The advantages and impediments in fostering Republic of Moldova- the European Union economic cooperation

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Abstract: *Despite considerable efforts and funding, the reform implementation process in the Republic of Moldova meets important difficulties especially in the areas of strategic significance including the fields of public administration, justice and banking sectors. The initiatives implemented in these sectors by the Moldovan authorities under European supervision proved to be inefficient as they did not reach the expected results. This situation leads to dragging down the pace of European integration of the country, as the trust of the population and of foreign partners regarding European future of Moldova was negatively affected. Thus, this research intends to identify the most important impediments of bi-lateral cooperation between the Republic of Moldova and the European Union. Also, some recommendations are provided to increase the actual status-quo and are specified main Moldovan economic advantages which have been registered since the acceleration of cooperation with the EU.*

Key-words: Economic cooperation; European financing; Economic competitiveness; Economic freedom;

Introduction

The effectiveness of cooperation is usually judged by the supposition of inputs against outputs. In the case of cooperation between the Republic of Moldova (RM) and European Union, the inputs could be considered the financial and technical resources extensively provided by the European countries to Moldova as well as the Moldovan commitment to implement effectively reforms and specified projects. Accordingly, the outputs relate to sectorial transparency, rise in the level of living of population and strong and independent institutions the Rep. of Moldova committed to aspire to. Yet, the results or in our case the outputs are not satisfying, and in some areas even disappointing such as the promotion of the rule of law and fighting corruption. In such a way, the reluctance of Moldovan authorities regarding justice and public administration reforms' implementation and, in patches, the European lack of control upon financial resources allocation caused the Moldova to lag behind in terms of creating competitive and lucrative environment for socio-economic development. The internal political obscurity of Moldovan decision making factors and the lack of promptness and in some cases of asperity, from the EU part caused the raise of EU scepticism within the Moldovan society. Therefore, it can be remarked that during the ten year period of cooperation with the EU, the preference of population for EU integration decreased from 68% in November 2006 to 38% in October 2016 [1]. Thus, it is generally recommended that the European Union need to change the approach in cooperation with the Republic of Moldova from the actual top-down, promoted in the last years including in the economic sector, to the bottom-up one. In such a way, it will be possible to re-build the population trust in the EU's willingness to support people and businesses and not the bureaucratic apparatus in the country.

Nevertheless, to have a better understanding of the impediments in fostering the cooperation between the Republic of Moldova and the European Union, it is necessary to have firstly an impartial view upon the advantages the first receives by building closer economic collaboration with the community partners. A more intense participation of Moldova in the community supported projects is of high convenience for the socio economic prosperity of the state as the European Union represents by far the most promising economic partner of the Republic of Moldova in terms of trade, investment and development assistance. The conclusion of the AA and consequent adoption of DCFTA trade regime in fact could provide additional economic opportunities for the Rep. of Moldova in the future if the process of reformation of the country is properly managed. With a population of 510 million inhabitants (6.9% of the world population); a territorial area of 4,324,782 km2 (2.9% of global area); a GDP (PPP) reaching $19.7 trillion (16.4% of world GDP); representing a union of 28 democratic states with a strong and competitive market driven economy; the EU offers a more competitive model of socio economic development for the Republic of Moldova than the one existing in the country at the moment or proposed by the Russian Federation through the Eurasian Economic Union. In such a way, the present paper intends to impartially describe the main advantages for Moldova in fostering the cooperation with the European Union and point out the impediments which are widely exploited by populists in distorting public opinion regarding the community.

1. Main Moldovan economic advantages in fostering cooperation with EU

The main economic advantages the Republic of Moldova is going to benefit from deepening the cooperation with the EU comprise both technological and socio-economic aspects regarding the proper economic efficiency and also public institutional functionality. Firstly, a deeper level of economic cooperation with the European Union will help the country to strengthen its institutional framework taking into consideration the current issues linked to red-tape and cost expensive bureaucracy. In such a way, the conclusion of the AA and DCFTA, besides the economic and commercial aspects in terms of tariff and non-tariff trade barriers reduction and facilitation of commercial exchanges, comprise the aspects of countries reformation in order to absorb the western advanced experience regarding governance and justice, border management and transparency. As it was mentioned in the sections above, the reformation of public administration and justice sector of the Republic of Moldova is crucial taking into consideration the modern challenges of globalisation.

Second advantage provided by a deeper level of economic cooperation with the European Union which the Republic of Moldova is benefiting from includes more profound technological transfer. The reduction of tariff and not-tariff trade barriers allow the country to import advanced technologies from the countries of the European Union a lesser cost, thus creating favourable pre-conditions of trade growth in this area of strategic importance for further development. So, the internal market of the RM will have larger range of possibilities to absorb technological capital and develop high complexity economic clusters. This fact will affect directly or indirectly all economic sectors motivating the growth in sectorial competitiveness. The technological development will allow the country to create higher value added per capita which in its turn will raise level of living.

Third advantage provided by a deeper level of cooperation with the countries of the European Union is absorption of modern entrepreneurial practices and modern business culture. The conclusion of the AA and the creation of DCFTA foster the formation of a strong institutional component. It this way, it is empowered the functionality of the market economy in the country which is to be more functional and performant meeting the requirements of the EU. This factor is essential as a performant market driven economy considers high degree of sectorial cooperation and interaction among the main economic actors including entrepreneurs, government and consumers.

Fourth advantage includes better perspectives of attracting FDI which is fundamental considering the economic development. The increasing cooperation between the Republic of Moldova and European Union within the period of y. 2006-2016 led to higher institutional inter-connection. It empowers the adjustment of the national legislation and institutional framework to the standards adopted by 28 EU states. Impartial, transparent and lucrative institutions and legislative framework is of high importance providing additional security for national and international investors interested in building businesses in the Republic of Moldova. Despite of multiple difficulties in the area of FDI attraction, the Rep. of Moldova pursues the commitments of AA which once realised are meant to assure functional business environment.

Fifth advantage is related to the trade opportunities the Republic of Moldova has since the conclusion of AA and consequent enforcement of DCFTA. The DCFTA increase the access of Moldovan producers to the EU market, they will have even larger opportunities when the process of alignment to EU safety and health standards will be fully implemented. The full completion of food safety reform will offer new possibilities to the Moldovan farmers to export agricultural goods to EU in larger quantities and at a higher price. According to a study performed by the EU External Action Service in 2016, the proper implementation of the reform process and full access of Moldovan farmers on community market will foster GDP growth of the state with 5.4% annually. Moreover, the AA and DCFTA are compatible with all trade agreements the Republic of Moldova is member of, including the membership in CIS. Also, Moldova maintains full control of its trade policy as it has no membership in any customs union. In general, the domestic policies which the Rep. of Moldova pledged to implement alongside with the EU support and development assistance will open for Moldova new trade opportunities as it will reach full compliance with EU standards.

