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CHALLENGES TO RADICAL INNOVATION WINNING TECHNOLOGY FOR THE CAR OF THE FUTURE? PART TWO

Abstract: *This second article on the car for the future investigates the various possible scenarios for a successful innovative solution. An analytical model for innovation is proposed. This new analysis grid makes it possible to evaluate the potential for the emergence of new products, new services, new processes or new organizations, assuming that four conditions must be satisfied simultaneously (same time, same place): “Scientifically and technically possible”; “Industrially feasible”; “Commercially salable”; and “Politically, socially and culturally acceptable”. The six key success factors are the followings: Autonomy or driving range; Technological simplicity; Total cost, i.e. purchasing cost and the cost of use; Availability and security of supply, in time and space, of primary energy; Security and reliability; Time scale of deployment of innovations. The specific conditions of the automotive industry are analyzed and discussed in details as well as general economic and political issues impacting positively or negatively the deployment of new innovative automobiles.*

Keywords: *innovation, automobile, electric vehicle, technology management.*

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The automotive industry is looking for breakthrough innovations which could contribute to its survival and, if possible, provide it with sustainable competitive advantages. But innovation is an extremely complex process. It has been identified as a critical factor for business development, but remains very difficult to manage when it emerges or needs to be integrated into long-established organizations¹. The understanding of the directions that it is likely to take implies the use of a model of analysis.

1. An analytical model

Many factors or combinations of factors have been advanced by researchers in economics and management to explain the variables that may govern the success or failure of technical and organizational innovations², organizational configuration, including the size of the organization, the cultural context, strategy and leadership, the creativity of human resources. Nevertheless, the understanding of the ideal practices for innovation remains very imperfect³ and most scholars postulate that innovation is a fragile and vulnerable activity⁴. Large organizations seem to be unable to innovate sustainably in the long term.

But the main weakness of the academic literature remains its inability to provide decision-makers with an operational model of innovation management. In general, the published models favor a vision of the supply of new ideas by research institutions and businesses and neglect the vision by the demand, and in particular the expectations of the users and/or consumers and their level of acceptance of the technical solutions that are proposed to them.

¹ Schumpeter, J.A., (1911): *The Theory of Economic Development: An Inquiry Into Profits, Capital, Credit, Interest, and the Business Cycle*, Harvard University Press, Cambridge, 1934 edition; Chanaron, J.J., Metcalfe, S.M., (2007), Schumpeter's Innovation Theory, in Carayannis, E., Ziemnowicz C., (2007): *Re-Discovering Schumpeter: Creative Destruction Evolving into 'Mode 3'*, MacMillan-Palgrave, New York, pp. 52-67.

² Tidd, J., Bessant, J., Pavitt, K., (1997), *Managing Innovation: Integrating Technological, Market and Organizational Change*, John Wiley & Sons, London, 3rd edition, 2005; Burgelman, R.A., Christensen, C.M., Wheelwright, S.C., (2004), *Management of Technology and Innovation*, Irwin Publishers, Chicago; Chanaron, J.J., (1998), Automobiles: a static technology, a « wait-and-see » industry?, *International Journal of Technology Management*, Vol. 16, n°7, pp.595-630; Carayannis, E.G., Ziemnowicz, C., (2007), *Rediscovering Schumpeter: creative destruction evolving into "Mode 3"*, Palgrave Macmillan, New York.

³ Ahmed P. K., (1998), Benchmarking innovation best practice, *Benchmarking for Quality Management & Technology*, 5, 1; pp. 45-56.

⁴ Dougherty, D., Hardy, C. (1996), Sustained product innovation in large mature organizations: Overcoming innovation-to-organization problems, *Academy of Management Journal*, 39, 5, pp. 1120-1153.

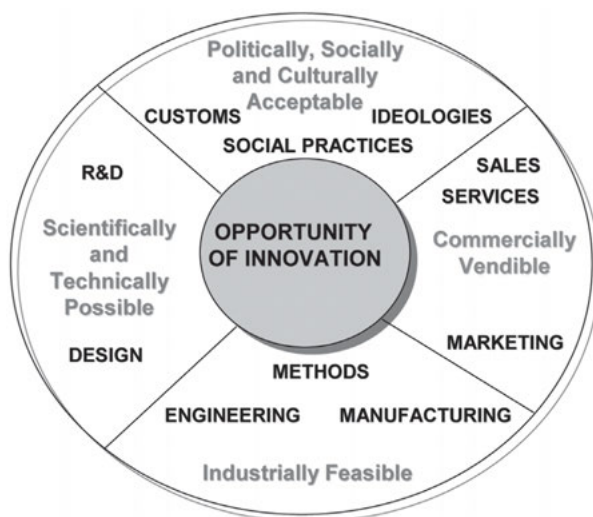


Figure 1. *Comprehensive model*

A new analysis grid makes it possible to evaluate the potential for the emergence of new products, new services, new processes or new organizations (Figure 1)⁵. It assumes that four conditions must be satisfied simultaneously (same time, same place). Any potential innovation must be:

- “Scientifically and technically possible”, i.e. meets the expected technical performance of consumers and users;
- “Industrially feasible”, i.e. produced at cost and quality levels that satisfy all stakeholders;
- “Commercially salable”, i.e. launched at a level of selling price and maintenance costs that are acceptable to the market;
- “Politically, socially and culturally acceptable”, i.e. receives the political support and the full acceptance of consumers.

The analytical model advocates that the success of a given innovation is only possible when and if the main variables associated with these four systems are favorable and failure occurs when key conditions of one or more systems do not exist or are not fulfilled.

What is presented in this chapter is based on a qualitative research methodology. Information, data and opinions were collected by a review of theoretical literature and specialized scientific and technical literature: information from traditional automotive stakeholders (manufacturers, equipment manufacturers, university laboratories, and component manufacturers) as well as new player’s potentials

⁵ Chanaron J.J., (2013), Innovation Valuation: Guesswork or Formalized Framework? A Literature Review, in Akhilesh, K.B., (2013), *Emerging Dimensions of Technology Management*, Springer India, pp. 17-33.

(energy suppliers, battery manufacturers and fuel cells, hydrogen producers and distributors). This review of the literature made it possible to set up an interview guide which, after having been tested with a limited number of interviewees, was then conducted with executives of automobile manufacturers and suppliers in charge of research and development and product planning and strategy as well as with researchers from leading public laboratories leading innovative automotive projects in charge of advanced components such as batteries, electronic control units and fuel cells. Also interviewed were officials of energy supply companies (electricity, bio fuels, hydrogen). All respondents held decision-making positions in their respective roles: R & D, strategy, new product development, production planning. More than one hundred interviews were conducted in China, France, Japan, Germany, Italy and the United States on several missions between 2010 and 2016.

Only the technical, economic, social, cultural and political factors that influence the characteristics of technological innovation in the automotive power train have been reviewed and retained. Obviously, a scientifically more robust exercise should consider technology trends for other onboard equipment; changes in consumer behavior, such as mobility choices; new forms of transport organization (people and goods) as well as changes in laws and governance.

2. Options in competition

Applied to different technological options, the innovation model provides key elements for the evaluation of technology and scenario building. There is a consensus among interviewees about a general scenario in which the different paradigms would appear successively in time, i.e. when each technological option is possible, feasible, acceptable and salable (Figure 2).

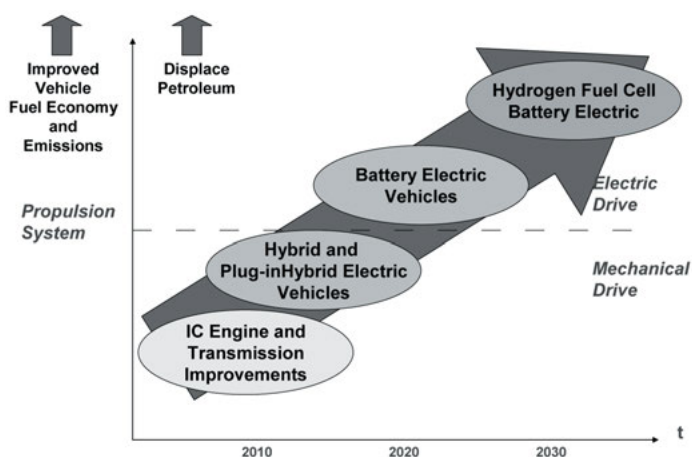


Figure 2. *A scenario of consensus*

Since the prerequisites for minimum vehicle performance - size in number of passengers and speed, safety and reliability - are fully met, the six key success factors from the literature review and interviews are the followings:

1. Autonomy or driving range;
2. Technological simplicity;
3. Total cost, i.e. purchasing cost and the cost of use;
4. Availability and security of supply, in time and space, of primary energy;
5. Security and reliability;
6. Time scale of deployment of innovations.

For the automotive industry, the storage of primary energy in the vehicle is one of the key decision-making factors of the customer-users because it determines five fundamental variables: autonomy, duration of recharging-refueling, safety, weight and size of the vehicle and total cost (Table 1).

The autonomy or distance traveled between two recharging-refueling is obviously a key point. There is no consensus on a minimum acceptable level for a conventional vehicle used in urban areas as well as for interurban connections. If the vehicle of the future is a small city car, a relatively limited autonomy might be possible. It is known that in France, for example, in 2008, 65% of trips are made by car, both as passengers and drivers, for 83% of the distances traveled with an occupancy rate of 1.4 persons per car. 73% of “commuters” use a car or motorcycle (according to the latest public survey carried out in France by INSEE). 99% of trips and 60% of distances are “local” mobility, i.e. within a radius of 80 km around their home. Users drive 3.15 daily trips for a total distance of 25.2 km and 8 km per trip. In Europe, only 13% of trips are more than 60 km long and almost 40-50% of cars never move more than 150 km. There are obviously large differences between urbanized areas and large agglomerations and rural areas where the car is almost omnipresent for lack of alternative offer.

Most trips are local and depend on spatial interaction criteria closely related to the organization of space and the place of employment, shopping and other equipment in relation to the place of residence. Theoretically it means that an electric car with reduced autonomy, lower than 100-150 km per recharge, could then satisfy almost all the daily needs of consumers. Of course, there is still a need for long-distance inter-city travel, which concerns a small percentage of customers. An often-advanced solution is the so-called multi-motorization: a small urban car and a “big” family car per household. But, for the moment, customer preference is for a “universal” vehicle rather than for several specialized vehicles per household.

One of the key features of the automotive market is that any alternative product will inevitably be calibrated to the performances of the current dominant design

The time scale is another crucial dimension. Customers are never ready to switch from one technology to another in a few years. There are approximately 1.5 billion vehicles in circulation in 2017, of which 72% are passenger cars. In 2017, the new annual registrations, which renew the fleet, are of the order of 90 million vehicles including 79 million passenger cars and analysts predicted 105 million in 2020 including 85 million cars. Unfortunately, the covid-19 pandemic crisis starting early in 2020 did put a dramatic end to such a trend.

Table 1. Comparing energy storage options

	Unit	Gasoline	Diesel	Electricity	Natural Gaz	LNG	Compressed H ²	Liquified H ²
State		Liquid	Liquid	Chemical	Gaz	Liquid	Gaz	Liquid
Temperature	Centigrade	Ambient	Ambient	Ambient	Ambient	Ambient	Ambient	-253°
Pressure	Bars	1	1	1	>200	5-25	350-700	5
Mass energy	Wh/kg	11900	11800	100-270	2200	7080	1200	500-1000
Volume energy	Wh/l	8900	9900	250-620	2500	4300	450	1800
Recharging-refueling time	Minutes	5	5	>30-480	5	5	5	5
Efficiency tank to wheel	%	30-35	40-42	72	20-38	30-35	~50	~30-35
Weight for 60 litres	Kg	45	50	270-600	70	36	90-100	100-200
Autonomy	Km	~900	~1000	250-500	160	430	200-300	~180

Sources : Syrota, 2008 and press cutting.

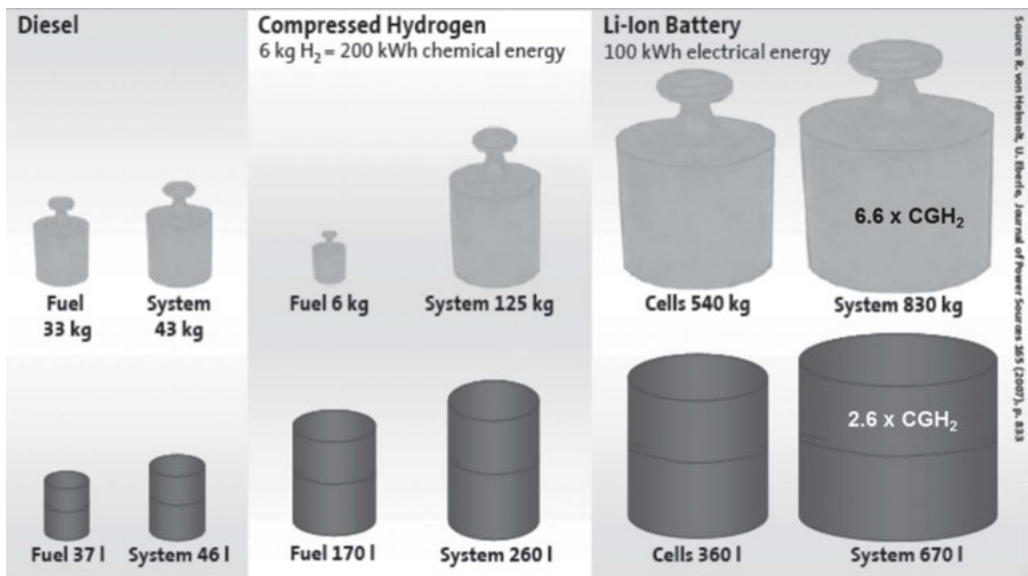


Figure 3. Comparison of storage densities for 500 km

It is very difficult to beat fossil fuels in terms of volume and on-board weight. These are certainly not definitive criteria, but one can imagine that consumers will look twice before switching to an alternative option. According to industry experts, park renewal should take at least 15 years. But these estimates are made with unchanged technology. New technology should follow the traditional cycle for any new product, namely an S-curve with a relatively slow take-off to large volumes, which will likely take several decades.

The total cost will inevitably be a decisive criterion. The cost of energy comes first. If the price of oil exceeds sustainably US\$200 per barrel and then continues to grow, as many experts might predict, it becomes a strong incentive to research for an alternative traction chain and then a massive spread would be possible. But in the current state of technology and given the price of gasoline in 2018, under pressure to stability, or even down with the emergence of shale gas, all alternative solutions will prove more expensive. Rechargeable hybrid or all-electric battery solutions will have to face a recharge cost that could increase with the development of a dedicated infrastructure of charging stations and the deployment of national electricity grids that will have to be upgraded dramatically to support the fast and simultaneous charging of millions of vehicles. As for the cost of replacing batteries at the end of their life, it could also prove to be high.

In 2008, it was estimated that the rechargeable HEV could be a viable solution if gasoline was priced at more than US \$ 6 per gallon in the United States⁶. At its highest in 2008, it was US \$ 4 and just over US \$ 2.54 at the beginning of 2018.

Many authors have recently looked at the different comparative advantages of battery or hydrogen vehicles and conventional vehicles in terms of consumption, pollution, life cycle, total cost without being able to determine a loser or a winner when facing so many, complex and variable assumptions to be implemented. The most “serious” i.e. scientifically-based studies published by researchers in public laboratories favor “well to wheel” analyzes of energy and environmental efficiency⁷.

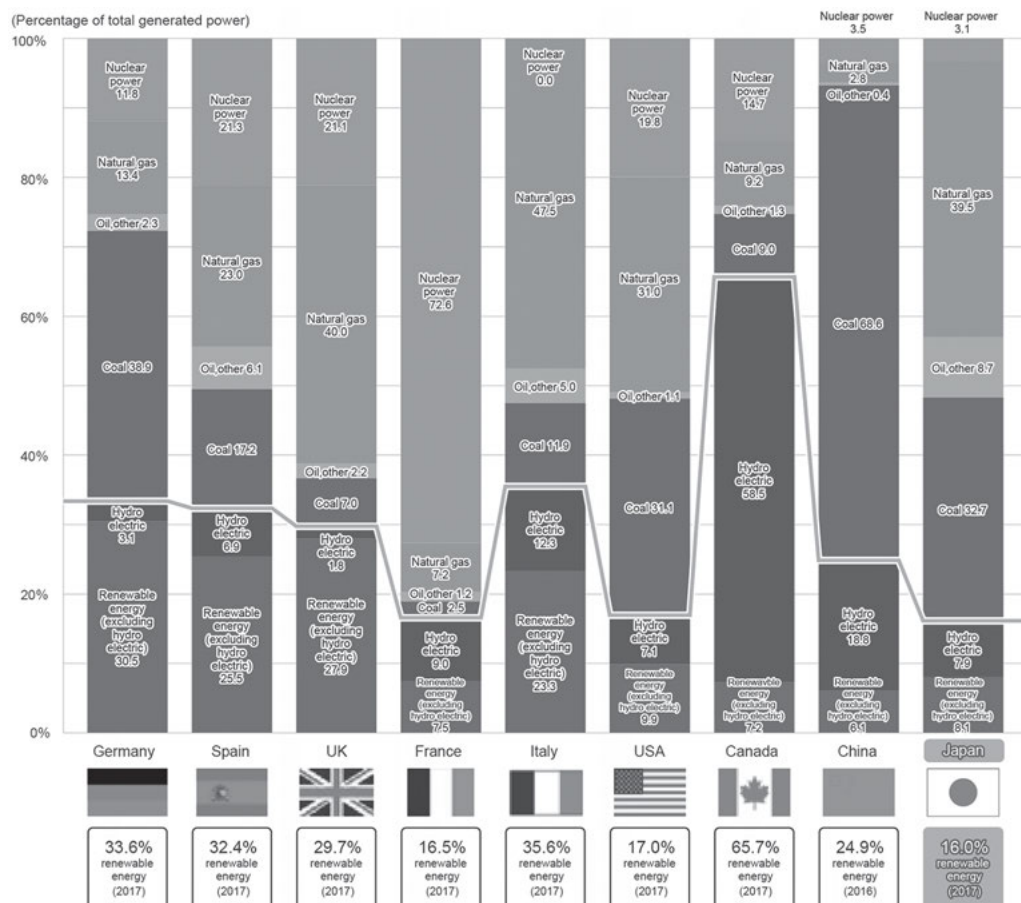
They take into account the local conditions of the energy mix. In fact, for electricity generation, countries are not equal (Figure 4): for example, China, with 72.8% of fossil electricity production, 68.6% for coal alone and hundreds of

⁶ Williams E., (2008), *Plug-in and Regular Hybrids: A National and Regional Comparison of Costs and CO2 Emissions*, Climate Change Policy Partnership, Duke University, November.

⁷ See Aguire B., Eisenhardt L., Lim C., Nelson B., Norring A., Slowik P., Tu N ., (2012). *Lifecycle Analysis Comparison of a Battery Electric Vehicle and a Conventional Gasoline Vehicle*, California Air Resources Board, June; Cai Z., Ou X., Zhang Q., Zhang X., (2012), Full lifetime cost analysis of battery, plug-in hybrid and FCEVs in China in the near future, *Frontiers in Energy*, 6, 2, pp. 107–111; McCullough R. (2012). Are Electric Vehicles Actually Cost-Effective, *Electricity Policy.com*, pp. 1-10; Alexander M., Davis M., (2013), *Total Cost of Ownership Model for Current Plug-In Electric Vehicles*, EPRI Technical Report. Jun M.; Di Muro (2013). Holistic Methodology to Analyze EV Business Models, *International Journal of Innovation, Management and Technology*, 4, 2, pp. 259-264.

operating thermal power plants, and Germany, where coal and lignite account for 38.9% of electricity production, are the worst placed.

In France, the situation is opposed with a clear domination of the nuclear power. But it is Canada and Norway that are the best placed countries in the environmental field thanks to a significant share of hydro-electric power.



Source: https://www.enecho.meti.go.jp/en/category/special/article/energyissue2019_02.html

Figure 4. Energy mix for electricity in 2019

Technological simplicity is a more complex factor because it is strongly linked to socio-psychological determinants. According to surveys conducted in Europe and the United States, customers seem to have a preference for a mono-technology when deciding on a car power traction chain. This criterion is obviously associated with the technical reliability, which determines the durability and cost of maintenance-repair, and safety of both driving and energy supply. The presence of a vast network of service stations for petroleum fuels gives them

a strong advantage. It will be necessary for the electric alternatives to guarantee comparable performances.

In behavioral terms, the initial feedback from the owners of Renault Zoe and Twizy tend to show a satisfaction rate of 98%, mainly due to the absence of noise and ease of driving, which is far higher level than those registered in the past for new innovative models. And the vast majority says they would never go back to the internal combustion technology!

While the environmental performance of a given power train is not yet a true decision-making criterion, most industry experts believe that environmentalist sentiments might become stronger and more widely spread in the future. In any case, it is necessary to differentiate the performance of the vehicle not only at the moment of use, or instantaneous performance, but with a well to the wheel perspective and in this regard, partially or fully electric solutions must be evaluated in a transparent manner. Indeed, everything depends on the energy “mix” of the electricity production. In some countries, such as China, the United States and Germany, which still use a lot of coal, rechargeable hybrids and battery-powered vehicles, have higher CO₂ emissions than conventional vehicles.

In countries where the share of nuclear energy is high, electric vehicles and plug-in hybrids are obviously efficient. But it should be emphasized that the shift from a significant part of the fleet to all-electric vehicles with batteries poses the problem of the capacity of the electrical networks, not only in voltage and therefore in section of the low-voltage lines, but also, above all, in production capacity. For example, it is estimated that a fleet of 3 million electric vehicles would require in France one additional Evolutionary Pressurized Reactor (EPR) and 6 to 7 EPR for electrification of the entire fleet. Oppositions to nuclear energy such as the cost and time of construction of such equipment are serious obstacles to such a scenario.

3. The automotive industry

What lessons can be learned from a comprehensive scan of the technical documentation and a hundred in-depth interviews with executives in charge of the product strategy and R & D of manufacturers (Toyota, GM, Chrysler, Nissan, Renault, Peugeot -Citroën, Daimler-Benz, BMW, Fiat, Hyundai, Kia), large public and private research laboratories, specialized non-profit professional organizations, transportation companies and public administrations for environment protection as well as innovative components manufacturers (batteries, fuel cells, electronic control units) in China, Japan, Europe and the United States?

The research is qualitative, investigating a common phenomenon in a real-life context in order to retain the holistic and significant characteristics of real

life events⁸. As part of the analysis of technology and innovation, it is the expression of a set of opinions and is obviously not scientifically suitable for generalization because it is not based on recognized technology forecasting method such as Delphi, scenario development or probabilistic forecasting.

A first conclusion is the broad consensus among respondents that the competition between the all-electric vehicle and the dominant design of the internal combustion engine (ICE) is still far from being played on the following five factors: energy consumption, autonomy, CO₂ emissions, purchase price and user costs (Figure 5).

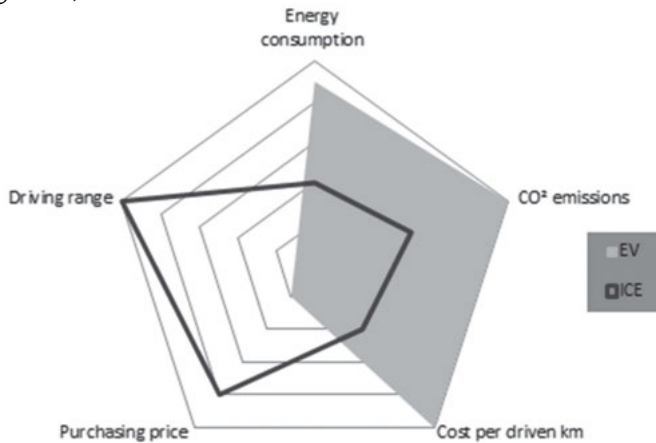


Figure 5. *Comparative advantages between Electric and ICE vehicles*

Technical as well as behavioral factors can move the electric car towards a more acceptable range. Political factors such as subsidies as well as increased volumes can play a role in changing the purchase price in the right direction. But other factors can give back to the conventional engine some colors in terms of user costs: a lower price and a guaranteed availability in petroleum products or significant advances in terms of depollution and energy consumption.

Forty years after a first research conducted in 1972-1973 on automotive innovation, we must remain cautious and moderately optimistic⁹. The resilience of this industry is remarkable. Global demand is growing fueled by the renewal of fleets but also by the accession to automobiles in emerging countries (Figure 6). Over a long period, it gives no sign of a lasting reversal. And the motorization needs of developing countries are enormous (Figure 7).

⁸ Yin R, (2008), *Case study research: Design and methods* (3rd ed.). Beverly Hills, CA: Sage Publishing

⁹ Chanaron J.J., (1973), *L'innovation dans la construction automobile*, Thèse de doctorat, IPEPS/IREP, Grenoble, novembre.

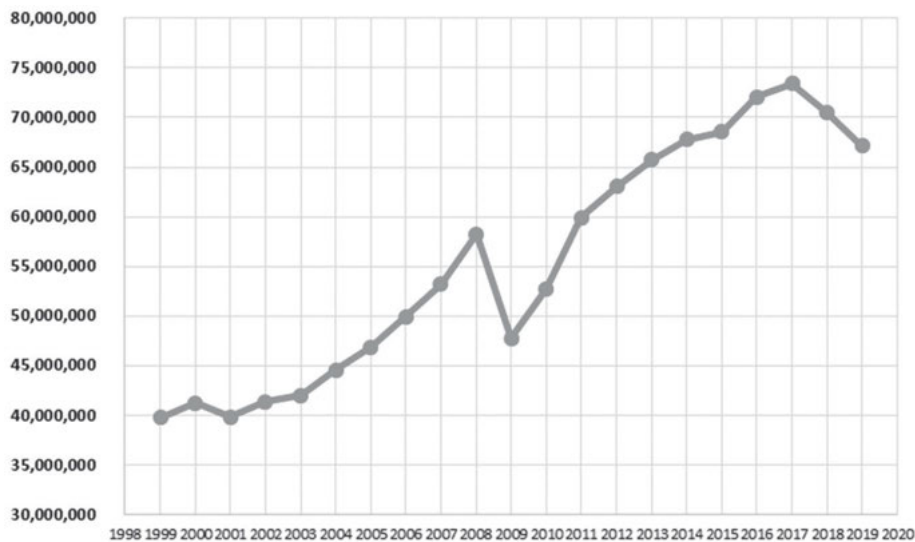


Figure 6. *Worldwide production of passenger cars, 1999-2019*

The automotive industry, in its current configuration, is a real system that involves many interrelated activities, although they may sometimes have conflicting interests: final assembly, components and equipment, trade and repair, trailer bodies and caravans, production and fuel distribution, road construction and maintenance, public administration, road transport, insurance and financing, sports and press, among others¹⁰. In France, about 10% of the active population is directly or indirectly dependent on the system!

It is a mature industry with technologies perfectly mastered and still perfectible in terms of energy consumption and pollution, where knowledge and know-how are difficult to acquire without going through the major traditional stakeholders, mainly the OEMs. This industry has also gigantic fixed industrial investments which are, at least for the moment, unavoidable and managed by iconic corporations, in limited numbers worldwide and unwilling to let “new entrants” threaten their current positions, already abused by their own competitive game. Finally, this industry is totally “path-dependent” vis-à-vis the dominant technology and does not have generally speaking a good command of alternative technologies that are not the result of the metal-mechanical technical system that made their fortune in the last hundred years¹¹. In such a context, it is not surprising to observe that technology takes many years to evolve, not only because of its complexity but also because of the resilience of the players.

¹⁰ de Banville E., Chanaron J.J., (1985), *Le système automobile français : de la sous-traitance au partenariat ? Eléments pour une problématique*, CPE .Etude, n° 56, mai.

¹¹ Chanaron J.J., Bye P., (1995), Technology Trajectories and Strategies, *International Journal of Technology Management*, 10, 1, pp. 45-66.

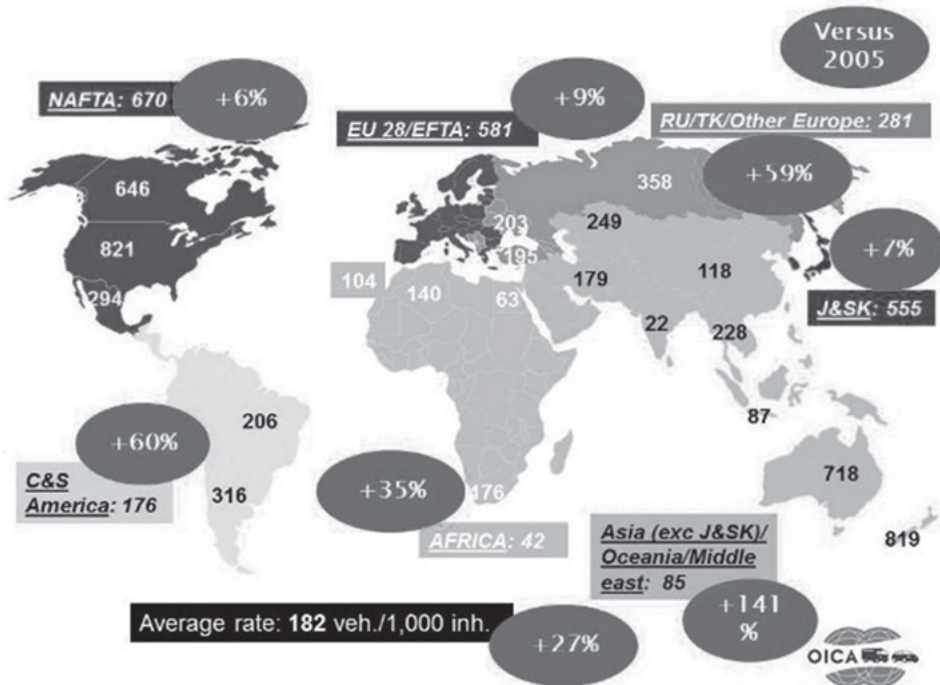


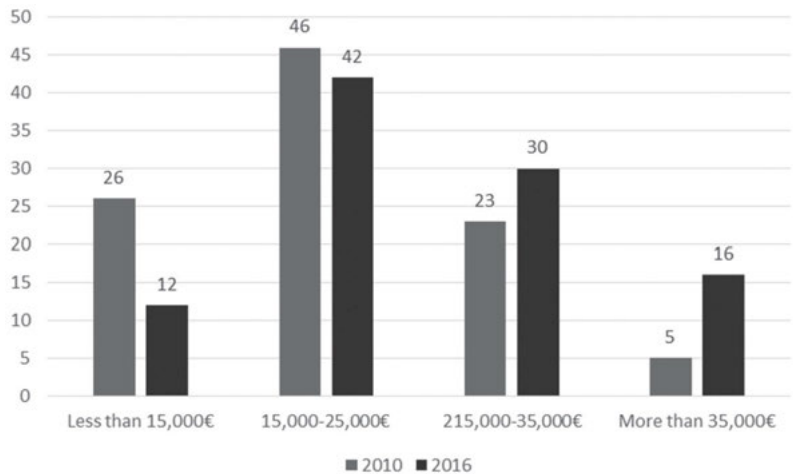
Figure 7. Motorization rate in 2015

The automobile system is a powerful economic policy tool not only in developed countries such as China, USA, Japan, Germany, Italy, South Korea, Brazil and others, by the direct and indirect jobs concerned but generally in all countries through tax revenues related to the acquisition and use of vehicles (Figure 7). The game of lobbies speaks by itself in this respect: Germany, the country with the strongest ecological feeling, but also the booming automotive industry (Volkswagen, BMW, Daimler-Benz) is one of the few countries that have not yet introduced an attractive tax incentive system for clean cars. The German government is probably waiting for its national OEMs to give it the green light in order to avoid that their French and Japanese competitors take a significant market share and appear as innovators and more ecologists!

2.4. Complex economic issues

However, one of the decisive factors should be and remain for a long time of economic nature: the purchasing price of the new vehicle and its total cost of use are crucial for potential buyers. And, in this regard, it is obviously the market that holds the keys. Consumers will inevitably compare the new offered electric models to the vehicles available today.

According to the Argus annual survey, the average new car in 2018 was priced € 26,000 for a standard average fuel consumption of 4.7 liters per 100 km and 113 g of CO2. In 2016, the breakdown by price ranges is shown in figure 8:



Source : L'Argus N° 4506 – 13 avril 2017.

Figure 8. Sales of new cars in France per price level in 2010 and 2016

Table 2 presents information on driving range and price for selected electric cars in France. One can see that as soon as autonomy exceeds 300 km, the market price becomes significantly dearer than the average price of an equivalent ICE vehicle.

Table 2. Information on driving range and price for selected electric cars in France in 2019

Model	OEM's official range	Price	Battery rental rate
Audi e-tron	300 km	70,000 €	
BMW i3	300 km	32,100 €	
Bolloré Bluecar	250 km	18,300 €	
Citroën C-Zero	160 km	27,000 €	Optional
Nissan Leaf	385 km	43,700 €	
Hyundai Ioniq	290 km	37,000 €	
Kia Soul EV	452 km	41,300 €	
Mitsubishi i-MiEV electricQ	160 km	23,500 €	
Opel Corsa-e	335 km	29,900 €	
Peugeot ion	160 km	27,000 €	Optional
Peugeot 308	340 km	32,100 €	
Renault Kangoo ZE	270 km	22,000 €	

Renault Zoé (1)	400 km	26,000 €	69-119€/month
Renault Twizy	120 km	7,400 €	
Smart ForTwo Electric Drive	140 km	23,000 €	
Tesla Model S standard	615 km	85,800 €	
Tesla Model X	500 km	104,300 €	
Tesla Model 3	560 km	59,000 €	
Volkswagen ID3	420 km	N.C.	
(1) Battery rental excluded			

Source: <http://www.automobile-propre.com/>

According to European OEMs, electric vehicles might reach a range of 600 kilometers by 2025-2026 but batteries should be of the same size and weight than those currently available (2020) while costing less.

Table 3 *Information on driving range and price for selected electric cars in China in 2018*

OEM/Model	OEM official range	Price in RMB	Price in euro
BJEV EV 200	245km	¥ 208,900	€26,611
BJEV EU 260	260km	¥ 205,900	€26,229
BYD e6	300km	¥ 309,800	€39,465
Zotye YUN100S	150km	¥ 108,800	€13,860
Chery eQ	200km	¥ 169,900	€21,643
BYD e5	305km	¥ 195,900	€24,955
Geely DIHAO EV	235km	¥ 195,800	€24,942
Zotye E200	220km	¥ 181,800	€23,159
ZD D1	160km	¥ 158,800	€20,226
BYD Qin EV	300km	¥ 235,900	€30,047
Roewe eRX5	270km	¥ 265,900	€33,867
ZD D2	155km	¥ 151,800	€19,334

Source: <http://www.diandong.com/zixun/2017010547184.shtml>

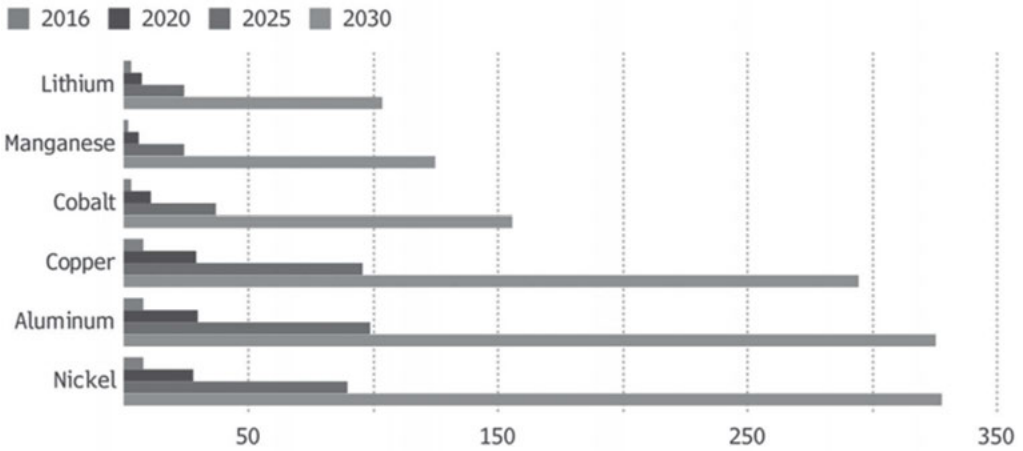
http://green.xcar.com.cn/newcar/5_0_27_0_0/

<https://ev.autohome.com.cn/?pvareaid=2023985>

Other factors of economic nature, which determine the purchasing price and the user cost of electric vehicles and their likely evolution, have been previously mentioned: the price of raw materials, both those entering in the manufacturing process and those necessary for the use of vehicles: lithium, cobalt, platinum, crude oil, electricity. But also other metals (Figure 9):

Surging Demand

Projections for key metals in EV batteries (thousand metric tons)



Source: Bloomberg New Energy Finance

Bloomberg

Figure 9. Bloomberg Forecast for Key Metals in Batteries

The price of batteries is, with the autonomy and the number of recharges, a crucial element for the future of rechargeable vehicles. And this price should gradually decrease with the entry into production of giant factories, like that of Tesla, in partnership with Panasonic, in Nevada at a cost of 5 billion dollars. When the site will run at full capacity in 2020, it will produce the equivalent of 32 gigawatts per hour and equip 500,000 cars a year. Similarly, Northvolt, created by Peter Carlsson, a former Tesla Purchasing Manager, is building a giant plant in Sweden that is scheduled to start in the second half of 2018 for gradual commissioning between 2020 and 2023. At full capacity, the site will also produce 32 giga watt/hour per year of lithium-ion batteries.

The gradual reduction of costs and therefore of selling prices is initiated. Experts talk already about “low cost” electric cars: the Renault-Nissan Alliance announced in August 2017 the creation of a joint venture in China with its local partner Dongfeng to develop electric vehicles, for an opening in 2020 with a plant in Shiyan (Hubei Province) and a capacity of 120,000 vehicles per year. The eGT joint venture will be owned 25% by Renault, 25% by Nissan and 50% by Dongfeng, the second largest Chinese manufacturer. The price will be in the range of \$ 7,000 to \$ 8,000 thanks to the use of the Renault Kwid platform produced in India. The model will also be produced and marketed in India, a country that appears, with China, one of the favorite places of OEMs for such innovative projects. Similarly, Toyota and Suzuki joined forces in November 2017 to launch electric vehicles in the Indian market by 2020¹².

¹² Challenge, 21/11/2017 ;

Getting Competitive

Battery prices seen reaching key level of \$100 per kilowatt hour by 2026

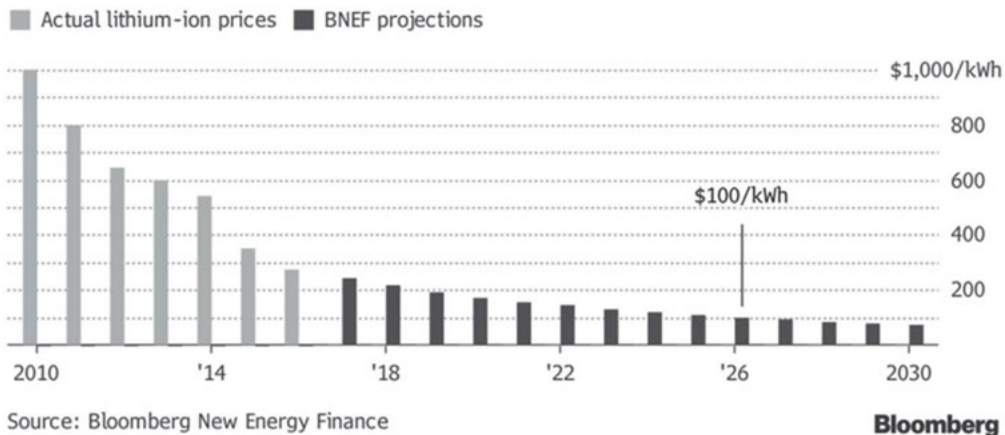


Figure 10. Bloomberg Forecast of Battery Process

It is obviously difficult to estimate the total cost of ownership of an electric car because of the too small size of the existing fleet and the lack of hindsight and experience. Such a limited knowledge does not prevent lobbyists such as the BEUC, the European Bureau of Consumer Unions (<http://www.beuc.eu/publications/>), to predict that the average total cost of ownership of a four-year-old electric car could match that of a gas-powered car by 2024. Supreme consecration, electric power might become even cheaper than a diesel before 2030 (Figure 11).

As with gasoline or diesel cars, the consumption of electric vehicles varies by model and by manufacturer. It is measured in “kilowatt hours per hundred kilometers”. However, it is difficult to determine the cost of a “full electric”, i.e. the recharge of a battery, because the price per kWh may vary depending on the supplier and the consumption of the vehicle depends its autonomy, the capacity of its battery and the driving style adopted.

