition to solvency, it is necessary to constantly create opportunities for expanding capital through investments, and thus attract future investors, that is, new shareholders. New shareholders, as investors, represent new capital that is necessary for the further development of a joint stock company. Consequently, a positive image of the society is created, with the aim of good business cooperation. Therefore, the answer to legal certainty and, at the same time, the stability of companies is in the ownership of real estate that needs to be defined in accordance with adequate legislation. As such, they represent a form of security for a particular business society that is approaching the outside world, that is, the capital market, which is today burdened with numerous competition.

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## THE SIGNIFICANCE OF THE FORENSIC PHONETICS IN THE VOICE IDENTIFICATION AS AN EFFECTIVE PROTECTION AND SAFETY MEASURE

Ines Babić MA, e-mail: [ines.babic19@gmail.com](mailto:ines.babic19@gmail.com),  
Selma Otuzbir, MA  
Irma Hodžić, MA

**Abstract:** *Communication is a complex process between humans and other species. It involves the act of transferring informations, ideas, opinions, and other facilities through signals and signs (speech, language signs, symbols, etc.). Verbal communication includes written and oral communication. Exact methods in the study of language and text, and an interdisciplinary approach caused the development of the forensic phonetics. It is today, in practice and in research, domain that has reached a significant progress. It is extremely useful in the world in a crime investigation, and provides protection and safety. It is used in criminal investigation, counter-terrorism and surveillance. Countries such as: the United Kingdom, Germany, Holland, Belgium, and America rely much on the forensic linguistics. This paper explores the importance of the forensic phonetics when analysing the criminal investigation. In order to determine the profile of an offender it is essential to pay attention to the forensic phonetics. Unfortunately, the field of the forensic phonetics is not recognized in Bosnia and Herzegovina. That is why this subject is selected.*

**Keywords:** *Forensic phonetics, criminal investigation, speech, communication, verbal communication*

## **Introduction: protection and security**

Communication is a complex process that involves communicating between people and other living beings by transmitting information, ideas, attitudes, and other content with the help of a signal system or characters (speech, tongues, symbols, etc.). Verbal communication is a type of communication that includes speech and writing, which are crucial for the intent of the perpetrator of the crime, because they ensure a more secure criminal investigation, and thus greater protection of citizens. The primary goal for creating security is to develop security technologies and knowledge that will ensure optimum and more coherent use of technologies. Therefore, exact methods in speech research and the application of an interdisciplinary approach have led to the development of forensic phonetics which has reached significant development in the world today and in the research and research domain.

1. Principle of operability

It is necessary to emphasize that legal regulations and professional literature are mostly used by the term "criminal-operative affairs", and it defines it insufficiently and unclearly, where such a term does not define the totality of taking actions and measures of officials within the framework of a continuous and long-lasting process of prevention and the suppression of criminality, which can be called content work, from where the term "criminal-operative work" is performed, or shorter "operative work". After all, this term is generally accepted in police structures and in everyday use.

In the precise definition of the term "operational work", it is necessary to determine those characteristics that are essentially composed by the team that is, that is, identify the compulsory elements that justify it. Mandatory elements of operational work are: 1) objectives (the intended operational measure or action must contain previously set objectives so as not to turn into illogical and unreasonable wandering), 2) planning (as the operational work is extremely complex activity, quality pre-planning is the basis of success), 3) the operational plan (containing the legal basis, objectives, executors, funds, targets, manner of realization, place and time of execution, control mechanisms, etc.); 4) data processing (a large number of information collected by the service is important for its functioning), 5) approvals and approvals (prior approval of the management or approval of the competent authorities for the intended operational activity is the basic prerequisite for the legality and regularity of the work, as well as the protection of officials who perform the action), 6) the legal basis (non-verification or incorrectly established the legal basis of the official work undertaken most often turns it into the incriminated behavior of the official person).

The principle of operability implies knowledge of opportunities and conditions in the domain of criminal behavior in a given area. This means that the operative worker must know well the manifestations of crime in his area, criminal records and objects, convicted persons, persons serving prison sentences, persons who are on conditional release or who have served the sentence of imprisonment, certain persons as potential perpetrators of criminal offenses, etc.