Sixth advantage provided to Moldova by a deeper level of cooperation with the European Union is the enlargement of development assistance. Since y. 2006, the level of development assistance provided by the European Union to Moldova has considerably increased amounting to almost EUR 1 billion. It mainly targets strengthening the rule of law and improve of business environment. Many resources have been allocated towards making more efficient the public administration, rural and agricultural development as well as to proper management of border and transparent police and justice. Many achievements have been accomplished; nevertheless further efforts should be directed towards these sectors of strategic importance for further European Integration of the Rep. of Moldova. Only for the years of 2014-2017, the EU through the instrument of ENP planes to provide the Republic of Moldova with EUR 335-410 million if necessary reforms will be realised. According to the same EU External Action Service report, it is estimated that in the Rep. of Moldova with the assistance of the community have been created 20 000 jobs all across the country. Furthermore, additional funding of EUR 400 million is available for Moldova through the intermediation of regional funding mechanisms of Neighbourhood Investment Facility. Cumulated, there are 21 programmes implemented by the European Union in the Rep. of Moldova in the area of governance, democracy, human rights and support for economic and institutional reforms. Besides these, additional 6 programmes in the field of trade and regional integration, 10 programmes in the area of infrastructure, communications and transport, 5 programmes intended to improve the sector of water and energy, 4 programmes in the area of social cohesion and employment. At the same time, the EU is stimulating the human development in the Republic of Moldova with 5 programmes, the area of rural development by 1 programme, conflict prevention 4 programmes, and other 6 programmes for multi-sectorial purposes.

Concluding the above paragraphs, it can be mentioned that the European Union is an important economic partner of the Republic of Moldova which not only provides trade and investment opportunities, but also learning, transfer of knowledge and technology and high quality experience in terms of entrepreneurship and business. The last decade cooperation between EU and Moldova not only provided economic benefits to our country but also an integrational perspective which will enable the Republic of Moldova to join the community in the future as the AA and DCFTA tend to align RM economic and socio-politic standards to the EU accepted one.

2. The impediments in fostering the Republic of Moldova –European Union economic cooperation

An important dimension to be analysed regarding the impediments in fostering the economic cooperation between the Republic of Moldova and the European Union regards poor economic competitiveness of the first, which can affect economic growth in the conditions of increasing economic competitiveness from the EU producers. Albeit, the Republic of Moldova did not completely liberalised the market for EU businesses, there is a considerable risk that the country will not manage to achieve in the future 10 years an economic competitiveness level able to match that of the EU states. So, it can be remarked that within the period of y. 2006-2016 the Republic of Moldova registered weak economic competitiveness which has been affected by the lack of FDI inflows, poor FDA (foreign development assistance) management and raise in uncontrolled consumerism. In order to find out the level of economic competitiveness of the Republic of Moldova it is necessary to examine table 1.

Table 1: Global Competitiveness Index rank of the Republic of Moldova

Period	2006-2007	2008-2009	2009-2010	2010-2011	2011-2012
Rank	86 (out of 125)	95 (out of 134)	not included	94 (out of 139)	93 (out of 142)
Score	3,71	3,75	not included	3,86	3,89
Period	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017
Rank	87 (out of 144)	89 (out of 148)	82 (out of 144)	84 (out of 140)	100 (out of 138)
Score	3,94	3,94	4	4	3,86

Source: *Designed by the author based on WEF data [2]. Available at:* *www.weforum.org*

It can be concluded that the Republic of Moldova has not substantially improved its economic competitiveness in terms of score in the period of y. 2006-2016. Nevertheless, it terms of rank Moldova has dropped 14 positions in just 10 years, the fact demonstrating that the world's competitiveness has increased at a higher extent on average. It can be remarked that the best rank of the Republic of Moldova was 82nd position.

In is necessary to mention that the economic competitiveness of the Republic of Moldova significantly decreased in the period of 2016-2017 losing 16th position in comparison with the previous period the fact which is a direct consequence of economic and political difficulties the country met in the last period. In such a way, it can be underlined that broadening the economic cooperation with the European Union slightly increased economic competitiveness of Moldova in the researched period with little effect on the attraction of investments. The aggravation of economic situation in the Rep. of Moldova caused the weakening of Moldovan economic potential, while the reluctance of reforms implementation reduced the level of trust of foreign partners, including of the European Union one, in the ability of the current authorities to pursue EU integration the situation leading to the cessation of FDA allocation.

Another important indicator which should be taken into consideration when assessing the impact of politico-economic impediments upon the level of economic cooperation with the EU is the level of economic freedom registered by the Republic of Moldova. The economic freedom describes the critical relationship between the business environment, employees and the government. It assesses the level of government's ability to create favourable conditions for businesses and individuals as to enforce the mutual sense of liberty. Through the Index of Economic Freedom it is analysed the main socio-economic aspects characterising the functionality of society, businesses and institutions in terms of rule of law, government size and its effectiveness, taxation, regulatory efficiency (including business, monetary and labour liberty) and market openness for investment, trade and finance.

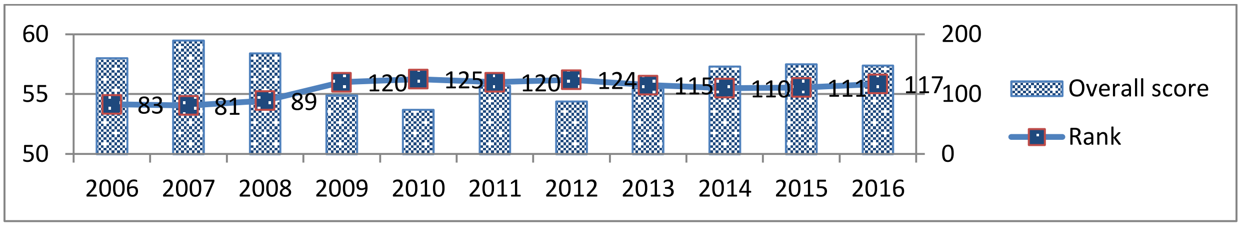

Figure 1: Index of Economic Freedom of the Republic of Moldova

Source: *Designed by the author based on data provided by the Heritage Foundation [3]. Available at: www.heritage.org*

Taking into consideration the information presented in figure 1, it can be highlighted that there have been made poor efforts by the Moldovan decision making factors in order to improve economic freedom of the country. It is a determinant impediment in enlarging the area of cooperation with the European Union, the economic freedom being one of the basic indicators of country's economic attractiveness. The Rep. of Moldova needs to improve this aspect as to assure better prospects for development. In such a way, it should be noticed that despite of the reformation road-map provided by the European Union, the passivity of Moldova in fighting the corruption and ineffective bureaucracy caused poor evolution of state's economic freedom.