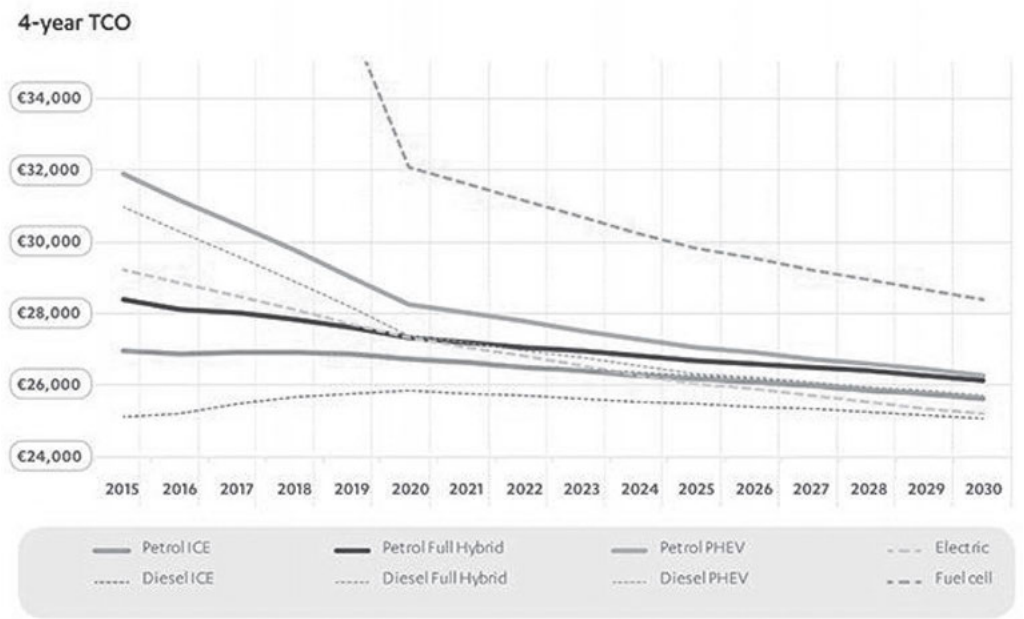
According to various specialized websites ([automobilepropres.com](http://www.automobilepropres.com), [energuide.be](http://www.energuide.be), [engie.fr](http://www.engie.fr)), the cost in electricity for 100 kilometers remains largely below 3 €. It must of course be taken into account that batteries are also to be considered as a ‘consumable’ element of the vehicle, in addition to electricity.

From a consumption of an electric car that averages between 12 and 20 kWh/100 km, and multiplying by the rate per kilowatt hour of the energy supplier, a median value of 0.146 € / kWh in full hours and 0.125 € / kWh off-peak at the beginning of 2018, we reach the following indicative values for a home recharge (<http://www.automobilepropres.com>):

Table 4. *Recharging rates in France as in 2018*

	High peak hours	Low peak hours
12 kWh/100 km	1.75 €/100 km	1.5 €/100 km
15 kWh/100 km	2.20 €/100 km	1.9 €/100 km
20 kWh/100 km	2.90 €/100 km	2.5 €/100 km

For a recharging at commercial terminals on the public domain, the prices are generally fixed per minute of charge. This is why Corri-Door’s quick charge, managed by Sodetrel, a subsidiary of the EDF group, with the support of the European Commission, (200 tri-standard speed terminals installed at the end of 2017), charges from 0.5 to 0.7 € the 5 minutes charge. CNR, the network run by the Compagnie Nationale du Rhône, offers a flat rate of 5 euros for a 45-minute charge on 50 kW tri-standard speed terminals. In France, the price of Tesla superchargers is set at € 0.20 / kWh beyond the annual credit allocated by the company to each owner.



Source: BEUC, (2016).

Figure 11. *Change in the average costs of all vehicle types between 2015 and 2030*

2.5. An avalanche of projects

All major global manufacturers are currently competing for ambitious electricity plans, under the pressure of increasingly restrictive environmental standards and increasing political pressure, particularly in Europe and Asia. In

addition, they must be forgiven for the many scandals related to cheating on the pollutant emissions of their diesel vehicles that have plagued the entire automotive industry since the fall of 2015 following the revelation of Volkswagen's "dieselgate" with the installation of a software for passing standards during emission tests. More recently, early 2018, Fiat, Ford, and Bosch were accused of similar cheating but in the end all manufacturers are to be suspected of minimizing the pollution of diesel engines: Mercedes Benz, Peugeot, Renault, etc. Showing their voluntarism towards electric vehicles could turn out to be just a strategy of communication: automobile manufacturers prefer to highlight politically correct zero emission vehicles.

The US OEM Ford announced in January 2018 that it would increase its investment in electric vehicles to \$ 11 billion by 2022, while it planned so far 4.5 billion until 2020. The goal is to offer 40 electrified vehicles by 2022, 16 of which are powered by an electric motor, with the balance being gasoline-electric hybrids.

In the US, the number one General Motors (GM) has, for its part, announced in October 2017 an offensive in the electric range, with the launch of twenty all-electric vehicles by 2023, including two new models by 2019.

Volkswagen is aiming for some 30 electric models in the middle of the next decade, which would weigh 20 to 25% of the global volumes of the German group at this time. In China alone, Volkswagen is expecting to sell 400,000 electric vehicles per year by 2020!

In 2017-2018, Daimler Benz is investing 500 million euros in a second lithium-ion battery plant in Germany to power the ten full electric models that Mercedes intends to market by 2025, from mini-Smart to big 4x4 SUV. The electric option should then represent about 20% of sales of Mercedes.

And even the luxury sports car expert, Porsche is launching its electric car range with its so-called Mission E Cross Turismo introduced by Oliver Blume, the CEO of Porsche during the motor show in Geneva early March 2018 which is supposed to compete with Tesla (Challenge, 08/04/2018). The model will be equipped with two electric motors offering more than 600 horse power allowing the car to reach 100 km/h in less than 3.5 seconds, exactly like the legendary Porsche 911 GT3 RS today! The promised range would be 500 kilometers and the OEM also promised that 80% of such autonomy would be recharged in 15 minutes.

The fight against Tesla is also open by Jaguar, which already launched the SUV I-Pace with two motors as well and 400HP for a minimum of 78,000 Euros. At the end of 2018, Audi will commercialize a big luxury SUV inspired by the concept car e-Tron Quattro in 2015 with 435HP and three motors for around 85,000 Euros

PSA is also preparing a new generation of electric models for 2019. These models will be based on a common platform for all future small cars of the group. By 2021, the French manufacturer plans to launch four electric vehicles and plans to sell 40,000 to 50,000 units in China by 2019-2020.

Amazing phenomenon in a highly oligopolistic industry, the niche is of interest to new entrants: this is how Google, the giant of the Internet, presented the first Google Car it has designed in 2014, a model that does not require any driver, with a very sketchy design for carrying two passengers. The project has been renamed Alphabet and then integrated in the Waymo project.

Like Tesla, General Motors and others around the world, Google is currently targeting the autonomous car market. But all predictions for public launching failed. Most issues are actually much trickier than they sound, as for example even the simple parts of driving, like tracking the objects around a car on the road. Google's sister company Waymo is the clear leader¹³. Waymo just announced 20 million miles driven overall, most of those not in California. In 2018, Waymo drove 1.2 million miles in California, with 0.09 disengagements (moments when a human driver has to take over because the computer could not handle a situation) every 1,000 miles. Coming in second is General Motors' Cruise, with about half a million miles and 0.19 disengagements per 1,000 miles.

Through the "Titan" project launched in 2014, Apple intended to launch an electric car on the roads in 2019 but the Cupertino (California) giant has since changed the project's focus which has shifted to developing self-driving car software instead of an actual car. Physical car project is possibly still in the works plan.

Is it a simple game of competition between giants of the Californian computing industry and car manufacturers?

Dyson, the inventor of the bag-less vacuum cleaner, but also the fan without propellers, wanted also to launch an electric car by 2020 and has planned to invest 2.3 billion euros for its initiative. But on October 10th, 2019, Dyson published the following dramatic official statement: "The Dyson Automotive team have developed a fantastic car...but we simply cannot make it commercially viable...We have been through a serious process to find a buyer for the project which has, unfortunately, been unsuccessful so far...The Dyson Board has therefore taken the very difficult decision to propose the closure of our automotive project... This is not a product failure... Dyson will continue its £2.5bn investment program into new technology and grow our wonderful new University."¹⁴.

The moral of this story is that it is not so easy to become a car manufacturer from scratch! This lesson should be learnt by many others potential new comers.

2.6. Governments role

Governments obviously have a major role to play in initiating and expanding the electric vehicle market. China announced on September 28, 2017 that electric vehicle quotas will come into effect in 2019, one year behind schedule.

¹³ See <https://www.vox.com/future-perfect/2020/2/14/21063487/self-driving-cars-autonomous-vehicles-waymo-cruise-uber>.

¹⁴ See <https://www.dyson.com/automotive.html>.

Rechargeable electric and hybrid vehicles will have to account for 10% of new car sales in 2019, 12% in 2020 and 20% in 2025. The Chinese government has waived the 8% quota for 2018, which was previously considered. He announced to study when could be enacted a ban on motor vehicles that France and Great Britain, for instance, decided to ban in 2040.

Officially, the Chinese government has two goals: to reduce pollution in major cities and reduce its dependence on imported oil by ensuring its energy independence. But it is more than likely that the Chinese government pursues through these measures a third objective, which has nothing to do with ecology: that of promoting the emergence of a national electric vehicle industry. Strongly encouraged by the central government in Beijing, Chinese manufacturers have already taken the lead, holding 96% of the electric segment, against just a little over 40% for the entire automotive market. In electric motors but also batteries, a significant part of the global capacity is already located in China.

The political and administrative support of the Chinese authorities to their national champions is obvious. It is the government that builds the bulk of the network of public charging stations and at forced march: nearly 150,000 at the end of 2016, 214,000 early 2018. China also plans to implement about 500,000 additional terminals in the next two years. There are also 232,000 private charging stations in early 2018¹⁵. Building on the success of its models in the Chinese market, Tesla is also in the game: the American firm has installed in Beijing and Shanghai its three largest charging stations. Each station is able to recharge 50 vehicles at the same time and in 30 minutes.

Financial incentives to consumers are also a weapon handled by the Chinese authorities: \$15,000 is thus offered by the central government and municipal authorities of major cities, making China the most generous state after Norway. In China, electric cars benefit very easily from a license plate in large cities, while for thermal vehicles, the granting of plates is drastically controlled and restricted to fight against pollution and traffic congestion.

In France, the public authorities encourage the shift from ICE vehicles, in particular through a super-bonus of 6,000 Euros for the purchase of a zero pollution model for a car priced less than €45,000 and €3,000 for a car priced between €45,000 and €60,000. The bonus for vehicles above €60,000 is limited to commercial vehicles and hydrogen powered cars.

The French state - except the army, police and gendarmerie - as well as its public administrations will now have to buy 50% of their fleet with "low-emission" vehicles. These models should emit less than 60 grams of CO₂ per kilometer. However, only electric and plug-in hybrids fall into this category. The proportion will be 20% for local authorities, their administrations and public companies. From 2020, taxis, VTC and car rental companies will also have to spend 10% of their fleet with electric vehicles.

¹⁵ See <https://www.breezecar.com>.

In Germany, state aid is limited 4,000 Euros for a full electric vehicle. But the German OEMs have announced in 2017 scrapping premiums for the scrapping of old diesels in favor of a new car, especially electric¹⁶. Volkswagen Group offers from 2,000 Euros to 10,000 Euros, depending on the range level of the desired model, for the scrapping of a diesel Euro 1 to Euro 4 and the order of a new car: it is estimated at 5,000 Euros the premium for a Volkswagen Golf, but only 2,380 Euros when buying its full electric variants (in addition to the government bonus), 1,785 Euros for a hybrid and 1,000 Euros for a natural gas engine. Mercedes-Benz is offering 2,000 Euros for the purchase of a gasoline-electric rechargeable vehicle and 1,000 Euros for the purchase of a 100% electric Smart For two.

It is obvious that the windfall effect explains the growth rates of the electric car market. As soon as the public authorities relax their aid, as in France where the premium bonus was decreased from 10,000 to 6,000 Euros, growth has slowed down significantly! In fact, without a premium, subsidy or any other financial incentive, the market would not take off. This is a confirmation that a technology that must be accompanied by public support is in fact not mature, or in others terms still not really accepted by the market and able to compete with the technology it is supposed to replace!

2.7. Social acceptance

The electric car raises a lot of questions, particularly about the welcome that consumers-users will give to it. Market research is most often biased and reliable results are extremely rare as it is difficult to estimate values in anticipation of a technology still in its infancy.

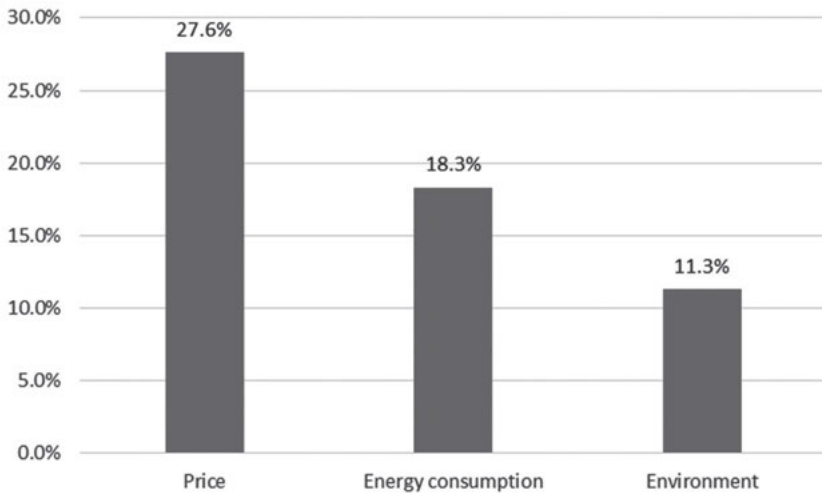
The study conducted in 2010 by students from the Ecole Supérieure de Commerce in Paris and Cap Gemini with a population of 754 people with the official quotas set by INSEE, resulted in interesting results (Figure 12). The respondents believe that they would be willing to buy an electric car provided it is not more expensive than a thermal car.

According to the study, the minimum speed accepted is 132 km/h on average and the minimum autonomy of 232 km on average, the sample being ready to sacrifice speed more than autonomy. But the cost criterion remains discriminating.

An Accenture study in 2011¹⁷, conducted in 13 countries with more than 7,000 people, notes that the issue of autonomy also teases potential buyers since 61% would buy an electric car if its battery allowed a course equivalent to that of an ICE car tank refueling. Government aid seems not to convince them: only 32% of respondents would be pushed to buy by such aid.

¹⁶ Challenge, 09/08/2017.

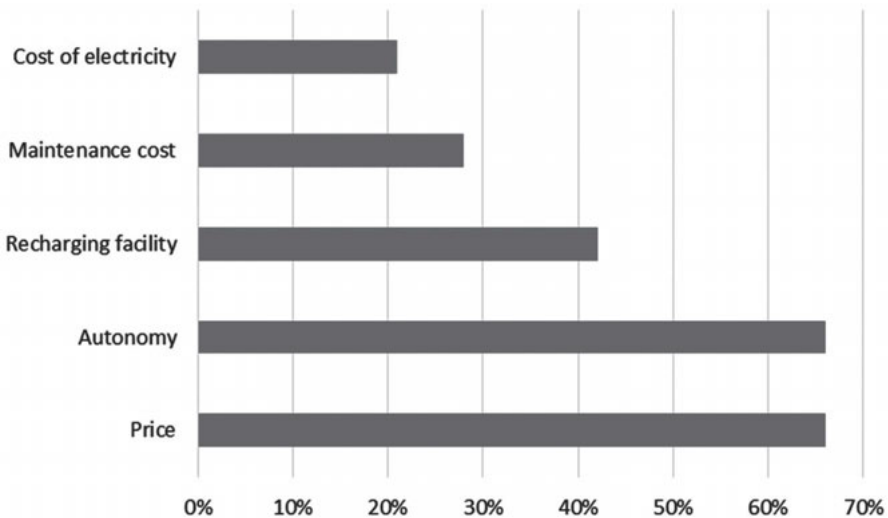
¹⁷ La tribune, 25/05/2011.



Source : ESCP (2010).

Figure 12. *Purchasing factors of an electric vehicle*

The consulting company OC&C published similar data regarding obstacles to the purchase of an EV in 2019 in France where surprisingly 46% of the respondents declared they are “interested” in buying an electric car far ahead of Germans (23%), British and Americans (19%). Only Chinese respondents are ahead of French consumers: 73%.



Source: OC&C, in Capital, 12/12/2019.

Figure 13. *Obstacles to the purchase of an electric car*

In general, owners of electric cars are more lenient¹⁸. It is also shown that dissatisfaction is linked to limited autonomy and to the weakness of the recharging system, which can make it impossible to travel more than the basic autonomy of the car, such as holidays or trips or long business trips different from usual journeys, or a trip to a destination without a charging system. Users then mention the obligation to own in parallel an ICE vehicle. The users of electric cars note the absence of rolling noise both as a clear advantage but also as a source of danger.

It is also the main result of several university researches in the United States. For example, an investigation in the Minneapolis-Saint-Paul region shows that the acquisition of an electric car is as much linked to the autonomy - estimated at 240-320km - as to the household's travel needs and the availability of alternative means of transport, including a second internal combustion engine vehicle¹⁹.

A study conducted in China among 458 consumers and published in 2018 shows that 35.8% of respondents do not wish to acquire an electric car, 46.1% want to buy an EV as second vehicle and only 18.1% to replace an ICE vehicle²⁰. Autonomy is by far the crucial factor, largely in front of battery life, but consumers also cite as very important the quality and reliability of batteries as well as the availability of charging stations.

KPMG has been conducting an annual survey of thousands of senior executives in the automotive and consumer industries for nearly twenty years on industry trends. In the latest version released early 2018, we see that the option electric car, battery or hydrogen, is not very popular! Thus, 55% of the 1,500 executives of the automotive industry interviewed believe that the battery-powered vehicle option will never be able to prevail, as the challenge of building the required infrastructure is enormous. Ranking the challenges in descending order, the executives surveyed put costs (30%), infrastructure (28%), environmental constraints (25%) and ecological footprint (18%) at the top. As for the consumers (more than 2,500 questioned), they also rank at the top the costs (35%), the recharge (28%), the autonomy (12%), the technological uncertainties (11%) and the interest for daily use (10%).

Charging time is a crucial criterion for the majority: 51% of consumers and even 60% of executives believe that the charging time for an electric car should be similar to the time of a refueling today, in other words a few minutes!

¹⁸ Poupon, L., Philipps-Bertin, C., Bobillier-Chaumont, M.E., Kalampalikis, N. (2017), L'acceptation de la voiture électrique : un agent transformateur des pratiques socio-domestiques, *Activites*, 14, 2, pp. 1-25.

¹⁹ Tamor, M.A., Gearhart, C., Soto, C., (2013), A statistical approach to estimating acceptance of electric vehicles and electrification of personal transportation, *Transportation Research Part C*, 26, pp. 125-134; Tamor, M.A., Moraal, P.E., Reprogle, B., Milacic, M., (2015), Rapid estimation of electric vehicle acceptance using a general description of driving patterns, *Transportation Research Part C*, 51, pp. 136-148.

²⁰ Wang, N., Tang, L., Pan, H., (2018), Analysis of public acceptance of electric vehicles: An empirical study in Shanghai, *Technological Forecasting & Social Change*, 126, pp. 284-291.

Autonomy is everywhere reported as the most important factor. This is how Auto Foresight, a Chinese consulting firm, estimates that 400km is the minimum acceptable²¹. But it is also shown that in fact, the real needs of users, measured in terms of average daily mileage - about 35km in the United States, but also in France - are far below the desired or expected autonomy and that, in other words, current offers could satisfy the vast majority of travel needs²².

Table 5. *Range of daily shuttles in France in 2016*

	Distance in kilometers	
	Average	Median
Intra-municipal shuttles included		
Urban poles	23.6	5.8
Peri-urban areas	30.5	13.6
Rural areas	28.4	10.2
All areas	25.9	7.9
Intra-municipal shuttles excluded		
Urban poles	34.3	9.7
Peri-urban areas	35.1	15.6
Rural areas	40.2	17.4
All areas	35.4	12.2

Source : INSEE.

It has been suggested²³ a very concise and interesting model of barriers to adoption of electric vehicles (Figure 14).

*
* * *

It is obviously difficult, if not impossible, to conclude on a scenario that inevitably imposes itself. Automotive manufacturers, as well as politicians, administrations and all other stakeholders, are far from a consensus on a “one-best-way”.

Obviously, if the performance of lithium-ion batteries were to reach the levels expected by the research laboratories that would allow a range greater than 1,600 km, the scenario in favor of battery vehicles would see its probability singularly increased. But even if that would be the case, many problems will still have to be resolved, such as the depletion of lithium reserves, the recycling of

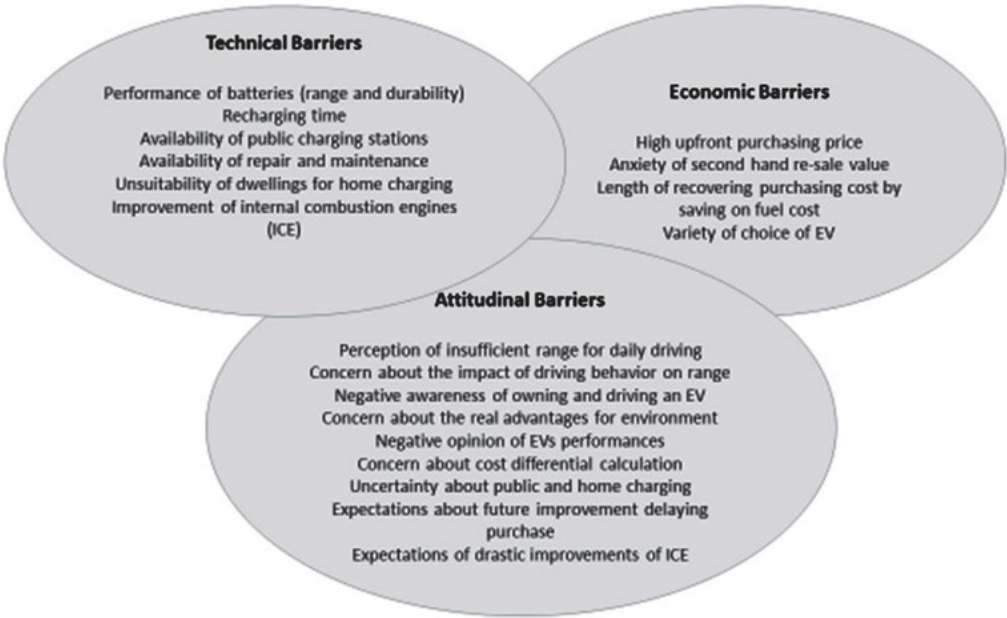
²¹ Financial Times, 24/10/2017.

²² Pearre, N.S., Kempton, W., Guensler, R.L., Elango, V.V., (2011), Electric vehicles: How much range is required for a day's driving?, *Transportation Research Part C*, 19, pp. 1171-1184.

²³ Berkeley, N., Bailey, D., Jones, A., Jarvis, D., (2017), Assessing the transition towards Battery Electric Vehicles: A Multi-Level Perspective on drivers of, and barriers to, take up, *Transportation Research Part A*, 106, pp 320-332.

batteries, the power supply of charging stations and plugs, and the postponement of global warming towards production of primary energy, etc.

It will also be unavoidable to compete with other technologies, such as petroleum or natural gas engines and, of course, hydrogen, which many experts consider to be the energy source of the 21st century.



Source: Adapted from Berkeley et al. (2017).

Figure 14. *Barriers to EVs adoption*

Benoît Potier, CEO of Air Liquide and co-chairman of the Hydrogen Council calls it “essential vector of the energy transition”²⁴. The hydrogen molecule is particularly energetic, three times more than gasoline. In addition, hydrogen, when produced from renewable resources, is considered non-polluting and has the advantage of being faster to recharge. It takes a recharge time of about 3 minutes in a filling station. Hydrogen is also considered a sustainable way to store energy, which is not possible with electricity.

But similarly, to the full battery option, there are still big problems to resolve: the production of hydrogen is both polluting and expensive. To date, 96% of hydrogen is produced from fossil fuels (oil, natural gas and coal) because this method is the most profitable. “Carbon-free” technologies are ready to go on the market, but they have to move to significant production scales to reduce costs.

The deployment of a hydrogen sector requires relatively heavy investments, both for the production, distribution and storage of hydrogen. The Hydrogen

²⁴ Le Figaro, 14/12/2017.

Council estimates these investment needs at between \$ 20 billion and \$ 25 billion annually, or about \$ 280 billion by 2030. This is worth pinpointing that this is well below the \$ 650 billion annual investment in oil and gas!

In April 2020, Daimler Benz decided to withdraw from the fuel cell for passenger car market after 30 years of research-development. This is officially due to its incapacity to reduce the cost to compete with full battery electric vehicles, in particular because the high cost of maintaining hydrogen under pressure at its liquefaction temperature. According to Daimler Benz and also Volkswagen, this is downgrading the energy efficiency of a fuel cell electric car to 25% to 35% against 70% to 90% for a battery electric car²⁵.

As for conventional engines, they have probably not said their last word! Is a low-energy solution with a hybrid technology with a consumption of 1.3 to 2 liters per 100 km able to delay the emergence of the electric battery car by a few decades and thus give time for a solution to emerge? to hydrogen? It has been already mentioned that prototypes such as the Renault Eolab achieve very low fuel consumption levels.

It is clear with the emblematic example of the automobile, innovation remains a complex process, often if not always unpredictable, impossible to manage *ex abrupto* in general. In the traditional manufacturing industries, well established on their technology, many factors block or at least hinder the emergence of alternative technologies²⁶, in particular because, over time, industrial players have accumulated knowledge and know-how that shape their thinking patterns. They also accumulated very productive fixed investments. We then speak of path dependency. Would this dependency be erased by new breakthrough incentives?

*
* *

Since this paper has been prepared, the Covid-19 pandemic crisis emerged and forced more than half of the world's total population to severe containment and an almost total halt to global auto production. In Europe and North America, vehicle sales have dropped sharply, and production has come to a nearly complete stop for several weeks. Obviously, when the crisis will be over, production and sales will restart. But nobody could know when and to what extent. Nobody could know if the industry organization will not be completely disrupted and moved to a deep restructuring. And indeed nobody could predict what the consumers will buy, in particular if they will shift to electric vehicles. It is highly possible that the impoverishment of many potential buyers would push them towards very affordable models! The dramatic fall of oil prices would also be a negative factor.

²⁵ Challenge, 24/04/2020.

²⁶ Bye, P., Chanaron J.J., (1995), Technology Trajectories and Strategies, *International Journal of Technology Management*, 10, 1, pp. 45-66.

Recently, the Center for Automotive Research (CAR) in Ann Arbor (USA) published the following questions that automakers and suppliers need urgently to address on the supply side:

- How does the automotive industry adjust its traditional business practices post-crisis?
- How do companies manage and monitor workers' health conditions?
- Are changes needed to current inventory management?
- How do companies evaluate and respond to supply chain risks and disruptions?
- Does this crisis push the need for companies to reset the production process?
- How do companies prepare to avoid another crisis impact on their business?

Other questions need to be addressed at the demand side:

- How do consumers adjust their preferences post-crisis?
- How do users change their mobility behavior after the crisis?
- Would the demand structure remain similar?
- Which market segments will emerge positively?

Due to the Covid-19 pandemic, the future of alternative technological options to internal combustion-based automobile (and trucks) is obviously at stake²⁷. With the dramatic drop in financial resources for both manufacturers and customers, many decisions would certainly be postponed for quite a long time, even if most economists predict a strong recovery when the epidemic will be stopped. As it has been underlined by most observers and analysts during this period, the post-crisis will be different from the pre-crisis situation!

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IZAZOVI RADIKALNIM INOVACIJAMA VODEĆA TEHNOLOGIJA AUTOMOBILA BUDUĆNOSTI?

Drugi deo

Sažetak: *Drugi članak o automobilu za budućnost, istražuje razne mogućnosti za uspešno inovativno rešenje. Predložen je analitički model za inovacije. Ova nova mreža za analizu omogućava procenu potencijala za pojavu novih proizvoda, novih usluga, novih procesa ili novih organizacija, pod pretpostavkom da istovremeno moraju biti ispunjena četiri uslova (istovremeno, na istom mestu): „Naučno i tehnički moguće“; „Industrijski izvodljivo“; „Komercijalno prodajno“; i „Politički, socijalno i kulturno prihvatljivo“. Šest ključnih faktora uspeha su sledeći: autonomija ili domet vožnje; tehnološka jednostavnost; ukupni troškovi, odnosno troškovi kupovine i troškovi upotrebe; dostupnost i sigurnost snabdevanja, u vremenu i prostoru primarne energije; Bezbednost i pouzdanost; Vremenski opseg primene inovacija. Specifični uslovi automobilske industrije se detaljno analiziraju i razmatraju, kao i opšta ekonomska i politička pitanja koja pozitivno ili negativno utiču na uvođenje novih inovativnih automobila.*

Ključne reči: inovacije, automobile, električno vozilo, upravljanje tehnologijom

ODRŽIVI RAZVOJ U UPRAVLJANJU RUDARSKIM OTPADOM – PRIMER REPUBLIKE SRBIJE

Sažetak: *Ljudske aktivnosti su oduvek generisale otpad. Kroz vekove to je postajao sve veći problem i danas se za otpad kaže da je jedan od glavnih zagađivača životne sredine. Pojam upravljanja otpadom sve više dobija na značaju kao način za efikasno rešenje navedenog problema. Podaci na nivou EU-28 pokazuju da procenat rudarskog otpada zauzima skoro trećinu od ukupnog udela otpada.*

U ovom radu fokus je stavljen na otpad koji proizvodi rudarska industrija na primeru Republike Srbije. S obzirom da Srbija u procesu pristupanja EU, odvija se niz projekata koji za cilj imaju poboljšanje i dostizanje održivog razvoja na tom polju. Kao primer biće predstavljen projekat koji je trenutno u toku – „Katastar rudarskog otpada“.

Ključne reči: *Održivi razvoj, rudarstvo, rudarski otpad, upravljanje otpadom, Srbija.*

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1. Uvod

Ljudske aktivnosti su oduvek proizvodile otpad. Istorijski to nije stvaralo velike poteškoće dok je svetska populacija bila relativno mala u poređenju sa današnjim ciframa ali je preraslo u ozbiljan problem sa razvojem urbanizma, stvaranjem milionskih gradova, industrijskim napretkom i ogromnom potrošnjom resursa. Loše upravljanje otpadom donelo je, kroz vreme, mnoštvo problema od kojih su najvažniji zagađenost vode, zemlje i atmosfere, globalno zagrevanje i pogoršano zdravlje ljudi. Prema nezavisnim predviđanjima, razvijenim od strane Međuvladin panel za klimatske promene - IPCC-a i Riahi-a¹ (Riahi Keywan), svetska populacija će porasti sa trenutnih sedam na devet do petnaest milijardi u 2100-toj godini sa ubrzanim stopama urbanizacije.² Sa druge strane, Fiksel (Fiksel Joseph) predviđa još veće nivoe zagađenja životne sredine kako se svet približava cifri od devet milijardi stanovnika.³

Širok je dijapazon otpada koji se svakodnevno proizvodi počevši od komunalnog, preko čvrstog ili radioaktivnog otpada, sve do industrijskog otpada u koji ubrajamo naftnu ili rudarsku industriju. Upravljanje svim vrstama otpada je veliki izazov današnjice i kao takav zahteva organizovan i koordinisan skup aktivnosti.^{4,5} Tačnu količinu svih vrsta deponovanog otpada je veoma teško izmeriti. U istraživanju Eurostat-a pokazuje se da ukupan iznos prelazi 2.5 milijardi tona što predstavlja najveću zabeleženu vrednost od početka mernog perioda za baznu 2004-u godinu. Dominantne izvore predstavljaju građevinska industrija sa 35% udela, rudarska industrija sa 28% i manufakturna/proizvodna industrija sa 10% udela (Slika 1).⁷

Fokus ovog istraživanja će biti na rudarskom otpadu. Svet zavisi od rudarske industrije da obezbedi mnogobrojne sirovine potrebne za proizvodnju raznih proizvoda u svakodnevnoj upotrebi od običnih limenki ili posuda, pa sve do kompjuterskih čipova ili prevoznih sredstava. Iskopavanje potrebnih ruda i upravljanje procesima na pogrešan način dovodi do negativnih posledica po socijalno i ekološko okruženje kojem određeni rudnik pripada.

¹ Riahi Keywan et. al. (2012): *Energy pathways for sustainable development in global energy assessment – Toward a sustainable future*. Cambridge University Press.

² IPCC. (2001): *Climate change 2001: Third assessment report*.

³ Fiksel Joseph. (2012): A systems view of sustainability: The triple value model. *Environmental Development Journal*, 2, 138-141.

⁴ El Haggag Salah (2007): *Sustainable Industrial Design and Waste Management: Cradle-To-Cradle for Sustainable Development*. Academic Press Cambridge, Massachusetts.

⁵ Giusti Lorenzo (2009): A review of waste management practices and their impact on human health. *Waste Management Journal*, 29, 2227-2239.

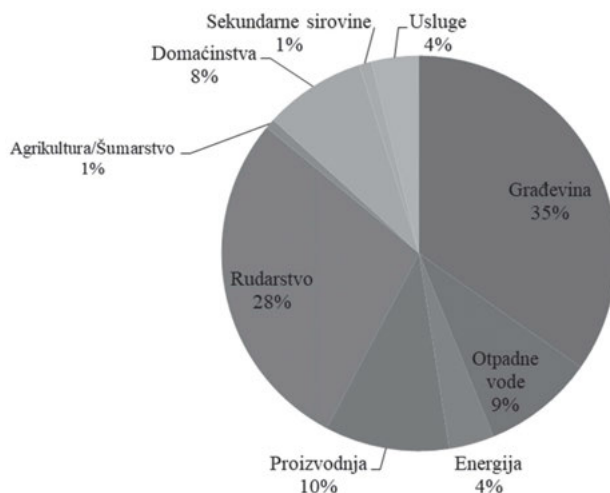
⁶ Prokić Dunja, Mihajlov Andjelka (2014): Contaminated sites: solid waste management practice in developing country (Serbia). *Environment Protection Engineering*, 38, 1, 81-90.

⁷ Eurostat. (2014): *Waste statistics*.

Loše upravljanje sirovinom i sledstvenim otpadom i dalje dovodi do zagađivanja zemlje, vode, vazduha i najvažnije – zdravlja ljudi.

Ovaj rad će pokušati da približi proces upravljanja otpadom u rudarskoj industriji kao i da objasni značaj postizanja zadovoljavajućeg stepena održivog razvoja. Istorijski, loše tretiranje otpada u mnogim zemljama je dovelo do pogoršanja ukupnog stanja i nauka pronalazi načine za stavljanje situacije pod kontrolu i oporavak.

Najvažniji aspekt predstavljace analiza stanja u Republici Srbiji kroz projekat koji je trenutno u toku, kao i odnos koji Srbija ima sa EU u tom pogledu. Zaključno, uz uvažavanje ograničavajućih faktora istraživanja, rad će predstaviti potencijalne pravce razvoja za buduća istraživanja.



Izvor: Eurostat.

Slika 1: Udeo otpada po vrstama ekonomske aktivnosti u 2014-oj (EU-28)

2. Uticaj rudarskog otpada na životnu sredinu

Istorijski gledano, ljudi se bave rudarstvom hiljadama godina, počevši još od neolitskog doba⁸. Industrija je kroz vekove dobijala oblik, unapređivala se uz pomoć tehnoloških otkrića i u prošlom (XX) veku postala glavni pokretač rasta i razvoja država i pripadajućeg GDP-a. Međutim, ogromna eksploatacija je došla uz odgovarajuću cenu.

Mnogi autori su posvetili svoja istraživanja štetnom uticaju koji rudarska industrija i kompanije imaju na svet i okruženje oko nas.

⁸ Reardon C. Arthur (2011): *Metallurgy for the non-metallurgist*. II edition, ASM International. OH, USA.

Dusti (Giusti Laura) ispituje i analizira praktične primere upravljanja radioaktivnim rudarskim otpadom i uticajem koji ima na čovekovo zdravlje.⁹ Hilson i Murk (Hilson Gavin, Murck Barbara) ispituju strategiju održivog razvoja u rudarskoj industriji sa korporativnog stanovišta i kako se ta strategija primenjuje na kompanijama u cilju preduzimanja koraka potrebnih za održivost poslovanja.¹⁰ Karvaljo (Carvalho Fernando) ukazuje na potrebnost zaokreta u strategiji upravljanja rudarstvom i koncentrisanju na održivi razvoj kao vidu ulaganja u budućnost, racionalizaciji preostalih resursa i zaštiti zdravlja ljudi.¹¹ Potencira buduću neraskidivu povezanost između rudarstva i ciljeva održivog razvoja. Princip održivog razvoja je i tema koju obrađuju autori koji razvijaju principe održivog razvoja potrebne za bezbedno i uspešno odlaganje otpada iz rudnika.¹² Potenciraju nedostatak unificiranih normi na globalnom nivou i iskazuju potrebu za njihovim usaglašavanjem.

Nadalje, Recalde et. al. (Recalde Marina) posmatraju stepen rasta globalnog zagrijavanja i efekta staklene bašte za čiji uzrok smatraju upotrebu raznih vrsta energetskih izvora od strane čoveka gde dominantnu ulogu igraju izvori ruda. Zastupaju princip dematerijalizacije izvora energije i koncept održive energije dinamičkim pristupom.¹³

Das i Čuduri (Das Rajdeep, Choudhury Ipseet) analiziraju različite vrste rudarskog otpada, količine koje se proizvode na globalnom nivou i njihov uticaj na životnu sredinu i zdravlje. Takođe analiziraju najefikasnije načine nošenja sa problemom i prave korak dalje u odnosu na već navedene istraživače gde ovaj problem nazivaju mogućim uzročnikom konačnog uništenja planete i eko-sistema.¹⁴

Kada govorimo o domaćim autorima, tu se baza značajno smanjuje. Istraživanja su više usmerena ka čvrstom i komunalnom otpadu i analizama tretiranja otpada u širem smislu reči.^{15 16} Sa pozitivne strane, problemom rudarskog otpada se bave Nikolić i Nikolić na primeru otpada iz rudnika bakra i uticaja istog na

⁹ Ibid

¹⁰ Hilson Gavin, Murck, Barbara (2000): Sustainable development in the mining industry: clarifying the corporate perspective. *Resources Policy*, 26, 227-238.

¹¹ Carvalho Fernando (2017): Mining industry and sustainable development: time for change. *Food and Energy Security*, 6, 2, 61-77.

¹² Franks Daniel et. al. (2011): Sustainable development principles for the disposal of mining and mineral processing wastes. *Resources Policy*, 36, 114-122.

¹³ Recalde Marina et. al. (2014): Are modern economies following a sustainable energy consumption path? *Energy for Sustainable Development*, 19, 151-161.

¹⁴ Das Rajdeep, Ipseet Choudhury (2013): Waste management in mining industry. *Indian Journal of Scientific Research*, 4(2), 139-142.

¹⁵ Jovićić Nebojša et. al. (2010): A fast method for the analysis of municipal solid waste in developing countries: Case study of Serbia. *Environmental Engineering and Management Journal*, 9, (8), 1021-1029.

¹⁶ Urošević, Snežana et. al. (2012): Contemporary tendencies in waste management in Serbia. *Economics Management Information Technology*, 1, (3), 159-167.

kvalitet zemljišta u poplavnim područjima.¹⁷ Sličan problem je predmet analize drugih autora u kojem ispituju prisustvo i koncentraciju metala u zemljištu i biljkama na području rudnika bakra i rudarskog kompleksa u Boru.¹⁸

Temu održivog razvoja i upravljanja je obrađena od strane drugih autora gde analiziraju uticaj rudarskih aktivnosti na održivo upravljanje zemljištem u rudarskom području na primerima Rep. Srbije i Rumunije. U radu su predstavljani glavni izazovi vezani za rešavanje navedenih problema u praksi kao i slučajeva uzurpiranja i pristupa navedenom zemljištu.¹⁹

Da se primetiti da je tema rudarskog otpada i principa održivog razvoja relativno nova u Srbiji i koja je u fokus dospela sa ubrzanjem procesa EU integracija. Iako se zakonodavstvo kroz godine sve više usaglašavalo sa zakonodavstvom EU, potreban je dodatan istraživački napor da bi se problem, pre svega, kvantifikovao i zatim pristupilo iznalaženju sistemskog i dugotrajnog rešenja za upravljanje rudarskim otpadom.