## **2. The notion of phonetics and branches of phonetics**

### **2.1. The notion of phonetics**

Phonetics (from the cry of the word fonetiké) is a linguistic discipline that studies the articulation and acoustical properties of speech and voices, as crucial in communication. According to Knight Rachael Anne (2012), "phonetics is a science that studies the characteristics of voices." (p.15) The subject of phonetics is articulated voices that are produced consciously and with their own will and enable the combination of an infinite number of messages.

### **2.2. Branches of phonetics**

The three basic branches of phonetics are artistic phonetics, acoustic phonetics and perceptual phonetics. Articulation phonetics deals with the study of articulation organs, i.e. description and classification of speech organs and their production in the course of speech, while acoustic phonetics deals with the study of the transmission of sound waves and the way the inner ear receives it (Jongman & Reetz, 2009) Perceptive phonetics deals with the study of how the human brain creates experiencing voice the sounds it receives. (Bulgarian, 2003)

## **3. Spectrographic analysis of voice**

Snapshots of words for analysis need to work in words that are converted by special hardware and software into a graphic view of a computer called a spectrometer. (Borden, Harris & Raphael, 2007) The spectrum is often called a voice tag (Kersta, 1962), which is unique and closely related

to the fingerprint on which people can be detected. (Blumstein & Lieberman, 1988) On the other hand, Olsson (2004) argues that the use of the name of a voice capture for a spectrometer is not an appropriate term because "language is a property we learn, and not one we own, in which it differs from the DNA analysis and the impression finger ". (p.32) For the purpose of preparing the voice to be analyzed through the spectrum, the experts prepare a sample of voice at the Court's order, which is later compiled using the spectrum with a recorded voice previously delivered. The suspect reads the text of a universal character, and then repeats the sentences that are dictated to him. If the video is analyzed by a scream, then the respondent is asked to quit, and if it was a whisper, then the respondent will whisper. Spontaneous speech is the last characteristic on the basis of which a criminal can be discovered. The respondent in a state of as much relaxation talks about any topic.

## **4. Speech characteristics**

Characteristics of human voice and speech are elements of speech that characterize every speaker. Speech characteristics that should be considered when identifying speakers include: voice height, intonation, accent / accent, speech speed, speech disorders, psychological state, changed voices, masking and voice quality.

### **4.1. Voice height**

Voice height means decreasing or increasing the voice tone that depends on the fundamental frequency that is the physical parameter. The fundamental frequency is the number of vibrations that

the voices do in one second. "The value of the fundamental frequency is influenced by age, gender, body constitution, social environment, emotions, intellectual status, laryngeal pathology, mental disorders, hearing impairments, neurological and endocrine disorders and general health conditions" (Heider, 2010, . The difference in the tone of voice is a useful feature in distinguishing between speakers and needs to be analyzed spectral and auditory.

#### **4.2. Intonation**

Voice intonation is a perceived variation in the height of the voice that is an excellent indicator of the emotional state of the speaker. When analyzing someone's intonation, it is possible to find out much about the degree of conviction or incompatibility of a particular person.

#### **4.3. Accent / accent**

Accen involves emphasizing words with the help of height and volume. If no masking is used, the speaker's accent should be similar in emphasizing the style in the word regardless of the recording. (Heider, 2009)

#### **4.4. Speed of speech**

Speech speed is a significant feature of every speaker. A part of the speaker determines a faster speech, while others have a slower pace of speech. It is important to carefully analyze whether a person deliberately tries to pronounce certain words faster for the purpose of concealing information. It is also important to professionally analyze the use of the pause

the speaker uses. It is necessary to distinguish the pause of hesitation, where the speaker considers what he is saying, from too long and too many breaks that the speaker can and intentionally take to conceal certain content. (Gibbon, Hardcastle & Laver, 2010)

#### **4.5. Speech disorders**

Irregularities in pronunciation and linguistic expression like stuttering, improper pronunciation of voices, hasty speech and others can be decisive in the discovery of speakers and should be taken into account.

#### **4.6. Psychological condition**

There are many psychological reasons that influence speech. Sometimes people are aware of them, and often they have unconsciously adopted systems of thinking. Speech can be influenced by various factors such as hunger, alcohol consumption, taking drugs, and others. Listening can usually reveal psychological effects that affect speech. Such changes are often referred to as fear, nervousness, excessive calm, excitement, and so on. The examiner should be skilled in order to properly determine the emotions they are working on.