Analysing the information provided above, it can be underlined the fact that the process of reform implementation in the Rep. of Moldova to meet the European Union standards encounters several difficulties in areas of institutional functionality including especially justice and public administration.

Nevertheless, on overall the deepened economic cooperation with the European Union countries raised the governance standards in the Republic of Moldova due to the implementation of the EU experience (figure 2). The reforms implemented in the period of y. 2009-2013 led to signing the AA which established further framework for bilateral cooperation including in the economic field supposed to lead to the EU integration of the Republic of Moldova.

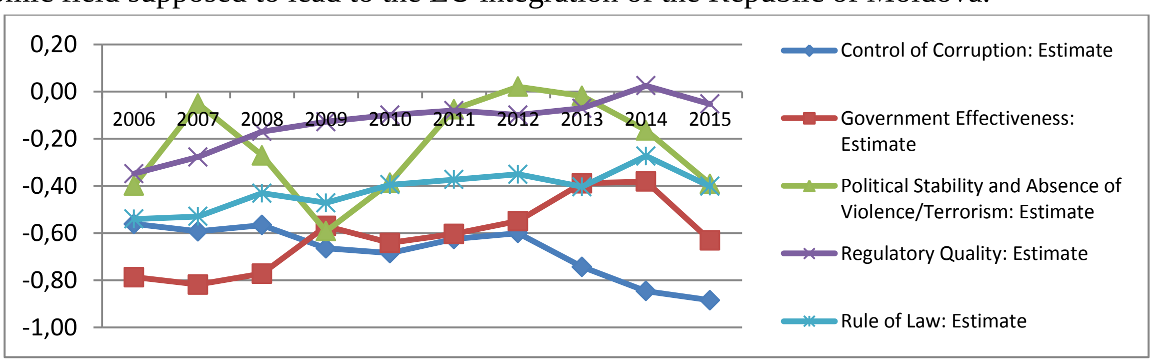

Figure 2: Worldwide Governance Indicators min(-2.5) and max (2.5) reported by the R. of Moldova, y. 2006-2015 [4]

Source: *Designed by the author based on data provided by the WB. Available at:* *www.worldbank.org*

According to the figure 2, it can be observed that the Republic of Moldova in the period of y. 2006-2014 recorded positive dynamics of all indicators excluding the control of corruption. In such a way it is worth mentioning that the Rep. of Moldova registered improvements in the area of regulatory quality due to the implementation of EU's normative. The same directions are followed by the rule of law whose quality also has grown in the period. Also, it can be observed that the government effectiveness grew in dynamics as well as the indicator of political stability. However, it should be mentioned that for the y. 2015 the all indexes registered a decrease, this fact being a direct result of alarming corruption, social inequality and political instability. Moreover, they are direct indicator of unfavourable evolution of Moldovan banking system causing weak economic evolution dragging down the socio-economic stability of the country.

3. Prospects and recommendations for improving the actual status-quo of EU-Republic of Moldova economic cooperation

Nowadays, the Republic of Moldova achieved an important success by concluding AA with the EU which provides main guidelines and represents a roadmap of achieving social, political and economic cohesion with the countries of the European Union. At the same time, the country should take into account the experience of the East European nations (further EEN) which successfully integrated into the community in y. 2004, 2007 and 2013. By learning from these states experience, the Republic of Moldova will be able to accelerate the European integration of the country as the main mistakes and difficulties are supposed to be taken into consideration. These countries represent are whole range of treats characteristic and for the Republic of Moldova including common communist past, economic difficulties of 90's, problems of market economy formation and of privatisation. Moreover, the Rep. of Moldova can learn from the states' experience in combating corruption and red-tape, essential conditions to assure working economic environment as to attract internal and foreign investments [5], p75-76]. In this regard, the East European nations, member of the European Union could be considered as success examples and suitable for Moldova, whose proper European integration road was abounding in issues to be dealt with [6], p8].

Further, there will be analysed the most important points of these states' experience to be taken into consideration and the recommendations as to improve and accelerated the economic development of the Rep. of Moldova and bring the economic cooperation with European states at a more complex level. Thus, the Republic of Moldova will be able to a build socio-economic environment matching, even surpassing, in competitiveness the European Union one. The integration into the European Union of former socialist nations could be considered a major achievement of the East European region as a whole, the EU representing a symbol of democracy, human freedom and effective market economy.

Nevertheless, it should be mentioned that the European integration of EEN was a long-run process of economic restructuring and adjusting to EU requirements based on a throughout socio-political reformation as to assure the suitable institutional framework. A relevant example of how right approach towards implementing reforms and initiatives improve countries' socio-economic environment and institutional framework meeting the pre-established requirements of the European Union is shown by the Visegrad group states including Poland, the Czech Republic, Hungary and Slovakia. The Visegrad states have registered important progress in terms of economic development succeeding in re-building and re-forming the inherited communist economic potential assuring high degree of competitiveness based on best modern experience. They overcame the difficulties and crises of 90's realising successful transformation from planned economy towards market driven one [7], p85-101].

The Visegrad countries managed to overcame corruption and red-tape damaging to economic and entrepreneurial freedom, the countries' experience being an important example for the Republic of Moldova to combat these impediments towards deepening the economic cooperation with the European Union. Also, the countries created favourable environment to attract national and foreign investment the fact which considerably accelerated the countries' economic development and the growth of socio-economic welfare of the population.

These states unrolled the process of the privatisation in a more effective way than the Republic of Moldova. They succeeded in attracting foreign direct investment and restructure their industries due to stable and transparent socio-economic environment, while the Republic of Moldova failed at this chapter. The privatisation process in the Republic of Moldova was made with multiple moral and law violations, when profitable enterprises were brought to bankruptcy. Afterwards, the state enterprises whose assets valued millions of dollars were privatised on cents. In such a way, it can be easily identified the link between the illegal privatisation process and the impairment of institutions of Moldova leading to the deterioration of economic development prospects. Thus, the causes of the current precarious economic situation in the Republic of Moldova are deep rooted in the 90's when the FDI attractiveness potential was ruined and economic development prospects minimised. The Visegrad countries have undertaken reform implementation process in all economic sectors including taxation, industry, agriculture, government procurement one European Union manner, at the same time building effective justice and public administration systems. The Visegrad countries concluded AA with the EU in the period of y. 1994-1995, succeeded to realise the provisions within several years as to become member states of the European Union in y. 2004. In such a way, if the Republic of Moldova aspires to integrate into EU, it should implement reforms on a pragmatic and effective taking into consideration the experience of Visegrad nations.