3. Upravljanje rudarskim otpadom

Primeri lošeg upravljanja otpadom predstavljaju najuočljiviju osobinu svetske rudarske industrije. Nesavesni tretman otpadom može imati uticaj na životnu sredinu čak i hiljadama godina²⁰. Stoga je veoma važno, pored uspostavljanja pravila, kontinuirano sprovođenje istih uz kvalitetan monitoring još od samog početka rada rudnika sve do njegovog zatvaranja. Rizici pogrešnog upravljanja otpadom su višestruki, čak i za kompanije koje se mogu suočiti sa padom vrednosti akcija, privremenom i trajnom zabranom poslovanja, uvećanim troškovima u vidu kazni, kompenzacija ili sudskih parnica, kao i oduzimanja licence i prava na buduća istraživanja prirodnih bogatstava. Međutim, i pored svesnosti o pravilima igre, prisutan je nedostatak zajedničkog konsenzusa između svih zainteresovanih strana u koje (između ostalih) ubrajamo izvođačke kompanije, regulatorna tela, investitore, državne i nevladine organizacije o tome kako se procesi upravljanja otpadom mogu uklopiti u svrhu održivog razvoja.

¹⁷ Nikolić Nina, Nikolić Miroslav (2012): Gradient analysis reveals a copper paradox on floodplain soils under long-term pollution by mining waste. *Science of the Total Environment*, 425, 146-154.

¹⁸ Antonijević M. Milan *et. al.* (2012): Metal concentrations in the soils and native plants surrounding the old flotation tailings pond of the Copper Mining and Smelting complex Bor. *J. Environ. Monit.*, 14, 866-877.

¹⁹ Popović Vesna *et. al.* (2015): Sustainable land management in mining areas in Serbia and Romania. *Sustainability*, 7, (9), 11857-11877.

²⁰ Kempton Houston *et. al.* (2010): Policy guidance for identifying and effectively managing perpetual environmental impacts from New Hard-rock mines. *Environmental Science & Policy*, 13, 558-566.

Iscrpljivanje prirodnih resursa i sprovođenje zakona koji štite životnu sredinu su usmerili mnoge rudarske kompanije ka državama u razvoju gde zakoni nisu tako strogi i čvrsti. Smatra se da se u takve države ubraja i Srbija.

Srbija je otpočela proces pridruživanja EU još 2008. godine i obavezala se da, između ostalog, usaglasi zakonodavstvo sa legislativom EU. Godinu dana kasnije, Srbija je usvojila novi Zakon o upravljanju otpadom (Službeni glasnik RS, br. 36/09 i 88/10) koji treba da uokviri i da da smernice industriji na koji način treba tretirati otpad i njime upravljati. Međutim, trenutno stanje pokazuje da zahtevi EU u tom pogledu ni izbliza nisu ispunjeni.²¹ Upoređujući se sa standardima razvijenih zemalja zaključeno je da je opšte stanje upravljanja otpadom u Srbiji neadekvatno i da se mora pristupiti razvoju menadžment planova i na regionalnom i na lokalnom nivou.²²

U nastojanjima da se unaprede rezultati preduzet je niz aktivnosti. Usvojena je Strategija upravljanja otpadom za period 2010-2019 (Sl. glasnik RS, br. 29/10), veća pažnja je posvećena statistici upravljanja otpadom i uz podršku fondova EU otpočet je niz projekata među kojima je i „Katastar rudarskog otpada“ koji je obrađen u nastavku.

4. Princip održivog razvoja

Diskusija o održivom razvoju u rudarskoj industriji je danas prilično razvijena i istrošena. Mnogi istraživači su pružili svoju verziju definicije koja se sažeto može posmatrati kao kombinacija uvećanog socio-ekonomskog razvoja i poboljšane ekološke zaštite kroz sprečavanje zagađenja. Navedeni autori tvrde da je jako teško govoriti o bilo kom obliku održivog razvoja u rudarskoj industriji kada se zna da svaki rudnik ima svoj tzv. „rok trajanja“, odnosno da će raditi onoliko dugo koliko je ekonomski isplativ za vađenje i obradu rudnog bogatstva.

Već spomenuti nedostatak zajedničkih usvojenih pravila na međunarodnom nivou nametnuo je istraživačima zadatak da osmisle šablon oko kojeg bi se postiglo unificirano saglasje. Frenks i ko-autori su u svom istraživanju razvili sedam principa kojim se rudnik treba voditi da bi dostigao cilj održivog razvoja:²³

- 1) Rudarskim otpadom se treba upravljati tako da bude fizički, geografski, hemijski i radiološki stabilan;
- 2) Rudarski otpad koji dolazi u kontakt sa okruženjem treba biti jednak u pogledu sastava, koncentracije, lokacije i količine u odnosu na druge materijale istog ekosistema;

²¹ Stevanović Ivana et. al. (2009): *Recycling Assessment for South-Central Serbia. A Strategic Document for Public, Private and Civil Society Actors*. Treehouse, Krusevac, Serbia.

²² Čurčić Ljiljana et. al. (2009): *Waste management practice as the local environmental security issue*.

²³ Ibid

- 3) Otpad koji nije jednak bi trebalo odvojiti od ostalog i tretirati ga po usvojenim pravilima za takve slučajeve;
- 4) Prostor za odlaganje treba biti fizički ograničen i kao takav da ima smanjen (idealno-minimalan) uticaj na okolinu u kojoj se nalazi;
- 5) Upravljanje otpadom treba biti u skladu sa svakom individualnom lokacijom i pripadajućim uslovima društvene i životne sredine;
- 6) Upravljanje otpadom treba biti takvo da svede na minimum ulaganje resursa nakon zatvaranja kao i nižu količinu ukupnog otpada u odnosu na količinu izvađene rude; i
- 7) Načini upravljanja otpadom koji za rezultat mogu imati unapređenje ekološkog i društvenog sistema bi se trebali usvojiti.

Potrebno je naglasiti da navedeni principi mogu biti primenljivi kroz razne načine upravljanja rudarskim otpadom kao i vrstama otpada koje se proizvode. Takođe je bitno uvideti da principi predstavljaju sklop idealnih smernica koje bi u praksi trebale da utiču na pojedinačne odluke i da vode kroz proces odlučivanja uzimajući u obzir individualne rizike.

5. Katastar rudarskog otpada – Primer Rep. Srbije

Projekat „Katastar rudarskog otpada“ je finansiran zajednički od strane Rep. Srbije i EU kroz pretpristupni fond (IPA²⁴) namenjen zemljama kandidatima za članstvo. Započet je 1. 2. 2017. godine i predviđeno vreme implementacije je 36 meseci. Prevladavajući cilj projekta je pružanje pomoći Rep. Srbiji u ispunjavanju uslova *Acquis Communautaire*²⁵ iz oblasti životne sredine kroz institucionalnu izgradnju i unapređenje infrastrukture životne sredine. Dodatno, specifični cilj predstavlja razvoj i unapređenje sistema upravljanja rudarskim otpadom. Svrha projekta treba da bude unapređenje svesti i nivoa znanja o upravljanju otpadom kao i razvoj sveobuhvatnog katastra rudarskog otpada u koji će biti uključena procena rizika, karakterizacija otpada i klasifikacija lokacija otpada.

²⁴ IPA – Instrument for Pre-Accession Assistance

²⁵ *Acquis Communautaire* – Pravne tekovine EU

Predviđene aktivnosti u toku trajanja projekta treba da pruže sledeće rezultate:

Tabela 1: Očekivani rezultati projekta

Rezultat br. 1

Unapređeni kapaciteti Min. Rudarstva i Energetike (dalje: MRE) Odeljenja za geologiju i rudarstvo za kontrolu i nadzor rudarskog otpada kroz razvoj katastra u obliku veb aplikacije i u obliku knjige;

Rezultat br. 2

Unapređeni kapaciteti MRE za upravljanje rudarskim otpadom u cilju zaštite životne sredine kroz razvoj studija slučaja na sanaciji i rekultivaciji rudarskih deponija;

Rezultat br. 3

Poboljšan kvalitet znanja u vezi inspekcije i kontrole upravljanja rudarskim otpadom u okviru MRE kroz razvoj priručnika za inspektore;

Rezultat br. 4

Unapređenje ukupnih kapaciteta zaposlenih u MRE za upravljanje rudarskim otpadom putem organizovanih obuka i studijskih putovanja.

Izvor: Sopstveno istraživanje

Planiranje aktivnosti i sredstava koji trebaju ostvariti gore navedene rezultate su bitne karakteristike svakog projekta, pa i ovaj nije izuzetak. Međutim, uvek postoji mogućnost pojave ograničavajućih faktora na koje se ne može uticati. U sklopu analize trenutne situacije, a u svrhu sticanja što jasnije slike o problemu, identifikovane su određene pretpostavke i rizici koji mogu negativno uticati na izvršenje projekta. Tabela 2 predstavlja neke od njih:

Tabela 2: Pretpostavke i rizici projekta

Pretpostavke	Načini rešavanja
Vlasnici privatnih poseda pokazaće zainteresovanost za identifikaciju rudarskog otpada u cilju saniranja i rekultivisanja tih lokacija.	Državni organi će pružiti institucionalnu i tehničku pomoć u vidu identifikacije istorijskog otpada dok će izvođač projekta staviti akcenat na aktivnu saradnju svih zainteresovanih strana.
Država će iskazati posvećenost ispunjenju standarda EU u sklopu zaštite životne sredine i nakon završetka projekta.	Pored nesumnjive zainteresovanosti potrebno je stvoriti uslove za post-projektne aktivnosti u vidu kontrole ostvarenih rezultata kao i nastavljanja rada na osvežavanju katastra sa novim podacima.
Rizici	Načini rešavanja
Neadekvatna saradnja sa kompanijama koje poseduju licence za istraživanje ruda u slučajevima izbegavanja odgovornosti koja može dovesti do netačnih ili nepotpunih podataka.	Državni organi će u okviru svojih nadležnosti omogućiti institucionalnu pomoć pri kontaktu sa rudarskim kompanijama. Izvođač projekta će detaljnijim terenskim kontrolama utvrđivati verodostojnost prezentovanih podataka.

Rizici	Načini rešavanja
Kompleksnost projekta stvara međuzavisnost elemenata gde se ostvarivanje većine zadataka oslanja na ishode prethodnih.	Izvođač projekta bi trebao obezbediti blagovremeno podnošenje izveštaja o odgovarajućim učincima za svaki pojedinačni zadatak. Takođe, sprovede se revnosno upravljanje rizicima sa predeterminisanim aktivnostima u slučaju neispunjenja istih.

Izvor: Sopstveno istraživanje

Ovaj projekat će doneti višestruku korist svim uključenim institucijama kroz procese umrežavanja i koordinacije aktivnosti u koje su uključeni izvođač radova, MF CFCU²⁶, MRE, Geološki zavod, Rudarsko-geološki fakultet, Institut za Rudarstvo i metalurgiju Bor i mnoge druge zainteresovane strane ovog projektnog zadatka. Važna komponenta će biti izveštavanje javnosti o postignutim rezultatima što će se i ostvariti kroz Plan komunikacije i vidljivosti koji podrazumeva redovno održavanje sastanaka, konferencija za novine, ažuriranja internet stranice, priloga za vesti i dr.

5.1 Plan komunikacije i vidljivosti

Jedan od integralnih delova celog projekta, na koji predstavnici EU stavljaju poseban fokus, je Plan komunikacije i vidljivosti. Prevashodno, uspešna implementacija plana treba da služi ostvarivanju sledeća dva cilja:

- 1) Obezbeđivanje višeg nivoa svesti kod ciljne javnosti kao i građana Rep. Srbije uopšte o podršci koju EU pruža Rep. Srbiji u razvijanju i implementaciji sistema upravljanja rudarskim otpadom; i
- 2) Obezbeđivanje zadovoljavajućeg nivoa svesti i visokog nivoa znanja o upravljanju rudarskim otpadom i o njegovom značaju.

Strategija plana na projektu treba da obezbedi efektivnu, redovnu, pravovremenu i proaktivnu komunikaciju ka svojoj ciljnoj javnosti. Uzimajući u obzir da je pojam rudarskog otpada apstraktan za veći deo opšte javnosti, preporučena je upotreba jednostavnijeg jezika i forme izražavanja, zarad lakšeg međusobnog razumevanja.

Da bi plan bio ostvaren jednako i na svim nivoima, napravljena je tabela sa jasno definisanim predstavnicima ciljne javnosti:²⁷

²⁶ Cental Financing and Contracting Unit (Odeljenje za ugovaranje i finansiranje programa iz sredstava EU)

²⁷ Ciljna javnost - *Stakeholder*

Tabela 3: Stakeholder-i projekta

Ciljna javnost	Predstavници ciljne javnosti
Korisnici	Vlada Rep. Srbije: a) Min. rudarstva i energetike; b) Min. životne sredine; c) Min. finansija; d) Min. za evropske integracije.
Zainteresovane strane	Komercijalni sektor: a) Menadžment privatnih rudnika; b) Menadžment rudnika u vlasništvu države. Lokalna samouprava Akademska zajednica Privredne organizacije NVO sektor Mediji
Opšta javnost	Građani Rep. Srbije

Izvor: Sopstveno istraživanje

Potrebno je takođe detaljno isplanirati predviđene aktivnosti kao i načine merenja uspeha rezultata – bazne vrednosti. Sledstveno, tabela 3 prikazuje te aktivnosti, potrebne alate kao i indikatore uspeha:

Tabela 4: Šematski prikaz planiranih aktivnosti i pripadajućih rezultata

Aktivnost	Alat	Indikator uspeha
Redovna komunikacija o projektnim aktivnostima i postignućima kroz sopstvene kanale komunikacije kao i dostupne kanale korisnika projekta	a) Vesti objavljene na <i>web site</i> -u projekta; b) Vesti objavljene na <i>web site</i> -u Delegacije EU i MRE; c) Brošura koja se objavljuje tri puta godišnje	a) Kreiran i aktivan <i>web site</i> projekta; b) Na sajtu projekta objavljeno minimum 10 vesti; c) Pripremljeno i poslato minimum 10 vesti za društvene mreže; d) Objavljene tri ikonografije; e) Objavljene i predstavljene tri studije slučaja sa projekta.
Redovni odnosi sa medijima	a) Izjave i saopštenja za TV, dnevne novine i portale; b) Prateći materijal za medije tokom organizovanog događaja; c) Obezbeđen prostor u medijima za plasiranje sadržaja o projektu.	a) 30 objavljenih vesti o projektnim aktivnostima u novinama / portalima; b) Dva opširna intervjua u kojima se predstavlja projekat; c) Pet TV priloga na nacionalnim i lokalnim stanicama.

Lokalni događaji	a) Posete trima izabranim lokacijama rudarskog otpada;	a) Tri realizovane posete;
	b) Organizovanje info dana ili radionica na lokalnom nivou	b) Tri organizovane radionice;
		c) Distribuiran info materijal.
Učešće na konferencijama i radionicama koje za temu imaju rudarstvo i životnu sredinu	a) PowerPoint prezentacije;	Projekat je predstavljen na pet različitih događaja.
	b) Predavanja;	
	c) Panel diskusije.	
Kampanja podizanja svesti kod javnosti	a) Reklame;	a) Ciljna javnost zna za projekat i web site;
	b) Baneri.	b) Ciljna javnost posećuje web site u potrazi za informacijama
		c) Ciljna javnost zna da EU finansijski podržava projekat i upoznata je sa projektnim aktivnostima i ciljevima.

Izvor: Sopstveno istraživanje

6. Postignuti rezultati

RI: Uzimajući u obzir da je projekat jedinstvenog i specifičnog oblika bilo je potrebno prikupiti podatke o svim lokacijama koje predstavljaju rudnike, rudarska nalazišta i otpad. Ukupan broj svih lokacija za koje postoje informacije je 2 822. Od navedenog, svega 0,1% (32) nije bilo predmet daljeg ispitivanja, zbog postojanja funkcionalnih postrojenja za odlaganje otpada. Dodatno, sve 32 lokacije predstavljaju nalazišta sa površinskim kopom od kojih više od trećine (40%) obrađuje pesak. Svi ostali su kategorisani prema sledećim parametrima: opština i numerički kod, geografska lokacija, mineralna grupa, vrsta rude, vrsta rudarske aktivnosti, posedovanje dozvole i da li je u pitanju aktivni rudnik ili samo lokacija rudarskog otpada.

Prateći plan predviđenih aktivnosti bilo je potrebno odrediti prioritetnu listu lokacija predviđenih za posetu u predeterminisanom periodu. Pristupilo se izradi predselektivnog protokola baziranog na proceni rizika za svaku lokaciju pojedinačno. Protokol se sastojao od 17 pitanja koja su prosleđena u elektronskom i fizičkom obliku vlasnicima licenci za istraživanje ruda/rudarski otpad. Na osnovu povratnih informacija ustanovljena je grupa od 250 lokacija rudarskog otpada koje su bile predmet posete i analize prema sledećim parametrima:

- 1) Osnovni podaci – Opština, geografska lokacija, status i zaključak;
- 2) Uticaj – (Ne) postojanje štetnog uticaja na okolinu;

- 3) Izvor zagađenja – Srebro, bakar, olovo, cink, azbest itd.;
- 4) Vrsta zagađenja – Jalovište, kolektor, deponija itd. i
- 5) Uticaj na okolinu – Stanovništvo, agrikultura, ukupni ekološki uticaj.

Inicijalno se pristupilo istraživanju onih nalazišta čija zapremina prelazi 50m³ dok ona koja imaju manje od ustanovljene granice se analiziraju posle. Na osnovu zadatih parametara prikupljena je značajna količina podataka od kojih su najznačajniji za predstaviti: postojanje štetnog uticaja na okolinu, vrsta zagađenja i direktan uticaj na okolinu.

Podatak koji izaziva brigu pokazuje da skoro svako peto nalazište (19.6%) predstavlja izvor dugoročnog zagađenja po ekosistem i okolinu, dok od ukupnog broja analiziranih nalazišta svega devet (0.03%) ne utiče ili ne dolazi u kontakt sa nekim prirodnim oblikom vode (izvor, potok, reka ili jezero). Skoro trećina (30.8%) nalazišta je locirano u blizini ili neposredno pored naseljenog područja što predstavlja izuzetno štetan uticaj na stanovništvo bez obzira da li je ili nije prisutan faktor dugoročnog zagađenja. Ono što takođe treba naglasiti je da deponije predstavljaju dominantan izvor zagađenja – tačnije 220 rudarskih lokacija/nalazišta odlaže otpad na navedeni način.

Svi prikupljeni i analizirani podaci postaju integralni deo Katastra koji će biti ažuriran konstantno u toku trajanja projekta. Sledstveno, obim prikupljenih podataka će pružiti mogućnost široke statističke analize koja će pružiti bazu budućim istraživačima o tome koji su dominantni izvori zagađenja iz rudarskog otpada.

R2, R3 i R4: Finalni autputi predstavljenih rezultata umnogome zavise od ostvarivanja prvog i najznačajnijeg rezultata – Katastra. Opipljiv napredak na polju jačanja kapaciteta bi trebao biti vidljiv, u idealnom slučaju, pri kraju projekta. Priručnik za inspektore bi trebao biti razvijen i predstavljen državnim organima krajem tekuće (2018) godine, dok se pripremni radovi za obuke i studentske ture za zaposlene planiraju na leto 2018-e godine, a početak implementacije naredne (2019) godine.

Važno je naglasiti da projekat u dosadašnjem periodu implementacije nije prošao bez poteškoća. Usvajanje Početnog izveštaja koji predstavlja kamen temeljac projekta je dva puta odložen zbog neusaglašenosti informacija u vezi sa lokacijama rudnika i rudarskog otpada. Potrebno je bilo proveriti istorijski dostupne podatke o nalazištima pa su te aktivnosti zahtevale dodatno vreme i resurse. Detaljnije, problem je predstavljao i nedostatak odgovarajućih topografskih i digitalnih mapa terena potrebnih tokom obilazaka lokacija rudarskog otpada. Podaci koje navedene mape pružaju predstavljaju sastavni deo Izveštaja o posećenim lokacijama i kao takve su od vitalnog značaja. Nemogućnost dostavljanja mapa od strane naručioca projekta je bio razlog za odstupanje od usaglašenih rokova.

Dodatno, aktivnosti koje za cilj imaju podizanje svesti o projektu za sada ne pružaju očekivane rezultate kod zainteresovanih strana i to prevashodno eksternih – NVO sektor, mediji i građani. Jedan od mogućih načina prevazilaženja situacije je organizovanje većeg broja konferencija za medije, okruglih stolova ili radionica, kao i angažovanje novih eksperata koji bi bili zaduženi za direktnu komunikaciju sa navedenim strukturama javnosti.

Zaključno, uspešno kompletiranje projektnog zadatka nesumnjivo daje kvalitetnu osnovu za budući rad i istraživanja. Ostavlja na raspolaganju obimnu količinu sistematizovanih podataka koji se mogu statistički obrađivati i dopunjavati. Važan aspekt će biti stečena količina znanja svih zainteresovanih strana i uvećani kapaciteti za rešavanje budućih problema. Uzimajući u obzir da je u pitanju pionirski poduhvat, ostaće podložen kontroli kao i kritici, te stoga i mogućnosti za unapređenje i korigovanje mogućih propusta u radu.

7. Zaključak

Potreba postojanja rudarske industrije se ne dovodi u pitanje, uzimajući u obzir nemerljive koristi koje generiše. Ovaj rad se koncentrisao na procese koji se tiču upravljanja otpadom koji ostaje nakon iskopavanja rude i njegovim pravilnim odlaganjem, jer činjenično stanje pokazuje da navedena industrija predstavlja jednog od glavnih zagađivača životne sredine i zdravlja ljudi. Prema raspoloživim istraživanjima i podacima, nivo tretmana rudarskog otpada nije na zadovoljavajućem nivou, pogotovo u državama koje su u procesu razvoja u koje se ubraja i Rep. Srbija.

Osnovni pokazatelji nam govore da naša država još uvek nije dostigla potreban stepen održivog razvoja u upravljanju raznim vrstama otpada, počevši od komunalnog, kanalizacionog i naročito industrijskog otpada. Usvojeni zakonodavni okvir za rudarsku industriju se pokazao nedovoljnim usled manjka sinergije između svih zainteresovanih strana na tržištu.

Međutim, kroz proces pridruživanja EU došlo je do pozitivnih pomaka u vidu usaglašavanja i bolje implementacije zakonske regulative, jačanja kapaciteta kroz učenja o pozitivnim primerima iz prakse i nadasve zajedničkim projektima usmerenim ka poboljšanju opšteg stanja u industriji. Jedan od primera takve vrste projekta je i „Katastar rudarskog otpada“.

Uspešna implementacija projekta će, prvenstveno, sistematizovati i osvežiti trenutnu bazu podataka lokacija rudarskog otpada, uključujući i vrstu, količinu i način odlaganja istog. Nadalje, omogućiće svim zainteresovanim stranama bolji uvid i pristup svim informacijama sa tržišta. Zaključno, postaviće dobar temelj budućim istraživačima ukoliko se iskaže potreba za revizijom postojećeg stanja, unapređivanja prošlih istraživanja pomoću novih podataka ili za detaljnijim ispitivanjima pojedinačnih vrsta otpada.

Rudarske aktivnosti moraju biti povezane sa ciljevima održivog razvoja da bi osigurale sadašnjim i budućim generacijama bolji pristup resursima i načinima zadovoljenja osnovnih životnih potreba. Implicira se potreba za rastom recikliranja metala, kao i iznalaženja alternativnih izvora energije u cilju smanjenja uticaja na okolinu.

Ignorisanje trenutnog stanja neće doprineti boljitku, a kao što istorijski rezultati pokazuju štetu je sve teže sanirati. Upitno je da li će i to više biti moguće.

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SUSTAINABLE DEVELOPMENT IN WASTE MANAGEMENT IN THE MINING INDUSTRY – THE CASE OF THE REPUBLIC OF SERBIA

Summary: *Throughout the centuries, human activities have always generated different kinds of waste, and this has become a significant problem which nowadays is considered as one of the main polluters of the environment. The term waste management is gaining importance as a way of providing an efficient solution for this problem. Data from the EU-28 shows that nearly one third of the total waste produced is attributed to mining activities.*

This paper focuses on the waste generated by the mining industry in the case of the Republic of Serbia. Considering that Serbia is in the process of becoming an EU member state, there are several ongoing projects which aim to enhance and reach a level of sustainable development in the respective field. As an example, a project which is currently being implemented will be covered in this research, namely – “Cadastre of mining waste”.

Keywords: *Sustainable development, mining, mining waste, waste management, Serbia.*

FINANCIAL MANAGEMENT AND CONTROL – A New Management Concept in the Context of the Serbian Public Sector

Abstract: *Bearing in mind the legislation that sets out the principles of sound financial management, a good understanding of the internal control mechanisms and how they work in practice is necessary. The established level of financial management and control among users of public funds is of unequal quality and has not sufficiently contributed to reducing weaknesses in internal control and raising management responsibility to the optimum level. In order to implement modern management concepts, public companies have to have large access to internal control mechanisms or „tools” to assist in management. Integrated management systems with their modern process approach in business organization and comprehensive and fast processing of information on business changes can significantly contribute to the quality of business control. Research on this issue is based on the fact that the introduction of control standards increases the orderliness and documentation of the system, which significantly contributes to the control of business processes. The aim of this paper is to show that the mutual interdependence of integrated management systems through the overall organization structure with the system of financial management and control, as their final outcome, ensure financial integrity and compliance with policies and procedures and promote effective management processes.*

Keywords: *financial management and control, integrated management systems, risk management, control standards*

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1. INTRODUCTION

Financial management and control is one of the three pillars of internal financial control of the public sector and it is based on the principles of modern public administration and the responsibilities of executives. This means that every public sector entity must take full responsibility for spending and managing its own budget and ensure that there are adequate controls and safeguards in place.¹ In order to achieve the full effects and benefits of the implementation of this system, it is necessary to change the awareness of employees in public sector entities in order to consider the benefits of full implementation of the financial management and control system for their work. In this way, the plans defined in the framework of the public administration reform are supported to improve the control environment and assist public funds users in risk assessment, which enables public sector management to be based on effective control mechanisms that mitigate risk and improve the costs effectiveness, efficiency, effectiveness and transparency in the use of public funds, regardless of funding sources.

In this paper the authors have tried to evaluate the contribution of integrated management systems to improving the implementation of financial management and control systems in the Serbian public sector. Both legislative and internal control mechanisms were observed. Legislative control mechanisms are mechanisms that are binding on the basis of positive legal regulations in the Republic of Serbia, while internal control mechanisms are those introduced by the public sector organization itself, on the one hand to improve legal control mechanisms and on the other hand to improve the overall management process.

It is important to emphasize that the system of financial management and control encompasses the entire business and is at the back of every decision and all activities and is a comprehensive system of internal controls, which incorporate within them organizational structure, methods and procedures that cover not only areas of financial nature, but also relate to all operational and strategic goals, creating the preconditions for the public funds user to achieve the defined goals in accordance with the laws, standards and rules with greater economy, efficiency and effectiveness in business.

The authors of this paper start from the fact that in the public sector of Serbia the system of financial management and control is at an early stage of development. The subject of the research is the existence of significant interdependence between the implementation of financial management and control systems and integrated management systems as a modern management concept, seen through the organization and documentation in the overall structure of the organization in the current business practice and with the application of quality standards, but also through the achievement of strategic and operational goals in performing activities.

¹ *Priručnik za finansijsko upravljanje i kontrole* (2019) Ministarstvo finansija, Republika Srbija Beograd.

2. THE CONCEPT OF FINANCIAL MANAGEMENT AND CONTROL

There are several definitions, but all of them are similar in that they establish that financial management and control encompass the entire system of financial and other controls, including organizational structure, methods and procedures, not only financial systems, but also operational and strategic systems of the organization. These controls, through risk management, reasonably provide assurance that the means (in the right, ethical, economical, effective and efficient manner) are being used to achieve the goals of the enterprise (organization).² In essence, the system of financial management and control is “a philosophy of approach to management” This system is not strictly prescribed by law for companies operating in the Republic of Serbia, but is regulated by law for the public sector. Based on the recommendations of the European Union, the Government of the Republic of Serbia adopts in 2009 the Strategy for the Development of Internal Financial Controls in the Public Sector in the Republic of Serbia.³

According to this strategy, the concept of managerial accountability implies that directors of public funds users bear responsibility for the fiscal, managerial and programmatic competencies that have been delegated to them. In the organization for which they are responsible, they are responsible for planning, programming, budgeting / financing plan, budget / financial plan execution, accounting, controls, reporting, archiving and supervision, respectively, and are responsible for setting and achieving the set goals.

Law on the Budget System of the Republic of Serbia, Article 81.⁴ provides that users of public funds are obliged to establish a system of financial management and control in the public sector. The Rulebook on Common Criteria and Standards for Establishing, Functioning and Reporting on the System of Financial Management and Control in the Public Sector⁵ prescribes common criteria and standards for establishing, functioning and reporting on the system of financial management and control in users of public funds. However, the Law on the Budget System does not set any time limits for the establishment of these functions, thus creating space for unequal access to this obligation.

² Romić, L., Gravorac, S., Šijan, G., Veselinović, B.(2017): *Implementacija finansijskog upravljanja i kontrole u subjektima javnog sektora-put ka novoj paradigmi fiskalne odgovornosti*, Ekonomski izazovi br. 11, Univerzitet u Novom Sadu, Ekonomski fakultet u Subotici, Subotica str.77-91

³ *Strategija razvoja interne finansijske kontrole u javnom sektoru u Republici Srbiji 2017-2020*, „Sl. Glasnik RS” br. 55/05, 71/05-isp. 101/07, 65/08, 16/11, 68/12-US, 72/12, 7/14-US i 44/14.

⁴ *Zakon o budžetskom sistemu* (“Sl.glasnik RS” br. 54/09; 73/10; 101/11; 93/12; 62/13; 63/13; isp. 108/13; 142/14; 68/15-dr.zakon, 99/16; 113/17; 95/18; 31/19 I 72/19).

⁵ *Pravilnik o zajedničkim kriterijumima i standardima za uspostavljanje, funkcionisanje i izveštavanje o sistemu finansijskog upravljanja i kontrole u javnom sektoru*, “Sl. glasnik RS” br. 99/11, 106/13.

The existing legal framework in the Republic of Serbia ensures the implementation of most international standards of internal control. The FMC regulation stipulates that the elements of the Financial Management and Control System are determined in accordance with international internal control standards relating to standards aligned with the International Organization of Supreme Audit Institutions Public Sector Guidelines (INTOSAI).

Adequate financial management and control systems are present for all users of public funds and are primarily designed to ensure compliance with legal and institutional requirements, safeguarding assets against loss, misuse and damage, in addition to ensuring value for money management”, also the managerial responsibility at all levels of management and a systematic approach to understanding controls.

The management „value for money” implies that the provision of services to customers and other activities undertaken by the institutions meets the quality standards and is done in a cost-effective, efficient and effective way, in other words to provide quality service at the lowest of possible costs.⁶ The primary responsibility for establishing, maintaining and regularly updating the financial management and control system lies on the director of the public funds user.⁷ The executive director is the „first and last link in the chain of responsibility” however, the “chain of responsibility” is made up of all the managers within the organizational structure.

Managerial responsibility at all levels of management assumes that senior management of each user of public funds is responsible for the way they are managed and how their employees and other stakeholders see it. Based on this model, all executives have to take responsibility for their employees and the scope of controls, in support of general budget user policies

A systematic approach to towards understanding the principles of controls implies that control standards are established in each organization that are explicit and codified, that unambiguous principles are used in their construction, and that they are goal-oriented. According to Mokler⁸ control is a „systematic” effort to make that planning goals became the control standards, to define feedback, to compare actual results with predefined standards, to determine the magnitude and significance of deviations, and to take appropriate actions that utilize all available resources in an effective and efficient manner to achieve the goals.

⁶ *Priručnik za finansijsko upravljanje i kontrole* (2019) Ministarstvo finansija, Republika Srbija Beograd.

⁷ *Pravilnik o zajedničkim kriterijumima i standardima za uspostavljanje, funkcionisanje i izveštavanje o sistemu finansijskog upravljanja i kontrole u javnom sektoru*, “Sl. glasnik RS” br. 99/11, 106/13.

⁸ Mokler, R.(1968): *Management Control Models*, Holt, New York.

An important component of the internal control system is the one related to the information and communication system, since the quality of the decisions made by management structures is directly related to the quality of the information on which the decisions are made. The information must be accurate, up-to-date, relevant and accessible, which requires efficient communication at all levels in the institution, an appropriate information system, and the implementation of a timely and reliable reporting system.⁹ A well-established system the financial management and control requires constant monitoring of what management structures perform to evaluate, function properly and ensure timely updates.¹⁰

Monitoring is done through continuous monitoring, self-assessment and internal audit. The financial management and control are not only the responsibility of the organizational units for finance, but it is an integral part of managerial accountability at all levels of management and in all organizational units.

Well-established system of financial management and control are implemented through five interconnected components of internal controls, which include:

- Control environment - must be positive and higher executives must set the tone and, by example, direct employees to respect and perform their duties as best they can;
- Risk management - a strategy that supports the mission and key target entities must be adopted, creating an environment in which the discussion of risks will be part of the ongoing business;
- Control activities - adequate controls must be in place and regularly reviewed to ensure that the internal control system is functioning properly;
- Information and communications - relevant information must be accessible to both employees and the public; it is also necessary to introduce a good two-way communication system;
- Monitoring of controls - users of public funds must regularly assess and monitor risks and controls and, if necessary, make improvements.

It is important to note that no matter how well-designed and operational the management system is, the internal control system cannot provide absolute assurance that the goals of the institution are being achieved, but only a reasonable measure that is a matter of assessment. In making this assessment, managers should identify the risks inherent in activities, programs and projects, assess the risks, and determine the acceptable degree of risk in different circumstances.¹¹

⁹ Stamatović, M. Maksimović, S., Tornjanski, A. (2016): *Poređenje efikasnosti javnog i privatnog sektora- da li su birokratske procedure izvor neefikasnosti?*, Ekonomika, Niš, Vol.62. pp. 111-122.

¹⁰ Mazur, B. (2010): *Cultural Diversity in Organisational Theory and Practice*, Journal of Intercultural Management, Vol.2. pp. 5-15.

¹¹ Valter, C. (2009): *Korporativno upravljanje, merenje performansi i normativna usaglašenost sistema interne kontrole*, Data Status, Beograd

An established system of controls can help an institution achieve its goals, but it is not a substitute for good governance because it only provides information on an institution's progress or insufficient progress, but internal controls cannot achieve goals that depend on management.

An effective financial management and control system should be a structured, permanent and well-documented system designed to identify weaknesses in the controls in place, activities needed to correct those weaknesses, monitor the implementation of necessary corrective actions and periodically assess the adequacy of the FMC.¹²

2.1. Research Methodological Framework

The main objective of the research is to show that integrated management systems that represent a way to effectively and efficiently manage an organization are of great importance in the process of implementing internal control mechanisms.

According to the subject of the research, the basic premise of creating a successful business environment is that:

- The system of financial management and control prescribed by law, properly hierarchically established and organized in a way that is accepted by managers and all employees in public sector organizations can contribute to achieving business goals, greater responsibility in spending public funds and strengthening financial discipline.

In relation to the goal of the research, we focused on studying the significance of:

- Established integrated management systems in the existing practice of public sector organizations and degree to which through their process approach contribute to the implementation of financial management and control
- Relationships between the degree of introduction of ISO standards with the system of goal management, orderliness, documentation and control of business processes.

In preparing this research, we used secondary sources of information and the Internet, and certainly the reports of the Central Harmonization Unit at the Ministry of Finance of the Republic of Serbia should be highlighted first. By adopting the Strategy for the Development of Internal Financial Control in the Public Sector in the Republic of Serbia for the period 2017-2020,¹³ the Govern-

¹² *Priručnik za finansijsko upravljanje i kontrole* (2019) Ministarstvo finansija, Republika Srbija, Beograd

¹³ *Strategija razvoja interne finansijske kontrole u javnom sektoru u Republici Srbiji 2017-2020.*, Sl. Glasnik RS" br. 55/05, 71/05-isp. 101/07, 65/08, 16/11, 68/12-US, 72/12, 7/14-US, 44/14.

ment of the Republic of Serbia provided strong support for the introduction and strengthening of the IFK system. It also expresses its commitment to implement a series of comprehensive reforms in the area of public finance management in the broadest sense, with the aim of increasing accountability, ensuring sound financial management through improving the efficiency and effectiveness of public resource management.

In the Report of the Ministry of Finance, Central Harmonization Unit of the Republic of Serbia from 2017, states that the financial management and control system, as well as internal audits, are underdeveloped in direct and indirect budget users, and therefore is underdeveloped risk management. The reports received show that the majority of users of public funds have work programs, financial plans, procurement plans and periodic reports. These responses also suggest that public funds users are in the early stages of adopting a risk management methodology and that existing control systems are in place primarily to ensure the legality of the business. Control systems are not sufficiently focused on managing risks that may affect the achievement of other general goals of the organization. It is increase the number of users of public funds who submitted a report for 2017. and it is 23% higher than in 2016. However, the share of incorrect reports is quite high at 18% in 2017, which is somewhat expected because the large number of users submitted reports for the first time. The major gaps identified in completing the report are the following: failure to complete the monitoring, monitoring and evaluation section due to a fundamental misunderstanding of this segment, misunderstanding or non-recognition of certain issues, failure to provide evidence to answer the question, entering data on activities conducted in 2017. instead of showing the state of the FMC system at the end of the reporting year, which negatively reflects the not overall result.¹⁴

We also used data from the implemented Local Finance Reform Project¹⁵ launched by the Swiss Secretariat for Economic Affairs (SECO) with the support of the Central Harmonization Unit. This project conducted a survey to determine the current situation of the established FMC system at the Local Government Unit level. The aim of the research was to provide a representative and objective view of the current status of the level of implementation of FMC and the function of Internal Audit in local government units in Serbia. According to a survey of 128 local government units that participated in the survey, 58 (45%) have established a FMC system, while 70 (55%) do not. According to this survey, FMCs were more established by cities than by municipalities.

¹⁴ *Priručnik za finansijsko upravljanje i kontrole* (2019) Ministarstvo finansija, Republika Srbija, Beograd.

¹⁵ RELOF (2018): *Stepen primene finansijskog upravljanja i kontrole i funkcije interne revizije u lokalnim samoupravama i javnim preduzećima osnovanim od strane lokalnih samouprava*, SECO, Beograd

According to the way that FMC was implemented, the research showed that a smaller number of local self-government units introduced this function independently, mainly is developed with the support and constant cooperation with external experts. Also the report to the Central Harmonization Unit, are composed mainly of external experts, and is only forwarded by Local Government Unit. This research also covered issues related to the key challenges that local governments faced during the implementation of FMC, and noted that there was a lack of internal resources (expert staff or resources to hire external experts), and also insufficient awareness of the management, as well as the employees about the importance and the need to establish the FMC; also the failure to decide on the appointment of the Head and the Working Group for the Implementation of the FMC; most employees are not interested in introducing the system; insufficiently educated staff to write procedures and assess risk.¹⁶

The focus of the analysis of this paper was the heads of finance departments in local governments in Serbia and directors of public companies that should monitor all activities in their organization, as well as whether control activities are functioning properly and whether risks and opportunities are adequately addressed, and all in order to achieve the set goals in the strategic documents as well as in the operational plans. The research was conducted during two lecture cycles at the Belgrade Institute of Economics and Law in collaboration with Sevoi Financial Consulting during May and October 2019 and February 2020. It covered the analysis of the established control mechanisms as well as the entire process of financial management and control in local governments and public companies in Serbia. The results of the analysis are based on the responses of employees in local self-government units from 43 Local Government Unit (54%), who sent a questionnaire response, out of 80 Local Government Unit sent to the questionnaire, 34 public companies that responded to the questionnaire as participants in the lecture. The selection of the questions in the questionnaire was made on the basis of taking over some of the questions from the Self-assessment of the Quality of Financial Management and Control, made by the Central Harmonization Unit of the Ministry of Finance of the Republic of Serbia, for the purpose of mandatory annual reporting. The aforementioned questionnaire was designed in a similar fashion to the COSO model for assessing the control environment.¹⁷

On the basis of the answers received from the questionnaires and interviews conducted with the directors and heads of finance who participated during the two cycles of lectures in the field of FMC, we wanted to evaluate the current level of development of the established internal controls in the Republic of Serbia, and whether the established quality control standards through integrated manage-

¹⁶ Ibid, 24.

¹⁷ COSO (2010): *Report on ERM*, preuzeto sa: <http://www.coso.org/documents/cososurveyreportfull-web-r6finalforwebposting111710.pdf>. Preuzeto: 01/04/2020

ment systems in current business practices contribute to the easier implementation of financial management and controls.

In planning this research, we have constantly kept in mind that the development of financial management and control is different among users of public funds. Differences certainly arise from the different organizational structure and size of direct and indirect users of budget funds, but not only for these reasons. An important reason can certainly lie in knowing the possibilities, that is, information, but also the willingness and desire to improve the management process. Our goal was to investigate the interdependence and development of integrated management systems in relation to the established system of internal control mechanisms. Because, if the system is regulated, permanent internal control of input and output parameters is carried out, with control of the process flow itself, and with taking of possible corrective measures in accordance with set quality standards, then good business results can be expected.

Starting from the interdependence of the established control mechanisms in correlation with the development of the modern concept of management in the public sector of Serbia, the research sought to determine whether introducing a model of an integrated management system and ISO standards into the entire structure of the organization through a process approach enhances the tidiness and documentation of the entire system.