#### **4.7. Changes in voice**

Voices change refers to the way in which the voice begins (soft and hard start) and the amount of noise in the voice. Ataka voice or hard start is the way a speaker begins speech and one of the characteristics of a particular person's speech. (Heider, 2009)



#### 4.8. Covering (masking)

The deliberate disguise of a handset with a handkerchief or hand can pose difficulties in discovering the speaker. Also deliberate concealment of certain words are the elements on which an examiner should pay attention. It is very important to carefully analyze the characteristics of the masking in the sample and determine whether it is possible to compare with another pattern.

#### 4.9. Voice quality

Each person has a different voice quality and by comparing the voices it is possible to discover similarities and differences between voices, considering that the quality of the voice is affected by laryngeal characteristics (height, accent and intonation), articulation movements and resonance of the oral cavity. (Kapoor & Rizvi, 2010).

A practical example of using forensic phonetics

Forensic phonetics are useful in identifying speakers in a variety of important cases, such as fake phone calls to emergency services, sexual harassment by telephone, telephone hijackers, etc. (Manojlović & Nikolić, 2009) For the first time, the perpetrators were identified in America in 1967 by passing the Standards Relating to Electronic Surveillance, first at the federal level (Shuy, 2007), so that later the local police would begin to carry out secret operations in which a covert investigator and witness associate wore hidden microphones and were involved in interviews with suspected people. (Manojlović & Nikolić-Novaković, 2009)

Since then, this method has been used in a world where many cases have been resolved based on voice analysis. Mia Šešum, a graduated defectologist for blackmail, kidnapping and threats, worked on a blackmail case. With the help of knowledge in the field of phonetics, the criminal was discovered. An incorrect pronunciation of the voice R attempted to hide it. The speaker was aware of his speech pathology he hid so well that he pointed to one skill and special ability that only a small group of people had. Knowing phonetics is very important for identity checking, but not a sufficient way of checking. Additional measures are needed that need to be considered in order to make the final decision. (Šešum, 2009)



*Figure 1. Mia Šešum, a graduated defectologist in blackmail, abductions and threats*

#### 5. Intoxication and speech

The state of intoxication occurs when excessive intake of normally harmless substances or toxic poisoning. Intoxication is characterized by various effects such as uncontrollable speech, depression, nausea, and the like. During the investigation, experts always check that the suspect was under the deliberate or unintentional influence of alcohol, drugs, or other toxic or intoxicant chemicals during the commission of a particular crime. It is

necessary to pay attention to what and how people speak at those moments. For example, people who are under the influence of alcohol often have a memory deficit, are disoriented in speech, pronounce irregular and unconnected, certain words, repeating words or sentences, making breaks, and the like. They are often characterized by adding unnecessary style or voice to the word. For example, "I did not tear" instead of "I did not take", where the speaker adds an unnecessary voice to the words he took. Another example is often the rejection of unnecessary syllables and words during a break, like, but, but, uh, ah, you know, and the like. For example, the accused can say "I saw myself with (uh, ah) her." Speakers in these situations are characterized by attempts to fight on the face while trying to pronounce certain words or sentences. Their facial expression is filled with grimas, widespread pupils, lips tremors, and the like.

All five aspects of speech production (respiration, phonation, articulation, resonance, and prosody) can be disrupted by the introduction of the inoxics. People under the influence of intoxication are associated with significant changes in speech projection. Prozodija refers to those speech characteristics (words, sentences, and the like), which can not be performed or observed at the segmental level of the phoneme, but at the wider level of the word or sentence. Usually, the prozois is characterized by the following speech characteristics: tempo, rhythm, idle, and color, and they are added to the speech characteristics at suprasegmental level: intonation, volume, and length (their measurable acoustic correlates are fundamental frequency, intensity and