Another important point which should be taken into consideration regarding the European integration experience of the Visegrad nations concerns the states' experience in managing development assistance and attracting FDI. The countries have spent much time in developing legislative rules, agencies and most important effective procedures as to build economic processes capable of absorbing FDA and FDI transforming these resources into economic development and growth [8], p10-17]. The governments of these nations have invested much in creating favourable business environment as to accelerate socio-economic development oriented mostly on long-run prospective. The policies promoted were both oriented towards assuring macroeconomic stability and insure microeconomic flexibility, as to meet the nowadays requirements of modern dynamic world. In such a way, it was promoted policies of combating the inflation, reducing the taxation burned upon entrepreneurs, liberalising the labour market, creating more effective system of acquiring real-estate and establishing new companies. They focused on privatisation of utilities, telecommunications and financial sector which provided the countries with additional economic advantages in terms of FDI [9], p63-70].

Also, the states created favourable conditions for the efficient use of funding by creating wide working infrastructure. The priority was set on the people with initiative whom the governments offered the most support in terms funding and technical advice. Therefore, the Republic of Moldova should overcome the problems of corruption and ineffective bureaucracy to succeed in attracting FDI and provide more efficient use development assistance. The European Union should support the people of the country in this regard. In this way, it will be created favourable pre-conditions for economic development and EU integration of the Rep. of Moldova.

Therefore, the experience accumulated by these countries will be a considerable input in accelerating politico-economic reformation of the country to meet the modern competitiveness requirements. The main advice from the Baltic States the Republic of Moldova should take into consideration in pursuing the European Union integration regards the following areas: unity of national decision making factors in following the strategic goals of society and national interests which is the key for effective reform implementation process in a country. Moreover, the reforms should be de-politicized. They are to be entrusted to technocrats and pragmatic specialists the payment of whom should be commensurable with their responsibilities. Furthermore, the initiative should be well-coordinated at the institutional level.

Conclusion

The success of an effective economic cooperation with the countries of EU resides in the responsibility of the governing elite for implementation of reforms committed through the conclusion of the AA. Thus, the governing elite of the Republic of Moldova should set national reform priorities ahead the individual petty economic interests. There should be undertaken efforts which are to be supported by the EU in order to eliminated red-tape and eradicate corruption, two-main impediments the country face in effectively implementing economic reforms. In such a way, the European integration of the country will improve the actual socio-economic environment providing better opportunities for population and business people. The idea highlighted in this research is that the Republic of Moldova, based on the experience of European Union, can build even stronger economic ties with the community member states fitting into their economic clusters. The responsibility of Moldova is to create favourable environment for doing entrepreneurial activities keeping up economic standards and reducing at the lowest possible level the implication of the state. Moreover, the Rep. of Moldova should look forward to promote higher productivity industries in the country as well as new prospective directions characterised by more progressive and innovation requirements. In such a way, there will be possible to boost the degree of economic cooperation between the Moldova and EU including in the trade and investment fields. In this situation both parties will have to benefit as there will be reduced the economic costs and financial waste.

It could also be mentioned that broadening the economic cooperation with EU countries requires both responsibility and pragmatism which needs to be shown by Moldovan government decision making factors and EU representatives. The success of reforms do not only consist of funding which was provided by the EU representatives extensively in the period of y. 2006-2016, but also from political will-power which certainly the Rep. of Moldova's authorities are in lack of. In such a way, it is necessary to re-think the framework of current economic cooperation between the Republic of Moldova and the European Union which should be based on mutual orientation towards improving the current living and business conditions in the Republic of Moldova.

Bibliography

[1] Institute of Public Policies. Barometer of Public Opinion Reports 2006-2016[online]. Available at: http://www.ipp.md/lib.php?l=ro&idc=156&year=2016

[2] WEF. The Global Competitiveness Report 2006-2007 to 2016-2017[online]. Available at: https://www.weforum.org/reports

[3] The Heritage Foundation. Index of Economic Freedom reports 2006-2016[online]. Available at: http://www.heritage.org/index/

[4] WB. Governance Indicators[online]. Available at: http://data.worldbank.org/data-catalog/worldwide-governance-indicators

[5] GAŢCAN, Iurie. Corupţia ca fenomen social şi mecanisme anticorupţie-(Cazul Republicii Moldova[online]. Chişinău, 2015 [cited on April 16, 2017]. Available at: http://www.cnaa.md/files/theses/2016/24368/iurie_gatcan_thesis.pdf

[6] ŠUKYTĖ, Dovilė. Economic Challenges of Ukraine and Moldova on the Way to EU. Eastern Europe Studies Centre, 2015. ISBN 978-609-95488-7-6

[7] CRUDU, R., IGNATOV A.. Can the Experience of Visegrad Countries Help Moldova to Integrate in the European Union? Studii Europene [online].2016, nr.7, p. 85-101. ISSN 2345-1041. Available at: http://studiieu.org/files/publications/Studii%20Europene%20nr.%207-11906.pdf.

[8] ALLEN & OVERY. Foreign Direct Investment in Central and Eastern Europe[online]. Prague, 2006Available at: http://www.visegradgroup.eu/fdi-in-central-and

[9] CRUDU R., IGNATOV A.. The Role of EU Financing In The Industrial Development of EU New Member States. In: 25 de Ani de Reformă Economică in Republica Moldova: Prin Inovare si Competitivitate spre Progres Economic: international scientific conference, September 23-24, 2016. Chişinău, ASEM, 2016, Vol. III, p 63-70. ISBN 978-9975-75-834-5

THE FEATURES OF DECISION MAKING PROCESS IN INTERNATIONAL COMPANIES. ARE COMPANIES IN CONTROL OF THEIR OWN DECISIONS?

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Abstract

The following article deals with the main causes of irrational decision making process in companies and with respective solutions to make decisions more rational and effective. With the aid of relevant literature, the ways managers, groups and leaders make decisions in reality will be clarified. Besides, the solutions to rational decisions examined through the perspective of managers, leaders and groups. Thus, the background of this article is the question "Are companies in control of their own decisions?" In addition, this paper includes relevant information about the features of decision making process, basic types of decisions, describes the most essential approach in management regarding to decision making and presents the top worst and best business decisions of all time.

Keywords: decision making process; rational and irrational decisions; routine and nonroutine decisions (programmed and nonprogrammed decisions); strategic decisions; tactical decisions; operational decisions; managerial, group, leaders decision making process; rational decision-making model, analysis paralysis; strategies to improve decision-making process; top worst vs best business decisions in management.

Introduction and definition of decision making process.

Over the years, decision making process was one of the primordial activities for people. Made rational or irrational, decisions shape people's lives which Hammond, Keeney & Raiffa describes as "a fundamental tool used in facing opportunities, the challenges and the uncertainties of life" [1].