The introduction of integrated management systems in Serbia began in the early 1990s. Half of the public companies in our sample have implemented some of the standards for most business processes or for all business processes, while 25% of organizations have not implemented any of the ISO standards.

The most widespread is the application of ISO 9001 in 70% of the surveyed Public Enterprises, followed by the implementation of ISO 14000 in about a quarter of organizations, ISO 18000 in about 16% of the organizations in our sample. The most common is their application in the field of technical business, then in the field of commercial business (procurement / sale), and then the following procedures in the field of protection: at work, from fire, environment, and safety. We have slightly fewer procedures in the field of financial management for planning in 30% and reporting in 32% of organizations. In doing so, we would like to emphasize that the public companies surveyed are in the field of public communal utilities. When it comes from local self-governments the most common answers are that they do not have integrated management systems or quality standards, the existing internal control systems are characterized mainly by the situation that, by departments of the municipal administration, internal acts have been adopted in which certain business processes or special activities are prescribed, such as in 19 (45%) of 43 local governments that submitted questionnaire replies. In 14 (33%) local governments, a system of financial management and control has been established with the cooperation of external experts, but they do not have integrated management systems or quality management standards in place. In 10 (22%) local

governments that responded to the questionnaire, there are no implemented integrated management systems, no financial management and control, only internal acts have been adopted that prescribe risk management.

In the 19 municipalities surveyed, for which part of the business process is prescribed a way of performing them, in order to ensure their implementation in accordance with the principles of legality, economy, effectiveness and efficiency, there is a serious interest in the implementation and implementation of the FMC system. Also, we have identified for these local governments that no audit trail has been prepared (description of the business process or procedure, description of the activity, the person responsible for carrying out a specific activity in the business process, as well as the deadline within which the activity should be carried out). All instructions should be in written and formal form, not verbal and unofficial, which should be emphasized as a recommendation at all stages of financial management and control implementation.

By introducing elements of corporate governance, i.e. IMS increases the orderliness and documentation of the whole system, thus increasing the awareness of employees and understanding of the importance of implementation of the overall system of internal control mechanisms, all with the aim of increasing the quality of management and achieving the set goals, thus confirming the first hypothesis of this paper

3. CONSIDERING THE IMPACT OF INTEGRATED SYSTEM MANAGEMENT ON EFFICIENT ESTABLISHMENT OF FMC

Contemporary management literature deals intensively with the problem of integrated management systems. Different approaches and concepts are present both in theory and in practical realization. By reviewing the topics addressed in the quality principles, it is clear that they relate to the overall functioning of the organization, including other aspects that are often subject to other standards. Therefore, they have a universal character that they give to the whole series of ISO 9000 standards.¹⁸

Worldwide technical standardization has been established by an international standardization organization, established in 1946 in Geneva. Today, it has 165 members (national standardization organizations), from developed and developing countries, from all five continents. The ISO portfolio includes 19971 developed standards (predominantly technical), which make practical tools to support business worldwide. On the other hand, the standards ISO 9001, ISO 14001 and ISO 22000 are the most well-known and most applied for management systems worldwide, and today they form the framework for business stand-

¹⁸ Milekić, M., Bobrek, M. (2015): *Integrirani menadžment sistemi*, Naučno-stručni skup sa međunarodnim učešćem "QUALITY 2015", Neum, B&H, 10. – 13. jun 2015.

ardization. Within the ISO organization there is an international network of experts working on the development of the ISO model of standards.¹⁹ The integrated Management System (IMS) is a way to manage an organization effectively and efficiently. Emphasis is placed on the pursuit of process management with the task of transforming the input elements into output elements as efficiently as possible. Therefore, it is necessary for an organization to identify and successfully manage all related activities. „Process approach” involves identifying, classifying, and applying process systems within an organization, together with identifying and interacting those processes, to achieve the desired results.²⁰

It is important to note that business processes are not the same as procedures or functions. Procedures describe what needs to be done in a particular situation, and functions are parts of an organization that are assigned specific responsibilities, or work tasks. A business function is an area (field) of work in an organization, a mode of operation that requires similar knowledge and skills (research and development, maintenance, logistics, finance, human resources, accounting). They are practically the result of the specialist division of labor and the traditional organization of the business system.²¹

When recording, analyzing, and improving processes, one should strive to define processes as wide as possible as a whole, and then divide them into sub-processes, since the reverse defined smaller processes will strive for their own efficiency without taking into account the whole. As the goal of every organization should be to provide quality output with the most rational use of imputes globally, the need for standardization has emerged. Based on this need, standards from the area of Quality Management System are created. „The European Community has expressed the same needs with its White Paper, which places particular emphasis on the adoption of many directives for the harmonization of national laws and standards with a deadline of 1992.”²² The recommendation was to strive for the utmost uniformity of European standards, while respecting national standards and specifics in implementation. ISO / TC 176 Technical Committee of the International Organization for Standardization (ISO) began work in 1979 on „standardization and harmonization in the field of Quality Management System, Quality Assurance and Appropriate Quality Technologies.” The basis was British Standard BS 5750, Part 1 to 6 of 1979. As a result of this work, in 1987 a series of ISO 9000 standards was adopted, accepted by the

¹⁹ Majstorović V., Marković M., Kuzmanović D., Maćutić J., Marinković V., Šibalića T., Bekčić S., Pejović G. (2015): *Analiza nivoa poslovne standardizacije u svetu i kod nas*, Tehnika, 70 (5). pp. 884-892.

²⁰ Paunović, B. (2016): *Ekonomika preduzeća- preduzeće, okruženje i ulaganje*, Ekonomski fakultet, Beograd.

²¹ Živkov. N. (2012): *Integrirani sistemi menadžmenta*, Fakultet organizacionih nauka, Beograd

²² https://ec.europa.eu/.../files/bela_knjiga_o_prihodnosti_evrope, Preuzeto:01/04/2020

European Community under the name „Development of a model of internal control mechanisms in the function of corporate governance” under EN 29000 (the same applies to EFTA members) and other countries in Europe and the World. In our country at that time the standard series was designated JUS ISO 9000.²³ The new version of the ISO 9000: 2015 series is in line with the already initiated ISO / TC 176 committee process to prescribe a unified structure for management standards, making it easier for them to integrate formally. This process is based on contemporary theoretical concepts of integrated management. Practical models and approaches of this integration are given by the so-called. Annex SL - a document that sets out the basic structure of all management standards. In the future, all ISO MSS (Management System Standard) should be consistent and compatible - they will all look the same and have the same essence.²⁴ Standards are implemented one by one, with the ISO 9000 series being taken as the starting point, or multiple standards being applied simultaneously. The aim is to standardize most organizational partial management systems in accordance with the requirements of different international standards. The process of integration of partial management systems can be accomplished in two ways:²⁵

- by adding - each management system has its own documentation, which is interconnected,
- including - where documentation of the quality management system is laid as a documentation basis and then expanded according to the requirements of other systems.

The role of integrated standards is to define all process activities, identify all aspects and hazards affecting the environment and the workplace, and more (general safety, security information, etc.) and define measures to reduce all risks. ISO 9001 is a general organizational management standard, applicable to manufacturing, services, public enterprises, government, education. The requirements related to internal audits, non-compliance, corrective and preventive measures and system review (there are still, depending on the standard), are practically the same or very similar to the relevant requirements of ISO 14001 (OHSAS 18001) (OHSAS 18001 (occupational health and safety management) and ISO 22000 (food safety management). ISO 9001 sets out the basic mechanisms to which other standards are based.²⁶

²³ Vulanović V., Stanivuković D., Kamberović B., Maksimović R., Radaković N., Šilobad M., Beker I., Šević D., Morača S., Vulanović S., Milisavljević S., Kesić I., Delić M., Brkljač N., (2012): *Sistem menadžmenta kvalitetom*, UNS-FTN, NoviSad

²⁴ Bobrek, M., Milekić, M. Macanović, K. (2014): *Upravljanje kvalitetom (Integrirani sistem upravljanja prema ISO 9001:2015*, Saobraćajni fakultet Doboj

²⁵ Đorđević D., Čočkalović D. (2007): *Upravljanje kvalitetom*, TF “Mihajlo Pupin”, Zrenjanin, str. 145.

²⁶ Vulanović V., Stanivuković D., Kamberović B., Maksimović R., Radaković N., Šilobad M., Beker I., Šević D., Morača S., Vulanović S., Milisavljević S., Kesić I., Delić M., Brkljač N.,

Considering the integration of the management system, the terms: integration, coordination, parallelism, cooperation, compatibility should be properly understood and used. The benefits of system integration include: improving process performance, internal management methods and interdisciplinary teamwork; greater motivation of the management; fewer multiple audits; increasing customer confidence; cost reduction.²⁷ Integration should be planned and implemented in a structured way. Many companies have adopted standardized management systems as a result of external pressure from customers requiring the application of some quality standard or external requirements to establish a health and safety system at work. Integration should be done for the benefit of the business. Therefore, the first step should be to identify the needs of the business.²⁸ Also, integrated management systems improve efficiency and effectiveness, contribute to creating synergy by improving communication between organizational units, better cooperation and work in processes. From the top management's point of view, an integrated management system of an organization could be defined as a comprehensive tool that integrates all elements of the business system into a single and complete system of process management in an organization to achieve business goals in accordance with the vision and mission of the organization.²⁹ In this sense, from the point of view of our research, the introduction and application of standards of integrated management in public sector organizations significantly contributes to improving the quality of regulation, documentation and control, business processes.

There is a direct correlation between the efficient operation of public enterprises and the established management standards, and it is reflected in the fact that public companies that have and apply quality standards most often achieve better business results. The implementation of integrated management systems and quality management standards in public companies in Serbia is of recent date and has not been sufficiently applied in the operations of public enterprises. The attention of the authors of this paper is focused on the correlation of established management standards with respect to the effective implementation of financial management and control systems. From this point of view, it is necessary to change the current way of managing public companies, establish new management concepts and professionalize management.

(2012): *Sistem menadžmenta kvalitetom*, UNS-FTN, NoviSad

²⁷ Noble, M. (2000): *Organizational Mastery with Integrated Management Systems: Controlling the Dragon*, John Wiley & Sons, New York

²⁸ Maksimović, S., Stamatović, M. (2018): *Upravljanje rizicima kao deo upravljanja javnim investicionim projektima*, 4. Međunarodna naučno stručana konferencija - Inovacije kao pokretač razvoja, Fakultet za primenjeni menadžment, ekonomiju i finansije, Beograd, pp. 4-9.

²⁹ Harrison K. D., Petty J. D. (2002): *Systems for Planning and Control in Manufacturing*, Newnes

Based on the conducted research, authors have determined that there is no practice of established management standards in the units of local self-governments that has sent a reply to our questionnaire. The situation in public companies is different, but again the authors emphasize that these are public utility companies that have a legal obligation to establish certain standards (eg. health and hygiene, quality, environmental protection, work safety, etc.).

New management concepts require public companies to continuously monitor the level of customer satisfaction, in order to improve the process of service delivery through feedback regarding certain costs and perceived quality of service. Understanding the use of services and steps required of users, and in order to obtain a quality service product, often leads to ideas - management in accordance with the set goals, ie with a defined mission and vision of the company. All this indicates the intertwining of integrated management systems, established standards and financial management and control, which together form the framework for successful and efficient operation of the public sector.

CONCLUSION

The implementation and application of financial management and control requires of budget users to actively engage and responsibilities of manager for financial performance. The focus is not only on how much is spent and whether it is within the boundaries of the planned costs, but also on whether the funds are spent on purpose, and what results and effects are achieved by spending those funds.

In addition to the conceptual definition, the paper also presents the components of financial management and control, emphasizing that the implementation of this system requires clearly defined business processes, their duration, input params, as well as outcomes and results. Therefore, it is clear the importance of the introduction and proper implementation of financial management and control, since it directly contributes to the achievement of the set goals through the rationalization of resources.

Financial management and control represent a comprehensive system of business rules and procedures and cover all business transactions, which ensure that risk management assures budget users that they will achieve their business goals, and that they use the funds properly, efficiently and effectively in accordance with legal and other regulations, protecting them from loss, misuse and harm.

The research intent of the authors of this paper was to propose, through the prism of situational, strategic, integrative and controlling dimensions, a good framework for improving the missing elements in the introduction of financial management and control in the Serbian public sector. In this direction, the paper presents the IMS-integrated management system as a process approach to standards, which at

the same time requires constant compliance with legal regulations and other procedures and is very useful for harmonization of all procedures in the company.

Starting from the concept of financial management and control, integrated management systems can also be considered as one of its elements. Very often, when implementing an IMS module or an ISO standard, the emphasis is on implementing existing processes in the organization, in the spirit of the standard. This achieves its compliance with the „best” world practice. The implementation of the model also introduces existing internal control mechanisms, both in the field of basic processes and in the field of management processes, as well as other support processes.

In this paper, the authors have covered only one part of the elements of financial management and control, and the essential advantage of the proposed models is the comprehensiveness that their application allows, in terms of order and documentation, but also the ability to combine conflicting or sometimes exclusive targets while maintaining the ability to function successfully. In this sense, this approach seeks to strike a balance between short-term goals and long-term stability, between transparency and necessary confidentiality, but also value goals and monitoring.

The results of the research indicate that when creating a sound framework for implementing financial management and control, one must start with a situational analysis, but indicate that a clear attitude is needed when it comes to control standards, as well as formalizing the risk management process. After analyzing the current state of financial management and control in the public sector of Serbia, although there is a slight shift in the implementation of this concept, principles, instructions and recommendations have not been fully adopted, regardless of the legal regulations in this area - since all laws have been adopted and applicable to all users of public funds. The main common problem for all budget users is inadequate administrative capacity. In the coming period, greater attention must be paid to the assessment of training needs in this area by public funds users, and it is also important to carry out continuous situational analysis to identify new needs. Therefore, it is imperative that all relevant actors approach the regulation of this area.

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FINANSIJSKO UPRAVLJANJE I KONTROLA – novi koncept upravljanja u kontekstu javnog sektora Srbije

Abstrakt: *Imajući u vidu zakonodavnu regulativu kojom su propisani principi dobrog finansijskog upravljanja, neophodno je dobro razumevanje unutrašnjih kontrolnih mehanizama i načina na koji oni funkcionišu u praksi. Uspostavljeni nivo finansijskog upravljanja i kontrole kod korisnika javnih sredstava je neujednačenog kvaliteta i nije dovoljno doprineo umanjenju slabosti interne kontrole i podizanju upravljačke odgovornosti do optimalnog nivoa. Savremeni koncepti upravljanja zahtevaju od javnih preduzeća veliki spektar internih kontrolnih mehanizama odnosno „alata“ za pomoć pri upravljanju. Integrisani menadžment sistemi svojim savremenim procesnim pristupom u organizaciji poslovanja i sveobuhvatnom i brzom obradom informacija o poslovnim promenama, u značajnoj meri mogu doprineti kvalitetu kontrole poslovanja. Istraživanje ove problematike bazirano je na činjenici da se uvođenjem standarda kontrole povećava uređenost i dokumentovanost sistema, što značajno doprinosi kontroli poslovnih procesa. Cilj rada je da ukaže da međusobno sadejstvo integrisanih menadžment sistema kroz celokupnu strukturu organizacije i sistem finansijskog upravljanja i kontrole kao svoj konačan ishod obezbeđuju finansijski integritet i saglasnost sa politikama i procedurama i promovišu efikasne procese upravljanja.*

Ključne reči: *finansijsko upravljanje i kontrola, integrisani menadžment sistemi, upravljanje rizicima, standardi kontrole*

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STEPEN OSTVARENE LIBERALIZACIJE EKONOMIJE SRBIJE U PROCESU PRISTUPANJA SVETSKOJ TRGOVINSKOJ ORGANIZACIJI

Sažetak: Cilj ovog rada je da se saglada jedan broj aktuelnih pitanja u pogledu stepena ostvarene liberalizacije ekonomije Srbije u procesu pristupanja Svetskoj trgovinskoj organizaciji. Članstvo Srbije u Svetskoj trgovinskoj organizaciji predstavlja i preduslov koji se mora ispuniti da bi se zatvorilo Poglavlje 30 pristupnih pregovora sa Evropskom unijom. Članstvo u Svetskoj trgovinskoj organizaciji bi imalo veoma pozitivan efekat na ekonomski razvoj Republike Srbije. Zatvaranje pregovora sa Svetskom trgovinskom organizacijom će, ukoliko bude praćeno drugim odgovarajućim merama ekonomske politike, dovesti do jačanja nacionalne privrede i njene dodatne ekonomske liberalizacije. U procesima liberalizacije, potrebno je da država svojim merama, po potrebi, i dalje interveniše u određenim oblastima privrednog i društvenog života.

Ključne reči: liberalizacija, ekonomija, Svetska trgovinska organizacija

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1. Uvod

U ovom radu autori su se pozabavili aktuelnim pitanjima u pogledu stepena ostvarene liberalizacije ekonomije Srbije u procesu pristupanja Svetskoj trgovinskoj organizaciji, koja predstavlja regulatorni okvir uz pomoć kog se omogućava obavljanje trgovine na globalnom nivou, pri čemu se osnovne prednosti članstva ogledaju u precizno definisanim i predvidljivim uslovima za obavljanje trgovinskih transakcija, koji se obezbeđuju kroz stalni nadzor trgovinskih politika zemalja koje su njene članice.¹

Članstvo u Svetskoj trgovinskoj organizaciji je jedan od najznačajnijih koraka u pravcu integracije Srbije u međunarodne ekonomske i trgovinske tokove. Pored toga, članstvo Srbije u Svetskoj trgovinskoj organizaciji predstavlja i preduslov koji se mora ispuniti da bi se zatvorilo Poglavlje 30 pristupnih pregovora sa Evropskom unijom. Proces pridruživanja Srbije Svetskoj trgovinskoj organizaciji traje već punih 12 godina.

Posebna formalna prepreka sticanju statusa punopravnog člana svodi se na ukidanje odredbi zakona kojima se zabranjuje trgovina genetski modifikovanim organizmima i proizvodima.

2. Svetska trgovinska organizacija

Svetska trgovinska organizacija je jedina globalna međunarodna organizacija koja se bavi pravilima obavljanja trgovinskih transakcija između pojedinačnih nacija². Suština ove organizacije se zasniva na sporazumima Svetske trgovinske organizacije koji se potpisuju i ratifikuju u skupštinama velike većine zemalja koje imaju aktivno učešće u oblasti međunarodne trgovine. Osnovni cilj Svetske trgovinske organizacije je da obezbedi preduslove da se međunarodna trgovina obavlja slobodno i na što jednostavniji način.³

Posebnu korist od članstva u Svetskoj trgovinskoj organizaciji mogu pod određenim uslovima da imaju ekonomski manje snažne zemlje koje mogu, kroz razvijanje saradnje sa drugim zemljama, da efikasno štite svoje ekonomske i nacionalne interese. Pored toga, članstvo u Svetskoj trgovinskoj organizaciji obezbeđuje malim zemljama i efikasne mehanizme za rešavanje trgovinskih sporova, pružajući im pritom priliku da na efikasniji način štite svoje interese nego što bi to bio slučaj u direktnim bilateralnim pregovorima.

¹ Todorović, B. (2017): *Zašto Srbija treba da uđe u Svetsku trgovinsku organizaciju?* Beograd: Centar za međunarodne i bezbednosne poslove

² www.wto.org/english/thewto_e/whatis_e/whatis_e.htm, posećeno 31.10.2017.

³ Rapaić, S. (2013): *Svetska trgovinska organizacija i preduzeća u spoljnoj trgovini*. Beograd: Ekonomski fakultet Univerziteta u Beogradu

Svetska trgovinska organizacija je osnovana 1. januara 1995. godine, a njeno sedište se nalazi u Ženevi. Na dan 29. jula 2016. godine Svetska trgovinska organizacija je imala 164 zemlje u svom članstvu, dok je 20 zemalja (među kojima je i Srbija) imalo status posmatrača. Osnovne funkcije koje Svetska trgovinska organizacija obavlja su:⁴

- sprovođenje trgovinskih ugovora Svetske trgovinske organizacije,
- kreriranje preduslova za obavljanje trgovinskih pregovora između zemalja članica,
- rešavanje nesporazuma koji se pojavljuju tokom trgovine,
- praćenje nacionalnih politika trgovine,
- pružanje tehničke pomoći i obuka zemljama u razvoju, i
- uspostavljanje saradnje sa drugim međunarodnim organizacijama.

3. Odnos Srbije i Svetske trgovinske organizacije

Sticanje statusa punopravnog člana Svetske trgovinske organizacije predstavlja jedan od najznačajnijih koraka u procesu integracije zemlje u savremene ekonomske i trgovinske tokove. Ulazak Srbije u članstvo Svetske trgovinske organizacije predstavlja i veoma značajan preduslov tokom procesa pridruživanja i pristupanja Evropskoj uniji. Upravo ova činjenica ukazuje na to da bi proces pristupanja Svetskoj trgovinskoj organizaciji trebalo da predstavlja jedan od najvažnijih elemenata razvojne strategije Srbije tokom budućeg perioda.

Najznačajnije prednosti koje bi Srbija mogla ostvariti nakon ulaska u članstvo Svetske trgovinske organizacije ogledaju se u povoljnijim mogućnostima ulaska na tržišta drugih zemalja članica, razvoju efikasnijeg modela tržišne privrede i pružanju podsticaja za realizaciju reformi u oblasti zakonodavstva kojim se reguliše realizacija privrednih aktivnosti.⁵ Pored toga, članstvo Srbije u Svetskoj trgovinskoj organizaciji bi predstavljalo i određenu vrstu garancije stranim investitorima da je Srbija politički i ekonomski stabilna zemlja.

Nakon neuspešnih zahteva za održavanjem kontinuiteta članstva tadašnje Savezne Republike Jugoslavije u Opštem sporazumu o carinama i trgovini, koji je predstavljao prethodnika Svetske trgovinske organizacije, Vlada Savezne Republike Jugoslavije podnosi zvanični zahtev za prijem u članstvo ove organizacije, koji nije mogao biti prihvaćen zbog različitih spoljnotrgovinskih politika koje su Srbija i Crna Gora tada imale. Vlada Srbije i Crne Gore povlači tokom 2004. godine ovaj zahtev, nakon čega Vlada Republike Srbije, tokom iste godine, donosi odluku o podnošenju zahteva za članstvo Srbije u Svetskoj trgovinskoj organizaciji, koji je

⁴ www.wto.org/english/thewto_e/whatis_e/whatis_e.htm, posećeno 31.10.2017.

⁵ Bjelić, P. (2017): *Zašto je Svetska trgovinska organizacija važna za Evropsku uniju i svetsku trgovinu uopšte?*. Beograd: Centar za međunarodne i bezbednosne poslove

prihvaćen tokom 2005. godine.⁶ Nakon prihvatanja zahteva Generalni savet Svetske trgovinske organizacije osniva Radnu grupu zaduženu za pristupanje Srbije ovoj organizaciji. Ova Radna grupa je dobila mandat da proveri nivo usaglašenosti trgovinske politike Republike Srbije sa pravilima definisanim od strane Svetske trgovinske organizacije. Pored toga, ova grupa je imala i zadatak da proceni nivo saglasnosti sa obavezama (liberalizacija tržišta industrijskih i poljoprivrednih proizvoda i usluga) koje će Srbija preuzeti tokom bilateralnih pregovora sa članicama Svetske trgovinske organizacije.

Radna grupa za pristupanje Srbije Svetskoj trgovinskoj organizaciji se do sada sastala 13 puta, pri čemu je poslednji sastanak održan tokom 2013. godine, nakon čega je proces pristupanja faktički zamrznut.⁷ Kao osnovni problemi koji su se pojavili kao prepreka procesu pristupanja Srbije Svetskoj trgovinskoj organizaciji ističu se:⁸ GMO (genetički modifikovani organizmi), robna razmena, robne rezerve, i usluge.

Najveći problem u procesu pristupanja Srbije Svetskoj trgovinskoj organizaciji predstavlja Zakon o genetički modifikovanim organizmima koji je donet tokom 2009. godine. Promene u okviru ovog zakona predstavljaju jedan od osnovnih preduslova za ulazak Srbije u Svetsku trgovinsku organizaciju, ali i za zatvaranje tridesetog poglavlja pregovora o pristupanju Srbije Evropskoj uniji.⁹

4. Značaj pristupanja Svetskoj trgovinskoj organizaciji za pristupne pregovore Srbije sa Evropskom unijom

Članstvo Srbije u Svetskoj trgovinskoj organizaciji predstavlja preduslov bez kog nije moguće ostvariti članstvo u Evropskoj uniji. Ispunjenje ovog uslova predstavlja jedan od neophodnih elemenata za zatvaranje pregovaračkog poglavlja 30 koje se odnosi na ekonomske odnose sa inostranstvom. Nijedna od 28 zemalja članica Evropske unije nije mogla da uđe u članstvo unije pre nego što je postala članica Svetske trgovinske organizacije, tako da nije realno očekivati da će u slučaju Srbije biti napravljen izuzetak, posebno zbog činjenice da problem predstavlja Zakon o genetički modifikovanim organizmima na čijem usvajanju insistira i unija. Dodatni značaj ponovnog aktiviranja i ubrzavanja pregovaračkog procesa sa Svetskom trgovinskom organizacijom se ogleda i u eksplicitno iskazanim zahtevima Evropske unije da Srbija pre ulaska u njeno članstvo mora

⁶ Todorović, B. (2017): *Zašto Srbija treba da uđe u Svetsku trgovinsku organizaciju?* Beograd: Centar za međunarodne i bezbednosne poslove

⁷ Rapačić, S. (2016): *Stanje i perspektive pristupanja Srbije Svetskoj trgovinskoj organizaciji.* Beograd: Institut za međunarodnu politiku i ekonomiju

⁸ Ibid

⁹ <http://mondo.rs/a1021922/Info/Ekonomija/Srbija-i-Svetska-trgovinska-organizacija-Pristupanje-zamrznuto-zbog-Zakona-o-GMO.html>, posećeno 1.11.2017.

provesti određeno vreme u članstvu Svetske trgovinske organizacije kako bi se mogla obaviti kontrola da li ona poštuje procedure i pravila ove organizacije.

Evropska unija, od samog početka ulaska Srbije u Svetsku trgovinsku organizaciju pruža potpunu političku i tehničku podršku ovom procesu. Posebna pažnja Evropske unije, prilikom procesa pristupanja Srbije u članstvo Svetske trgovinske organizacije, je bila posvećena ujednačavanju nivoa koncesija koje je Srbija prihvatila sa obavezama koje je preuzela Evropska unija u okvirima članstva Svetske trgovinske organizacije, obzirom da će Srbija u budućnosti postati član unije. Evropska unija ovim ujednačavanjem želi da zaštiti sopstvene interese pošto je postojala opasnost da se pristankom Srbije na promene carinskih tarifa u određenim oblastima stvori presedan koji bi, nakon ulaska Srbije u članstvo, primorao i ostale države članice Evropske unije da promene svoje carine.¹⁰ Uprkos činjenici da je ovakav stav Evropske unije, pre svega, posledica želje za zaštitom sopstvenih ekonomskih interesa, on u značajnoj meri predstavlja i podršku Srbiji kroz jačanje njene pregovaračke pozicije tokom bilateralnih pregovora o ulasku u Svetsku trgovinsku organizaciju.

5. Step en ostvarene ekonomske liberalizacije Srbije u procesu pristupanja Svetskoj trgovinskoj organizaciji

Uprkos činjenici da proces pregovora o ulasku u članstvo Svetske trgovinske organizacije zvanično traje već 12 godina, Srbija je još uvek daleko od dobijanja statusa člana ove organizacije, ostavši na taj način jedna od tri evropske zemlje (uz Belorusiju i Bosnu i Hercegovinu) koja nije članica ove organizacije.

Proces ulaska Srbije u članstvo Svetske trgovinske organizacije se odvija paralelno na dva nivoa:¹¹

- multilateralnom, u okviru kog se realizuju aktivnosti u oblasti usklađivanja nacionalnog zakonodavstva Srbije sa pravilima Svetske trgovinske organizacije, i
- bilateralnom, koji uključuje pregovore u vezi sa nivoom liberalizacije pristupa tržištima roba i usluga sa zemljama članicama Svetske trgovinske organizacije koje su zainteresovane za potpisivanje ovih sporazuma sa Srbijom.

Srbija se već više od pet godina nalazi u završnoj fazi procesa ulaska u članstvo Svetske trgovinske organizacije. Pozitivan element u ovim pregovorima predstavlja činjenica da su bilateralni pregovori sa većinom zemalja članica Radne grupe za pristupanje uspešno završeni, što ukazuje na visok stepen ekonomske liberalizacije koja je ostvarena u procesu pristupanja Srbije Svetskoj trgovinskoj organizaciji. Pozitivan faktor u okviru procesa pristupanja Srbije Svetskoj trgovin-

¹⁰ Mišćević, T. (2009): *Pridruživanje Evropskoj uniji*. Beograd: Službeni glasnik

¹¹ Rapaić, S. (2013): *Svetska trgovinska organizacija i preduzeća u spoljnoj trgovini*. Beograd: Ekonomski fakultet univerziteta u Beogradu

skoj organizaciji predstavlja podrška ključnih članica ove organizacije, pri čemu se posebno mora istaći podrška Evropske unije.¹²

Jedan od najznačajnijih pozitivnih efekata pregovora sa Svetskom trgovinskom organizacijom i Evropskom unijom ogleda se u značajnom podizanju nivoa liberalizacije ekonomskog sistema Srbije, koji je u velikom broju elemenata (poput carinske politike, procedura ulaska stranih investitora na tržište i sl.) skoro u potpunosti usklađen sa zakonskim odredbama koje važe u zemljama sa najrazvijenijim privrednim sistemima.

Proces ekonomske liberalizacije u Srbiji je doveo do nastanka inicijalnih gubitnika na koje je otvaranje tržišta imalo veoma velike negativne efekte. Najveći gubitnici u procesu liberalizacije su, bez ikakve sumnje, bile kompanije u državnom i društvenom vlasništvu koje zbog niskog korišćenja kapaciteta, prevelikog broja radnika i neadekvatne ponude proizvoda i usluga nisu bile u mogućnosti da se na ravnopravan način tržišno nadmeću sa konkurentima iz inostranstva.

Najveće koristi od ekonomske liberalizacije su imali novi investitori iz inostranstva koji su preuzeli ili preuzimaju vodeću poziciju u velikom broju tržišnih sektora u Srbiji. Svetska trgovinska organizacija igra ključnu ulogu u ekonomskoj liberalizaciji nacionalnih tržišta, pre svega, kroz uspostavljanje standarda kojih se države koje žele da postanu njene članice moraju pridržavati. Pored pružanja pomoći tokom kreiranja poslovnog okruženja koje ohrabruje transparentnost i konkurentnost, proces pristupanja Svetskoj trgovinskoj organizaciji u značajnoj meri može poslužiti i kao jedan od argumenata koje Vlada Srbije može koristiti prilikom preduzimanja određenih mera koje nemaju veliku podršku među stanovništvom.

Ekonomska liberalizacija u Srbiji se ne može ograničiti isključivo na aktivnosti koje su usmerene u pravcu smanjenja ili ukidanja carina na određene proizvode ili na pretvaranje necarinskih ograničenja u carinske stope.¹³ Ukoliko nakon sniženja carinskih stopa dolazi do sprovođenja nekih drugih oblika sprečavanja slobodne konkurencije efekti trgovinske liberalizacije mogu biti u značajnoj meri umanjeni, mogu izostati u potpunosti ili mogu biti čak i negativni. Da bi se ostvarili potpuni efekti ekonomske liberalizacije koji nastaju kao rezultat procesa pridruživanja Srbije Svetskoj trgovinskoj organizaciji mora se obezbediti i jednaki tretman svih učesnika na tržištu, posebno u slučajevima javnih nabavki koje još uvek predstavljaju veliki problem u poslovanju.

Svetska trgovinska organizacija od zemalja koje su u procesu pristupanja zahteva da, u okviru svojih pravnih sistema, kreiraju sve preduslove koji su neophodni za liberalizaciju tržišta. Pored toga, pravni sistemi zemalja kandidata

¹² Todorović, B. (2017): *Zašto Srbija treba da uđe u Svetsku trgovinsku organizaciju?*. Beograd: Centar za međunarodne i bezbednosne poslove

¹³ Rapaić, S. (2013): *Svetska trgovinska organizacija i preduzeća u spoljnoj trgovini*. Beograd: Ekonomski fakultet univerziteta u Beogradu

za članstvo u Svetskoj trgovinskoj organizaciji moraju pružati i odgovarajuće osnove za funkcionisanje mehanizama slobodne tržišne konkurencije.¹⁴ Nakon ulaska Srbije u Svetsku trgovinsku organizaciju ova institucija ima pravo da kontroliše i stavi van snage sve mere i politike države koje mogu imati negativan uticaj na slobodu tržišta.

6. Prednosti spoljne trgovine i mikroekonomski modeli

Korisno je na ovom mestu ukratko se podsetiti nekih od osnovnih pouka ekonomske teorije spoljne trgovine, koja daje odgovore na pitanja zašto je spoljna trgovina dobra i poželjna, kako do nje dolazi i šta su njeni efekti, i zašto uprkos potencijalnim opštim dobicima od trgovine postoje otpori slobodnoj međunarodnoj trgovini.

Teorija spoljne trgovine je prilično razrađena i zasnovana na nekoliko poznatih mikroekonomskih modela, kao što su: klasičan Rikardov model, model specifičnih faktora, Hekšer-Olinov model, standardni model koji uključuje prethodna tri kao specijalne slučajeve, te modeli zasnovani na eksternoj ili internoj ekonomiji obima.

Najjednostavniji odgovor na pitanje zašto je spoljna trgovina dobra i poželjna, i u čemu su dobici od međunarodne trgovine, bi bio da spoljna trgovina pruža veće mogućnosti, u smislu granice proizvodnih mogućnosti i potencijalnog blagostanja, dok otpori slobodnoj međunarodnoj trgovini potiču od uticaja koji spoljna trgovina ima na raspodelu dohotka, tj. od činjenice da, pored potencijalnog opšteg boljitka, spoljna trgovina može da stvara pojedinačne dobitnike i gubitnike. Pretežući pozitivni efekti spoljne trgovine objašnjavaju se time da ukupni dobici nadmašuju ukupne gubitke, te da bi dobitnici mogli da kompenzuju gubitnike, a da i dalje ostane potencijal za popravljavanje položaja svih – Pareto poboljšanje.

Kada se radi o poželjnosti ili dobicima od trgovine, dve su osnovne vrste razloga zašto države imaju korist od međusobnetrgovine. Prvi razlog je što su različite, bilo u tehnologijama (produktivnosti), bilo u relativnoj raspoloživosti resursa. Specijalizuju se onda za one grane u kojima imaju komparativnu prednost. Važan uvid koji proizilazi iz Rikardovog modela je da komparativna prednost ne mora da bude iapsolutna prednost, što znači da se ekonomiji isplati da se specijalizuje u graniu kojoj je relativnonajmanje zaostala, čak i ako je manje produktivna u svim granama. Drugi razlog su rastući prinosi na obim ili ekonomija obima u proizvodnji. Na neki način, specijalizacija i “podela rada” među državama, ima paralelu u sličnim prednostima koje podela rada pruža unutar jedne države.

¹⁴ Bjelić, P. (2002): *Svetska trgovinska organizacija*. Beograd: Prometej

7. Problemi u procesu ulaska Srbije u članstvo Svetske trgovinske organizacije

Poseban otvoreni problem koji sprečava nastavak procesa pristupanja Srbije Svetskoj trgovinskoj organizaciji predstavljaju izmene Zakona o genetski modifikovanim organizmima i njegovo usaglašavanje sa zahtevima Svetske trgovinske organizacije, koji su identični sa zahtevima koje Evropska unija ima po ovom pitanju. Nastavak pregovora između Srbije i Svetske trgovinske organizacije uslovljen je ukidanjem faktičke zabrane prometa ovim vrstama proizvoda. Svetska trgovinska organizacija se zasniva na primeni principa da države koje su njene članice ne smeju imati definisanu sistemsku (apsolutnu) zabranu uvoza ili izvoza bilo koje vrste proizvoda za koje ne postoje neoborivi dokazi da ugrožavaju ljudsko zdravlje.¹⁵ Mediji u Republici Srbiji često pogrešno javnosti prezentuju informaciju o tome da je trgovina genetski modifikovanim proizvodima razlog zbog kog Srbija ne može ući u Svetsku trgovinsku organizaciju, koja se uopšte ni ne bavi konkretno ovom vrstom proizvoda, umesto da prezentuju informacije da problem predstavlja generalno bilo koji oblik trgovinskih zabrana koje određena zemlja može uvesti.

Svetska trgovinska organizacija ne dozvoljava zemljama članicama i kandidatima za članstvo da pregovaraju o usklađivanju nacionalnih propisa sa njenim principima i pravilima, tako da nijedna zemlja nije uspela da uđe u članstvo pre nego što je svoje celokupno zakonodavstvo prilagodila propisima ove organizacije. Srbija može, kao i veliki broj zemalja članica Evropske unije, koje takođe imaju rezervisan stav prema genetski modifikovanim organizmima, da iskoristi mogućnost da drugačije reši ovaj problem, poštujući pritom pravila Svetske trgovinske organizacije. Jedan od načina rešavanja ovog problema je primena sistema veoma strogih i detaljnih kontrola ove vrste proizvoda, njihovog posebnog označavanja i informisanja građana u vezi sa negativnim posledicama koje njihova upotreba može imati.¹⁶ Ukoliko želi da umani otpore javnosti i nastavi sa procesom priključenja Svetskoj trgovinskoj organizaciji Vlada Republike Srbije mora sprovesti široku kampanju informisanja građana i javnu raspravu tokom koje bi bili rešeni problemi u vezi sa korišćenjem genetski modifikovanih organizama i proizvoda.

Sadašnja situacija, u kojoj je Srbija na korak od ulaska u Svetsku trgovinsku organizaciju, se protekom vremena može samo dodatno iskomplikovati pošto postoji mogućnost da države koje uđu pre Srbije u ovu organizaciju zatraže nove ustupke u okviru bilateralnih pregovora, čime bi se samo dodatno produžio proces pristupanja ovoj organizaciji. Uslov za pristupanje Srbije Svetskoj trgovinskoj organizaciji, pored usklađivanja svih segmenata zakonodavstva, se ogleda i u uspešnom završetku svih

¹⁵ Todorović, B. (2017): *Zašto Srbija treba da uđe u Svetsku trgovinsku organizaciju?*. Beograd: Centar za međunarodne i bezbednosne poslove

¹⁶ Rapaić, S. (2016): *Stanje i perspektive pristupanja Srbije Svetskoj trgovinskoj organizaciji*. Beograd: Institut za međunarodnu politiku i ekonomiju

bilateralnih pregovora sa pojedinim zemljama članicama.¹⁷ Rusija, koja je Svetskoj trgovinskoj organizaciji pristupila u leto 2012. godine, je trenutno poslednja država koja je otpočela bilateralne pregovore sa Srbijom.

8. Koristi koje bi Srbija ostvarila članstvom u Svetskoj trgovinskoj organizaciji

Ulazak u Svetsku trgovinsku organizaciju sa sobom donosi veliki broj koristi državama koje postaju njene članice. Sve članice Svetske trgovinske organizacije su morale, pre pristupanja, da sprovedu značajne strukturne reforme svojih privrednih sistema i da liberalizuju trgovinu, čime su ostvareni dodatni pozitivni efekti na ekonomski razvoj i uključivanje u tokove globalne trgovine. Praksa je pokazala da članstvo u Svetskoj trgovinskoj organizaciji ima i pozitivan uticaj na sprovođenje reformi u okvirima države, koje kao posledicu imaju i povećanje obima trgovine i investicija.¹⁸

Ulazak Srbije u Svetsku trgovinsku organizaciju predstavljao bi i jedan od koraka njene pripreme za članstvo u Evropskoj uniji, koja je kolektivni član ove organizacije. Svetska trgovinska organizacija je veoma značajna za Evropsku uniju i sve njene članice, pre svega, zbog činjenice da su trgovinske aktivnosti u okviru unije u značajnoj meri pod uticajem ove organizacije.