duration). (Bulgarian, 1996, page 89) Neurological disorders caused by injectable or toxic agents can affect these speech-motor aspects in different ways by creating a group of unique symptoms. The group of symptoms partially depends on the influence of the intoxicant on the degree of neurological organization. At certain times, when defending a suspect, lawyers should provide statements of persons if they were under the influence of certain substances. Judges can make decisions about the intensity of poisoning with narcotic substances and their consequences on speech and criminal act. Poisoning intensity is divided into three different degrees: 1) relatively low degree of anxiety, 2) higher levels of anxiety, and 3) extreme degrees of anxiety. A relatively low degree of anxiety can actually result in a speaker being more fluent and more discerning, as he or she consciously compensates for increased stress, and a person can successfully deal with anxiety. Higher degrees of anxiety have an impairing effect on fluency and speech accuracy, because a person can not knowingly eliminate the influence of anxiety on speech. Speaker's speech is not fluent and does not think clearly. An extreme degree of anxiety can cause a person to be incapable of producing comprehensible speech due to severe disruptive factors. It should be kept in mind that all people respond to anxiety differently, but the rule is that higher degrees of anxiety increase dysfunction and reduce accuracy. (Heđever, 2009, page 66)

## 6. Voice analysis

Heđever (2009) argues that voice analysis can result in one of the seven decisions: a secure identification (90% of comparable words of at least twenty words must be very

similar to aural and spectral), almost secure identification (80% of comparable words of at least fifteen words must (80% of comparable words of at least 10 corresponding words must be very similar to the phonetic and spectral), undefined identification (no conclusions due to different limiting factors), the possible elimination (80% of comparable words must be very similar to the phonetic and spectral) to be different in the auditory and spectral manner, on a sample of no less than words that do not match), almost safe elimination (80% of comparable words on a sample of no less than fifteen words that do not match must be very different hearing and spectral) and elimination 90% of comparable words of at least twenty words that do not match the araja must be very different hearing and spectral).

## 7. Second opinion

The other opinion can be requested independently of the opinion of the first examiner. The other examiner must express his or her opinion independently without obtaining any information from the first examiner's opinion. If the examiners do not agree, the final opinion is obtained on the basis of a detailed discussion between the two examiners. In case that the decisions of the examiners are not prosecuted, the decision must be an undefined identification. A third opinion may be sought, but the result may be only the lowest level of reliability or the undefined identification of all three testers. (Heđever, 2009) 8. Notes and material storage

The necessary information should include the following: a laboratory, a description of the presented evidence, a description of how to store documentation, a description

and type of tape recorder, bandwidth information, copy process information, signal processing, list of words used for comparison, co-workers in the expert judgment and final decision. (Heđever, 2009) It is necessary to keep the material for at least three years after the end of the test, unless all material has been requested to be returned.

## 8. Forensic Phonetics Laboratory



Figure 2, Forensic Phonetics Laboratory

The Forensic Phonetics Laboratory must have different audio and video recording, reproducing and editing devices. (Heider, 2009) All equipment must be of extremely professional quality and as advanced technology as possible. The laboratory should be located in as little noise as possible. It should be well illuminated to meet the working conditions.

## 9. Forensic phonetics in BiH

In the criminal theory and practice in Bosnia and Herzegovina, the area of phonetics unfortunately does not have its own place. There are no professional, academic and specialist studies that would be able to give knowledge and practice in the same field. The lack of specialists in this field presents difficulties in learning about a particular speech. At the time of developing and applying more sophisticated hidden criminal operations, technology and methods, the lack of specialists in this field presents difficulties

in learning how to describe a particular speech. This significantly affects the value of the evidence trying to prove the guilt or innocence of a particular person in criminal proceedings and to maintain security in a particular country. An attempt to build an effective legal system in Bosnia and Herzegovina should result in the desire to punish in every way the perpetrator of a criminal offense, that is, he should be prevented from avoiding criminal prosecution for a committed criminal offense. This certainly includes respect for the rights of persons who are charged with the commission of a particular criminal offense, that they can be used in all achievements of science in order to prove their innocence. Here, the area of phonetics plays a very important role and its place. When introducing modern methods in the fight against crime, it is necessary to pay attention to the field of phonetics, and to hire specialists in this field, which is certainly in the interest of protecting the basic values of the individual, society, state and the international community.

## Conclusion

Phonetics is a very important and useful discipline for criminals. As the fingerprint of each person is unique, so is the language of individuals different. Learning the language of a particular person can be of great help in the investigation and interpretation of the evidence, evidence, testimony of witnesses, suspects or defendants, etc.