A lot of research on decision making is done in order to show people's common mistakes and effective methods to overcome them, which will be described in this article. Therefore, the main focus of these papers will be on the ways companies make decisions in reality and on the methods they can use to make those decisions more rational, presenting some companies as examples in international management. Thus, there are different definitions concerning decision making process as following: Harrison defined a decision making process as “an ongoing process of evaluating alternatives at which expectations about a particular course of action impel the decision maker to select that course of action most likely to result in attaining the objective” [2]. The Oxford Dictionary defines the term decision-making as "the action of carrying out or carrying into effect".

Another modern and simple definition regarding to this subject explains that decision making is “process of selecting a logical choice from the available options.

When trying to make a good decision, a person must weigh the positives and negatives of each option, and consider all the alternatives. For effective decision making, a person must be able to forecast the outcome of each option as well, and based on all these items, determine which option is the best for that particular situation.” [3]

While it can be argued that management is decision making, half of the decisions made by managers within organizations fail. In this way, a large number of people think that companies conceive brilliantly every decision, still in many cases; they tend to make irrational choices due to limited time, bounded rationality and other causes which will be explained in this paper. Therefore, increasing effectiveness in decision making is an important part of maximizing your effectiveness at work.

Individuals throughout organizations use the information they gather to make a wide range of decisions. These decisions may affect the lives of others and change the course of an organization. For example, the decisions made by executives and consulting firms for Enron ultimately resulted in a $60 billion loss for investors, thousands of employees without jobs, and the loss of all employee retirement funds. But Sherron Watkins, a former Enron employee and now-famous whistleblower, uncovered the accounting problems and tried to enact change. Similarly, the decisions made by firms to trade in mortgage-backed securities is having negative consequences for the entire U.S. economy. Each of these people made a decision, and each person, as well as others, is now living with the consequences of his or her decisions.

Because many decisions involve an ethical component, one of the most important considerations in management is whether the decisions you are making as an employee or manager are ethical. Here are some basic questions you can ask yourself to assess the ethics of a decision. [4] (Blanchard & Peale, 1988) Is this decision fair?

- Will I feel better or worse about myself after I make this decision?

- Does this decision break any organizational rules?
- Does this decision break any laws?
- How would I feel if this decision was broadcast on the news?

1. The basic types of decisions. Routine (programmed) and nonroutine (also called nonprogrammed) decisions.

Pringle et al. classify decisions on a continuum ranging from routine to nonroutine, depending on the extent to which they are structured.

They describe routine decisions as focusing on well-structured situations that recur frequently, involve standard decision procedures, and entail a minimum of uncertainty.

For example, many restaurants face customer complaints as a routine part of doing business. Because this is a recurring problem for restaurants, it may be regarded as a programmed decision. To deal with this problem, the restaurant might have a policy stating that every time they receive a valid customer complaint, the customer should receive a free dessert, which represents a decision rule. Another common examples include payroll processing, reordering standard inventory items, paying suppliers, and so on.

The decision maker can usually rely on policies, rules, past precedents, standardized methods of processing, or computational techniques. Probably 90 percent of management decisions are largely routine. Indeed, routine decisions usually can be delegated to lower levels to be made within established policy limits, and increasingly they can be programmed for computer “decision” if they can be structured simply enough.

Nonroutine decisions (called also nonprogrammed), on the other hand, “deal with unstructured situations of a novel, nonrecurring nature,” often involving incomplete knowledge, high uncertainty, and the use of subjective judgment or even intuition, where “no alternative can be proved to be the best possible solution to the particular problem.” Such decisions become more and more common the higher one goes in management and the longer the future period influenced by the decision is. [5]

In other words these decisions are unique and important require conscious thinking, information gathering, and careful consideration of alternatives. For example, in 2005, McDonald’s became aware of a need to respond to growing customer concerns regarding foods high in fat and calories. This is a nonprogrammed decision because for several decades, customers of fast-food restaurants were more concerned with the taste and price of the food, rather than the healthiness. In response, McDonald’s decided to offer healthier alternatives, such as substituting apple slices in Happy Meals for French fries and discontinuing the use of trans fats. A crisis situation also constitutes a nonprogrammed decision for companies. For example, the leadership of Nutrorim was facing a tough decision. They had recently introduced a new product, ChargeUp with Lipitrene, an improved version of their popular sports drink powder, ChargeUp. But a phone call came from a state health department to inform them that several cases of gastrointestinal distress had been reported after people consumed the new product. Nutrorim decided to recall ChargeUp with Lipitrene immediately. Two weeks later, it became clear that the gastrointestinal problems were unrelated to ChargeUp with Lipitrene. However, the damage to the brand and to the balance sheets was already done. This unfortunate decision caused Nutrorim to rethink the way decisions were made under pressure so that they now gather information to make informed choices even when time is of the essence. [6] p.18–23.]

Decision making can also be classified into three categories based on the level at which they occur. Strategic decisions set the course of organization. Tactical decisions are decisions about how things will get done. Finally, operational decisions are decisions that employees make each day to run the organization. For example, remember the restaurant that routinely offers a free dessert when a customer complaint is received. The owner of the restaurant made a strategic decision to have great customer service. The manager of the restaurant implemented the free dessert policy as a way to handle customer complaints, which is a tactical decision. And, the servers at the restaurant are making individual decisions each day evaluating whether each customer complaint received is legitimate to warrant a free dessert.

Figure 1. Decisions Commonly Made within Organizations

Level of Decision	Examples of Decision	Who Typically Makes Decisions
Strategic Decisions	Should we merge with another company? Should we pursue a new product line? Should we downsize our organization?	Top Management Teams, CEOs, and Boards of Directors
Tactical Decisions	What should we do to help facilitate employees from the two companies working together? How should we market the new product line? Who should be let go when we downsize?	Managers
Operational Decisions	How often should I communicate with my new coworkers? What should I say to customers about our new product? How will I balance my new work demands?	Employees throughout the organization

Source: http://2012books.lardbucket.org/books/management-principles-v1.0/s15-decision-making.html

2. The managerial decision making process. Are companies in control of their own decisions?

Decision making is fundamental part of managerial activity. During years, managers endeavor to increase their performance; however, they do not cease to tend to make irrational choices. According to Hammond, Keeney & Raiffa, it occurs due to inaccurate information collected, negligence in defining the costs and benefits of the particular decision or failure in establishing practical alternatives [7]. These common mistakes were examined also by Harrison who thinks that executives have tendency to collect a large amount of information rather than to use it rationally. Moreover, while making a decision, first, they disregard essential information and then, after experiencing a failure, they look for it. In fact, in most cases, a great part of collected information is not connected to the actual issues managers deal with. [2]

Another cause of irrational decisions is uncertainty. It is one of the most challenging phenomena managers face. This issue was examined by Watson & Buede who think that the complexity of decision making is owing to an array of uncertainties. For instance, they state that a manufacturing company's manager might say "If I only knew what my competitor intended, then

I would see more clearly what to do, but, because I am uncertain, I find it difficult to decide". [9] As a result, managers are more focused on the intricacy of a problem, rather than on workable strategies for solving it.