Najznačajnija prednost koju bi Srbija ostvarila ulaskom u Svetsku trgovinsku organizaciju ogleda se u ravnopravnom pristupu globalnom tržištu od 7 milijardi ljudi, na kon se reliazuje skoro 98% ukupne svetske vrednosti trgovinskih transakcija.¹⁹ Ova mogućnost se pokazala kao posebno korisna na primeru malih zemalja, poput Srbije, koje nisu dovoljno snažne da bi mogle da održavaju aktivnu ekonomsku saradnju sa drugim zemljama. Ulaskom u Svetsku trgovinsku organizaciju sprska privreda će biti u mogućnosti da ima povoljnije uslove poslovanja i na tržištima zemalja sa kojima Srbija nema potpisane bilateralne ugovore o trgovini.²⁰

Članstvo u Svetskoj trgovinskoj organizaciji bi Srbiji omogućilo i mnogo brže i jednostavnije rešavanje eventualnih trgovinskih sporova sa drugim zemljama. Ova mogućnost je posebno značajna ukoliko se u obzir uzme činjenica da regulativa u okviru CEFTA sporazuma, koji je Srbija potpisala, ne omogućava efikasno rešavanje sporova. Članstvo u Svetskoj trgovinskoj organizaciji bi omogućilo

¹⁷ Todorović, B. (2017): *Zašto Srbija treba da uđe u Svetsku trgovinsku organizaciju?*. Beograd: Centar za međunarodne i bezbednosne poslove

¹⁸ Todorović, B. (2017): *Zašto Srbija treba da uđe u Svetsku trgovinsku organizaciju?*. Beograd: Centar za međunarodne i bezbednosne poslove

¹⁹ Bjelić, P. (2017): *Zašto je Svetska trgovinska organizacija važna za Evropsku uniju i svetsku trgovinu uopšte?*. Beograd: Centar za međunarodne i bezbednosne poslove

²⁰ Todorović, B. (2017): *Zašto Srbija treba da uđe u Svetsku trgovinsku organizaciju?*. Beograd: Centar za međunarodne i bezbednosne poslove

Srbiji da sve ove sporove rešava u njenim okvirima, na mnogo brži i jednostavniji način. Ova prednost bi posebno bila korisna u slučaju sporova koji se ponavljaju, poput uvođenja necarinskih prepreka koje se obnavljaju iz godine u godinu, od kojih bi države ekonomski partneri odustale, pre svega, zbog visokih troškova rešavanja sporova kojima bi bile izložene u Svetskoj trgovinskoj organizaciji.²¹

9. Iskustva Češke Republike sa članstvom u Svetskoj trgovinskoj organizaciji

Češka Repulika je član Svetske trgovinske organizacije od prvog januara 1995. godine. Nakon pristupanja Evropskoj uniji, 1. maja 2004. godine, Češka Republika ima status članice Evropske unije koja je po automatizmu i u članstvu Svetske trgovinske organizacije.²² Pristupanje Evropskoj uniji dovelo je do značajnih promena u statusu Češke Republike u Svetskoj trgovinskoj organizaciji, uprkos tome što je ona i dalje zadržala status ravnopravnog člana i sve multilateralne sporazume i obaveze koje je preuzela na osnovu članstva. Prihvatanjem zajedničke trgovinske politike koja važi na nivou unije, Češka se nije odrekla i svojih nacionalnih ekonomskih interesa, ali ih je prilagodila trgovinskim interesima koji važe za sve zemlje koje su u članstvu Evropske unije. Za razliku od drugih zemalja članica Svetske trgovinske organizacije, zemlje koje su članice Evropske unije nastupaju zajednički, pri čemu sve njihove stavove zastupaju predstavnici Evropske komisije, umesto nacionalnih predstavnika.²³ Primer Češke će morati da sledi i Srbija, ukoliko se priključi Evropskoj uniji nakon što završi proces pristupanja Svetskoj trgovinskoj organizaciji.

Usvajanjem zajedničke trgovinske politike, Češka Republika je na sebe preuzela i sve one obaveze koje je Evropska unija preuzela u okvirima Svetske trgovinske organizacije. Prihvatanje obaveza koje su definisane na osnovu članstva u Evropskoj uniji je imalo pozitivan efekat na olakšavanje ulaska stranih kompanija na tržište Češke. Sve odredbe nacionalnog zakonodavstva Češke su morale biti usklađene sa odgovarajućim odredbama zakonodavstva Evropske unije, kako bi ona mogla da prihvati članstvo u Svetskoj trgovinskoj organizaciji kao zemlja članica unije i sve obaveze koje na osnovu toga proističu. Češka je, usklađivanjem zakonskih odredbi, prihvatila carinske tarife koje koristi Evropska unija, istovremeno prenoseći na nju i ovlašćenja za obavljanje svih trgovinskih pregovora i definisanje trgovinsko-zaštitnih mera.²⁴

²¹ Rapaić, S. (2016): *Stanje i perspektive prsitupanja Srbije Svetskoj trgovinskoj organizaciji*. Beograd: Institut za međunarodnu politiku i ekonomiju

²² www.wto.org/english/thewto_e/countries_e/czech_republic_e.htm, posećeno 12.2.2018.

²³ www.mzp.cz/en/world_trade_organization, posećeno 12.2.2018.

²⁴ Trade and environment division (2006). *Trade and Environment at the WTO*. Geneva: World Trade Organization

Češka Republika je Evropskoj uniji pristupila zajedno sa još deset zemalja centralne i istočne Evrope, koje su skoro sve bile članice Svetske trgovinske organizacije. Aktivnosti u vezi prilagođavanja statusa Češke Republike i novih zemalja članica Evropske unije zahtevima Svetske trgovinske organizacije su otpočele u proleće 2003. godine. Osnovni cilj koji je Češka pokušavala da ostvari tokom ovih pregovora se ogledao u održavanju ravnoteže između trgovinske liberalizacije i unapređenja multilateralnih pravila obavljanja trgovinskih transakcija. Pored toga, Češka Republika je akcenat stavila i na podizanje nivoa transparentnosti, poverenja i predvidljivosti trgovinskih odnosa. Češka, kao zemlja sa razvijenom poljoprivrednom proizvodnjom, pokušala je da tokom pregovora sa Evropskom unijom u ovom segmentu sebi obezbedi povoljniji tretman, što bi trebala da učini i Srbija ukoliko želi da zaštiti interese ovog sektora.

Značajan akcenat prilikom pregovora Češka je stavila i na olakšanje njenog pristupa inostranim tržištima nepoljoprivrednih proizvoda. Češka zauzima stav da je neophodno da se reše problemi koji se odnose na maksimalne carine i ne carinske prepreke, koje trenutno predstavljaju značajnu prepreku prilikom pristupa inostranim tržištima.²⁵ Pored toga, Češka se zalaže i da najnerazvijenije zemlje imaju povlašćeni tretman, koji bi predstavljao određenu vrstu pomoći od strane najrazvijenijih zemalja članica Svetske trgovinske organizacije.

Značajan segment pregovora, koji bi Srbija mogla da primeni, ogleda se u nastojanjima Češke da sačuva nacionalno tržište u oblasti javnih usluga, sve do trenutka dok se ne završe pregovori o usklađivanju sa njenim nacionalnim propisima. Češka je, tokom svojih pregovora, akcenat stavila i na odnose između obavljanja trgovinskih transakcija i konkurencije, na transparentnost procesa javnih nabavki i na načine za ulazak stranih investitora na njeno tržište.²⁶ Velika pažnja je posvećena i zaštiti geografskog porekla, koja se u Srbiji ne koristi u dovoljnoj meri, a koja bi mogla da značajno poboljša konkurentsku poziciju u velikom broju privrednih grana.

10. Zaključak

Članstvo u Svetskoj trgovinskoj organizaciji bi imalo veoma pozitivan efekat na ekonomski razvoj Republike Srbije, a za to je potrebno pripremiti regulatorni okvir u raznorodnim oblastima uključujući i osiguranje²⁷. Aktivnosti koje je Srbija preduzela tokom procesa pristupanja Svetskoj trgovinskoj organizaciji dovele su do značajnih strukturnih reformi i ekonomske liberalizacije koja je u velikoj meri podigla nivo otvorenosti nacionalnog tržišta. Regulisana liberalizacija trgovine koja je

²⁵ www.wto.org/english/thewto_e/countries_e/czech_republic_e.htm, posećeno 12.2.2018.

²⁶ Trade and environment division (2006): *Trade and Environment at the WTO*. Geneva: World Trade Organization

²⁷ Vid. Jovanović, S. (2013) *Regulation of the private group insurance contract in the European law*, Evropska revija za pravo osiguranja, vol. 12, iss. 2, pp. 8-16

ostvarena tokom procesa pridruživanja Svetskoj trgovinskoj organizaciji direktno je uticala na sprovođenje određenih reformi na nacionalnom nivou, koje su za posledicu imale povećanje vrednosti inostranih investicija i trgovine sa inostranstvom.

Pristupanje Svetskoj trgovinskoj organizaciji sa sobom donosi veliki broj potencijalnih mogućnosti za ostvarivanje dugoročnog privrednog rasta i održivog razvoja nacionalne privrede. Češka posmatra Svetsku trgovinsku organizaciju kao najznačajniji kanal liberalizacije trgovine i poboljšanja kvaliteta i efikasnosti pravila na osnovu kojih se ona obavlja. Pored toga, članstvo u Svetskoj trgovinskoj organizaciji donosi i brojne pogodnosti, što se jasno može videti i na primeru Češke Republike.

Ulazak u Svetsku trgovinsku organizaciju predstavlja i jedan od načina na koji se Srbija priprema za članstvo u Evropskoj uniji, koja je kolektivni član Svetske trgovinske organizacije, u čijem članstvu pored nezavisnih zemalja mogu biti i carinske unije. Zatvaranje pregovora sa Svetskom trgovinskom organizacijom će, ukoliko bude praćeno drugim odgovarajućim merama ekonomske politike, dovesti do jačanja nacionalne privrede i njene dodatne ekonomske liberalizacije.

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DEGREE OF LIBERALIZATION IN SERBIAN ECONOMY AS A PART OF THE ACCESSION PROCESS TO THE WORLD TRADE ORGANIZATION

Abstract: *The aim of this paper is to examine some of the current issues regarding the degree of liberalization in Serbian economy as a part of the accession process to the World Trade Organization. Serbia's membership of the World Trade Organization is prerequisite for closing Chapter 30 in the accession negotiations with the European Union. The membership of the World Trade Organization should have a highly positive effect on the economic development of the Republic of Serbia. Closing the negotiations with the World Trade Organization will, if accompanied by other relevant economic policy measures, result in a stronger national economy and its further economic liberalization. Within the liberalization process, it is necessary for the state to intervene by its measures, as necessary, in certain areas of economic and social life.*

Keywords: *liberalization, economy, World trade organisation*

MEĐUNARODNOPRAVNI KARAKTER GENOCIDA

Apstrakt: *Rad je posvećen genocidu kao jednom od najtežih međunarodnih krivičnih dela sankcionisanog kako unutrašnjim (nacionalnim), tako i međunarodnim pravom. U radu se nastoji da se analizira savremeni međunarodnopravni karakter genocida, njegove osnovne osobine, odlike i posledice. Osnovni cilj i zamisao rada jeste da se kroz analizu ovog međunarodnog krivičnog dela dokaže koliko velike štetne posledice ono može imati po neku etničku, versku, rasnu, manjinsku ili političku grupu i ujedno da se skrene pažnja na sve subjekte međunarodnog javnog prava u pogledu preduzimanja mera za njegovu prevenciju i sprečavanje.*

Ključne reči: *genocid, genocidna namera, rat, oružani sukobi, zaštićena grupa, kažnjavanje.*

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1. Uvod

Baš kao što je to objašnjeno u međunarodnom ratnom i humanitarnom pravu, svaki oružani sukob, bilo unutrašnji bilo spoljašnji, sa sobom može nositi nesagledive posledice. Te posledice ne tiču se samo države kao subjekta međunarodnog prava, već i njene nacije u celini. Iako se teži da se svaki unutrašnji ili međunarodni sukob reši mirnim putem, putem pregovora i diplomatije, nažalost, u nekim slučajevima to nije baš tako. Izbijanjem ratnog sukoba najveće posledice snose stanovnici zaraćenih strana.

U težnji da se na brz i efikasan način postigne određeni cilj, zaraćene strane u tom smeru ne biraju sredstva za njegovu realizaciju. Opšte je poznato da je Hitlerova nacistička Nemačka, tokom Drugog svetskog rata, koristila novi metod ratovanja poznat pod nazivom „Munjeviti rat” (Blitzkrieg). Ovaj metod označavao je brz, efikasan i munjevit prodor na neprijateljsku teritoriju praćen nemilosrdnim razaranjem i uništavanjem stanovništva. U toj borbi, nacisti su planski i sistematski pobili nekoliko desetina miliona Jevreja. Ta zverstva, kao i zverstva ustaša u Nezavisnoj Državi Hrvatskoj nad nehrvatskim življem (Srbi, Jevreji i Romi), možemo posmatrati kao jedne od prvih primera genocida u savremenoj istoriji, iako tada genocid kao pojam nije ni postojao.

Njegovo uvođenje u međunarodno i nacionalno zakonodavstvo desiće se ubrzo nakon završetka Drugog svetskog rata. U cilju da se brutalnosti iz tog rata više nikada ne dogode, pod okriljem Ujedinjenih nacija takva ponašanja definisana su kao međunarodna krivična dela (ratni zločini, agresija, zločini protiv čovečnosti, kršenje zakona i običaja ratovanja), a među njima bio je i genocid.

U kolikoj meri se uspelo u toj nameri, skorija dešavanja iz savremene istorije, nažalost, ne potvrđuju tu zamisao. Drugim rečima, ideja je dobra, ali realizacija loša. Naravno, kao što je već opšte poznato, zločin genocida se ne dešava samo u ratu, već i u mirnodopskom periodu, o čemu će se u ovom radu svakako govoriti.

2. Opšta podela međunarodnih krivičnih dela

a) Krivična dela protiv čovečnosti

1. Genocid
2. Zločin protiv čovečnosti
3. Rasna i druga diskriminacija
4. Trgovina ljudima
5. Trgovina decom radi usvojenja
6. Zasnivanje ropskog odnosa i prevoz lica u ropskom odnosu
7. Međunarodni terorizam
8. Uzimanje talaca
9. Finansiranje terorizma

b) Krivična dela ratnih zločina

1. Ratni zločin protiv civilnog stanovništva
2. Ratni zločin protiv ranjenika i bolesnika
3. Ratni zločin protiv ratnih zarobljenika
4. Upotreba nedozvoljenih sredstava borbe
5. Protivpravno ubijanje i ranjavanje neprijatelja
6. Protivpravno oduzimanje stvari od ubijenih
7. Povreda parlamenta
8. Surovo postupanje s ranjenicima, bolesnicima i ratnim zarobljenicima
9. Neopravdano odlaganje repatrijacije ratnih zarobljenika
10. Uništavanje kulturnih dobara
11. Zloupotreba međunarodnih znakova

v) Krivična dela protiv mira

1. Agresivni rat

g) Opšta krivična dela protiv čovečnosti i drugih dobara zaštićenih međunarodnim pravom

1. Organizovanje i podsticanje na izvršenje genocida i ratnih zločina
2. Nedozvoljena proizvodnja oružja čija je upotreba zabranjena
3. Nesprečavanje vršenja krivičnih dela protiv čovečnosti i drugih dobara zaštićenih međunarodnim pravom¹

3. Definisanje pojma genocida

Ovo krivično delo najčešće se određuje kao sistematsko uništavanje jedne etničke grupe ili čitavih naroda, ubijanjem ili masovnim istrebljivanjem njenih stanovnika i rasturanjem njenih političkih, socijalnih, kulturnih i religioznih ustanova.² Ovim međunarodnim krivičnim delom uskraćuje se ljudski opstanak određenoj grupi, odnosno pravo na život. Imajući u vidu karakter i posledice, krivično delo genocida spada u krivična dela kod kojih je najviše izražen međunarodni karakter, odnosno, za koja je međunarodna zajednica najviše zainteresovana da počinioци tog krivičnog dela dođu pod udar krivičnih sankcija.³

Međunarodno krivično delo genocida u krivično pravo uveo je poljski pravnik Rafael Lemkin. Sama reč genocid je nastala od dve reči – od grčke „genos” što znači rod, narod i latinske „occidere” – ubiti. Ovaj naziv je usvojila Generalna

¹ Dorđević Dorđe (2009): „Krivično pravo – posebni deo”, Kriminalističko-policijska akademija, Beograd, 266-267.

² Nogo Sreto (2016): „Međunarodno krivično pravo”, Catena Mundi, Beograd, 100, fn 55.

³ *Ibid.*

skupština UN na prvom zasjedanju, označavajući da se to krivično delo „protivi moralnim zakonima, kao i duhu i ciljevima UN”.⁴

Iako se pojavio kao „podvrsta zločina protiv čovečnosti”, genocid je ubrzo dobio autonoman status i sadržinu kao jedno od najtežih krivičnih dela današnjice. On se danas naziva „zločinom nad zločinima”. Genocid kao međunarodno krivično delo određuju tri elementa: a) objektivni sastojak – *actus reus*, b) subjektivni sastojak – *mens rea*, c) objekt dela – skupina ili grupa – žrtva. Osnov za ovu inkriminaciju nalazi se u Konvenciji o sprečavanju i kažnjavanju zločina genocida iz 1948. godine koja u članu 2. određuje pojam i elemente ovog međunarodnog krivičnog dela.⁵

Najkraće rečeno, to je sistematsko uništavanje čitavih naroda, plemena ili drugih ljudskih grupa. Konvencijom o sprečavanju i kažnjavanju zločina genocida (1948) države ugovornice su potvrdile da genocid, bez obzira na to da li je izvršen za vreme mira ili rata, predstavlja međunarodno krivično delo i obavezale su se da ga spreče i kazne.⁶

Prema Konvenciji, genocidom se smatra „bilo koje od sledećih dela učinjenih u nameri potpunog ili delimičnog uništenja jedne nacionalne, etničke, rasne ili verske grupe kao takve: a) ubistvo članova grupe; b) teška povreda fizičkog ili mentalnog integriteta članova grupe; c) namerno podvrgavanje članova grupe životnim uslovima koji treba da dovedu do njenog potpunog ili delimičnog fizičkog uništenja; d) mere uperene na sprečavanje rađanja u okviru grupe; e) prinudno premeštanje dece iz jedne grupe u drugu. Na isti način ovo delo definisano je i u nekim drugim dokumentima, pre svega u Statutu stalnog Međunarodnog krivičnog suda (Rimski statut).⁷

Statut međunarodnog vojnog suda usvojen na osnovu Londonskog sporazuma savezničkih sila 8. avgusta 1945. godine (Nirnbërška presuda, 1948: 13-19) u članu 6. određuje međunarodna krivična dela čiji će učinioci kao pojedinci ili kao članovi organizacije biti suđeni od strane ovog suda. To su: a) zločini protiv mira, b) ratni zločini i c) zločini protiv čovečnosti. Pored neposrednih izvršilaca ovih međunarodnih krivičnih dela (zločina), krivično su odgovorna i lica koja se javljaju u svojstvu vođe, organizatora, podstrekača ili drugog saučesnika, a koji su učestvovali u sastavljanju ili izvršenju nekog zajedničkog plana ili zavere radi izvršenja nekog od napred navedenih zločina. Ovde se zapravo radi o odgovornosti i kažnjavanju saučesnika za izvršena dela po principu subjektivne akcesorne krivične odgovornosti. Učiniocu ovih krivičnih dela u smislu odredbe čl. 27. i 28. Statuta, mogu se izreći sledeće kazne: a) smrtna kazna, b) druga vrsta

⁴ *Ibid.*

⁵ Jovašević Dragan (2011): „Zločin genocida u teoriji i praksi – međunarodno i domaće krivično pravo”, Vojno delo, proleće/2011, 74.

⁶ Paunović Milan, Krivokapić Boris, Krstić Ivana (2015): „Međunarodna ljudska prava”, Centar za izdavaštvo i informisanje Pravnog fakulteta Univerziteta u Beogradu, 324.

⁷ *Ibid.*

kazne (zatvora) koju sud nađe za pravednu i c) konfiskacija (oduzimanje svake ukradene) imovine.⁸

Statut Nirnberškog suda ne priznaje zločin genocida kao samostalnu inkriminaciju, već je ona obuhvaćena pojmom zločin protiv čovečnosti. Zločin protiv čovečnosti (član 6. stav 2. tačka c.) je po prvi put definisan upravo Statutom Međunarodnog vojnog suda. Tu spadaju sledeći akti: 1. ubistvo, 2. istrebljenje, 3. porobljavanje, 4. deportacija i 5. ostala nečovečna dela. Za postojanje zločina protiv čovečnosti bitno je postojanje još dva elementa. To su: a) da je radnja izvršena protiv bilo kog civilnog stanovništva i b) da se radnja preduzima u određeno vreme – pre ili za vreme trajanja rata.⁹

Genocid je pravni pojam. On je ušao najpre u pravno-političku upotrebu usvajanjem Rezolucije 96 (I) Generalne skupštine OUN od 11. novembra 1946. To je, inače, bila među prvim rezolucijama koje je usvojila Generalna skupština ove novoformirane organizacije. U ovoj rezoluciji se konstatuje kako je „genocid osporavanje prava na postojanje čitavim ljudskim grupama, isto kao što je homocid osporavanje prava na život individualnim ljudskim bićima”, te da je takvo osporavanje „šokira savest čovečanstva, rezultira velikim gubicima po čovečanstvo u kulturnim i drugim doprinosima reprezentovanim od tih ljudskih grupa” i da je u suprotnosti sa „moralnim zakonima, duhom i ciljevima Ujedinjenih nacija”. Mnogi primeri takvog zločina genocida su učinjeni kada su rasne, religijske, političke i druge grupe uništene, u celini ili delimično. Kažnjavanje zločina genocida je predmet međunarodnog staranja, i kažnjiv je u odnosu na privatna lica, javne službenike i državnike, bez obzira da li je izvršen „na rasnoj, verskoj, političkoj ili drugoj osnovi”.¹⁰

4. Genocid u međunarodnim aktima

Genocid, iako je kao pojava poznat otkada postoji čovečanstvo, kao krivično delo u međunarodnom i unutrašnjem krivičnom pravu pojedinih zemalja javlja se tek nešto više od pola veka. Krivično delo genocida je ustanovljeno Konvencijom o sprečavanju i kažnjavanju zločina genocida iz 1948. godine (stupila na snagu 12. januara 1951. godine). Donekle iznenađuje činjenica da do danas Konvenciju nije ratifikovao veliki broj država (Konvenciju je ratifikovalo 116 zemalja).¹¹

⁸ Jovašević Dragan (2016): „Zločin genocida u teoriji i praksi: međunarodno i krivično pravo Bosne i Hercegovine”, Zbornik IKSI, 1/2016, 20.

⁹ *Ibid*, 20-21.

¹⁰ Šuvaković V. Uroš, Rakić M. Branko (2017): „Genocid i etničko čišćenje ili o odnosu dispozicije jednog međunarodno-krivičnog dela i jednog sociološko-politikološkog pojma”, Strani pravni život, 2/2017, 60, fn 6.

¹¹ Stojanović Zoran (2008): „Međunarodno krivično pravo”, Beograd, 121-122.

Konvencija o sprečavanju i kažnjavanju zločina genocida na dosta precizan način određuje biće ovog krivičnog dela, a sadrži i odredbe koje se odnose na primenu nekih instituta opšteg dela u odnosu na ovo krivično delo, pa u tom pogledu predstavlja izuzetak u pozitivnom smislu u odnosu na većinu međunarodnih ugovora kojima se predviđaju određena međunarodna krivična dela.¹²

Statut međunarodnog krivičnog suda pod krivičnim delom genocida podrazumeva svaku radnju koja ima cilj da potpuno ili delimično uništi nacionalnu, etničku, rasnu ili versku grupu, preduzimanjem neke od sledećih radnji:

1. Uništavanje članova grupe;
2. Prouzrokovanje teških fizičkih ili mentalnih patnji članova grupe;
3. Namerno podvrgavanje grupe životnim uslovima koji treba da dovedu do njenog potpunog ili delimičnog uništenja;
4. Preduzimanjem mera koje su uperene ka sprečavanju rađanja u okviru grupe;
5. Prinudno premeštanje dece iz jedne grupe u drugu¹³

Prema Rimskom statutu Međunarodnog krivičnog suda, član 6.krivičnim delom genocida smatra se bilo koja od sledećih radnji počinjenih u nameri da se, u celini ili delimično, uništi nacionalna, etnička, rasna ili verska grupa, i to preduzimanjem neke od sledećih radnji:

- a) Ubijanje članova grupe
- b) Prouzrokovanje teških fizičkih ili mentalnih patnji članova grupe;
- c) Namerno podvrgavanje grupe životnim uslovima koji treba da dovedu do njenog potpunog ili delimičnog uništenja;
- d) Preduzimanjem mera koje su uperene ka sprečavanju rađanja u okviru grupe;
- e) Prinudno premeštanje dece iz jedne grupe u drugu¹⁴

5. Genocidna namera

Karakteristično za ovo krivično delo i njegov, moglo bi se reći centralni element, jeste namera učinioca da potpuno ili delimično uništi neku nacionalnu, etničku, rasnu ili versku grupu (genocidna namera). Genocidna namera mora biti upravljena na to da se potpuno ili delimično uništi neka nacionalna, etnička, rasna ili verska grupa kao takva. To znači se radnja izvršenja genocida preduzima prema pojedincima samo zato što su pripadnici određene grupe. Za sadržaj ove namere je karakteristična neselektivnost u pogledu toga prema kojim pripadnicima grupe s obzirom na njihova svojstva (pol, starost, društveni status)

¹² *Ibid*, 122.

¹³ Nogo Sreto, 102, fn 61.

¹⁴ *Ibid*, 103, fn 62.

je usmerena. Irelevantno je za postojanje genocida da li ta namera postoji radi ostavriivanja i nekih drugih daljih ciljeva (na primer, osvajanja teritorija, prisvajanja imovine), ili se zasniva na nekim pobudama kao što su mržnja, osveta i sl. Međutim, u slučajevima kada se ova namera prepliće i sa nekim drugim subjektivnim elementima, otežano je utvrđivanje njenog postojanja. U svakom slučaju, genocidna namera mora biti dominantna.¹⁵

Jedna od specifičnosti koja neposredno ili posredno utiče na kompleksnost utvrđivanja postojanja genocidne namere jeste kvalitativna i kvantitativna komponenta zločina koje su od krucijalne važnosti u postupku dokazivanja odnosno utvrđivanja postojanja genocidne namere kao nužnog odnosno kumulativno propisanog uslova za postojanje genocida.¹⁶

Bitno obeležje krivičnog dela genocida jeste postojanje genocidne namere da se potpuno ili delimično uništi neka nacionalna, etnička, rasna ili verska grupa. Ukoliko nema genocidne namere, onda takva krivična dela predstavljaju krivična dela ratnih zločina. Krivična dela etničkog čišćenja uz postojanje genocidne namere smatraju se krivičnim delom genocida. Za razliku od krivičnih dela ratnih zločina, genocid se može izvršiti i u miru. Ovo krivično delo vrši se uz direktni umišljaj. Imajući u vidu njegovu težinu i posledice po međunarodno krivično pravo, ovo delo ne zastareva.¹⁷

Nameru kod dela genocida možemo tretirati kao osnovu bića krivičnog dela, koje je u jednom smislu i značajnije od *actus reus*. Ovo utoliko što se pojedini oblici *actus reus* genocida mogu sresti i kod drugih međunarodnih krivičnih dela. Hana Arent navodi da je namera kod Ajhmana¹⁸ da realizuje „konačno rešenje” bila toliko izražena da su vojni komandanti Rajha izražavali proteste zbog delovanja Ajhmana koji je zaustavljao vojne transporte koji su išli u susret dolazećoj sovjetskoj armiji kako bi prioritarno prolazili transporti Jevreja ka Aušvicu i Treblinku.¹⁹

Imajući u vidu da se namera tretira kao psihički odnos učiniooca prema delu, to je neophodno da se namera utvrđuje za svakog okrivljenog ponaosob. To znači, utvrđivati nameru kao stanje svesti učiniooca iz čega proističe i fizički odgovor na radnje dela. Iz tog razloga je važno ukazati da se genocidna namera ne može utvrđivati kao namera u okviru „zajedničkog zločinačkog poduhvata”. To pruža mogućnost da se genocidna namera utvrđuje iz vršenja pojedinih dela koja sama sebi, ili čak ni zajedno sa drugim delima nužno ne predstavljaju delo

¹⁵ Stojanović Zoran, Delić Nataša (2015): „Krivično pravo – posebni deo”, Pravna knjiga, Beograd, 313.

¹⁶ Karović Sadmir (2014): „Kompleksnost utvrđivanja postojanja genocidne namere”, Zbornik radova Pravnog fakulteta u Splitu, 1/2014, 122.

¹⁷ Nogo Sreto, 103.

¹⁸ Adolf Ajhman (1906-1962), tvorac nacističkog „konačnog rešenja”

¹⁹ Đorđević Goran (2014): „Odgovornost za međunarodna krivična dela”, doktorska disertacija, Pravni fakultet Univerziteta u Nišu, 86, fn 317.

genocida. Tako u presudi Haškog tribunala u predmetu Krstić, Pretresno veće ističe: „da činjenica premeštanja ide u prilog konstataciji veća da su neki članovi Glavnog štaba vojske Republike Srpske nameravali da unište bosanske Muslimane u Srebrenici. To što prisilno premeštanje samo po sebi ne čini genocidno delo, ne isključuje mogućnost da se Pretresno veće na to osloni kao na dokaz o nameri članova Glavnog štaba vojske Republike Srpske. Genocidna namera može se, između ostalog, izvesti i iz dokaza o izvršenju drugih kažnjivih dela koja su sistematski uperena protiv iste grupe.”²⁰

Subjektivni element krivičnog dela genocida (*mens rea*) predstavlja namera da se u potpunosti ili delimično uništi nacionalna, rasna, etnička ili verska grupa. Namera (lat. *dolus*, eng. *intent*) je institut međunarodnog krivičnog prava čiji ekvivalent u nacionalnim krivičnim zakonodavstvima (uključujući i zakonodavstva sa prostora bivše Jugoslavije) čini umišljaj, i. e. volja i svest da se prouzrokuje zabranjena posledica, kao oblik krivice koji predstavlja opšti uslov kažnjivosti kod mnogih krivičnih dela.²¹

I dok se kod drugih krivičnih dela (zločina) zahteva „obična” namera (umišljaj), kod genocida je nužno utvrditi postojanje specijalne namere (lat. *dolus specialis*). Ekskluzivitet i posebnost namere koja konstituiše zločin genocida ogleda se u tome što ta namera mora obuhvatiti volju i svest da se učini neka od alternativnih radnji izvršenja genocida, ali da te radnje nisu same sebi cilj, već su samo modus za postizanje drugog, višeg cilja, a to je uništenje neke od Konvencijom zaštićenih grupa.²²

6. Osnovna obeležja, stadijumi razvoja i vrste genocida

Govoreći o obeležjima dela genocida, može se reći da postoje dve vrste osnovnih elemenata dela: subjektivni i objektivni element. Objektivni element se javlja u dva oblika i to kao uništenje zaštićene grupe ili dela grupe i sama radnja ostvarenja dela, i to shvaćena kao „niz različitih delatnosti”, dok subjektivni element predstavlja namera učinioaca da se uništi zaštićena grupa ili deo grupe. *Actus reus* ovog krivičnog dela ogleda se u preduzimanju radnji kao što su: „a) ubistvo članova grupe, b) teška povreda fizičkog ili mentalnog integriteta članova grupe, v) namerno podvrgavanje grupe takvim životnim uslovima koji treba da dovedu do njenog potpunog ili delimičnog fizičkog uništenja, g) mere usmerene na sprečavanje rađanja u okviru grupe i d) prinudno premeštanje dece iz jedne grupe u drugu”. Kao radnje izvršenja označene su: a) genocid, b) spora-

²⁰ *Ibid*, 86-87, fn 318.

²¹ Gurda Vedad (2015): „Procesuiranje genocida u Bosni i Hercegovini pred međunarodnim, nacionalnim i inostranim sudovima”, *Monumenta Srebrenica*, 4/2015, 50-51, fn 76.

²² *Ibid*, fn 78.

zum o izvršenju genocida, v) neposredno i javno podsticanje na izvršenje genocida, g) pokušaj genocida i d) saučesništvo u genocidu.²³

Subjektivni element predstavlja posebno važan segment utvrđivanja krivične odgovornosti učinioca ovog dela. To podrazumeva utvrđivanje subjektivnog odnosa svakog učinioca prema delu genocida u odnosu na obeležja ovog dela kao što su: „namera da uništi”, „u celosti ili delimično”, „grupa kao takva”.²⁴

Gregori H. Stanton, predsednik Genocide Watch²⁵, razvio je ukupno deset stadijuma u razvoju genocida, i to:

1. **Klasifikacija** (sve kulture imaju kategorije kako bi razlikovale ljude u „nas i njih” po etničkoj, rasnoj, religijskoj ili nacionalnoj pripadnosti: nemačkom i Jevrejinu, Hutu i Tutsi)
2. **Simbolizacija** (mi damo imena ili druge simbole klasifikaciji, mi imenujemo ljude „Jevreje” ili „Cigane”, ili ih razlikujemo bojama i oblačenjem; i primeni simbola članovima grupe)
3. **Diskriminacija** (dominantna grupa koristi zakon, običaj i političku moć da uskrati prava drugih grupa)
4. **Dehumanizacija** (jedna grupa negira čovečnost druge grupe, članovi su izjednačeni sa životinjama, štetočinama, insektima ili bolestima)
5. **Organizacija** (genocid je uvek organizovan, obično od strane države, često koristeći milicije kako bi se osigurala odgovornost države; ponekad je organizacija neformalna ili decentralizovana)
6. **Polarizacija** (ekstremisti pogađaju grupe, grupe mržnju emituju koristeći propagandu)
7. **Priprema** (lideri nacionalnih ili izvršnih grupa planiraju „konačno rešenje” Jevrejima, Jermenima, Tutsima ili drugim ciljnim grupama)
8. **Izazov** (žrtve su identifikovane i izdvojene zbog svog etničkog ili verskog identiteta)
9. **Eksterminacija** (počinje i brzo postaje masovno ubijanje koje se legalno zove „genocid”; to je „istrebljenje” jer ubice ne veruju da su njihove žrtve u potpunosti ljudske)
10. **Denijal** (poslednja faza koja traje i uvek prati genocid, to je jedan od najsigurnijih indikatora daljeg genocidnog masakra; počinioci genocida otkopavaju masovne grobnice, spaljuju tela, pokušavaju da prikriju dokaze i zastraše svedoke)²⁶

Genocid može biti: (1) fizički, (2) biološki i (3) nacionalnokulturni.

²³ Dorđević Goran, 79.

²⁴ *Ibid.*

²⁵ Genocide Watch – Međunarodna alijansa za okončanje genocida

²⁶ <http://genocidewatch.org/genocide/tenstagesofgenocide.html>, (posećeno: 05.09. 2018.)

1. Fizički genocid se ispoljava u različitim postupcima u kojima je jasno ispoljena namera za potpuno ili delimično uništenje neke nacionalne, etničke, rasne ili verske grupe.
2. Biološki genocid obuhvata postupke sprečavanja rađanja odnosno biološke reprodukcije određene grupe.
3. Nacionalnokulturni genocid pretpostavlja nasilan postupak koji dovodi do gubljenja kulturnog, nacionalnog, etničkog ili verskog identiteta određene grupe.²⁷

7. Kažnjivost zločina genocida

Rimski statut stalnog Međunarodnog krivičnog suda, usvojen na Diplomatskoj konferenciji OUN u Rimu 17. jula 1998. godine, propisuje da će se pred ovim sudom voditi krivični postupak, utvrđivati krivična odgovornost i izricati krivična sankcija licima koja su učinila najozbiljnije zločine priznate od strane međunarodne zajednice kao celine. U članu 5 ovog Statuta proglašena je nadležnost suda za sledeća međunarodna krivična dela: 1) zločin genocida, 2) zločin protiv čovečnosti, 3) ratne zločine i 4) zločin agresije. Prema članu 77, učiniocu nekih od ovih međunarodnih krivičnih dela sud može izreći sledeće kazne: 1) zatvor u određenom trajanju koje ne može da pređe maksimum od 30 godina, 2) doživotni zatvor kada je ta kazna opravdana ekstremnom težinom zločina i individualnim okolnostima vezanim za učinioca dela, 3) novčanu kaznu prema kriterijumu koji je određen u Pravilima dokazivanja i procedure i 4) konfiskaciju prihoda, vlasništva i dobara koji su direktno ili indirektno pribavljeni izvršenim zločinom.²⁸

Član 4.stav 3. Statuta Međunarodnog krivičnog suda za bivšu Jugoslaviju (MKSJ), osim genocida kao takvog, predviđa i kažnjivost:

- udruživanja radi činjenja genocida
- direktnog i javnog podsticanja na genocid
- pokušaj genocida
- saučesništvo u genocidu

Direktno i javno podsticanje na genocid kao samostalni zločin javljao se u ratu u delovanju pojedinih funkcionera. Otvorilo se i pitanje uloge medija/novinaru u podsticanju zločina.²⁹

Zločin genocida kažnjiv je kako u međunarodnom, tako i u nacionalnom zakonodavstvu mnogih država koje su prihvatile i ratifikovale Statut Međunarod-

²⁷ Nogo Sreto, 102.

²⁸ Jovašević Dragan (2015): „Odgovornost i kažnjivost za zločin genocida”, Zbornik radova Pravnog fakulteta u Nišu, 70/2015, 403-404.

²⁹ Josipović Ivo (2007): „Ratni zločini – priručnik za praćenje suđenja”, Centar za mir, nenasilje i ljudska prava, Osijek, 25.

nog krivičnog suda. Takođe, zločin genocida bio je kažnjiv i prema Nirnberškom pravu, Tokijskom sudu, Međunarodnom krivičnom sudu za Ruandu itd.

Pored izvođenja krivaca pred nacionalne sudove, predviđen je i postupak pred (stalnim) Međunarodnim krivičnim sudom, što je kasnije potvrđeno Rimskim statutom. U najnovije vreme, za genocid su sudili, odnosno sude međunarodni ad hoc krivični tribunali.³⁰

8. Genocid u srpskom (nacionalnom) zakonodavstvu

U naše krivično zakonodavstvo krivično delo genocida je uneto već u Krivični zakonik iz 1951. godine. Radnja genocida kako je određena u članu II pomenute Konvencije preuzeta je u taj Krivični zakonik, na osnovu čega je formulisana i sada važeća inkriminacija iz člana 370. KZ. Krivično delo genocida sastoji se u preduzimanju određenih radnji u cilju potpunog ili delimičnog uništenja neke nacionalne, etničke, rasne ili verske grupe kao takve. Rešenje u našem krivičnom zakonodavstvu ostaje na pozicijama Konvencije i ne proširuje krivičnu pravnu zaštitu i na neke druge grupe.³¹

Iako se krivično delo genocida po pravilu vrši preduzimanjem više radnji izvršenja, ono postoji i kada je učinilac preduzeo samo jednu od radnji u odnosu na jedno lice, ukoliko je to učinio u nameri potpunog ili delimičnog uništenja neke od pomenutih grupa. Iako je ovo shvatanje prihvaćeno u našoj teoriji, ono nije sasvim nesporno. Naime, ako se pođe samo od jezičkog tumačenja bilo bi potrebno da je radnja preduzeta bar u odnosu na dva pripadnika grupe s obzirom da se koristi množina. Postojanje dovršenog krivičnog dela ne zavisi od toga da li je učinilac ostvario svoju nameru. To znači da su granice kriminalne zone na objektivnom planu postavljene dosta široko. Ukoliko je veći značaj subjektivnog elementa, tj. genocidne namere koja nekim radnjama koje mogu predstavljati neko drugo (po pravilu lakše) krivično delo, može dati karakter genocida.³²

Ko u nameri da potpuno ili delimično uništi neku nacionalnu, etničku, rasnu ili versku grupu kao takvu naredi da se vrše ubistva ili teške povrede tela ili teško narušavanje fizičkog ili duševnog zdravlja članova grupe ili da se grupa stavi u takve životne uslove koji dovode do potpunog ili delimičnog istrebljenja grupe ili da se primene mere kojima se sprečava rađanje između pripadnika grupe ili da se vrši prinudno preseljavanje dece u drugu grupu ili ko u istoj nameri izvrši neko od navedenih dela, kažniće se zatvorom najmanje pet godina ili zatvorom od trideset do četrdeset godina.³³

³⁰ Paunović Milan, Krivokapić Boris, Krstić Ivana, 325.

³¹ Stojanović Zoran, 122-123.

³² Stojanović Zoran, Delić Nataša, 311-312.

³³ Član 370. Krivičnog Zakonika Republike Srbije br. 85/2005, 88/2005 – ispr. 107/2005 – ispr. 72/2009, 111/2009, 121/2012, 104/2013, 108/2014 i 94/2016.