The speaker can be profiled with information obtained on the basis of accent, dialect, voice height, intonation, speech speed, speech disorder, psychological state, voice change, voice quality, and the like. Based on these characteristics, it is possible to establish important facts such as the origin of the speaker, the degree of security or insecurity, many of the affects and conditions, the psychological distress that man manifests through the language, etc.

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## DATA SECURITY IN THE WI-FI NETWORK IN BH COMPANIES

Prof. dr. Husnija Bibuljica, email: [h\\_bibuljica@hotmail.com](mailto:h_bibuljica@hotmail.com)

Mr. sc. Haris Bibuljica

**Abstract:** Data security in computer networks are very actual thematic. Accommodation provided by wireless network causes their spiral expansion. In the other hand easy connection to the medium for transmission of data making this networks much exposed to the attacks. Because of that it is necessary to pay much attention about data security in this networks. During the implementation of wireless networks we must decide how to define security policy and as part of this question we must decide what is equipment and data security method best for selection. In this paper as theoretical base are exposed some basic thesis in information theory. There are named often used standards for wireless networks, and standards IEEE 802.11x. and IEEE 802.16 are detailed presented. There are discussed mechanism for data protection, and in this frame work detailed analyzed weakness and threats for data security. I elaborated the program to change the MAC address of one of the means of network security. Showing systematic measures to improve data security in wireless computer networks and described in more detail some of the technical measures.

**Keywords:** Data security, WLAN, Encryption, Companies

## Introduction

The convenience of the wireless computer network has made it popular, and it is very often used today. For example, in a business environment, universities, in public places, and also in private homes. The security of data transmitted in wireless computing networks is an increasingly frequent issue that users choose. The medium for transmitting information is ether, which means that anyone with the radio and transmitter can receive and send data. This is a threat to the confidentiality of information transmitted in such networks.

At the time WEP was accepted, there were significant limitations in the hardware capabilities of the equipment and the cost of its production, which led to the adoption of such a data protection mechanism. WEP has proven vulnerable to several types of attacks and is now contemplating that it has little value as a mechanism for protecting confidentiality of data. This paper presents how WEP works and several ways to break the protection it provides. In order to improve security, and utilize the existing equipment that was used with the WEP mechanism, the protection was enhanced by the WPA mechanism. It was a transient solution, with still insufficiently effective security. Only WPA2 with AES and the new authentication system finally provides the required level of data security. Current protection systems are a product of human labor, intended for other people. The mistakes in the application of data protection are most often due to the lack of understanding of the concept on which the development of such systems is based. In order to overcome this, new intelligent data

protection systems with application of intelligent and intelligent software are developed.

## 1. Information networks and data security

The information system is an integrated set of components for collecting, recording, storing, processing and transmitting information. Business enterprises, other types of organizations and individuals in modern society depend on information systems for managing their operations and operations, maintaining market competitiveness, offering a variety of services and enhancing their personal abilities and capacities. For example, modern corporations depend on computer information systems to process their financial accounts and business transactions, and manage human resources; municipal administrations depend on information systems for offering basic services to their citizens; Individuals use information systems to improve their knowledge, to purchase, manage bank accounts and transactions, as well as for various financial operations.

The general information system consists of sources of information, encoders of information, communication (portable) channels, decoders and information streams.



Figure 1. General information system view

It is considered that the cryptographic system is weak if it allows the use of bad

keys, if it has flaws in the design or if it can be easily decrypted.

Determining the existence of possible changes to the message during transmission is another essential task of cryptographic systems. Data integrity is provided by adding separate data in the form of a control sum or other redundant data that will be used in the decryption process. Adding the Message Authentication Code (MAC) is the usual way to verify its integrity. MAC is obtained based on the content of the message itself and the key itself. MAC is usually encrypted with the message itself, and it sends it, which adds another layer of integrity check. The recipient also calculates the MAC value in an identical manner and compares its score with the values sent along with the message. Integrity is provided if these two values are the same. It is no longer enough for the tool to be automated and adaptive (in order to overcome user errors). The tool must behave like an intelligent observer, capable of recognizing the "abnormal" behavior of the information flow. It must also be able to make some decisions and be able to completely reconstruct information as it was before unauthorized changes.