Besides, they are influenced by past events which are real obstacle to the company's performance. According to the Howard & Abbas, it is common for managers to say " We tried this last time and it did not work, so this time we will try something else" or vice versa. [10] Past events were also examined by Hammond, Keeney & Raiffa who demonstrated that this problem represents an anchor to rational thinking. For instance, when managers promote a product, they tend to focus on past sales volume; however, this approach leads to the underestimation of potential factors that can change the future sales flow. [7]

3. Group decision making process

In a company it is important to have groups that use effectively available resources to make rational choices. Periodically it is a common misconception that groups are rational every time. According to Harrison, people often tend to think that groups have a higher probability to make good decisions rather than individuals do, however, groups also tend to be inaccurate in their choices. An irrational decision can be a result of so called "deindividuation" a problem examined by Harrison. The common characteristic of this problem is the members' tendency to worry about their identity in the group. As a result; they often hide their ideas in order not to be criticized by others. [2]

Furthermore, Sunstein & Hastie state that members are not eager to develop their judgments due to the fear of being irrational. Besides, they do not want to make their leader mad. [11]

Periodically groups fail due to limited time. According to Harrison, groups use a large amount of time to achieve a compromise. Hence, even this compromise is effective in case it was developed by qualified members; otherwise it is only a way to make irrational decisions. [2] In addition, and even qualified members can make mistakes. This phenomenon was examined by Goodwin & Wright who state that people who work in the same environment come approximately with similar judgments. Hence, they do not endeavor to look for new information or alternatives, just to have a different point of view that can change the whole situation. In addition, sometimes, the information can be invalid and this leads to irrational decisions. [12] Sunstein & Hastie state that members tend to strengthen and multiply the errors of their colleagues, instead of correcting them. [11]

4. Leaders decision making process

It is common to hear that leaders are great decision makers; however people’s brains are not equipped to make perfect business decisions every time. Some causes that influence them to act irrational were examined by Dipaolo who states that leaders often fail to make rational decisions due to the chase after power, social position and money. Hence, they are more influenced by self interest rather than by aspirations. [8] This tendency leads them to focus on interests not on alternatives. In addition, the problem of power was also examined by Thompson who states that leadership does not mean the gain of large amount of money or the higher probability to be promoted into well-known corporations. It means the ability to find workable alternatives for solving difficult situations. [13]

Moreover some leaders make irrational decisions, due to the unwillingness to improve their performance. Koestenbaum has claimed that these leaders are below the line with no standards or values. They are not eager to become professionals in their environment and this is a potential threat to their companies. [14]

Periodically, leaders fail due to their arrogance. DiPaolo thinks that overconfidence is a major reason why leaders fail making estimates, judgments and forecasts. [8] Indeed, confident leaders are rational until they do not become overconfident.

Another cause of irrational choices is unbalanced emotions. For instance, stressful leaders cannot use time, information and resources effectively while making a decision.

Thompson states that sometimes, emotions have negative impact on leaders’ cognitive intelligence. Moreover he thinks that stress was a major reason why a large number of corporations failed. Starting in 2007, companies such as: Enron, WorldCom, Tyco and other USA corporations began to lose their power in global economy due to the leaders who were under high level of stress. Hence, emotional pressures led them to give irrational orders. [13]

5. Making rational decision approach.

In management exist different decision making approaches and one of the most important is: rational decision-making model.

Thus, the rational decision-making model describes a series of steps that decision makers should consider if their goal is to maximize the quality of their outcomes. In other words, if you want to make sure you make the best choice, going through the formal steps of the rational decision-making model may make sense.

Let's imagine that your old, clunky car has broken down and you have enough money saved for a substantial down payment on a new car. It is the first major purchase of your life, and you want to make the right choice. The first step, therefore, has already been completed—we know that you want to buy a new car. Next, in step 2, you'll need to decide which factors are important to you. How many passengers do you want to accommodate?

How important is fuel economy to you? Is safety a major concern? You only have a certain amount of money saved, and you don't want to take on too much debt, so price range is an important factor as well. If you know you want to have room for at least five adults, get at least 20 miles per gallon, drive a car with a strong safety rating, not spend more than $22,000 on the purchase, and like how it looks, you've identified the decision criteria.

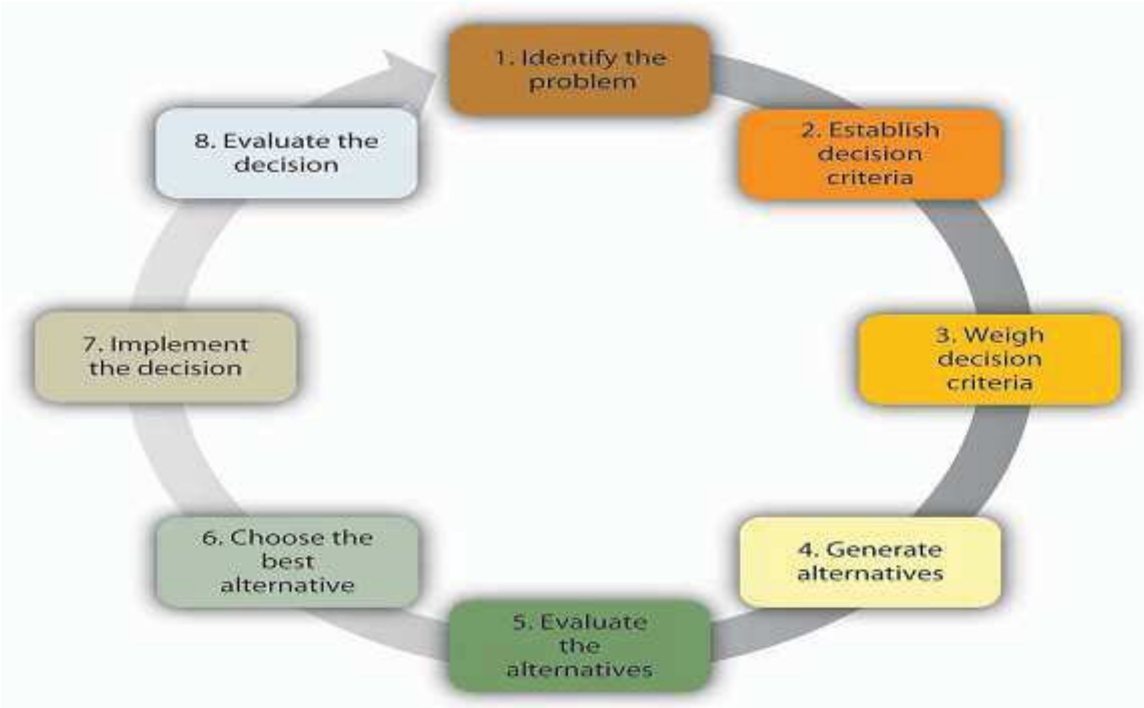
All of the potential options for purchasing your car will be evaluated against these criteria.