9. Genocid u praksi

Nažalost, u ovom ili onom obliku genocidi su zabeleženi još od antičkih društava, sve do danas. U poznate istorijske slučajeve genocida spadaju: ubistvo oko 35 miliona kineskih seljaka od strane mongolskih osvajača u periodu 1311-1340; masovni pokolj hugenota u Francuskoj 1572. godine (tzv. Vartolomejska noć); istrebljenje oko 15 miliona severnoameričkih Indijanaca i takva ista sudbina latinoameričkih Indijanaca; pokolj Nemaca u Jugozapadnoj Africi (1904-1907) da odvođenjem u pustinju, a zatim metodama izgladnjivanja i trovanja bunara istrebe narode Herero i Nama, usled čega je stradalo oko 65 000 Herreroa (80 % tog naroda) i 10 000 Nama (50 % njihovog ukupnog broja); genocid Turaka nad Jermenima i Grcima (1914-1923) – tvrdi se da je tada, radi stvaranja etnički čiste države, pobijeno više od 1, 5 miliona Jermena i oko 300 000 Grka.³⁴

Što se tiče naše nacionalne istorije i prošlosti svakako moramo spomenuti genocid u Nezavisnoj Državi Hrvatskoj od strane ustaša i domobrana nad srpskim, jevrejskim i romskim stanovništvom u periodu od 1941. do 1945. godine. U toku Drugog svetskog rata od strane nacista i ustaša formirana je kvinslinška fašistička tvorevina Nezavisna Država Hrvatska, 10. aprila 1941. godine. Na čelu ove „države” nalazio se poglavnik Ante Pavelić, pripadnik Ustaškog pokreta. Opšte je poznato koliku mržnju su ustaše imale prema srpskom stanovništvu koje su posmatrali kao remetilački faktor u formiranju etnički čiste Hrvatske države. Kao što su nacisti sprovodili njihovo „Konačno rešenje” prema Jevrejima, isto tako su i ustaše krenulo u krvavi pohod prema srpskom življu. „Srpsko pitanje” u NDH trebalo je rešiti po čuvenom „Sistemu trećina” koji je smislio visoki ustaški funkcioner Mile Budak. Prema tom programu, trećinu Srba trebalo je pobiti, trećinu pokatoliti, a trećinu proterati. Obračun sa Srbima sproveden je uz najbrutalnije moguće metode, a u istoriji je ostalo zabeleženo da su se zverstvima ustaša zgražavali čak i sami nacisti. Za samo te četiri godine u ustaškim koncentracionim logorima, u kojima je prednjačio Jasenovac, mučki je pobijeno preko 700 000 Srba i još nekoliko stotina hiljada Jevreja i Roma. Ovakav genocid svakako predstavlja jedan od najmonstruoznijih zločina sprovedenih u skorijoj savremenoj istoriji sa direktnom genocidnom namerom da se srpsko stanovništvo u potpunosti eliminiše i istrebi sa prostora Hrvatske. Nažalost, ovaj proces eliminacije traje i danas.

Početkom 90-tih, nakon državnog udara u Ruandi 1993, na vlasti je bila vojna uprava, pod kontrolom Hutua³⁵. To je dovelo do pobune Tutsija, ali je ubrzo dogovoreno primirje, koje je podrazumevalo da će Tutsi dobiti udeo u vlasti i da će biti organizovani slobodni izbori. Primena tog dogovora išla je sporo. Okidač za sukobe bio je teroristički napad na avion u kome su bili predsednici Ruande i Burundija, 6. aprila 1994. godine. U Burundiju su i pre tog događaja bili

³⁴ Paunović Milan, Krivokapić Boris, Krstić Ivana, 325.

³⁵ Cetralnoafrička etnička grupa koja pretežno živi u Ruandi i Burundiju.

nemiri. Ovaj atentat i državni udar pojačao je te sukobe, koji su svakog meseca odnosili po 1000 života. U Runadi je stanje bilo još kritičnije, jer su za napad na predsednički avion bili optuženi Tutsi. To je pokrenulo masakre koji su obeležili 1994. godinu i koji su kasnije obeleženi kao genocid, odnosno planirano istrebljenje naroda Tutsi od strane Hutua. Između 500 000 i 800 000 ljudi je ubijeno za manje od dva meseca, u zemlji sa svega osam miliona stanovnika. Samo u prestonici Kigaliju ubijeno ih je 100 000.³⁶

Savet bezbednosti Ujedinjenih nacija osnovao je Međunarodni krivični sud za Ruandu da „krivično goni osobe odgovorne za genocid i druga teška kršenja međunarodnog humanitarnog prava počinjena na teritoriji Ruande i susednih država, između 1. januara 1994. i 31. decembra 1994. godine. Tribul se nalazi u Aruši, Tanzanija, i ima kancelarije u Kigaliju u Tuandi. Žalbeno veće nalazi se u Hagu, u Holandiji. Od kada je otvoren 1995. godine, Međunarodni sud je optužio 93 lica za koje se smatra da su odgovorni za teška kršenja međunarodnog humanitarnog prava počinjena u Ruandi 1994. godine. Optuženi su vojni i vladini zvaničnici, političari, biznismeni, kao i verski zvaničnici, milicije i medijski lideri.³⁷

Reakcija međunarodne zajednice bila je spora i neefikasna. U tom trenutku snage UN već su bile u 17 misija, a od država članica samo je Francuska pokazala volju da pokuša da zaustavi krvoproliće. U junu 1994. Savet Bezbednosti je izglasao humanitarnu intervenciju jedinica UN, sastavljenih od pretežno francuskih trupa, čiji cilj je bio da razdvoje Hutue od Tutsija. Napravljena je vlada u koju su ušli predstavnici oba naroda, ali su, u strahu od odmazde, predstavnici naroda Hutu počeli masovno da beže u susedni Zair. Oko milion njih je bilo u izbegličkim kampovima. Međunarodni krivični sud za Ruandu, osnovan u Hagu, dokazao je da je genocid u Ruandi bio rezultat smišljenog plana Hutu milicija za uništenje Tutsija, a ne plod anarhije koja je nastupila tokom rata. Na sudu je osuđen i premijer Ruande, kao prvi šef jedne države osuđen za genocid.³⁸

10. Sprečavanje i prevencija genocida

Da bi se sprečili zločini, od ključnog je značaja razumevanje osnovnih uzroka ovih zločina. Zločini, posebno zločin genocida i zločini protiv čovečnosti, nisu spontani postupci. Umesto toga, razvijaju se kao proces tokom vremena, zbog čega je moguće identifikovati znakove upozorenja da može doći do njihove realizacije. Kancelarija za sprečavanje genocida i odgovornost za zaštitu razvila je Okvire analize za identifikaciju nekih od glavnih faktora rizika. Sprečava-

³⁶ Stojanović Dubravka (2015): „Rađanje globalnog sveta 1880-2015”, Udruženje za društvenu istoriju, Beograd, 453.

³⁷ <http://unictr.irmct.org/en/tribunal/>, (posećeno: 08.09. 2018.) – International Criminal Tribunal for Rwanda

³⁸ Stojanović Dubravka, 453.

nje zločina znači biti upoznat sa ovim rizicima i preduzimanje akcije za njihovo rešavanje i smanjivanje, ili idealno, iskorenjivanje.³⁹

Sprečavanje genocida, ratnih zločina, etničkog čišćenja i zločina protiv čovečnosti je proces koji zahteva trajne napore tokom vremena da se izgradi otpornost društva da do zločina ne dođe, da se osigura poštovanje vladavine prava kao i zaštita svih ljudskih prava bez diskriminacije, uspostavljanje legitimnih i odgovornih nacionalnih institucija, eliminisanje korupcije, konstruktivno upravljanje raznolikostima itd. Prema međunarodnom pravu, primarna obaveza sprečavanja zločina, uključujući i genocid, leži na pojedinačnim državama. Konvencija o sprečavanju i kažnjavanju zločina genocida, Ženevske konvencije iz 1949.godine i sveobuhvatni međunarodni ugovori o ljudskim pravima sadrže odredbe koje obavezuju države članice da spreče te zločine tako što će osigurati poštovanje tih normi.⁴⁰

11. Zaključak

Genocid kao akt eliminacije i istrebljenja neke zaštićene grupe, naroda ili plemena postoji i primenjuje se od najstarijih vremena, praktično, od nastanka samog čovečanstva. On je kao međunarodna krivično delo proklamovan tek posle završetka Drugog svetskog rata što znači da svi zločini sa njegovim karakterom u prošlosti nikada nisu sankcionisani, niti je neko za njih ikada odgovarao. Genocid u sebi sadrži jasnu nameru da se u potpunosti ili delimično uništi i istrebi neka nacionalna, etnička, rasna i verska grupa u cilju ostvarenja određenih ciljeva i interesa. Sve te žrtvene grupe predstavljaju određeni remetilački faktor pri realizaciji tih ciljeva i one kao takve moraju biti eliminisane. Čak i danas, posle donošenja Konvencije o sprečavanju i kažnjavanju zločina genocida, Ženevskih konvencija i Rimskog statuta Međunarodnog krivičnog suda, i dalje postoje jasne namere da se određeni narodi i grupe uklone kao jasne smetnje ostvarenju nekog cilja. Sa takvim namerama i opasnostima danas se suočavamo u građanskom ratu u Siriji, jasnim masakrima nad nearapskim muslimanskim crnačkim stanovništvom sa karakteristikama genocida u Darfuru (Sudan), zatim plemenskim sukobima u Centralnoafričkoj Republici, verskim i plemenskim sukobima u Demokratskoj Republici Kongu, potencijalnom genocidu nad manjinskim Rohindžama u Mjanmaru, itd. Svi ovi aktuelni primeri nam jasno dokazuju da genocid nije samo jedno od međunarodnih krivičnih dela, već da je to proces koji neprekidno traje od nastanka čoveka pa do danas.

I pored toga što je međunarodna zajednica sankcionisala genocid kao jedno od najtežih krivičnih dela sa elementima inostranosti, to očigledno nije dovoljno

³⁹ <http://www.un.org/en/genocideprevention/prevention.html>, (posećeno: 08.09.2018.) – United Nations office on genocide prevention and the responsibility to protect

⁴⁰ *Ibid.*

jer i ta ista međunarodna zajednica ga prikriveno sprovodi podržavajući određene ekstemističke grupe i vlade pojedinih država koje imaju jasnu genocidnu nameru, u većoj ili manjoj meri. O tome jasno svedoče zakasnele, ili bolje rečeno, inertne reakcije Ujedinjenih nacija i drugih međunarodnih faktora na neki otvoreni zločin sa direktnim ciljem nečijeg potpunog ili delimičnog uništenja.

Razlikuje se od ostalih međunarodnih krivičnih dela po tome što se može realizovati i u doba rata i u doba mira i stoga predstavlja moćno oružje u rukama većinskih interesnih grupa. Stvaranje etnički čiste nacije i države uz pomoć genocida realizuje se, stvarajući tako uskraćivanje prava na život i opstanak određenoj zaštićenoj grupi. Naučna doktrina o genocidu danas još uvek nije u potpunosti razvijena, jer samo proučavanje genocida, kao globalnog problema, iziskuje ogromne napore naučne i stručne javnosti koja svakodnevno pokušava da međunarodnoj zajednici predoči sve posledice ovog neprekidnog procesa. Genocid je zločin koji se danas nesmetano odvija.

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THE INTERNATIONAL LEGAL CHARACTER OF GENOCIDE

Abstract: *The paper is dedicated to genocide as one of the most challenging international crimes sanctioned by both national and international laws. The paper seeks to analyze the contemporary international legal character of genocide, its basic characteristics, features, and its consequences. The main purpose and the idea of this paper is to prove, through the analysis of this international crime, the extent of harm the genocide may cause to an ethnic, religious, racial, minority, or political group, and, at the same time, to draw attention of all subjects of international public law to the necessity of taking preventive and protective measures against genocide.*

Keywords: *genocide, genocidal intent, war, armed conflicts, protected group, punishment.*

MODELOVANJE JEDINICE ZA BORBU PROTIV TERORIZMA NA TERITORIJI REPUBLIKE SRBIJE

Sažetak: *Borba protiv terorizma predstavlja jedan od značajnijih činilaca koji ostvaruju uticaj kako na međunarodnu i regionalnu bezbednost tako i na bezbednost Republike Srbije. Zbog ekspanzije terorizma u svetu, neophodno je uspostaviti efikasne mehanizme zaštite od terorizma i terorističkih aktivnosti. Formiranje antiterorističkih i protivterorističkih jedinica i njihova modernizacija su ključni faktori u borbi protiv terorizma. U radu su analizirane teorijske osnove elitnih protivterorističkih jedinica vodećih zemalja sveta, i protivterorističke jedinice Republike Srbije.*

Upotrebom AHP metode kao podrške odlučivanju izbora najefikasnije protivterorističke jedinice donet je zaključak o najefikasnijoj protivterorističkoj jedinici, a u cilju modelovanja efikasne protivterorističke jedinice na teritoriji Republike Srbije i modernizovanja i osavremenjivanja već postojećih protivterorističkih jedinica. Uporedna analiza je izvršena na osnovu kriterijuma kao što su brojno stanje jedinice, broj modularnih jedinica, vrsta i nivo naoružanja i vojne opreme koju koriste protivterorističke jedinice, vremena trajanja selektivne obuke za ulazak u specijalnu jedinicu, vremena trajanja ciklusa obuke pripadnika jedinice i prosečna starost pripadnika jedinice. Rezultat ovog istraživanja može se implementirati u protivterorističke jedinice Srbije, a u cilju povećanja efikasnosti protivterorističke jedinice u borbi protiv terorizma. Na kraju je izvršeno modelovanje jednog tipa protivterorističke jedinice, koja bi svojom organizacijsko-formacijskom strukturom i stepenom opremljenosti, naoružanjem i opremom, mogla uspešno da se suprotstavi terorizmu na teritoriji Republike Srbije.

Ključne reči: *terorizam, protivteroristička jedinica, analiza, modelovanje*

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1. Uvod

Ekspanzija terorizma u svetu usloвила je većinu zemalja na formiranje protivterorističkih jedinica, koje su postale neophodan element sistema bezbednosti. Neke države protivterorističke jedinice formiraju u sastavu armija, ili pod neposrednom komandom vlada, sa osnovnim zadatkom borbe protiv terorizma, dok druge države formiraju protivterorističke jedinice u sastavu policije, koja neposredno odlučuje o njihovom angažovanju i upotrebi u protivterorističkoj operaciji. Formiranje ovakvih jedinica uslovljeno je većim materijalnim izdacima, kvalitetnijom selekcijom pripadnika, opremanjem najsavremenijim naoružanjem i opremom, kao i sistemom obuke koja je neophodna da se stalno prilagođava savremenim izazovima, rizicima i pretnjama po bezbednost.

Za pripadnike protivterorističkih jedinica od izuzetne je važnosti socijalni status u društvu koji ta jedinica poseduje, a sve to proističe iz finansijskih sredstava koja se odvajaju za tu jedinicu. Neophodno je da protivteroristička jedinica poseduje kompleksnu obuku, a naročito je značajna selektivna obuka kojom se realizuje izbor najsposobnijih pripadnika prema zadatim kriterijumima. Da bi selektivna obuka ispunila neophodne kriterijume, potrebno je od kvantiteta odabrati kvalitet, a za to je neophodno da se na konkurs za selektivnu obuku prijavi daleko veći broj kandidata od broja lica koja se primaju u službu.

Na osnovu izazova, rizika i pretnji po bezbednost države, trebalo bi da se modeluju jedinice za borbu protiv terorizma. Za efikasno suprotstavljanje terorizmu neophodno je da protivterorističke jedinice svojom organizacijsko-formacijskom strukturom idu u korak sa razvojem terorizma i njegovim pojavnim formama. Potrebno je da se sastav jedinice prilagodi dodeljenim misijama i zadacima.

Za uspešno modelovanje protivterorističke jedinice neophodna je potpuna analiza protivterorističkih snaga, kako bi se uspešno formirala jedna efikasna jedinica na teritoriji Republike Srbije. U daljem delu rada izvršeno je definisanje pojma terorizma i protivterorizma, kako bi se na najefikasniji način mogao shvatiti sadržaj rada i prikazane su protivterorističke jedinice sveta i Srbije i AHP metodom kao podrškom odlučivanju izbora najefikasnije jedinice izvršeno je njihovo rangiranje. Na osnovu analize protivterorističkih jedinica, donet je zaključak o modelu protivterorističke jedinice.

2. Pojam terorizma i protivterorizma

Teorijska razmatranja o terorizmu, protivterorizmu i njegovoj zastupljenosti u gradskoj sredini, opšte posmatrani, od važnosti su za shvatanje kompleksnosti suprotstavljanja terorizmu i borbi protiv terorizma. Terorizam kao pošast savremenog društva predstavlja jedan od oblika političkog nasilja, postao je jedan od najvećih bezbednosnih izazova u svetu.

Ne postoji jedna opšteprihvaćena definicija značenja pojma i termina *terorizam* što je osnov mnogih nesporazuma i nerazumevanja. Dok nema jedne opštevažeće ili barem opšteprihvaćene definicije terorizma, ne može se konstituisati ni jedna jasna, opštevažeća međunarodno prihvaćena norma, na osnovu koje će se terorizam identifikovati, teroristi prepoznavati sa relativnom sigurnošću, a o terorizmu i teroristima suditi srazmerno usaglašeno na nivou celokupne međunarodne zajednice.¹ Objektivna razlog zbog koga ne postoji svetski prihvaćena definicija terorizma je i taj što je terorizam veoma teško definisati, zbog njegovog složenog oblika i različitih pojava formi. Terorizam se konstantno razvija i ima sve više i više pojava formi, što otežava njegovo definisanje čak i najkvalifikovanijim istraživačima.

Iako postoje mnogobrojne različite definicije pojma terorizam, većina njih u svom sastavu sadrži zajedničke pojmove koji bliže određuju terorizam. Mnogobrojne su definicije terorizma, jedan broj njih je izdvojen i prikazan² i predstavljaju suštinu definisanja pojma terorizam.

Robert Kuperman (Robert Harris Kupperman) terorizam je definisao kao pretnju ili upotrebu sile da bi se postigli politički ciljevi bez potpune upotrebe svih resursa. Boaza Ganora (Boaz Ganor) terorizam definiše kao namernu upotrebu ili pretnju upotrebom nasilja protiv civilnog stanovništva, zbog ostvarenja političkih, ideoloških i religioznih ciljeva.³

Pol Džonson (Paul Johnson) smatra da je terorizam namerno, sistematsko ubistvo, sakaćenje i ugrožavanje nevinih, kako bi se izazvao strah radi postizanja političkih ciljeva. Džonson smatra da terorizam u potpunosti predstavlja zlo. Volter Laker (Walter Lacker) smatra da terorizam postizanje političkih ciljeva realizuje nelegitimnom upotrebom sile, kada su mete nevini ljudi. Civilne žrtve predstavljaju indirektnu metu preko kojih se želi postići uticaj na primarnu neposrednu metu, a neposrednu metu u velikom broju slučajeva predstavljaju državni organi.⁴

U *Političkoj enciklopediji* terorizam je definisan kao akcija nasilja preduzeta iz političkih razloga, a radi unošenja straha i slamanja otpora onoga prema kome je upućen. U Prosvetinoj *Maloj enciklopediji* pod terorizmom se podrazumeva i strahovlada, nasilje i vladavina nasilja. Vujaklija navodi da je terorizam doktrina i metod borbe za određene ciljeve sistematskom upotrebom nasilja.⁵

Dragan Simeunović terorizam definiše kao „višedimenzionalni politički fenomen koji se može teorijski najopštije odrediti kao: složeni oblik organizo-

¹ Simeunović Dragan (2009): *Terorizam*, Pravni fakultet u Beogradu, 17.

² Talijan Miroslav (2012): *Bezbednosni menadžment u suprotstavljanju terorizmu i borbi protiv terorizma*, MC „Odbrana“, Beograd, 21.

³ Gaćinović Radoslav (2011): *Terorizam u političkoj i pravnoj teoriji*, MC „Odbrana“, Beograd, 47.

⁴ Krstić Marko (2016): Izazovi definisanja savremenog terorizma, *Vojno delo* 3/2016. 291.

⁵ Radovanović Marko (2018): *Mogućnost izvođenja protivterorističkih operacija u urbanoj sredini na teritoriji Republike Srbije* – master rad, Univerzitet u Beogradu.

vanog grupnog, i ređe individualnog ili institucionalnog političkog nasilja, obeležen ne samo zastrašujućim brahijalno-fizičkim i psihološkim, već i sofisticirano-tehnološkim metodama političke borbe kojima se obično u vreme političkih i ekonomskih kriza, a retko i u uslovima ostvarene ekonomske i političke stabilnosti jednog društva, sistematski pokušavaju ostvariti „veliki ciljevi“ na morbidno spektakularan način, a neprimereno datim uslovima, pre svega društvenoj situaciji i istorijskim mogućnostima onih koji ga kao političku strategiju upražnjavaju. Društveno-ugrožavajući opus terorizma obuhvata pretnju silom u okviru intenzivne psihološke propagandne delatnosti, zloupotrebu interneta u terorističke svrhe, otmice, ucene, psihofizičko zlostavljanje, atentate, sabotaže, diverzije, samoubilačke napade, pojedinačna i masovna politička ubistva, i intenciju ispoljavanja ređe nad stvarnim i potencijalnim političkim protivnicima, a češće nad predstavnicima sistema i nevinim žrtvama. Kao vid individualnog, nelegitimnog, nelegalnog i neinstitucionalnog nasilja terorizam je uvek okrenut protiv određenih institucija nekog društva, odnosno *in concretum* protiv neke države.“⁶

Terorizam je još moguće definisati⁷ i kao akt političkog nasilja koji svojim aktivnostima i delovanjem i raznolikim metodama političke borbe ima za cilj ostvarivanje sopstvenih interesa (političkih, ideoloških ili religioznih) kroz upotrebu ili pretnju upotrebe sile kao i drugih nasilnih aktivnosti upućenih prema neposrednoj meti, čime se u društvenoj zajednici ostvaruju osećaji nesigurnosti, strah i panika na osnovu kojih se želi ostvariti pritisak i uticati na posrednu metu, koju najčešće predstavljaju državni organi.

U pojam suprotstavljanja i borbe protiv terorizma uključeni su raznovrsni sadržaji koji su u vezi sa antiterorizmom: kontraterorizam, odbrana od terorizma, protivteroristička zaštita, protivterorističke mere i aktivnosti, protivteroristička dejstva sl. Suprotstavljanje i borba protiv terorizma označava se najčešće pojmovima antiterorizam i protivterorizam.

Antiterorizam je opštiji i širi pojam od pojma protivterorizam i predstavlja proces integracije međunarodnih antiterorističkih pojedinačnih državnih subjekata u suprotstavljanju i borbi protiv terorizma. Pod pojmom antiterorizam se podrazumeva primena brojnih mera, radnji i postupaka kako bi se uz minimalno angažovanje vojnih snaga uspešno realizovale preventivne i bezbednonosno-odbrambene mere, a tu je još i upotreba obaveštajnih i kontraobaveštajnih organa kako bi se smanjila mogućnost pojave terorističkog akta. Antiterorizam karakteriše upotreba preventivno-represivnih mera, radnji i postupaka, ali ne isključuje borbene aktivnosti bezbednosnih i odbrambenih snaga. Sve neborbene i borbene aktivnosti, odnosno dejstva, izvede posebno organizovane snage – jedinice, po fazama, koje se međusobno razlikuju u primeni tehničkih i tak-

⁶ Simeunović Dragan (2009): *Terorizam*, Pravni fakultet u Beogradu, 80.

⁷ Radovanović Marko (2018): *Mogućnost izvođenja protivterorističkih operacija u urbanoj sredini na teritoriji Republike Srbije* – master rad, Univerzitet u Beogradu.

tičko-operativnih mera i radnji, i po vremenu odvijanja i karakteristikama određene terorističke grupe.⁸

Protivterorizam se karakteriše kao delatnost i funkcija koju imaju nacionalne snage bezbednosti koje su namenjene za suprotstavljanje terorizmu radi zaštite vitalnih interesa i vrednosti društva. Američki autor Smit Endru (Andrew J. Smith) u svom radu *Combating Terrorism*,⁹ razgraničava pojmove protivterorizam (*counterterrorism*) i antiterorizam (*antiterrorism*) i u vezi s tim ukazuje da se u SAD sve mere koje se sprovode u borbi protiv terorizma označavaju zajedničkim imenom – borba protiv terorizma (*Combating terrorism*). Aktivnosti u okviru borbe protiv terorizma dele se na dve kategorije: protivterorističke i antiterorističke.

Malkolm Nans (Malcolm Nance) u svom delu *Terrorist Recognition HandBook*¹⁰ definiše antiterorizam kao preventivno-odbrambene mere koje se preduzimaju da se smanji mogućnost pojave terorističkih napada. Povećanje bezbednosnih snaga i upotreba antiterorističkih mera smanjuju mogućnost pojave terorističkog napada. Borba protiv terorizma (*Combating terrorism*–CBT) predstavlja pojam koji je na najvišem nivou strategijsko – političkom, gde se uz pomoć doktrinarnih dokumenata i pravnih regulativa usmeravaju politički aspekti u suprotstavljanju terorizmu. Borbu protiv terorizma karakterišu antiterorističke (defanzivne) i protivterorističke (ofanzivne) operacije, koje izvide protivterorističke snage kako bi se suprostavili terorizmu.

Antiterorizam predstavlja defanzivne mere za smanjenje negativnih posledica od terorističkih akcija, uključujući i ograničenu reakciju snaga sistema odbrane kao i zadržavanje njihovog daljeg širenja.

Protivterorizam podrazumeva ofanzivne mere, koje najčešće uključuju angažovanje borbenih snaga neposredno usmerenih na teroriste i njihove aktivnosti, a antiterorizam se odnosi na pasivno angažovanje snaga, odnosno defanzivne mere koje se preduzimaju da bi se spečio teroristički napad.

U našoj novijoj literaturi o terorizmu nastoji se da se posebno definišu ovi pojmovi. Najbliže definiciji su formulacije da su u pitanju različiti modaliteti delovanja snaga bezbednosti u borbi protiv terorizma, tj. obavljanje zajedničke delatnosti različitih snaga i sastava sa nizom zajedničkih, ali i mnoštvom samo sebi svojstvenih komponenti i karakteristika. Na osnovu teorijskih određenja pojmova antiterorizam i protivterorizam neophodno je i modelovanje protivterorističke jedinice koja bi uspešno mogla da se suprotstavi savremenom urbanom terorizmu.

⁸ Talijan Miroslav (2002): *Mesto i uloga specijalnih antiterorističkih jedinica u odbrani i bezbednosti zemlje*- magistarski rad, FCO, Beograd, 35-40.

⁹ Smith Andrew (2002): *Combating Terrorism*, Military Review, n. 1,

¹⁰ Nance Malcolm (2008): *Terrorist Recognition Handbook*, Second Edition, CRC Press, Taylor & Francis group, 48.

3. Protivterorističke snage sveta

Kako terorizam predstavlja pretnju po bezbednost celokupnoj međunarodnoj zajednici, još u drugoj polovini prošlog veka formirane su prve protivterorističke i antiterorističke jedinice namenjene za borbu protiv svetskog terorizma. Protivterorističke jedinice mogu biti u sastavu vojske ili policije ili direktno potčinjene predsedniku države. U ovom delu rada prikazane su vojne i policijske antiterorističke i protivterorističke jedinice najmoćnijih država svete i to: /1/ antiteroristička jedinica SAD – Delta, /2/ specijalne snage Velike Britanije – SAS, /3/ protivteroristička jedinica ruske armije – SPECNAZ, /4/ antiteroristička jedinica Nemačke – KSK, /5/ antiteroristička jedinica ruske policije – ALFA, /6/ antiteroristička jedinica francuske policije – GIGN, /7/ protivteroristička jedinica nemačke policije – GSG9.

Načelna borbena organizacija protivterorističke jedinice u svom sastavu ima: /1/ snage za napad, /2/ snage za podršku, /3/ snage za obezbeđenje i evakuaciju i /4/ snage za vezu i komandovanje.

3.1. Antiteroristička jedinica SAD – DELTA

Sjedinjene Američke Države su prihvatile koncept suprotstavljanja terorizmu gde celokupni sistem bezbednosti učestvuje u odbrani zemlje od terorističkog delovanja. Za borbu protiv terorizma 1977.godine formirana je jedinica „Delta“ (Special Force Operations Detachment – DELTA). Ova jedinica nije namenjena samo za borbu protiv terorizma već se može upotrebiti i za specijalne operacije. Kao osnov za formiranje u sastav odreda „Delta“ ušla je 160 avijacijska grupa iz Fort Kembela, mornarički komandni tim SEAL – peta i šesta grupa za specijalno ratovanje i četvrti bataljon za psihološki rat.

Osnovni zadaci jedinice „Delta“ su: oslobađanje zarobljenika i talaca; neposredno dejstvo protiv onih koji nezakonito poseduju provokativne materijale i nuklearno oružje i prete terorističkim aktom. Idejni tvorac ove formacije je pukovnik Čarls Bekvit, koji je već u Vijetnamskom ratu primenio neke od ideja iz programa „Delta“, po uzoru na britanski SAS. Jedinica je formirana u julu 1977.godine. „Iznenadjenje – brzina – uspeh!“ – moto je pripadnika „Delta“ odreda, jedne od najboljih vojnih specijalnih jedinica. Odred „Delta“ je stacioniran u Fort Bregu i broji oko 400 izuzetno osposobljenih pripadnika. Operativni deo je podeljen u dva skvadrona, a 20 ljudi je prebačeno u Nemačku radi lakšeg izvođenja akcija u Evropi. Slično SAS-u, osnovni borbeni tim čine četiri čoveka, a četiri takva tima čine vod, dok dva i više voda čine skvadron. U akcijama pripadnike odreda podržava 160.vazduhoplovni puk (SOAR – Special operations Aviations Regiment) iz sastava američkog ratnog vazduhoplovstva.

Selektivna obuka za prijem u jedinicu traje 21 nedelju, i za vreme te obuke kandidati se podvrgavaju najrigoroznijim psihofizičkim naporima. Obuka DELTE

traje osam meseci, a za sve vreme obuke se uče strani jezici. Odred DELTA je jedna od najobučenijih jedinica u SAD, a u prilog tome govori i činjenica da je DELTI povereno obučavanje specijalnih jedinica KOV i RM (Rendžeri i SEAL) u protivterorističkoj borbi.

3.2. SAS – Specijalne snage Velike Britanije

Specijalna vazдушna služba (Special Air Service – SAS) formirana je početkom Drugog svetskog rata, a idejni tvorac i osnivač je oficir Britanske armije Dejvid Stirling. SAS je bio i ostao uzor brojnim drugim specijalnim jedinicama, a postavio je standarde za tu vrstu jedinica koji sudanas opšteprihvaćeni za specijalne jedinice. Britanski SAS formiraju tri puka -21, 22.i 23, i pripada brigadi specijalnih snaga Velike Britanije. Od toga je 22. aktivan i nalazi se u Herefordu, a ostali su rezervni u sastavu teritorijalnih armija. U Londonu postoji uprava SAS koja je zadužena za objedinjavanje poslova sva tri puka sa brigadirom na čelu. Glavni Štab SAS od 2001. nalazi se u Kridenhilu u Velikoj Britaniji.

Aktivni 22.puk ima oko 700, a sa 21 i 23. pukom oko 2000 ljudi. Ta jedinica je učestvovala u dejstvima u Malagi, Ohaju, Borneu, Adenu, a u novije vreme je angažovana nasvim najsloženijim zadacima.¹¹22. puk u svom sastavu poseduju CRW- wing (Counter Revolutionary Warfare), odnosno CT (Counter Terrorism) koji je namenjen za izvršenje zadataka iz domena protivterorističkih dejstava sa težištem na prikupljanju podataka o teroristima, sprečavanju njihovog ubacivanja i operacije direktnog dejstva (spasavanje i evakuacija talaca u različitim situacijama). Pored skvadrona „Sablji“ u sastavu 22. SAS puka nalaze se i sledeće jedinice: 264. SAS Signal Skvadron (veza i prisluškivanje), ving Operations Research (planiranje), ving Planning Intelligens (operativno planiranje i obaveštavanje), Demolation ving (razaranje), 148.Meinils Commando Forward Observation Battery Royal Artillery (148. baterija komandosa kraljevske artiljerije) i 47.i 70. skvadrona RAF-a (Royal Air Force – Kraljevsko ratno vazduhoplovstvo). Ustaljena praksa je da skvadroni svakih 6 meseci menjaju uloge – anti-teroristička borba (Special Projects), prekomorski zadaci (Team Task) i obuka (Training Team).¹²

3.3. SPECNAZ – Protivteroristička jedinica Ruske Federacije

Vojne jedinice za protivteroristička dejstva Ruske federacije poznate su kao SPECNAZ (specialного назначения). Formirani su po uzoru na britanske jedinice SAS. Reorganizacijom ruske armije 1992.godine, Specnaz se organizacijski našao u sastavu treće direkcije Druge uprave GRU (Glavna obaveštajna uprava ruskog generalštaba), a Osnaz je postao šesta direkcija iste uprave. Snage SPECNAZ

¹¹ Talijan Miroslav (2004): *Terorizam i antiterorističke snage*, GŠ VSCG, Beograd.

¹² Mihajlović Mihajlo, Arsić Stanislav (2003): *Specijalne snage sveta*, NIC „Vojska“, Beograd, 45.

u okviru armije Ruske federacije broje oko 12 000 ljudi raspoređenih u 9 brigada: pet brigada u KoV-u i četiri brigade u flotama Ratne mornarice.¹³

Jedinice su namenjene za protivterorističku borbu, kao i za borbu u dubokoj pozadini neprijatelja. Izuzetno su psihofizički osposobljeni, i spremni su za izvršenje najrizičnijih zadataka. U toku izvođenja obuke ljudstvo se izlaže i opasnosti po život. Upotrebljavaju se smrtonosne hemikalije, bojeva municija i eksplozivne prepreke. Na kraju obuke ispit položi do 20% kandidata.

Brigada Specnaz u svom sastavu ima oko 1300 ljudi, a sastoji se od komandne čete, samostalne anti-VIP čete, jačine 70-80 ljudi, čiji je osnovni zadatak indentifikacija i eliminisanje važnih političkih i vojnih rukovodilaca, tri vazdušnodesantna bataljona, izviđačke čete, čete veze, minerske čete, jedinice za logističku podršku i helikopterskog odeljenja. Samostalni puk 600 do 800 ljudi sastoji se od komandne čete, čete veze i 6 do 7 četa. Specnaz četa ima 135 ljudi i sastoji se od tri do četiri voda, sa po 2 do 4 grupe (obično oko 9 do 10 spec timova). U njenom sastavu su jurišna grupa, grupe za likvidaciju (anti-VIP), grupe za eksplozive, grupe za oslobađanje talaca i diverzantska grupa. Izviđačka grupa (RG – razvedivateljnaja grupa) u svom sastavu ima od 3 do 5 članova.

3.4. KSK – Antiteroristička jedinica Nemačke armije

U septembru 1997. godine prvi put je predstavljena jedinica za specijalna dejstva nemačkog Bundesvera- KSK (Kommando Spezialkräfte). Brigada KSK nastala je od delova 25. padobranske brigade (tri čete) i dve samostalne izviđačke diverzantske čete. Četvorna formacija omogućava uspešno izvršenje mnogobrojnih zadataka, među kojima su najzastupljeniji i borbra protiv terorizma i rešavanje talačkih situacija. Danas KSK broji oko 1100 pripadnika, i nalazi se u sastavu 4. Nemačke divizije za brze intervencije.

KSK je formacijski sastavljena od komandne čete, čete veze, četiri čete komandosa, čete strateških izviđača, jedinice za logistiku i nastavnog voda. Četu komandosa čine komandni vod i četiri voda komandosa, od kojih je svaki podeľjen u četiri grupe sa po četiri vojnika. Svaki pripadnik je specijalista za određene specijalnosti: za minsko-eksplozivna sredstva, vezu i prvu pomoć, a četvrti je vođa grupe. Stratešku izviđačku četu čine dva voda: vod strateških izviđača, koji ima osam grupa po četiri člana, a drugi vod je sastavljen od 12 izviđača.

Vodovi su specijalizovani za: 1. vod namenjen je za izvođenje specijalnih operacija na kopnu, takozvani horizontalni prodor u pozadinu neprijatelja, 2. vod namenjen je za izvođenje padobranskih desanata, tzv. vertikalni manevar, 3. vod osposobljen je za izvođenje dejstava na vodi i pod vodom (amfibijska dejstva), 4. vod se upotrebljava za dejstva u različitim klimatskim uslovima.¹⁴

¹³ *Ibid*, 65.

¹⁴ <http://www.special-ops.pl/leksykon/id298, kommando-spezialkrafte-ksk 08.04.2019>.

3.5. ALFA – Antiteroristička jedinica Ruske policije

Specijalna jedinica ALFA osnovana je 1974.godine kao antiteroristička jedinica, a danas se nalazi pod direktnom komandom predsednika, pored zadatka obezbeđenja predsednika, obavlja i ostale dodeljene zadatke. Ruska antiteroristička jedinica ALFA je trenutno najelitnija policijska antiteroristička jedinica u svetu. U odeljenju ministarstva za borbu protiv terorizma Rusije nalazi se Centar specijalne namene – CSN, koji se sastoji od Uprave „A“ – odred ALFA; Uprave „B“ – odred VEGA i Službe za specijalne operacije – SSO.

Alfa je, između ostalih akcija, bila angažovana u Dagestanu, Beslanu, Buđanovsku, Kizljaru, kao i u moskovskom pozorištu „Dubravka“ u antiterorističkoj akciji oslobađanje talaca i prema procenama stručnjaka akcije je izvela veoma uspešno. Procenjeno je da nijedna antiteroristička jedinica u svetu nije imala tako komplikovanu situaciju kao što je bila talačka situacija u Buđanovsku. Stotine talaca na malom prostoru, minirana zgrada itd. Eksploziv (TNT, boce sa kiseonikom) bio je postavljen tako da se glavni blok zgrade sruši u trenu, pri čemu verovatno ne bi bilo preživelih. Spektakularnom akcijom Alfe završena je i veoma komplikovana talačka situacija u moskovskom pozorištu „Dubravka“.

3.6. GIGN –Antiteroristička jedinica Francuske policije

GIGN je profesionalna antiteroristička jedinica, nastala je od regionalne interventne jedinice za specijalne operacije (ECRI) komande žandarmerije za Pariz. Jedinica je dobila naziv „Grupa za intervenciju nacionalne žandarmerije“ (Groupement d' Intervention de la Gendarmerie Nationale), skraćeno GIGN, čija je osnovna namena borba protiv terorizma.¹⁵ Grupa za intervencije je pod komandom Štaba za specijalne operacije Francuske (COS) i namenjena je za intervencije unutar zemlje, a po potrebi i van granica Francuske, po odluci vlade i saglasnosti komande žandarmerije.

Danas GIGN broji 82 pripadnika: pet oficira i 77 podoficira. Formacijski je podeljen u četiri operativne grupe od kojih su tri glavna udarna snaga ove policijske antiterorističke jedinice, dok je četvrta namenjena za logistiku. Logističko jezgro čine dve manje jedinice i to obaveštajno odeljenje i odeljenje za razvoj.

3.7. GSG-9 Protivteroristička jedinica Nemačke policije

Nemačka protivteroristička jedinica GSG-9 (Granzschutz gruppe) formirana je 1972.godine. Jedinica GSG-9 formirana je u sastavu savezne Granične policije (Bundesgrenzschutz), sa sedištem u Bonu, ali je u nadležnosti ministarstva unutrašnjih poslova i čini sastavni deo policije. U svom sastavu ima oko 200 ljudi.¹⁶

¹⁵ (<http://www.gign.org/gi/> 08.04.2019)

¹⁶ (www.bundespolizei.de 08.04.2019)

Organizaciju jedinice čine četiri borbena voda, svaki od po 42 čoveka, kao i samostalna odeljenja i vazduhoplovna eskadrila od tri helikoptera. Unutar voda obrazovani su borbeni timovi od po šest ljudi, koji su sposobni da za samo nekoliko minuta uđu u antiterorističku borbu. Organizacijsko-formacijska struktura ove jedinice je: štabna jedinica; jedinica za vezu i dokumentaciju; inženjerijske jedinice; borbene jedinice koje broje najviše članova; vazduhoplovna eskadrila od tri helikoptera i 12 pilota i mehaničara, kao i tehnička grupa koja se bavi ispitivanjem i uvođenjem u upotrebu jedinice najsavremenijeg naoružanja. Služba u jedinici traje pet godina, a nakon toga njeni pripadnici se raspoređuju u policijske jedinice.

Jedinica GSG-9 u svom sastavu poseduje tri misijske jedinice i jedinicu za podršku, različitih specijalnosti i širokog spektra mogućnosti. Osnovne veštine su iste i jedinice rade u različitim misijama takođe zajedno. Razlika je samo u njihovoj specijalnosti. Prva jedinica nosi naziv „Einheit – Präzisionsschützen“ (Jedinica – Precizni strelci), druga jedinica je „Einheit – Taucher und Bootsführer“ (Jedinica – ronci na čamcima), treća jedinica je „Einheit – Fallschirmspringer“ (Padobranska jedinica) i četvrta „Unterstützungseinheit“ (Jedinica za podršku).

4. Protivterorističke snage Republike Srbije

Zbog izazova, rizika i pretnji sa kojima se susreće savremeni svet, a to su najčešće rizici od terorističkih napada koji su u zavisnosti sa nizom međunarodnih i unutardržavnih činilaca, potrebno je da država Srbija osavremeni svoje specijalne protivterorističke jedinice, radi efikasne odbrane i zaštite od mogućih terorističkih dejstava. Snage bezbednosti Republike Srbije (Vojska Srbije, Policija) teže stvaranju i unapređenju protivterorističkih jedinica, koje bi adekvatno mogle da se suprotstave savremenom terorizmu. Potrebno je da organizacijsko – formacijska struktura i obuka protivterorističkih jedinica prate savremene trendove razvoja terorizma, kako bi jedinica adekvatno mogla da mu se suprotstavi.