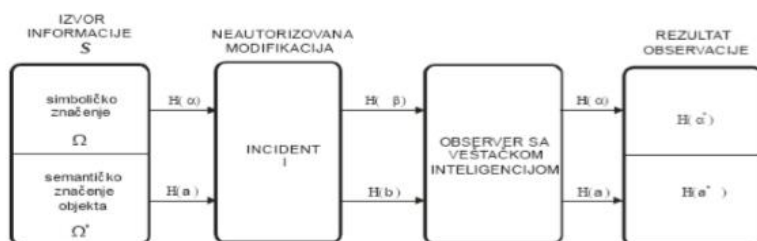


Figure 2. Attacked information system with an intelligent observer

## 2. Planning a Wi-Fi network

Factors to be considered at the planning stage are required coverage, capacity and costs. As a rule, a large area and a large capacity can only achieve high prices. In other words, less portable power supply, less coverage area. On the other hand, this leads to greater total capacity, by making access points closer to one another. In controlled networks, power settings are generally automatic: power transmission is reduced if access points are located close to each other.

In terms of capacity, the rule is that one access point is located on about 10-15 active users that can serve. Connection limit, i.e. the largest number of users who can connect to the access point at the same time is significantly higher (about 30-50 users, depending on the access point model). Older access point models have less capacity. In principle, coverage coverage can use both 2.4 and 5 GHz bandwidth for planning. In 5 GHz bandwidth, the signal is lost more strongly as a function of distance and as a result of an obstacle than in 2.4 GHz. Area coverage is almost the same, however, a 5 GHz signal allows more power transfer. However, due to the differences between the frequencies, the direction of the antenna need not necessarily work at 5 GHz.

There are at least three ways to carry out the planning of the coverage area: orthodox and methodical, planning based on testing, and planning based on user requirements. However, it should be noted that organizations that are planning their

network are not forced to add access points to sites as a result of users who complain about poor reception of the signal.

To get an idea of area coverage access points, data transfer should be measured in the following locations:

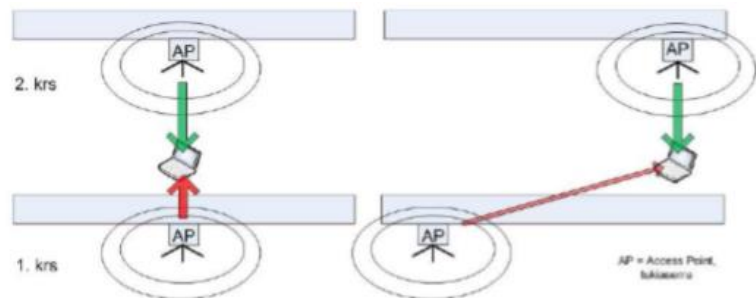
1. In the immediate vicinity of the access point, e.g. directly below it (point A),
2. Near the access point on the same floor, behind the curve in the corridor (point B1) - behind a wall relatively close to the access point (point B2) - behind a wall away from the access point B3)
3. Immediately above the access point on the floor above (point C) or directly below the access point on the floor below (point D).

After WLAN tests it is possible to estimate how often access points should be allocated to cover a large area (given the desired data transfer rate). The desired data transfer speed can be determined independently, giving due attention to the desired total area coverage and budget. However, results below 10 Mbps should not be in the planning phase. However, it should be noted that the actual data ratings can, in the worst case, remain below that. Nothing prevents controller-based access points from it, if the budget permits. In practice, the site of Ethernet and sockets, and in old buildings, the accessibility of the access point also needs to be considered when setting up access points. Where possible, access points should be placed systematically until the entire building is covered. However, the following factors must be considered to ensure the least possible interference between access points: Walls and floors / ceilings prevent

access to the area coverage area from being completely spherical.

Figure 3. Interference between access points.

If the access points are placed directly above or below each other, their signals will interrupt each other (left). If access points are located in somewhat different places on



different floors, the jammed signal weakens while traveling through the ceiling, resulting in less disturbance (right). The overall network plan allows the network to be set up, potential problems can be solved after optimization networks.

### 3. Software tools for wireless network analysis

Kismet is an open source tool.

It is primarily intended for detecting access points and collecting various information about access points. These are information such as network identifier, signal strength, protection used, and even information about clients that are connected to the respective access point. Kismet also stores a lot of data in log files, making it very attractive. Unlike some other tools, Kismet not only detects access points, but records a complete record of all captured packets. Such records can be subsequently used with other tools (Ethereal, Wireshark) for further analysis.