Before we can move too much further, you need to decide how important each factor is to your decision in step 3. If each is equally important, then there is no need to weight them, but if you know that price and gas mileage are key factors, you might weight them heavily and keep the other criteria with medium importance. Step 4 requires you to generate all alternatives about your options. Then, in step 5, you need to use this information to evaluate each alternative against the criteria you have established. You choose the best alternative (step 6) and you go out and buy your new car (step 7).

Of course, the outcome of this decision will be related to the next decision made; that is where the evaluation in step 8 comes in. For example, if you purchase a car but have nothing but problems with it, you are unlikely to consider the same make and model in purchasing another car the next time! (Figure 2)

While decision makers can get off track during any of these steps, research shows that limiting the search for alternatives in the fourth step can be the most challenging and lead to failure. In fact, one researcher found that no alternative generation occurred in 85% of the decisions studied. [15] p. 414–550]. Conversely, successful managers are clear about what they want at the outset of the decision-making process, set objectives for others to respond to, carry out an unrestricted search for solutions, get key people to participate, and avoid using their power to push their perspective. [16] p. 75–90].

Figure 2. Steps in the Rational Decision-Making Model



Source: http://2012books.lardbucket.org/books/management-principles-v1.0/s15-decision-making.html

The rational decision-making model has important lessons for decision makers. First, when making a decision you may want to make sure that you establish your decision criteria before you search for all alternatives. This would prevent you from liking one option too much and setting your criteria accordingly. For example, let's say you started browsing for cars before you decided your decision criteria. You may come across a car that you think really reflects your sense of style and make an emotional bond with the car. Then, because of your love for this car, you may say to yourself that the fuel economy of the car and the innovative braking system are the most important criteria. After purchasing it, you may realize that the car is too small for all of your friends to ride in the back seat when you and your brother are sitting in front, which was something you should have thought about! Setting criteria before you search for alternatives may prevent you from making such mistakes. Another advantage of the rational model is that it urges decision makers to generate all alternatives instead of only a few. By generating a large number of alternatives that cover a wide range of possibilities, you are likely to make a more effective decision in which you do not need to sacrifice one criterion for the sake of another.

Despite all its benefits, you may have noticed that this decision-making model involves a number of unrealistic assumptions. It assumes that people understand what decision is to be made, that they know all their available choices, that they have no perceptual biases, and that they want to make optimal decisions. Nobel Prize–winning economist Herbert Simon observed that while the rational decision-making model may be a helpful tool for working through problems, it doesn't represent how decisions are frequently made within organizations. In fact, Simon argued that it didn't even come close!

Think about how you make important decisions in your life. Our guess is that you rarely sit down and complete all eight steps in the rational decision-making model. For example, this model proposed that we should search for all possible alternatives before making a decision, but this can be time consuming and individuals are often under time pressure to make decisions. Moreover, even if we had access to all the information, it could be challenging to compare the pros and cons of each alternative and rank them according to our preferences. Anyone who has recently purchased a new laptop computer or cell phone can attest to the challenge of sorting through the different strengths and limitations of each brand, model, and plans offered for support and arriving at the solution that best meets their needs.

In fact, the availability of too much information can lead to analysis paralysis, where more and more time is spent on gathering information and thinking about it, but no decisions actually get made. A senior executive at Hewlett-Packard admits that his company suffered from this spiral of analyzing things for too long to the point where data gathering led to "not making decisions, instead of us making decisions."[17] p. 93–104]. Moreover, you may not always be interested in reaching an optimal decision. For example, if you are looking to purchase a house, you may be willing and able to invest a great deal of time and energy to find your dream house, but if you are looking for an apartment to rent for the academic year, you may be willing to take the first one that meets your criteria of being clean, close to campus, and within your price range.

6. Methods to improve decision making process

When companies make decisions consciously or unconsciously and these decisions have negative consequences, there are solutions that can solve this problem. According to Harrison, rational decisions require the responsibility to set a goal and to look for practical solutions to achieve this goal. [2]

6.1 Methods to improve managerial decision making process

Despite their failures, managers tend to improve their performance by focusing on related solutions. One of the business practices that assure a rational choice is creating a vision statement. According to Howard & Abbas, a vision statement helps managers to understand what to do due to its following three questions:

- "What we are doing?"
- "Why we are doing it?"
- "How will we know if we are successful?" [10]

Another rational practice is not focusing only on available alternatives. Hammond, Keeney & Raiffa state that managers should not limit their alternatives regarding a difficult situation. They should continue looking for more rational ones. [7] Harrison also examined this solution and he suggests managers to anticipate all the consequences of a particular selected solution. [2]

Moreover, Hammond, Keeney & Raiffa think that managers should not be aware of making mistakes. Indeed, even the most experienced managers can fail. Hence, they state that emotional equilibrium is a substantial solution for making rational decisions. [7] Besides, for making rational choices; groups should be attentive to statistics. Hastie & Sunstein have claimed that for groups is rational not to be influenced by the illusion of the accuracy of the statistical averages. Periodically, it can lead to errors and is better to look for accuracy only in situations in which most people are likely to be right. [11]

6.2. Methods to improve groups decision making process

A company performance depends on the decisions made by groups. Hence, Harrison thinks that effective decisions are the result of comfortable and relaxed atmosphere in the group. [2] Besides Jennings & Wattam think that groups manage to make rational choices when the members respect each others and do not anticipate the winners in a discussion.

It is a practical way to avoid the fear of expressing their ideas. Moreover, sometimes, new ideas generate disagreements. In fact, Jennings & Wattam state that disagreements make the members to look for more rational solutions. [18]

In addition, Goodwin & Wright state that for effective decisions, groups should obtain members judgments through open discussion or other communication process. It is a reasonable way to find more information on possible alternatives for rational choices. [12]

6.3. Methods to improve leaders decision making process

A large number of decisions which require judgment and creativity are taken by leaders.

Hence, to make rational choices, leaders should regard available solutions for overcoming their mistakes. Thompson states that leaders need to focus on improving their technical, interpersonal and leader skills for making an effective choice.