Protivterorističke snage u užem smislu predstavljaju jedinice vojske i policije koje su osposobljene i spremne da se uz kratke pripreme angažuju u borbi protiv terorizma, uključujući i izvođenje b/d. Specijalne antiterorističke i protivterorističke jedinice policije, odnosno vojske, čine fundamentalne protivterorističke snage, a namenjene su za izvršavanje posebnih protivterorističkih zadataka, prvenstveno za rešavanje talačkih situacija, kao i za izvođenje PtOp.¹⁷

¹⁷ Mićanović Branko, Duvnjak Srđan, Ilić Miloje (2015): *Angažovanje vojnih snaga u protivterorističkoj operaciji, 1. Međunarodna naučno-stručna konferencija upravljanje kriznim i vanrednim situacijama – teorija i praksa*, Beograd, 148.

4.1. Protivteroristički bataljon Vojske Srbije

Bataljon Vojne policije za protivteroristička dejstva „Sokolovi“ formiran je 1992. godine, poseduje bogato iskustvo svojih pripadnika u izvođenju protivterorističkih dejstava. Jedinica je četnog sastava, čete su specijalizovane za borbu protivterorista u svim ambijentalnim uslovima (u tom sastavu postoje četa padobranaca, timovi ronilaca i snajperista). Bataljon se nalazi u sastavu Specijalne brigade Vojske Srbije. Okosnicu čine timovi od po pet ljudi, slično kao i u ostalim svetskim protivterorističkim formacijama. Jedinica je isključivo profesionalnog sastava i broji oko 300 pripadnika.

Da bi ispunila svoje zadatke, Specijalna brigada organizuje intenzivnu obuku, koja se realizuje tokom trogodišnjeg perioda. Prvi deo je selektivna obuka, drugi — osnovna obuka specijalnih jedinica, a treći deo predstavlja napredna obuka specijalnih jedinica. Selektivna obuka traje 9, odnosno 13 nedelja, 7 dana nedeljno. Osnovna obuka specijalnih jedinica traje godinu dana (2 perioda po 6 meseci) i sastoji se od: fizičke obuke, gađanja i vatrene obuke, taktičke obuke, taktičke obuke specijalnih jedinica, topografije i orijentacije na zemljištu, sredstava i sistema za vatrenu podršku, sredstava telekomunikacija (tk) i procedura saobraćaja tk sredstvima i taktičkih vežbi.

O iskustvima i kvalitetima ove jedinice najbolje govore njene akcije na Kosovu i Metohiji 1998/99. godine, opisane u savremenoj publicistici, kao i multinacionalne vežbe u kojima su se pripadnici „Sokolova“ istakli i postizali zapažene rezultate. Jedan od primera osposobljenosti pripadnika ove jedinice za izvršenje najkomplikovanijih protivterorističkih zadataka predstavlja i vojno-policijska vežba „Zajednički udar 2018.“ koja je realizovana u Kraljevu 27. juna 2018. godine.

4.2. Bataljon vojne policije specijalne namene „Kobre“

Odeljenje vojne policije za protivterorističku borbu u okviru 282. bataljona vojne policije Jugoslovenske narodne armije formirano je 1978. godine, što ujedno predstavlja preteču prve specijalne protivterorističke jedinice u tadašnjoj JNA. U skladu sa reformama sprovedenim u Vojski Srbije, krajem 2006. godine formirana je jedinica bataljonskog nivoa pod nazivom Bataljon vojne policije za obezbeđenje „Kobre“, koji se tada nalazi u sastavu Garde. Od 2008. godine jedinica menja naziv u Bataljon vojne policije specijalne namene „Kobre“ i prelazi u sastav Uprave vojne policije Generalštaba VS.

U svom organizacijsko-formacijskom sastavu (OFS) „Kobre“ imaju: komandu; grupu za obuku; grupu za protidiverzionu zaštitu; i operativne čete koje broje oko 50 pripadnika podeljenih u 4 operativna voda sa po tri taktička tima. Prva četa je protivteroristička, dok su ostale namenjene za obezbeđenje lica i objekata. Brojno stanje jedinice je oko 350 pripadnika. Koriste najsavremenije naoružanje i vojnu opremu i vozila koja su prvenstveno namenjena zaštitu VIP ličnosti.

Uspešnu realizaciju svojih težišnih zadataka prikazali su na vojno-policijskoj vežbi „Zajednički udar 2018.“ koja je održana 27.06.2018. godine u Kraljevu.

4.3. Specijalna antiteroristička jedinica MUP-a Republike Srbije

Specijalna antiteroristička jedinica (SAJ) MUP-a Republike Srbije, formirana je 1978. pod nazivom Jedinica milicije za specijalna dejstva Sekretarijata za unutrašnje poslove Socijalističke Republike Srbije. Rešenjem o izmenama i dopunama Rešenja o obrazovanju specijalnih jedinica od 01. 01. 1994. godine, dotadašnji naziv Specijalne jedinice zamenjuje se novim nazivom – Specijalna antiteroristička jedinice (SAJ), koji i danas nosi isto ime.

Reformama 2003. god. umesto dotadašnja tri tima, u sastavu su, pored komande, formirana četiri tima: A, B, C (specijalistički), D tim (za obezbeđenje i podršku), Tehnička služba i dežurna služba. Organizacionim promenama sprovedenim 2012. god. u okviru jedinice formirani su Grupa za pregovaranje i Instruktorski tim, a takođe povećano je i brojno stanje pripadnika, posebno u operativnim timovima. Juna 2016. god. izvršeno je spajanje SAJ i PTJ (protivterorističke jedinice) u jedinstvenu jedinicu, gde je ostao naziv SAJ.¹⁸

U svojoj organizacijsko-formacijskoj strukturi SAJ ima¹⁹ : komandu, grupu za bezbedonosne poslove, grupu za operativnu tehniku, tim A, tim B, tim C – spec. (snajper., ronjoci, vSLP, spec. za MES i BHS), tim D (za obezbeđenje i podršku i obezbeđenje VIP lica), logistku (tehnička služba, sanitetska grupa, grupa za konstrukciju i ispitivanje naoružanja i municije, dežurna služba.)

Program obuke pripadnika SAJ na svim nivoima izrađuje se u skladu sa definisanim naučnim postupcima. Sistem obuke za pripadnike SAJ čine: selektivna obuka (4 nedelje), osnovna antiteroristička obuka – faza 1 i 2 (24 nedelje, 12+12 nedelja), viša antiteroristička obuka (18 meseci), redovna obuka gotovih snaga (konstantno).

Sopstvenu osposobljenost pripadnici SAJ su prikazali u više navrata, kao i na zajedničkoj vojno-policijskoj vežbi „Zajednički udar 2018.“, gde su pored pripadnika SAJ učestvovali i pripadnici Bataljona vojne policije specijalne namene „Kobre“ i pripadnici protivterorističkog bataljona „Sokolovi“.

¹⁸ Džamić Dragan (2013): 35 godina Specijalne antiterorističke jedinice, MUP RS, Beograd, 12-15.

¹⁹ Radovanović Marko (2018): *Mogućnost izvođenja protivterorističkih operacija u urbanoj sredini na teritoriji Republike Srbije* – master rad, Univerzitet u Beogradu.

Tabela 1. Podaci u zavisnosti od parametara komparativne analize

	Broj ljudi	Broj modularnih jedinica	Vreme trajanja selektivne obuke	Vreme trajanja obuke	Naoružanje u upotrebi	Prosečna starost
protivterorističke snage sveta						
DELTA	400	4	21 nedelja	8 meseci	IV + II	31
SAS	700	4	2 nedelje	7 meseci	IV+III+II+I	27-28
SPECNAZ	12 000	51	12 nedelja	12 meseci	IV+III+II+I	28
KSK	1 100	5	12 nedelja	24 meseca	IV+III+II+I	27
ALFA	1 500	5	40 nedelja	36 meseci	IV +II	25
GIGN	82	3	4 nedelje	8 meseci	IV	26
GSG-9	200	4	12 nedelja	6 meseci	IV+III+II+I	27
protivterorističke snage Republike Srbije						
ptb „Sokolovi“	300	4	12 nedelja	36 meseci	IV+III+II	33
bvp s/n „Kobre“	350	4	3 nedelje	12 meseci	IV	35
SAJ	200	4	4 nedelje	24 meseca	IV+III+II+I	32

5. Modelovanje jedinice za izvođenje protivterorističkih operacija na teritoriji Republike Srbije

Za uspešno modelovanje snaga za izvođenje PtOp neophodna je potpuna analiza Pt snaga najmoćnijih država sveta, kako bi se uspešno stvorila jedna elitna jedinica na sopstvenoj teritoriji. Kao podrška odlučivanju izbora najefikasnije protivterorističke jedinice upotrebljena je AHP²⁰ (analitičko hijerarhijski proces) metoda višekriterijumskog odlučivanja, na osnovu čega je donet zaključak o najefikasnijoj protivterorističkoj jedinici u odnosu na zadate kriterijume. Analiza je realizovana u odnosu na elemente: brojno stanje jedinice i broj modularnih jedinica, stepen naoružanja i opreme, proces obuke i prosečna starost pripadnika jedinice. Rezultati komparativne analize protivterorističkih jedinica upotrebom AHP metode²¹ prikazani su u tabeli 2.

²⁰ Satty T.L., The Analytic Hierarchy Process, McGraw-Hill, New York, 1980.

²¹ Detaljnije Radovanović Marko (2018), *Mogućnost izvođenja protivterorističkih operacija u urbanoj sredini na teritoriji Republike Srbije* -master rad, Univerzitet u Beogradu, Beograd,

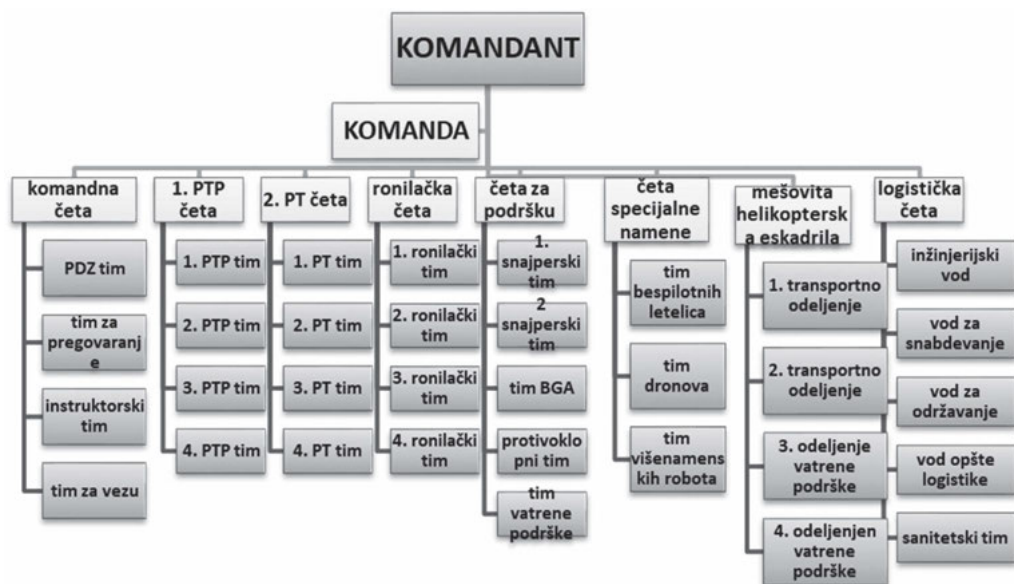
Tabela 2. Rezultati uporedne analize protivterorističkih jedinica AHP metodom

	Broj pripadnika	Broj modularnih jedinica	Vreme trajanja selektivne obuke	Vreme trajanja obuke	Nao-ružanje u upotrebi	Prosečna starost	Zbir	rang
Koeficijent težine	0,179	0,078	0,048	0,396	0,268	0,031	An*K1 +An*K6	
DELTA	0,076	0,062	0,375	0,033	0,029	0,041	0,0583	8
SAS	0,113	0,055	0,028	0,021	0,169	0,083	0,0820	6
SPECNAZ	0,284	0,359	0,147	0,070	0,169	0,083	0,1614	2
KSK	0,168	0,123	0,147	0,132	0,169	0,122	0,1483	3
ALFA	0,206	0,123	0,507	0,248	0,029	0,289	0,1856	1
GIGN	0,016	0,032	0,078	0,033	0,015	0,198	0,0322	10
GSG-9	0,024	0,062	0,147	0,014	0,169	0,122	0,0710	7
ptb „Sokolovi“	0,038	0,062	0,147	0,248	0,064	0,0221	0,1347	4
bvp s/n „Kobre“	0,052	0,062	0,044	0,070	0,015	0,014	0,0484	9
SAJ	0,024	0,062	0,078	0,132	0,169	0,028	0,1114	5

Na osnovu prikazanih rezultata komparativne analize protivterorističkih jedinica i zaključaka o najefikasnijoj jedinici, potrebno je modelovati protivterorističku jedinicu koja će u svom sastavu imati sve neophodne segmente kako bi uspešno mogla da se suprotstavi savremenom terorizmu.

Na osnovu rezultata analize protivterorističkih jedinica, modelovana protivteroristička jedinica ranga bataljona u svom sastavu treba da ima sledeće elemente što je prikazano i na šemi 1: /1/ komandu, /2/ komandnu četvu koja u svom sastavu poseduje tim PDZ (protiv-diverzione zaštite), tim za pregovaranje, instruktorski tim, tim za vezu, /3/ protivterorističku-padobransku četvu u čijem sastavu se nalaze četiri protivterorističko-padobranska tima, /4/ protivterorističku četvu u kojoj se nalaze četiri protivteroristička tima, /5/ ronilačku četvu sa četiri ronilačka tima, /6/ četvu za podršku koja u svom sastavu ima dva snajperska tima, odeljenje BGA (bacača granata automatskih), protivoklopno odeljenje (sa ručnim protivoklopnim sredstvima), odeljenje vatrene podrške (minobacači 60 mm), /7/ četvu specijalne namene u kojoj postoji tim bespilotnih letelica, tim dronova, i tim višenamenskih robota, /8/ mešovitu eskadrilu sa dva odeljenja transportnih i dva odeljenja borbenih helikoptera, /9/ logističku četvu u čijem sastavu se nalaze inženjerski vod, vod za snabdevanje, vod za održavanje, vod opšte logistike i sanitetski tim.

Za uspešno izvršenje protivterorističkih zadataka potrebno je da modelovana jedinica prilagodi sistem obuke savremenim izazovima i rizicima po nacionalnu bezbednost. Za protivterorističke jedinice od velikog je značaja da koriste najsavremenija i najkvalitetnija sredstva ratne tehnike, kako bi išli u korak sa vremenom i sa razvojem savremenih bezbednosnih izazova, a u cilju uspešnog izvođenja protivterorističkih operacija u svim uslovima.



Slika 1: Model protivterorističke jedinice

6. Zaključak

Na osnovu komparativne analize protivterorističkih jedinica upotrebom AHP metode došlo se do zaključka da je po zadanim kriterijumima najefikasnija ruska protivteroristička jedinica **ALFA**, na drugom mestu je ruski **SPECNAZ**, a na trećem mestu nemački **KSK**. Protivterorističke jedinice Republike Srbije, bataljon za protivteroristička dejstva „SOKOLOVI“ nalazi se na četvrtom mestu, dok je Specijalna antiteroristička jedinica zauzela peto mesto od ukupno deset analiziranih jedinica.

Na osnovu rezultata komparativne analize protivterorističkih jedinica i izvođenja PtOp modelovana je protivteroristička jedinica koja bi svojim sastavom i organizacijsko-formasijskom strukturom uspešno mogla da odgovori savremenom terorizmu. Model ove jedinice prikazan je u petom poglavlju na slici br. 1.

Na osnovu rezultata istraživanja dolazi se do zaključka da se adekvatnim angažovanjem protivterorističkih snaga Republike Srbije i izvođenjem protivterorističke operacije u urbanoj sredini može sprečiti i neutralisati savremeni terorizam na teritoriji Srbije.

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MODELING A UNIT FOR THE FIGHT AGAINST TERRORISM ON THE TERRITORY OF THE REPUBLIC OF SERBIA

Abstract: *The fight against terrorism is one of the most important factors that has an impact on both international and regional security and the security of the Republic of Serbia. Due to the expansion of terrorism in the world, it is necessary to establish effective mechanisms for protection against terrorism and terrorist activities. The establishment of anti-terrorist and counter-terrorist units and their modernization are key factors in the fight against terrorism. The paper analyzes the theoretical foundations of the elite anti-terrorist units of the leading countries of the world, and the counterterrorism units of the Republic of Serbia.*

Using the AHP method in support of choosing the most effective counterterrorism unit, the conclusion was reached about the most effective counterterrorism unit in order to model an effective counterterrorism unit in the territory of the Republic of Serbia and modernize existing anti-terrorist units. Comparative analysis was carried out on the basis of criteria such as the number of members of the unit, the number of modular units, the type and level of weapons and military equipment used by counterterrorism units, the duration of selective training for entering a special unit, the duration of the training cycle of members of the unit and the average age of members of the unit. The result of this research can be implemented in anti-terrorist units in Serbia, in order to increase the efficiency of the anti-terrorist unit in the fight against terrorism. In the end, the modeling of one type of counterterrorism unit was carried out, which with its organizational-formation structure and equipment could successfully counter terrorism on the territory of the Republic of Serbia.

Keywords: *terrorism, counterterrorism unit, analysis, modeling*

THE INFLUENCE OF BIG DATA CONCEPT ON FUTURE TENDENCIES IN PAYMENT SYSTEMS

Abstract: *The new wave of information and communication technology transformation relies on the concepts of the Internet of Things, Big Data and machine learning. These concepts will enable the connection and independent communication of a large number of devices, the processing of data that arises as a result of these processes and learning based on the refined information. Payment system is a sector that will experience major impacts by the coming changes. A large number of transactions create an information basis, whose analysis can provide precise inputs for business decision making. The subject of paper is the impact of managing a large amount of transactional data on key stakeholders in the payment process. The aim of the paper is to identify the key advantages and dangers that the Big Data concept will bring to the payment industry. The general conclusion is that the use of Big Data tools can facilitate the timely distribution of payment services and increase the security of transactions, but the price in the form of a loss of privacy is extremely high.*

Keywords: *Big Data, electronic payments, privacy, data misuse, mobile digital wallets;*

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INTRODUCTION

The key features of information and communication technologies (ICT) progress are the development of computer systems and the creation of telecommunication networks for data exchange. The changes have become continual process, so instead of Information revolution we can speak about Information evolution. The capacities for data processing, as well as the speed of data transmission via the network, are constantly increasing. Adequate collection, processing and use of data have become precondition for successful business activities. The volume of available data exponentially grows from year to year, making their management more complicated. The problem of modern business is not just collection of data, but also their classification according to the importance and observation of patterns that could be applied in the business processes.

A new dominant wave of ICT innovations has been intensified in recent years, which has changed relative importance of certain devices and information processes. Its basic pillars are Internet of Things, Big Data and Machine learning. These processes could enable connection and independent communication of large number of devices in homes and companies, without humans in direct control. New types of connections would make even larger amount of data, which would make their collection, processing and use more difficult. Devices will have the opportunity to learn, or to make conclusions based on previous experience and to adjust their behavior¹. Hence, a new approach in managing large amount of data is needed.

The subject of paper is the impact of managing a large amount of transactional data on key stakeholders in the payment process. The aim of the paper is to identify the key advantages and dangers that the Big Data concept will bring to the payment industry. Previous researches on this topic are not abundant. Some authors have emphasized the importance of mobile digital wallets as payment applications of the future². The others have analyzed the possibilities of interaction between cryptocurrencies and Big Data, focusing on two key aspects: increasing customers' security and predicting the movement of cryptocurrencies values³. There have also been some skeptic beliefs that the application of the Big Data tools in the field of finance, as well as other areas, will bring less value than what investors expect⁴.

¹ Song Il-Yeol, Zhu Yongjun (2017): "Big Data and Data Science: Opportunities and Challenges of iSchools", *Journal of Data and Information Science*, 3/2017, 1-18

² Liu Jun, Kauffman Robert John, Ma Dan (2015): "Assessing the Opportunities and Challenges with Big Data in the Mobile Payments Ecosystem", *Workshop on Internet and Big Data Finance 2015*, Research Collection School Of Information Systems, Singapore

³ Hassani Hossein, Huang Xu, Silva Emmanuel (2018): "Big-Crypto: Big Data, Blockchain and Cryptocurrency", *Big Data and Cognitive computing*, 4/2018

⁴ Ross Jeanne, Beath Cynthia, Quaadgras Anne (2013): "You May Not Need Big Data After All", *Harvard business review*, 10/2013

In the first part of the paper, the Big Data concept and its key features will be analyzed. In the second part, the application of this concept in the case of transactional information will be considered. In the third part it will be possible to observe the dangers of Big Data analysis that arise from opposite interests of stakeholders in the payment process.

1. THE NEED FOR ADVANCED DATA MANAGEMENT

The progress of ICT technology enabled faster data collection, its storage, processing and use in decision making. In the last few years, companies are facing with different problem in data management. In every phase of business process, companies collect huge volumes of data, so that databases become overloaded. Today's data bases are measured in petabytes (10^3 GB) and exabytes (10^4 GB), which makes their loading and storage extremely long lasting and expensive⁵. Since the prices of storage space have fallen, many entities simply store all data they collect, rather than deleting them⁶. Therefore, it is difficult to process those data so that they provide consistent conclusions, because it is often a matter of incomparable data of a different nature and priority.

Big Data denotes collection, processing, analysis and management of data that are diverse and extensive, are created at a high speed and have different structures⁷. It means that there are huge volume of information generated in a unit of time, while among them there is a high diversity in the terms of origin, priority and usability. The multiplication of information is encouraged by the increasingly pronounced networking of devices and objects in the human surrounding. IoT implies the highest form of integration of people with the devices and objects used both in business processes and also in everyday life. The Global Standard Initiative states that the IoT is a network of devices, machines, vehicles and objects that are connected through the communication networks such as the Internet, NFCs and RFIDs, equipped with microprocessors, sensors and appropriate software, which enables data collection and timely distribution⁸. On this occasion, an M2M type of connection is made, with both Ms representing machines or one M representing man and the other one machine (also referred to as M2P connection – machine-to-person). The goal of establishing such a net-

⁵ Everts Sarah (2016): "Information Overload", *Distillations*, 2/2016, 26–33

⁶ Mayer-Schönberger Viktor, Cukier Kenneth (2014): *Big Data: A revolution that will transform how we live, work, and think*, London: John Murray

⁷ Lukić Jelena (2014): "The impact of information and communication technology on decision making process in the Big Data Era", *Megatrend revija*, 2/2014, 227

⁸ Global Standard Initiative for Internet of Things (2016) *Harnessing the Internet of Things for global development*, International Telecommunication Union, Geneva, Switzerland

work is to create an automated business environment in which a „smart environment” will allow routine operations to be performed faster⁹.

It is necessary to process large amounts of generated data so that they serve in the decision-making process. Machine learning is a mathematical technique for creating an algorithm that, on the basis of a given sample of data, can learn to take the necessary actions without direct programming¹⁰. An example is algorithms that know to detect spam even though they are not directly programmed to filter the messages of a particular sender.

Contemporary databases contain large amount of useless data that not only occupy free space, but also make finding useful pieces difficult¹¹. In such circumstances, sorting data before their processment requires significant resources, making data management more expensive. The Big Data tools are used in analysis of the structured, semi-structured and unstructured data from different resource, whereby their scope and required processing speed exceed abilities of standard analytical tools and methods¹². An important feature of the concept is possibility for real-time data processing and providing the necessary information at the moment of action.

The databases that are suitable for managing Big Data tools are characterized by the following features, in the literature known as „5V”: volume, velocity, variability, veracity and value¹³. Some authors provide a more extensive description, and cite up to „17V” characteristics¹⁴. This means that volume is not the only characteristic of data suitable for processing with Big Data tools. High speed of data generation, changes in the dynamics of their generation, different formats and high value make one database suitable for Big Data tools. An example is an airplane, whose sensors generate a large amount of data on the external and internal state of the aircraft by varying dynamics. Although it is not a large database, because the data for several hours of flight take only several GB of storage space, it can be considered Big Data example because of the speed of generation and variety of information.

⁹ TomićNenad, Todorović Violeta (2016) Possibilities for Application of Electronic Payment Systems in Retail,in: *Sinteza 2016 – International Scientific Conference on ICT and E-Business Related Research*, Belgrade, Singidunum University, Serbia p. 461

¹⁰ Bishop Christopher (2006), *Pattern Recognition and Machine Learning*, Springer

¹¹ Waldherr Annie, Maier Daniel, Miltner Peter, Günther Enrico (2016):“Big Data, Big Noise: The Challenge of Finding Issue Networks on the Web”, *Social Science Computer Review*, 4/2016, 427

¹² AlamJafar Raza, SajidAsma, TalibRamzan,NiazMuneeb (2014):“A Review on the Role of Big Data in Business”, *International Journal of Computer Science and Mobile Computing*, 4/2014, 446

¹³ Ishwarappa Kalbandi, Anuradha J. (2015): “A Brief Introduction on Big Data 5 vs Characteristics and Hadoop Technology”, *Procedia Computer Science*, 48/2015, 320-321

¹⁴ ArockiaPanimalar, Varnekha Shree, Veneshia Kathrine, (2017):“The 17 V’s Of Big Data”, *International Research Journal of Engineering and Technology*, 9/2017, 329-333

It is shown that companies which have prepared strategy for big data management have achieved a competitive advantage and that they dominate in their industries (for example, Amazon and Uber). These companies have grasped the importance of data analysis and its benefit in making interactions with customers. An additional impulse to Big Data strategies was given by social networks and electronic payment systems (EPS). Both types of applications provide the great amount of data about consumers, which could be used for commercial purposes. One should bear in mind that the use of personal information is a special issue of legal nature.

In order to benefit from managing large data sets, companies have to learn¹⁵:

- To use Big Data analysis techniques in order to create value and to achieve competitive advantage;
- To use new technologies and to get the maximum from existing technology assets;
- To enable organizational change with adopting new technologies;
- To provide faster and superior results with accepting growing rates of changes which take place on the global market.

The Big Data concept is not strictly connected to the commercial activities. The great use is expected in sports, traffic, meteorology and management of government data¹⁶. Particularly significant benefits are expected from the application of this concept in healthcare. The first area of Big Data application for medical purposes is the processing of so-called clinical data. It is data on the causes, symptoms and development of the disease, collected by hospitals and clinics¹⁷. Another area of application is public health. Advanced ICTs have enabled the development of wearable systems for monitoring human vital activities and health condition. The third area of application involves managing the mass of data obtained in medical experiments. In addition, Big Data could certainly be widely used in the medical literature for systematization of general and specific knowledge gained from previously listed data sources¹⁸.

¹⁵ Minelli Michael, Chambers Michele, Dhiraj Ambiga (2013): *Big data, big analytics*, New Jersey, NJ: John Wiley & Sons

¹⁶ Pavlović Rastko, Dejanović Ratko (2014): "Big Data i poslovna strategija", *Infoteh-Jahorina*, Bosna i Hercegovina, 13, 754-758

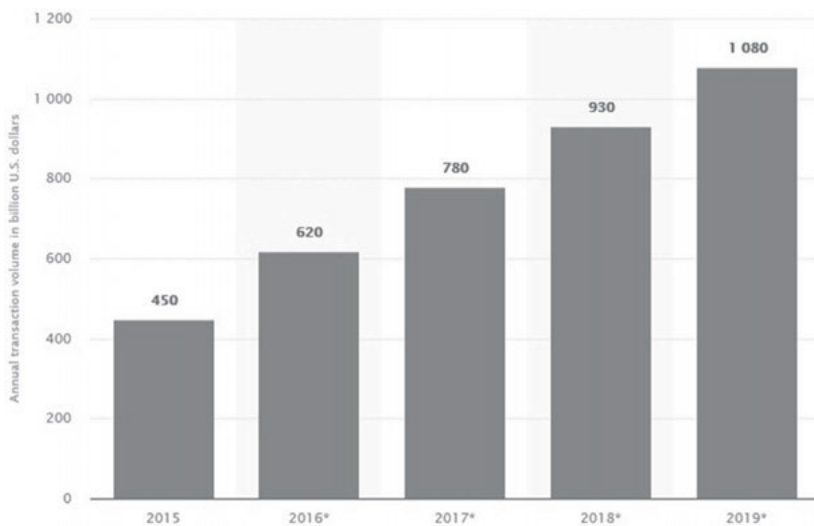
¹⁷ Tsumoto Shusaku, Hirano Shoji, Iwata Haruko (2013). Mining nursing care plan from data extracted from hospital information system. Paper presented at the 2013 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining, Niagara Falls, ON, Canada, *Big Data in Health Care: Applications and Challenges*

¹⁸ Hong Liang, Luo Mengqi, Wang Ruixie, Lu Peixin, Lu Wei, Lu Long (2018) Big Data in Health Care: Applications and Challenges, *Data nad Information Management*

2. BENEFITS OF APPLYING THE BIG DATA CONCEPT IN ELECTRONIC PAYMENTS

In order to enable the implementation of Big Data concept in electronic payments, it is necessary to collect as much information about payer as possible. Smart mobile phones are the ideal aggregator of necessary information. Based on the combination of transactional information, preference for specific products or services and location, the Big Data tools can provide timely distribution of payment services and increase the security of payments.

The first operative solutions of EPS were used solely for electronic trade. Smart mobile phones and near field communications (NFC) have created infrastructure for implementation of EPS in retail. Mobile phone payments in China for the first time exceeded payments initiated through personal computers in 2015, and the year after they even made two thirds of all electronic payments¹⁹. At the same time, payments initiated through personal computers still dominate in USA and EU, but mobile payments show high rates of growth²⁰. Trend Force's projection shows that despite the slowdown in the annual growth rate of mobile payments value, it will remain two-digit, while the total value of mobile payments in 2019 will exceed thousand billion dollars (see Diagram 1 for a full forecast).



Source: <https://press.trendforce.com/press/20160201-2298.html> (retrieved February 2nd 2019)

Diagram 1: Total revenue of global mobile payment market from 2015 to 2019

¹⁹ Evans Michelle (2017): "Three Payment Trends That Will Change How We Pay in 2018", *Forbes*, October 27th

²⁰ <https://ecommercenews.eu/key-figures-mobile-commerce-europe-revealed/> (retrieved February 2nd 2019)

With the emergence of new operating systems, technical base of mobile phones strengthens, because faster processors and increased RAM respond faster to consumers' requests²¹. New phones are getting closer to personal computers by the ability to process data and execute given commands. Along with the development of mobile applications for the large number of EPS, smart phones have become the base for the development of mobile digital wallets²². These currently represent the most innovative class of EPS. They contain a database of preferred payment methods for the phone owner – debit and credit card numbers, PIN numbers for each of the cards, card expiration dates, as well as personal information such as the address to which the card is registered, delivery addresses and others²³. At appropriate moment, the mobile digital wallet makes the stored data available and practically automates the process that the user would normally do manually. The ability to match payment cards with loyalty cards, gift cards or cards issued by a retailer is another advantage. This allows customer to directly make a discount when making payments, collect points for special prizes or use previously approved bonuses.

Two motives for an increase in number of companies that enter into the mobile digital wallets market are transaction processing fees and access to the source of information. Although processing fees may seem as a key motive, information control becomes more and more important. Banks have given up the ability to commercialize the data in their possession by committing themselves to clients' privacy protection. EPS have also stated in user agreements to protect the personal data. However, the circumstances under which the EPS operate are fundamentally different from traditional banking operations. Customers are aware that while browsing the Internet, a large number of websites follow their behaviour, especially if it discloses their preferences to certain products and services. In such situations, customers' privacy preferences only relate to the prevention of data theft, not the secrecy of transactions. It is therefore not surprising that EPS are less consistent than banks in preserving customers' privacy.

EPS payments represent only a small portion of all customers' transactions. Even assuming that the customer does not use cash, there is a variety of payment instruments to choose from. Not even banks can create a complete picture of their clients' payments, as they can use debit and credit cards of different issuing banks, gift cards or merchants' loyalty card. The data that intermediaries can obtain are a sample, which does not necessarily reflect all of customers' habits. That shows the full potential of mobile digital wallets, because they are conceived as an application that combines all payment instruments that the customer has

²¹ Phillips Casey (2014): "How Smartphones Revolutionized Society in Less than a Decade", *GovTech*, November 20th

²² Anderton Kevin (2016): "Mobile Payment And The Future Of Money", *Forbes*, April 29th

²³ Kemp Richard (2013): "Mobile payments: Current and emerging regulatory and contracting issues", *Computer Law and Security Review*, 29/2013, 175-179

at disposal. Within single application, there are payments made for e-commerce and retail purchases as well as usage of loyalty cards and collection of discounts. In developed economies, where the cash-use rate is at a low level, the mobile digital wallet provider can reach almost all of customer's payment data.

Banks play the role of executor in payment transactions. Until now, banks and other payment institutions did not have the means to actively participate in the creation of transactions. Thanks to the integration of mobile digital wallets with other mobile applications, banks and payment institutions can directly influence customers' decisions. Information coming from GPS modules, social networks and Internet browsers enable payment institutions to get to know the user more closely.

For example, a customer searches for winter sports equipment through a mobile browser. As the GPS is activated on his mobile phone, the customer receives a notification when the next time he is in vicinity of the winter sports equipment store. His bank offers him a loan for the purchase of sports equipment at a low interest rate. Here, the bank takes the initiative for direct distribution of its product (short-term loan) and influences the decision of its client, instead of just executing transactions²⁴. Of course, the final decision depends solely on the customer's attitude, but it can be considered that the lack of financial resources often delay or stop the purchase of this type of product. In the case that he decides to accept the offer, the user will buy goods that otherwise he would not be able to afford, and the bank will place the product for which there was no demand. Timely distribution of payment services generates value for customers, payment institutions (banks, ESP) and merchants.

Another key advantage is the increase in security by reducing the possibility of fraud by third parties. With different analysis techniques, it is possible to segment the transaction data into the components, each of which is compared with historical data and patterns. The aim is to identify the illogicality in the data indicating possible misuse. Thanks to these procedures, which are carried out with the help of adequate software solutions for the collection and processing of huge volumes of data, it is possible to stop misuses while they are still in progress. The risk of identity theft is significantly reduced in this way, because malicious users are stopped at a later stage of the transaction. Therefore, the entire Big Data transaction security strategy requires data management and real-time operation.

Largest Chinese auction website Alibaba has been successfully using a Big Data software solution to prevent abuse while shopping. The software performs a five-layer analysis of purchases in order to prevent misuse of customers' accounts. The first layer is the account check. Based on historical data and facts about buyer and seller, the trustworthiness of transaction is checked. It is necessary to determine whether there is a risk that the buyer's or seller's accounts have been compromised or have previously been involved in suspicious transactions.

²⁴ <http://www.paymenteye.com/2016/01/20/big-data-and-mobile-payments-the-game-changer> (retrieved February 2nd 2019)

The second layer is the device check. The aim is to determine whether the used device is the one customer usually uses and whether it is connected through the usual IP address. If the answer is negative, there is a high possibility that it is a misuse and the purchase may be stopped, or additional verification required. The third layer is the activity check. The authenticity of the purchase is checked within this step. It is necessary to determine whether the activity is consistent with the previous behavior of the buyer, whether he bought similar goods from similar sellers. If its behavior is atypical, it may be misuse. The fourth layer is a risk assessment strategy. Within this step, a decision on purchase is made either automated based on the algorithm, or it is sent to manual decision. Algorithms make clearly positive and clearly negative decisions. All uncertainties require additional checks that may take a while. On the one hand, Alipay wants payments to be quick and comfortable, but on the other it does not want to allow misuses. The fifth layer is a manual analysis, when needed²⁵.

All parties benefit from increased security. Customers avoid locking accounts and losing funds. Merchants avoid fraudulent purchases for which they will have to refund assets, with the loss of a product or service. Payment institutions avoid reclamations and work stoppages.

3. POSSIBLE MISUSES OF PERSONAL DATA

Previously mentioned advantages bring benefits to all stakeholders in the electronic payment cycle. However, certain activities based on the application of the Big Data tools can produce conflict of interests of different participants. As a rule, in these situations the customer is on one side and the payment institution is on the other. The reason for such segmentation is that payment institutions, using customer's personal data, can act against his best interests. Merchants can be found on both sides, that is, they can be threatened by the payment institution's operation, or use its specific position.

Practically all negative tendencies that can be associated with the Big Data concept originate from the loss of user's privacy. Entrusting a large amount of data to a particular entity consequently leads to an attempt of misuse by the entity itself. Some forms of personal data misuses may seem benign, while the others are clear form of attack on the basic human rights.

Targeted sales represent the first group of misuses²⁶. Previously mentioned example of purchasing sports equipment seems useful, however, it can only be

²⁵ Cheng Jidong et al. (2015): "Big data based fraud risk management at Alibaba", *The journal of financial and data science*, 1/2015, 1-10

²⁶ Anshari Muhammad et al. (2019): "Customer relationship management and big data enabled: Personalization & customization of services", *Applied Computing and Informatics*, 2/2019, 94-101

one in a series of offers that customers receive daily. In order to stimulate its services, payment institution can send offers for all forms of products and services customer has searched. This would cause customer's discomfort and the increase in unwanted purchases, due to the loss of autonomy in decision making. The situation would deteriorate further if the payment institution shared the data with merchants, who would then be able to send their own offers on a daily basis. A customer can find himself in a situation that he cannot evaluate the products in the right way, because of the huge offer of identical or very similar alternatives. These issues already exist on e-mail accounts, where a large amount of unwanted content arrives every day. In the future, digital wallets or map applications can be used to distribute commercial offers. It would be much more difficult for customer to avoid these contents, which increases the sense of discomfort.

The situation is even more worrying if one takes into account that in the future, the aggregation of financial data with data from social networks and mass messaging services could be possible. A payment institution could classify customers according to a psychological profile, as social networks classify according to the demographic profile. By identifying customers who are prone to suggestive spending, a payment institution can fully personalize offers and recommend targeted sales to appropriate merchants. The next step is sending suggestive ads to collectors, compulsive shoppers, or sending electronic gambling offers to customers found to be prone to gambling. The unethical nature of this practice is not in question, but in addition, it is necessary to bear in mind the possible extremely negative social effects.

Another significant possibility Big Data bring is a dynamic pricing policy. It is a very sensitive form of sales policy, in which the merchant constantly adjusts the level of prices for certain customers. Big Data would enable that real-time pricing policy, based on individual customer data²⁷. In other words, by analyzing the affinity of each customer, an individual price would be formed, which should respond to his unique willingness to buy a particular product or service. The first disadvantage is that a dynamic pricing policy is applicable to a small number of products, usually luxurious ones, for which demand is less elastic. Greater applicability would be possible in the service sector, especially IT services. Another, much more significant disadvantage is that dynamic pricing policy is highly discriminatory. Without any economic justification, a higher price is charged to certain groups of customers, just because it is noticed that they spend more on similar products. This kind of capabilities qualifies Big Data as a concept that can especially harm individual customers by exposing their privacy entirely to business entities.

Another group of potential problems are much more obvious. By using the Big Data tool, the entity that has the appropriate data available can easily moni-

²⁷ Le Thi Mai, Liaw Shu-Yi (2017): "Effects of Pros and Cons of Applying Big Data Analytics to Consumers' Responses in an E-Commerce Context", *Sustainability*, 5/2017, 1-19

tor each individual customer. Suppose that such an entity could be the state, which in different ways can exert pressure on companies that have disposable data to provide them. Similar cases have already been recorded, paradoxically, in Western countries. Under the excuse of the fight against terrorism, the states have taken over large amounts of data from telecommunications companies and Internet browsers²⁸. A dictatorial authority could integrate customer's payment account with data from internet searches, communication on social networks and his movement tracks, to conclude that he represents a threat to national security. This conclusion does not necessarily have to be malicious. It has already been emphasized that Big Data tools process data from different structures that are not necessarily always reliable. Therefore, an individual's behaviour can accidentally be interpreted as dangerous. Consciously blocking an individual due to anti-state behaviour opens a completely different problem of subjective assessments of undesirable behaviour and thus creates a vast space for abuses. By blocking the source of funds for one or more days, the state sends a clear message to the disloyal individual and all others who may act contrary to the interests of the authorities²⁹.

By analyzing these situations, it becomes clear that the positive and negative aspects of Big Data tool application must be viewed from the perspective of the end users. Having in mind the problems that can arise, the availability and use of personal data should be carefully legally regulated. In doing so, regulation must be a continuous process that is constantly being re-examined, as the informational evolution is constant. Categories that have been defined and regulated are now changed under the influence of new devices and communication channels, which provide new ways to overcome old legal frameworks.