Useful information, which can also be obtained using Kismet, the tool is a list of



clients that are connected to the access point. In the client list view, information about the MAC address of each client is available, and in some cases it is also possible to obtain information about the type of card that the client is using. The number of packages that Kismet captured and the number of packets encrypted is also identified. Kismet also has the ability to identify the IP address of the clients and the strength of their signal.

#### **4. Breaking the protection of wireless networks**

Since the time of the famous work on the issue of how to crack the WEP key, there are many works on weaknesses and failures in the WEP mechanism for data protection. As a replacement for WEP, users first accepted VPN and 802.1X. Such a solution allowed the use of existing network equipment while improving data security. Then there was a temporary solution in the form of a WPA mechanism. WPA has eliminated most of the known security vulnerabilities observed with WEP. With the improvement of security, the complexity of the adjustment of the safety mechanisms is growing, which again causes the application to be lower than expected. The final replacement for WEP and WPA is WPA2 (IEEE 802.11i), for which in the enterprise variant there are no reported weaknesses in terms of security so far. Practical examples in this chapter are executed under the Linux operating system due to the limited number of wireless network adapters that have the required functionality. Most of these examples could also be executed under the Windows platform.

#### **5. Measures to improve WLAN security**

Control measures for protecting wireless networks

Safety management measures begin with a comprehensive security policy. Security policy is a document on the basis of which the other measures of security, operational and technical are harmonized and implemented. Wireless network security includes the following guidelines:

User's Authorizations and Responsibilities

- The policy shows what is involved in it, why it is necessary, and what happens if it breaks. It also defines the responsibility of services and individuals, especially users in general, IT departments and controllers.
- Protected assets - Security policy can identify or point to sensitive information resources, communication channels and systems that need to be protected in the wireless network.
- Threats and weaknesses - Security policy can also include a section identifying threats to the wireless network.
- Analysis of attacks - Security policy can identify the consequences that occur in the event of a violation of wireless network security.
- Procedures and Responsibilities - Security Policy should identify and define security procedures for the following cases:
  - Planning
  - Security Response
  - Security Operational Measures to Protect Wireless Network Security
- Physical security is the basic measure to ensure that only authorized users have access to wireless computing equipment. Physical security includes measures such as:
  - Access Control
  - Identification of passwords, access through identification through card readers, identification by biometric devices are methods that reduce the possibility of

unauthorized access to equipment for the wireless computer network. Personal identification. Multi-level protection - door lock, installation of video surveillance to monitor the space around the objects in which the WLAN is set up. In this way, potential attackers are deterred from access points.

## 6. Conclusion

Wireless computer networks are a security risk for anyone who uses them. Causes should be sought in the incomplete application of existing protection mechanisms, as well as in the still-valid 802.11a, 802.11b, and 802.11g standards that use WEP as the basis of security.

The first result of this is the adoption of the 802.11X standard, which significantly improves user authentication, thereby increasing overall security. This standard uses EAP as its basis, which allows a large number of different authentication methods for network users. The next step in the evolution of security is the WPA standard that was adopted by the association of network equipment manufacturers for wireless computer networks (Wi-Fi Alliance). WPA has fixed all security vulnerabilities in WEP, and with fewer driver changes, it works on existing hardware. Although the great improvement of WPA is considered only between the 802.11x standard and the latest 802.11i standard that is imposed as the final solution to the security problem of wireless computing networks.

When it comes to protecting the company, we need to pay attention to a few additional things for better wireless security.

Companies are potentially more interesting to hackers, because there is always at least one "negligent" employee in the firm whose faults hackers can get confidential information about the company, future projects or bank accounts. Pay attention to the signal itself, it should be limited within the limits of the working environment, this is possible through the software by regulating and directing the antenna, as well as by the physical isolation of the signals at the end walls of that firm. In addition to controlling the access to the local transmitter, the same danger is lurking from "eavesdropping". Namely, by controlling the user who accesses the local transmitter, we did not prevent a third person within the reach of the local transmitter to listen to communication between the transmitter and the receiver (our computer), and in that way potentially obtain sensitive data (e.g., passwords for Internet banking, etc.).

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