4. CONCLUSION

Although it seemed as a distant future only a few years ago, the new IT reality has already begun. Its three pillars, the Internet of Things, Machine Learning and Big Data are used in basic forms in a wide variety of activities. All three concepts are still far from taking a dominant role and becoming a commercial standard. One should keep in mind that it took over three decades to transform computers in machines suitable in terms of price, dimensions and capabilities for individual customers and small firms. It can be expected that all three concepts will reach their full maturity and commercial application much faster. There are

²⁸ Chen Hsinchun, Chiang Roger, Storey Veda (2012): "Business intelligence and analytics: From big data to big impact", *MIS Quarterly*, 4/2012, 1171-1172

²⁹ Tomić Nenad, Todorović Violeta (2018): "Challenges of transition to cashless society", in: Babić Verica (ed.) *Contemporary issues in Economics, business and management – EBM 2018* [proceedings of the international scientific conference], Kragujevac: Faculty of Economics, 317

numbers of potential advantages associated with them, but also certain shortcomings and dangers of their unregulated use.

Mobile digital wallets in this moment represent the most suitable infrastructure for data aggregation. Owners of these wallets can distribute collected data to interested parties. Merchants and payment institutions then have the opportunity to directly offer their own products, which can be done both jointly and individually. The advantage of this distribution channel relative to targeted ads boosting on social network is that companies are offering the product to customers who are interested. Social networks allow company to make an offer to the targeted demographic group that does not need to be interested.

Another significant advantage is the ability to use large data set analysis in security purposes. Social networks, as Facebook does, prevent users from sending friend requests to people without visible connections, like mutual friends, common education, workplaces, or years of age. Information filters in payment systems must be more precise, and the comparison of historical data and those that emerge in real time plays a key role. If the Big Data software is able to use the algorithm to identify payment from a stolen account, the decennial problem of proper authentication of electronic payments can be overcome.

Nevertheless, the question of price of these benefits arises. In order to utilize its full potential, it is necessary to use as large data set as possible. This means that individual users will be confronted with an ever-increasing loss of privacy. The worst possible option is that users agree to share all requested information. Such an outcome is not entirely impossible, given the behavior of a large number of users on social networks. To expect that the companies with which the data are shared will be careful in using them is extremely naive. The possible problems mentioned in the third part of the paper show that the interests and the motives of stakeholders in this case are opposed.

The situation is even more worrisome given the position of the state. Instead of protecting its citizens and suppressing the violent behavior of large corporations, the state may require taking over all data for its own needs. This scenario would not be new and it would open another question. Once the user becomes part of the system in which every communication, search and purchase is monitored, will he ever be able come out? A possible solution is to formulate a flexible regulation of data collection and use, which will transparently monitor data management in large corporations. Such regulation should not be made solely by the state, due to its own interest in this field, but it should be necessary to include representatives of the association of consumers with appropriate knowledge. The question for further research is what would be effect on the overall problem if the withdrawal of cash occurs in the future.

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UTICAJ KONCEPTA BIG DATA NA BUDUĆE TENDENCIJE ELEKTRONSKIH PLAĆANJA

Abstrakt: *Novi talas transformacije informaciono-komunikacionih tehnologija oslanja se na koncepte interneta stvari, Big Data i mašinsko učenje. Ovi koncepti će omogućiti povezivanje i samostalnu komunikaciju velikog broja uređaja, obradu podataka koji nastaju kao posledica ovih procesa i učenje na osnovu prerađenih informacija. Platni promet je delatnost na koju će dolazeće promene imati veliki uticaj. Veliki broj transakcija stvara informacionu osnovu, čijom analizom se mogu dobiti precizni inputi za donošenje poslovnih odluka. Predmet istraživanja je uticaj upravljanja velikom masom transakcionih podataka na ključne stakeholdere u procesu plaćanja. Cilj rada je identifikovanje ključnih prednosti i opasnosti koje će koncept Big Data doneti platnoj industriji. Generalni zaključak je da primena Big Data alata može olakšati pravovremenu distribuciju platnih usluga i povećati bezbednost transakcija, ali je cena u vidu gubitka privatnosti izuzetno visoka.*

Ključne reči: *Big Data, elektronska plaćanja, privatnost, zloupotreba podataka, mobilni digitalni novčanici;*

DECISION TO WITHDRAW PUBLISHED TEXT
***Critics and Aspects of the European Citizenship According
to the CJEU: From Rottmann to Tjebbes and Others***

The commission of the Megatrend Review, formed to investigate issue, based on comparison of two scientific papers:

- A) Da Rottmann a Tjebbes e.a.: riflessioni sulla giurisprudenza della Corte di giustizia in materia di cittadinanza europea, ISSN 2284-3531, published at the Ordine internazionale e diritti umani, (2019), pp. 997-1014., http://www.rivistaoidu.net/sites/default/files/8_Orzan.pdf; and
- B) Critics and Aspects of the European Citizenship According to the CJEU: From Rottmann to Tjebbes and Others, doi:10.5937/MegRev2001001L, published at the Megatrend Review Vol. 17, № 1, 2020: 1-26, http://megatrend.edu.rs/wp-content/uploads/2020/04/Megatrend_revija_Vol_17_No_1_2020_WEB.pdf

concluded on October 13th 2020 that some parts of the original paper (A) in Italian language have been used without proper quotations in the paper (B) in the English language.

Following this conclusion, the Commission proposed to the Editorial Board to officially withdraw paper (B) electronically published in Megatrend Review №. 1 in 2020. Notification of the withdrawal will be issued in Megatrend Review №. 3 in December 2020.

The Editorial Board has accepted the proposal related to the above-mentioned text.

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1. Opšte. – „Megatrend revija“ je naučno glasilo Megatrend univerziteta (Megatrend University).

Časopis je, prema klasifikaciji CEON visoko pozicioniran kao vodeći nacionalni naučni časopis u Republici Srbiji (M51) i prema klasifikaciji Ministarstva prosvete, nauke i tehnološkog razvoja Republike Srbije (M52).

„Megatrend revija“ izlazi od 2004. godine, na srpskom i engleskom jeziku. Otvorena je za sve kvalitetne radove i autore iz čitavog sveta. Ima međunarodnu redakciju i međunarodni izdavački savet. Putem razmene i na druge načine, stiže do čitalaca i van granica Srbije.

Časopis „Megatrend revija“ je interdisciplinarni časopis iz oblasti društvenih nauka, u kojem se objavljuju radovi iz sledećih tematskih oblasti:

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- Informaciono društvo

2. Recenzije. - Svaki rad se recenzira od strane dva recenzenta. Radovi su podložni proverbi na plagijat.

Rad koji dobije pozitivnu recenziju oba recenzenta objavljuje se u skladu sa standardnom kategorizacijom radova u naučnim časopisima kao: originalni naučni rad, pregledni naučni članak, stručni članak, saopštenje ili osvrt, prikaz knjige i prevod.

O kategorizaciji rada odlučuju recenzenti i glavni urednik, s tim da se u slučaju sumnje prihvata rešenje koje je povoljnije za autora (ako je jedan recenzent kategorisao rad na jedan, a drugi recenzent na drugi način, prihvatiće se viša kategorizacija).

U slučaju da jedan recenzent predloži da se rad objavi, a drugi da se ne objavi, rad se daje na recenziju trećem recenzentu i njegova odluka je konačna.

3. Anonimnost autora i recenzenata. - Redakcija se strogo drži pravila o međusobnoj anonimnosti autora i recenzenata. Drugim rečima, recenzenti ne znaju ko je i odakle je autor rada, kao što ni autor ne zna imena recenzenata. Pored ostalog, autor koji nije zadovoljan načinom na koji su recenzenti vrednovali njegov rad, ima pravo da dobije na uvid recenzije, ali bez imena recenzenata.

II. ORIGINALNOST RADA I BORBA PROTIV PLAGIJATA

Molimo autore da imaju u vidu sledeće.

1. Pisana potvrda o tome da je rad originalan. - Prilikom dostavljanja rukopisa autor je dužan da u pisanom obliku potvrdi da je njegov rad originalan, tj. da već nije negde drugde objavljen. Radovi koji budu poslani bez pisane potvrde autora o tome da je reč o originalnom delu, neće biti uzimani u obzir.

2. Rad koji je već negde prethodno objavljen. - Ako iz nekog razloga kandiduje rad koji je već negde objavljen (u inostranstvu, na stranom jeziku), autor je dužan da precizno navede gde je rad objavljen (u kom časopisu, kom broju, na kojim stranama) i da priloži pisanu saglasnost redakcije časopisa u kome je rad prvobitno objavljen. Ukoliko su ispunjeni ovi uslovi, a Redakcija „Megatrend revije“ (dalje: „Revija“) zaključi da je rad iz nekog razloga posebno interesantan i da ga treba objaviti, rad će biti objavljen, s tim što će biti naznačeno gde je prvi put objavljen i da se štampa uz odobrenje.

Ukoliko je, međutim, rad već negde objavljen, a predat je za objavljivanje u „Reviji“ bez informacije o tome, rad neće biti objavljen. Uz to, kao sankcija za nekorektan odnos, u prvom narednom broju „Revije“ u posebnoj rubrici biće objavljena informacija o tome da je odnosni autor na nekorektan način pokušao da ponovo objavi isti rad. Takođe, radovi istog autora neće se ubuduće objavljivati u „Reviji“

3. Plagijat. - U slučaju da redakcija „Revije“ sama ili posredstvom recenzenta otkrije da je rad koji je predat za objavljivanje plagijat, u prvom narednom broju „Revije“ u posebnoj rubrici biće objavljena informacija o tome da je odnosni autor predao rad koji je plagijat, i biće navedeno originalno delo iz kog je plagijat uzet. Takođe, radovi istog autora neće se ubuduće objavljivati u „Reviji“. Po potrebi, biće obavešteni autor čiji je rad prepisan odn. redakcija časopisa u kome je objavljen originalni rad.

III. UPUTSTVO ZA AUTORE

Radove treba pripremiti u skladu sa sledećim uputstvom:

1. Rukopis

Rukopis se predaje u elektronskom obliku (MS Word). Predviđeni format stranice je A4, font Times New Roman (veličina 12 pt za tekst, uključujući i apstrakt, bez proreda. Radovi na srpskom jeziku se dostavljaju u srpskoj latinici. Rad se šalje na e-mail adresu: **megatrendrevija@megatrend.edu.rs**

Uz rad se obavezno dostavlja i pisana izjava autora o tome da je rad originalno delo (potpisana i skenirana izjava).

Uslov da rad uđe u proceduru recenziranja jeste da u potpunosti zadovoljava tehničke kriterijume koji su propisani ovim uputstvom. Rad mora biti lektorisan, tj. mora da zadovoljava jezičke i pravopisne standarde srpskog odnosno engleskog jezika.

2. Broj autora

Prednost imaju članci koje je napisao samo jedan autor (autor pojedinac), ali redakcija sprovodi aktuelne propise (*Pravilnik o postupku i načinu vrednovanja, i kvantitativnom iskazivanju naučnoistraživačkih rezultata istraživača*, Službeni glasnik RS br. 24/2016 i 21/2017), po kojima se rad prihvata ako nema više od tri koautora.

3. Jezik

Tekst se predaje na srpskom ili engleskom jeziku. Ako bude prihvaćen, biće objavljen na jeziku na kome je predat.

Izuzetno, redakcija ima pravo da zbog posebno opravdanih razloga odluči da se tekst koji je predat na srpskom prevede i objavi na engleskom jeziku, ili obrnuto.

4. Obim

Članak treba da ima približno 30.000 slovnih znakova, računajući i beline (1 autorski tabak). On može da bude i nešto kraći odn. nešto duži, s tim da broj slovnih znakova sa belinama ne bude manji od 20.000 niti veći od 45.000.

Iz naročito opravdanih razloga (poseban društveni značaj teme, koautorstvo nekoliko međunarodno priznatih naučnika i sl.), redakcija izuzetno može dozvoliti i objavljivanje članka većeg obima, ali ne većeg od 2,5 autorska tabaka (75.000 slovnih znakova).

5. Tabele i formule

Tabele praviti isključivo alatom za tabele u programu MS Word. Tabele moraju da imaju naslove i biti numerisane arapskim ciframa.

Formule raditi uz pomoć editora formula u programu MS Word.

6. Grafički prilozi i fotografije

Grafički prilozi mogu se predati nacrtani na papiru ili u elektronskom obliku. Kada se crteži predaju u elektronskom obliku, to treba da je u nekom od sledećih formata: EPS, AI, CDR, TIF ili JPG. Ako autor ne zna ili koristi neki specifičan program, potrebno je da se dogovori o formatu zapisa sa tehničkim urednikom. **Ne treba crtati crteže u programu MS Word!**

Fotografije moraju biti jasne, kontrastne i neoštećene. Autoru se ne preporučuje da slike skenira sam, već da taj osetljivi posao prepusti redakciji.

Ako u verziju na papiru nisu uključeni crteži i fotografije, moraju se jasno obeležiti mesta gde treba da se nalaze. Oznake u tekstu moraju se poklapati sa onima na priloženim slikama (ili fajlovima).

Crteži i fotografije moraju da imaju potpise i da budu numerisani arapskim ciframa.

7. Organizacija rukopisa

Članak mora da sadrži sledeće elemente i to ovim redom:

1. Podatke o autoru. - Ime i prezime, zvanje (titula) autora, naziv institucije u kojoj je autor zaposlen (afilijacija); obavezno navesti e-mail adresu autora.

2. Naslov rada. - Naslov treba da je jasan i precizan.

3. Sažetak (apstrakt). - To je kratak informativni prikaz sadržaja članka, koji sadrži cilj istraživanja, metode, rezultate i zaključak. Treba da je na istom jeziku na kome je napisan i sam rad. U pogledu obima, treba da ima od 100 do 250 reči odn. 4 do 8 rečenica ili od jedne trećine do polovine štampane strane i da stoji između naslova rada i ključnih reči, nakon kojih sledi tekst članka.

4. Ključne reči. - Predstavljaju termine ili fraze koji najbolje opisuju sadržaj članka. Dozvoljeno je navesti do pet reči odn. fraza.

5. Tekst članka. - Centralni deo predstavlja tekst članka u kojem autor uz upotrebu odgovarajuće aparature obrađuje određeni naučni problem.

6. Popis korišćene literature. - Posle teksta članka, daje se popis korišćene literature i to abecednim redom po prezimenima autora.

Popis se daje prema Uputstvu za citiranje, s tim da se godina izdanja stavlja odmah iza imena autora odn. urednika. Na kraju navođenja članka ili rada u zborniku navode se stranice na kojima se nalazi citirani rad.

Primeri:

- Knjiga: Akehurst Michael (1984): *A Modern Introduction to International Law*, London

- Poglavlje u knjizi više autora: Buchanan Allen (2010): "The Legitimacy of International Law", 79-96, in: Besson Samantha, Tasioulas John (eds.): *The Philosophy of International Law*, Oxford

- Članak: Osakwe Chris (1971): "Contemporary Soviet Doctrine on the Juridical Nature of Universal International Organizations", *American Journal of International Law* 3/1971, 502-521

Radovi istog autora navode se hronološkim redom, a ako se navodi više radova istog autora objavljenih u istoj godini, uz godinu izdanja dodaju slova "a", "b", "c" itd.

Primeri:

- Cassese Antonio (1999a): "Ex iniuria ius oritur. Are We Mowing towards International Legitimation of Forcible Humanitarian Countermeasures in the World Community?", *European Journal of International Law*, 1/1999, 23-30

- Cassese Antonio (1999b): "A Follow-Up: Forcible Humanitarian Countermeasures and Opinio Necessitatis", *European Journal of International Law*, 4/1999, 791-799

7. Rezime (Summary). - Na samom kraju daje se rezime tj. sažetak rada, koji može biti isti kao i sažetak (apstrakt), ali može biti i nešto većeg obima, ali ne više od 1 strane. Ako je rad pisan na srpskom jeziku, obavezno se dostavlja rezime na engleskom jeziku.

8. Nivoi naslova. - Zavisno od konkretnog teksta naslovi imaju različite nivoe, s tim da se koristi sledeći metod:

1. Prvi nivo naslova

(sredina, regular, bold, arapski brojevi)

1.1. Drugi nivo naslova

(sredina, italik, arapski brojevi)

1.1.1. Treći nivo naslova

(iznad početka pasusa, italik, arapski brojevi)

Za slučaj da ipak nešto nije jasno, autorima se savetuje da pogledaju prethodne brojeve „Megatrend revije“ ili da se obrate direktno sekretaru ili tehničkom uredniku časopisa.

Redakcija zadržava pravo da, u zavisnosti od specifičnosti teksta, a u cilju njegove bolje preglednosti, uredi naslove na nešto drugačiji način, ostajući u osnovnim okvirima izložene deobe naslova.

9. Citiranje. - Korišćenu literaturu citirati prema niže izloženom uputstvu za citiranje.

10. Adresa redakcije. - Radovi se šalju u elektronskoj formi na sledeću e-mail adresu: **megatrendrevija@megatrend.edu.rs**

Redakcija „Megatrend revije / Megatrend Review“
Megatrend univerzitet
Bulevar maršala Tolbuhina 8
11070 Beograd

Telefon redakcije: 011/220 31 50.

IV. UPUTSTVO ZA CITIRANJE

1. Opšta pravila

1. Ime autora. - Navodi se prvo prezime, pa ime autora. Ako postoji srednje slovo, ono se navodi između prezimena i imena.

Primer: Shaw N. Malcolm

2. Više autora. - Ako postoji više autora rada, razdvajaju se zapetama.

Primer: Simma Bruno, Alston Philip

Ako je više od 3 autora rada, navodi se prezime i ime samo prvog autora i dodaje se kurzivom (italikom) *et al.* (od *et alia*).

Primer: Henkin Louis *et al.* (1993): *International Law: cases and Materials*, St. Paul. Minn.

3. Strane. - Kada se navodi određena strana (knjige, članka), ona se navodi samo brojem bez ikakvih dodataka (s., str., p., pp., стр., S., i sl.).

Primer: Akehurst Michael (1984): *A Modern Introduction to International Law*, London, 9.

4. Fusnote. - Kada se navodi fusnota, iza broja strane piše se skraćenica „fn“ i onda navodi broj citirane fusnote.

Primer: Akehurst Michael (1984): *A Modern Introduction to International Law*, London, 9, fn 2.

5. Ponovno citiranje istog rada. - Kada se rad koji je već citiran ponovo navodi, to se vrši tako što se navodi prezime i ime autora, pa iza toga, razdvojeno zapetom, stranica koja se citira. Sve bez korišćenja op. cit., nav. delo i slično.

Primer: Akehurst Michael, 15.

Ako je navedeno nekoliko radova istog autora, navodi se prezime i ime autora, u zagradi godina u kojoj je odnosni rad objavljen i strana.

Primer: Akehurst Michael (1984), 15.

Ako je navedeno nekoliko radova istog autora objavljenih u istoj godini, radovi se u spisku korišćene literature (koji se obavezno daje na kraju rada) iza godine publikovanja dopunski obeležavaju latiničnim slovima „a“, „b“, „c“ itd. i tako navode kod citiranja u fusnotama.

Primer: Akehurst Michael (1984a), 15.

6. Ponovno citiranje prethodno citiranog rada. - Ako se citira podatak sa iste strane istog dela koje je citirano u prethodnoj fusnoti, koristi se samo latinična skraćenica *Ibid.* (od *ibidem*), bez navođenja bilo kakvih drugih podataka.

Primer: *Ibid.*

Ako se citira podatak iz dela koje je citirano u prethodnoj fusnoti, ali sa različite strane, navodi se Ibid, a zatim zapeta i broj strane.

Primer: Ibid, 54.

7. Strana imena. - U radovima koji se predaju na srpskom jeziku, strana imena se transkribuju na srpski jezik, kako se izgovaraju, a prilikom prvog pominjanja u tekstu njihovo ime i prezime navode se u zagradi u izvornom obliku.

Primer: Tomas Hobs (Thomas Hobbes)

2. Knjige

1. Opšte. - Knjige se navode na sledeći način: 1) prezime autora, 2) njegovo ime, 3) godina izdanja (u zagradi), 4) dve tačke, 5) naziv knjige kurzivom (italikom), 6) mesto izdanja kurentom (obično), 7) strana (bez ikakvih dodataka), 8) fusnota koja se citira.

Ako se navodi i izdavač, piše se kurentom (obično) pre mesta izdanja.

Primer: Scott V. Shirley (2010): International Law in World Politics, Lynne Rienner Publishers Inc., Boulder – London, 71, fn 45.

2. Više izdanja. - Ako knjiga ima više izdanja može se (ne mora) navesti broj izdanja u superskriptu.

Primer: Scott V. Shirley (2010²): International Law in World Politics, Lynne Rienner Publishers Inc., Boulder - London (objašnjenje: 2010² - drugo izdanje, objavljeno 2010)

3. Urednici. - Ako knjiga ima jednog ili više urednika, prvo se navode prezimena i imena urednika, razdvojena zapetama, zatim naznaka „(ur.)“ odnosno „ed.“ ili (ako ih je više) „eds.“, pa godina izdanja u zagradi, dvotačka, naziv knjige kurzivom (italikom), i mesto.

Primer: Besson Samantha, Tasioulas John (eds.) (2010): The Philosophy of International Law, Oxford.

Ako je broj urednika veći od tri, navode se podaci samo za prvog urednika, zatim se posle zapete navodi „et al.“ i posle toga se navodi „ur.“.

Primer: Hamilton P. et al. (eds.) (1999): The Permanent Court of Arbitration: International Arbitration and Dispute Resolution, Kluwer International, The Hague-London-Boston.

4. Poglavlje u knjizi. - Poglavlje u knjizi koja ima urednika navodi se tako što se: 1) navode prezime i ime autora, 2) godina izdanja u zagradi, 3) dve tačke, 4) naziv poglavlja kurentom (pod navodnicama), 5) zapeta, 6) brojevi strana koje se citiraju, 7) „u“ odn. „in“, 8) prezime i ime urednika, 9) „(ur.)“ odn. „(eds.)“, 10) naziv knjige u kojoj je citirano delo, kurzivom (italikom) i 11) mesto izdanja.

Primer: Buchanan Allen (2010): "The Legitimacy of International Law", 79-96, in: Besson Samantha, Tasioulas John (eds.): The Philosophy of International Law, Oxford.

3. Članci

1. Opšte. - Članci se navode na sledeći način: 1) prezime autora, 2) ime autora, 3) godina izdanja, 4) dve tačke, 5) naziv članka kurentom (obično) pod navodnicama, 6) naziv časopisa (zbornika i sl.) kurzivom (italikom), 7) broj i godište spojeni kosom crtom, 8) broj strane (bez ikakvih dodataka), 9) broj citirane fusnote.

Primer: Osakwe Chris (1971): "Contemporary Soviet Doctrine on the Juridical Nature of Universal International Organizations", *American Journal of International Law* 3/1971, 502, fn 1.

2. Skraćenica naziva časopisa. - Ako je naziv časopisa (zbornika i sl.) dug, prilikom prvog citiranja u zagradi sa navodi skraćenica pod kojom će se časopis (zbornik i sl.) nadalje pojavljivati.

Primer: Osakwe Chris (1971): "Contemporary Soviet Doctrine on the Juridical Nature of Universal International Organizations", *American Journal of International Law (AJIL)* 3/1971, 502-521.

4. Propisi

1. Opšte. - Propisi se navode na sledeći način: 1) naziv propisa se navodi u kurentu (obično), 2) kurzivom (italikom) navodi se glasilo u kojem je propis objavljen, 3) na kraju se navodi broj i godina glasila u kojem je propis objavljen.

Primer: Zakon o osnovama uređenja službi bezbednosti Republike Srbije, *Službeni glasnik Republike Srbije*, 116/2007.

2. Ponovno pominjanje propisa. - Ako se propis pominje kasnije, prilikom njegovog prvog pominjanja navodi se u zagradi njegov skraćeni naziv, s tim da se ispred skraćenog naziva stavlja objašnjenje „u daljem tekstu“.

Primer: Zakon o osnovama uređenja službi bezbednosti Republike Srbije (u daljem tekstu: Zakon o službama bezbednosti), *Službeni glasnik Republike Srbije*, 116/2007.

3. Izmene i dopune. - Ako je propis naknadno menjan i dopunjavan, navode se jedan za drugim brojevi i godine glasila u kojima su objavljeni izvorni tekst odn. izmene i dopune.

Primer: Zakon o osnovama uređenja službi bezbednosti Republike Srbije, *Službeni glasnik Republike Srbije*, 116/2007, 72/2012.

4. Članovi, stavovi i tačke propisa. - Članovi, stavovi, tačke (alineje) itd. propisa navode se kroz kosu crtu, tako što se prvo navodi broj člana, zatim stava, pa alineje itd.

Primer: Konvencija UN o pravu mora (1982) čl. 1/1/5/a/i.

5. Tekstovi sa interneta

Citiranje tekstova sa interneta treba da sadrži: 1) ime autora citiranog teksta (ako je reč o autorskom tekstu), 2) naziv citiranog teksta pod navodnicima, 3) podatke o tome gde je tekst objavljen (ako je objavljen u papirnoj verziji), 4) internet stranicu, 5) datum pristupa stranici.

Primer: Bradley A. Curtis, Gulati Mitu: "Withdrawing from International Custom", *The Yale Law Journal* 2/2010, 233-241, <http://yalelawjournal.org/images/pdfs/912.pdf> (18.11.2012).

GENERAL INFORMATION ON THE JOURNAL AND THE INSTRUCTIONS FOR AUTHORS

I. GENERAL INFORMATION ON THE JOURNAL

1. General. – “Megatrend Review” is the scientific journal published by Megatrend University (Megatrend univerzitet).

According to the classification of CEON the journal is highly ranked amongst the leading national scientific journals in Serbia (M51) and by the Ministry of Education, Science and Technological Development of the Republic of Serbia (M52).

“Megatrend Review” journal has been published since 2004 in Serbian and English language. It is open to all high-quality papers and authors from around the world. It has an international Editorial Board and international Publishing Council. Through international exchange it reaches readers beyond the borders of Serbia.

“Megatrend Review” journal is a multidisciplinary journal in the fields of social sciences. Papers on following scientific fields are published:

- Economics
- Law
- Politics and Security
- Management and Marketing
- International Relations
- Public Policies
- Information Society

2. Reviews. – Each paper is reviewed by two reviewers. Paper that has received two positive reviews will be published according to standard categorization of the scientific journals: original scientific paper, review scientific article, expert article, preliminary report or overview, translation and book review..

The categorization of the paper is determined by the reviewers and Editor in chief. If there is any doubt regarding the categorisation, the given higher category will be applied.

In case that one of the reviewers suggests that the paper should be published and the other that it should not, the paper is going to be given to the third reviewer whose decision is final.

3. Anonymity of the authors and reviewers. – Editorial of the “Megatrend review” journal abides by the rule on mutual anonymity between authors and reviewers. Further, if the author is not satisfied with the reviews of the paper, he / she, has the right to receive the reviews.

II. PAPER ORIGINALITY AND FIGHTING AGAINST PLAGIARISM

We kindly ask the authors to take into consideration the following:

1. Written confirmation that the work is original. - When submitting a manuscript the author is required to confirm in writing that his/her paper is original and that it has not been published elsewhere. The paper that is sent without this written confirmation by the author, will not be accepted.

2. The paper that has previously been published elsewhere. - If for any reason the author submits the paper that has already been published elsewhere (abroad, in a foreign language), he/she is obliged to specify where the paper was published (the journal, issue and number, the number of pages) and enclose the written consent of the editorial board of the journal in which the paper was originally published. If these requirements are met, and editors conclude that the paper is for some reason of particular interest and should therefore be published, it will be published with indication where it was published first and that it is republished in "Megatrend Review" with permission.

However, if the paper has already been published elsewhere, and also submitted for publication in "Megatrend Review" with no information about previous publication, the paper will not be published. In addition, as a sanction for unfairness, in the next issue of "Megatrend Review" the information that a particular author has unfairly tried to re-publish the same paper will be published in a special section. Apart from that, the papers by the same author will not be published in "Megatrend Review" in the future.

3. Plagiarism. - Should the editors of "Megatrend Review" journal or through reviewers discover that the paper submitted for publication is plagiarism, in a special section of its next issue the information that a particular author has plagiarized a paper will be published, and the original paper from which the plagiarism is taken will be cited. In addition, the papers by the same author will not be published in "Megatrend Review" in the future. If necessary, the author whose paper has been copied or the editorial board of the journal that has published the original paper will be notified.

III. INSTRUCTIONS FOR AUTHORS

The papers are to be prepared in accordance with the following instructions:

1. The Manuscript

The manuscript is submitted in electronic form (MS Word). Page size: A4, font Times New Roman (size 12 pt for text including abstract, line spacing: single. The

papers written in Serbian language are submitted in Serbian Latin script. The papers are submitted to the following e-mail address: **megatrendrevija@megatrend.edu.rs**

The paper should be accompanied by the written Author's Statement of originality signed by the author (written, signed and scanned).

Precondition for the paper to be accepted for the reviewing procedure is that it fully satisfies technical criteria according to the instructions given here. Also, the paper must meet the criteria regarding the language (Serbian and English) and spelling. The paper has to be proofread before submission

2. Number of authors

As a rule, papers written only by one author are preferable for publication (an author as an individual). However, if consider justified, according to current Rules of Procedure, the Method of Evaluation and Quantitative Expression of Scientific Research Results of the Researchers (*Pravilnik o postupku, načinu vrednovanja i kvantitativnom iskazivanju naučnoistraživačkih rezultata istraživača*, Službeni glasnik RS no. 24/2016 and 21/2017), editors can decide to publish papers written by co-authors, but not more than three.

3. Language

The text is submitted in Serbian or English language. If accepted, it will be published in the language in which it was submitted.

Exceptionally, the editors will decide that the text submitted in Serbian language is to be translated and published in English, or vice versa.

4. Volume

The paper should approximately have 30.000 characters, including spaces (one author's sheet). Alternatively, it could be shorter or longer, the number of characters with spaces not being smaller than 20,000 nor bigger than 45,000.

Due to particularly justified reasons (the special social importance of the topic, the co-authorship of a number of internationally recognized scientists, etc.) the editorial board could exceptionally allow the publication of an article of a larger volume, but not larger than 2.5 author's sheets (75,000 characters).

5. Tables and Formulae

The tables should only be made by means of table tools in MS Word. The tables must have titles and be numbered in Arabic numerals.

The formulae should be written by means of the equation editor in MS Word.

6. Graphs, Figures and Photographs

Graphs and figures can be submitted drawn on paper or in electronic form. When the graphs and figures are submitted in electronic form, they should be in one of the following formats: EPS, AI, EPS, TIF or JPG. If the author uses these or uses a specific program, it is necessary to agree on the format with the technical editor. **Graphs and figures should not be made in MS Word!**

Photographs must be sharp, in good contrast and undamaged. The authors are not advised to scan the images themselves, but to leave this sensitive job to the editorial office.

If the version on the paper does not include graphs, figures and photographs, the spaces must be clearly marked where they should be inserted. The markings in the text must match the ones in the submitted photos (or files).

Graphs, figures and photographs must have the signatures and be numbered in Arabic numerals.

7. Organization of manuscript

The article must contain the following elements, in the following order:

1 Information about the author – Name and surname, title of the author, name of the institution where the author is employed (affiliation) and the author's e-mail address.

2. Title of the paper. – The title should be clear and precise.

3. Abstract. – This is a brief presentation of the article content, which contains the research goal, methods, results, and main conclusions. It should be in the same language in which the paper was written. In terms of volume, it should contain 100 to 250 words or 4 to 8 sentences, or a third to half of the printed page. It stands between the title and keywords, after which the text of the article follows.

4. Key words. – The terms or phrases which best describe the content of the article. It is allowed to write up to five words, i.e. phrases.

5. Text of the article. – The central part is the text of the article in which the author uses appropriate tools while processing the writing of a scientific paper.

6. List of used literature. – After the text of the article, the list of used literature is specified in alphabetical order by authors' last name.

The list is given according to the Citation instructions, with the year of publication coming right after the author's, i.e. editor's name. At the end of the information on an article or a paper in the collection of papers, the pages of the cited paper are given.

Examples:

- A book: Akehurst Michael (1984): *A Modern Introduction to International Law*, London
- A chapter in the book by several authors: Buchanan Allen (2010): "The Legitimacy of International Law", 79-96, in: Besson Samantha, Tasioulas John (eds.): *The Philosophy of International Law*, Oxford
- A paper: Osakwe Chris (1971): "Contemporary Soviet Doctrine on the Juridical Nature of Universal International Organizations", *American Journal of International Law* 3/1971, 502-521

The papers by the same author are specified in chronological order. If several papers have been written by the same author and published in the same year, the year of publication is accompanied by the letters "a", "b", "c" etc.

Examples:

- Cassese Antonio (1999a): "Ex iniuria ius oritur. Are We Mowing towards International Legitimation of Forcible Humanitarian Countermeasures in the World Community?", *European Journal of International Law*, 1/1999, 23-30
- Cassese Antonio (1999b): "A Follow-Up: Forcible Humanitarian Countermeasures and *Opinio Necessitatis*", *European Journal of International Law*, 4/1999, 791-799

7. Summary. – Summary is written at the very end of the text i.e. It can be the same as the abstract, but could also be wider in extent, yet no longer than one page. If the paper is written in Serbian language, the summary in English language should also be submitted.

8. The levels of the titles. - Depending on the text, the titles can have different levels. Therefore the following method is used for marking different title levels:

1. The First Level Title

(centre align, regular, bold, Arabic numerals)

1.1 The second level title

(centre align, italic, Arabic numerals)

1.1.1. The third level title

(Above the beginning of the paragraph, italic, Arabic numerals.)

To achieve complete clarity about the title levels, authors are advised to refer to the past issues of "Megatrend Review" journal available in PDF forms, under Archive, or contact the Editorial secretary via e-mail.

Depending on the specific characteristics of the text, and with the aim of achieving clarity of the paper's structure, the editorial office reserves the right to edit the titles in a slightly different way, leaving the original heading divisions.

9. Citations. – The used literature is to be cited according to the instructions for citations given below.

10. The address of the Editorial Board. – The papers are submitted via e-mail to the following address: **megatrendrevija@megatrend.edu.rs**

Editorial Board
Megatrend Review
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Bulevar maršala Tolbuhina 8
11070 Belgrade, Serbia
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IV. INSTRUCTIONS FOR CITATIONS

1. General rules

1. Name of the author. - In writing author's name, surname is written before the first name. If there is the middle name/letter, it is written between surname and the first name.

Example: Shaw N. Malcolm

2. Several authors. – Names of the several authors are separated by commas.

Example: Simma Bruno, Alston Philip

If there are more than three authors, only the first author's surname and first name are specified, followed by the italicized et al. words (et alia).

Example: Henkin Louis *et. al.* (1993): *International Law: Cases and Materials*, St. Paul. Minn.

3. Pages. – When a particular page is specified (of the book or the paper), it s number is written without any additions (p., pg., p., page, etc.).

Example: Akehurst Michael (1984): *A Modern Introduction to International Law*, London, 9.

4. Footnotes. – When a footnote is given, after the number of the page, the sign "fn" is written, followed by the number of the footnote.

Example: Akehurst Michael (1984): *A Modern Introduction to International Law*, London, 9, fn 2.

5. The repeated citation of the same article. – When an article that has been cited before is recited, the author's surname and first name are specified, followed by the cited page, separated by a comma, without using *op. cit.* etc.

Example: Akehurst Michael, 15.

If several papers by the same author are specified, the author's surname and first name are stated, followed by the brackets with the year when the paper has been published and followed by the number of the page.

Example: Akehurst Michael (1984), 15.

When specifying several papers written by the same author, published in the same year, papers are specified in the literature list (which is always given at the end of the paper) by adding Latin letters “a”, “b”, “c”, etc to each paper. They are also stated as such when cited in footnotes.

Example: Akehurst Michael (1984a), 15.

6. Recitation of the previously cited article. - If a piece of data from the same page of the same paper cited in the previous footnote is cited again, only the Latin abbreviation *Ibid.* (from *ibidem*) is used without giving any other data.

Example: *Ibid.*

If a piece of data cited in the previous footnote is cited again, but from a different page, the Latin abbreviation *Ibid.* is used, followed by a comma and the number of the page.

Example: *Ibid.*, 54.

7. Foreign names. – In papers submitted in Serbian language, foreign names are transcribed, i.e. written as they are pronounced in Serbian, and when first mentioned in the text, the author's surname and first name are given in their original form within the brackets.

Example: Tomas Hobs (Thomas Hobbes)

2. Books

1. General. – The books are cited in the following way:

1) author's surname, 2) author's first name, 3) the year of publication in brackets, 4) colon, 5) title of the book in italics, 6) place of the publication in lowercase (ordinary letters), 7) number of the page (without any additions), 8) footnote which is being cited.

If the information on the publisher is given as well, it is written in lowercase (ordinary letters) before the place of the publication.

Example: Scott V. Shirley (2010): *International Law in World Politics*, Lynne Rienner Publishers Inc., Boulder – London, 71, fn 45.

2. Several editions. – If a book has several editions the number of the edition need/need not be specified in the superscript.

Example: Scott V. Shirley (2010²): *International Law in World Politics*, Lynne Rienner Publishers Inc., Boulder - London (explanation: 2010² - second edition, published 2010)

3. Editors. – If a book has one or more editors, the editors' surnames and first names are given first, separated by commas, then the sign “ed”, or “eds” is

written if there are more of them, followed by the title of the book in italics, and finally the place and year of publication.

Example: Besson Samantha, Tasioulas John (eds.) (2010): *The Philosophy of International Law*, Oxford.

If there are more than three editors, the data only for the first editor is given followed by a comma, then “et al.”, and finally “ed.”.

Example: Hamilton P. et al. (eds.) (1999): *The Permanent Court of Arbitration: International Arbitration and Dispute Resolution*, Kluwer International, The Hague-London-Boston.

4. Chapters in a book. – A chapter in a book with an editor is cited by giving the following: 1) authors surname and name, 2) year of publication in brackets, 3) colon, 4) title of the chapter in lowercase (under inverted commas), 5) comma 6) number of pages that are cited, 7) “in”, 8) editor’s surname and name, 9) “(eds.)”, 10) title of the book in which the cited text is in lowercase (in italics) and 11) place of publication.

Example: Buchanan Allen (2010): “The Legitimacy of International Law”, 79-96, in: Besson Samantha, Tasioulas John (eds.): *The Philosophy of International Law*, Oxford.

3. Articles

1. General. – The articles are cited in the following way: 1) author’s surname, 2) author’s name, 3) year of publication in brackets, 4) colon, 5) title of the article in lowercase in ordinary letters under inverted commas, 6) title of the journal (book of proceedings, etc.) in italics, 7) issue and year separated by a slash, 8) number of the page (without any additions), 9) number of the cited footnote.

Example: Osakwe Chris (1971): “Contemporary Soviet Doctrine on the Juridical Nature of Universal International Organizations”, *American Journal of International Law* 3/1971, 502, fn 1.

2. The abbreviation of the journal title. – If the title of the journal (collection of papers etc.) is a long one, when cited for the first time its abbreviation is given in brackets, which is later used when the same journal (book of proceedings, etc.) is cited again.

Example: Osakwe Chris (1971): “Contemporary Soviet Doctrine on the Juridical Nature of Universal International Organizations”, *American Journal of International Law (AJIL)* 3/1971, 502-521.

4. Regulations

1. General. – Regulations are cited in the following way: 1) title of the regulation is given in lowercase (in general letters), 2) journal/magazine in which the regulation is published is given in italics, 3) number of the issue and the year in which the journal is published are given at the end.

Example: Zakon o osnovama uređenja službi bezbednosti Republike Srbije, *Službeni glasnik Republike Srbije*, 116/2007.

2. If the regulations are re-mentioned. – If a regulation is mentioned again later in the text, at the place where it appears for the first time its short title is given within the brackets, with the words “hereinafter referred to as” preceding it.

Example: Zakon o osnovama uređenja službi bezbednosti Republike Srbije (u daljem tekstu: Zakon o službama bezbednosti), *Službeni glasnik Republike Srbije*, 116/2007.

3. Amendments. – If a regulation has been changed and amended, one by one, the numbers of issues and year of the journals are given in the original text, i.e. amendments were published.

Example: Zakon o osnovama uređenja službi bezbednosti Republike Srbije, *Službeni glasnik Republike Srbije*, 116/2007, 72/2012.

4. Articles, paragraphs and items of regulations. – Articles, paragraphs and items of regulations are written separated by a slash, the number of the article comes first, followed by the number of the paragraph, and finally that of the item, etc.

Example: UN Convention on the Law of the Sea (1982) čl. 1/1/5/a/i.

5. The Internet texts

The citation of the text from the Internet should contain: 1) name of the author of the cited text (if it is the author's text), 2) title of the cited text under inverted commas, 3) data on where the text was published (if it is published in a printed version), 4) internet page, 5) date of the access to the page.

Example: Bradley A. Curtis, Gulati Mitu: “Withdrawing from International Custom”, *The Yale Law Journal* 2/2010, 233-241, <http://yalelawjournal.org/images/pdfs/912.pdf> (18.11.2012).



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