Moreover, they should endeavor to maintain their emotional equilibrium in order to make intuitive as well as rational decisions. [13] In addition, Koestenbaum states that for rational choices, leaders must understand the meaning of personal responsibility and accountability. [14] Indeed, only actions move the world.

Besides, leaders should refocus their mind. Breaking through new perspectives, is a substantial way to broaden their horizon of knowledge. As a result, new information brings new alternatives for making a rational decision.

7. Top 10 worst business decisions in history

According to http://www.businessinsurance.org [19] the following rank presents the most costly and regrettable of all time, and will continue to be mocked for years to come.

1. Ross perot passes on microsoft for cheap

Cheap is a relative term. At the time, Ross Perot didn't view then-23-year-old Bill Gates' $40-to-$60 million asking price as reasonable, and thus opted not to make a move. It was 1979, and Perot's Electronic Data Systems was worth about $1 billion. The company was looking to invest in a small computer company, and saw Microsoft as an attractive option because it could potentially supply valuable software. Gates was hoping to enter the corporate marketplace, but refused to undersell his hard work. Perot later told the Seattle Times that it was "one of the biggest business mistakes I've ever made."

2. IBM allows Microsoft to retain copyright for DOS platform

In 1980, IBM was the king of the computer industry. When it approached Gates to develop an operating system, he took the opportunity, providing PC-DOS in exchange for $80,000 with the stipulation that Microsoft could retain the copyright for the platform. Microsoft in turn created the MS-DOS system, bringing forth a software revolution and ensuring the company would rule over the industry for the next three decades.

3. Excite passes on Google for $750,000

Today, Google is valued at $180 billion, a bit more than the $750,000 it could've commanded from Internet portal Excite in 1999. At the time, Excite was a highly-trafficked search engine that was at the forefront of the dot-com boom. Google founders Larry Page and Sergey Brin, recognizing Excite's stature, attempted to sale their search engine for $1 million, eventually reducing their asking price by $250,000. Excite CEO George Bell refused. A few years later, his company was purchased by Ask Jeeves following a major decline in the value of its stock.

4. Edwin Drake fails to patent his oil drill

Extracting large quantities of oil from reserves was a seemingly impossible task in 1858, but Drake wasn't afraid to work to make it a happen. Stationed in Titusville, Pennsylvania, he spent a year looking for a solution without results. After employing a local blacksmith, he built a derrick of pine wood, surrounded the drill with a pipe to keep water out, and drilled for weeks until he finally procured the black gold. Unfortunately, Drake was later fired by his company and he lost all of his money on Wall Street, just as many Americans took advantage of the opportunity to get rich quick. His failure to patent his invention resulted in the loss of millions, though the state of Pennsylvania and oil barons eventually paid him to express their gratitude.

5. Western Union passes on the telephone for $100,000

Already a communications giant with its telegraph monopoly, Western Union felt little need to take risks they deemed as unnecessary in 1876. Sticking to his guns, company president William Orton turned down Gardiner Greene Hubbard's offer to sell the patent to the telephone for a mere $100,000. According to Orton, the invention lacked "commercial possibilities" and resembled an "electrical toy." In the end, he missed out, and AT&T became America's telecommunications giant.

6. M&Ms passes on the opportunity to appear in E.T.

Reese's Pieces have been among the most popular candies of the past three decades due, in large part, to their appearance in E.T., in which they were used by Elliot to lure the little alien out of hiding. The Hershey Company can thank competitor Mars, Inc. for the success, as it turned down Amblin Productions when it approached it for permission to use the popular bite-sized chocolate candy. It's unclear why the decision was made, but many possible explanations have been offered through the years, including a rather mundane one claiming Mars had reached its advertising budget limit.

7. Ever-popular Coke introduces a new formula

Almost 100 years old in 1985, Coke was the world's leading soft drink and a marketing force. Drastic change certainly wasn't necessary, which is why so many Coke drinkers were perplexed when the company unveiled New Coke. A major aspect of the drink's appeal, in addition to the distinct taste, was the emotional connection it had formed with customers. That connection was compromised, causing a flurry of complaints to the company and eventually forcing it to acknowledge the mistake, despite the fact that New Coke had received favorable ratings in taste tests. Coca-Cola Classic was then released to placate the masses and reinvigorate sales.

8. Decca Records passes on the Beatles

The Beatles' audition for Decca Records on New Year's Day 1961 was less than perfect, as the group was nervous and eager to earn a record deal. Even still, they felt good about their chances, and hoped to proceed with the next step of their careers. Ultimately, the decision was made by A&R representative Mike Smith to instead sign a local act from London, Brian Poole and the Tremeloes, the safer choice. Decca's reasoning was that "guitar groups are on the way out." The Beatles went on to become the best-selling band in the history of the world, starting a cultural revolution in the process.

9. NBC and CBS pass on Monday Night Football

Baseball was still America's pastime in the late '60s, but football was emerging as the country's passion. The impending AFL-NFL merger would cause the newly-minted league to explode in popularity and become an extremely valuable television property. Commissioner Pete Rozelle foresaw the success of a weekly primetime game, initially approaching CBS and NBC to negotiate a contract. Both networks were reluctant to reach a deal, however, as they didn't want sacrifice successful programs such as the Doris Day Showand Laugh-In. Rozelle then went to last-placed ABC, which was more open to the idea, and Monday Night Football became one of the longest-running and consistently highest-rated televisions series of all time.

10. ABC passes on The Cosby Show

You win some, you lose some. Such was the case when ABC passed on The Cosby Show several years after it opted to broadcast Monday Night Football. In the mid-'80s, the network was still stuck in third place, with MNF essentially being its most-popular program. Entertainment Division President Lewis Erlicht received Cosby's first pitch, but turned it down because, according to Erlicht, Cosby asked for a commitment without providing substance such as a script or pilot episode. The program became an instant hit, ranking No. 3 in the Nielson ratings during its first season and No. 1 during the next five seasons, catapulting NBC to the No. 1 spot among the networks.

8. The greatest business decisions of all time

Business leaders make thousands of decisions each year, and sometimes, a single decision can have a powerful far reaching impact. In the book, The Greatest Business Decisions of All Time, Verne Harnish explores those “black swan” decisions that brought great success at

companies like Zappos, Intel, Tata, Toyota and many others. Below is Harnish's personal list of the greatest business decisions of all time.
(http://www.forbes.com/sites/kevinkruse/2013/05/22/business-decisions/#6e71bbe14fa3)

- **Greatest Decision—General Electric**. Jack Welch's decision to fully fund a first-in-class training center at Crotonville, led to the development of hundreds of great leaders who practiced the "GE Way".
- **Greatest Decision—Samsung**. Their decision to launch a sabbatical program that sends top talent all around the world continues to be the secret behind Samsung's success as a global brand.
- **Greatest Decision—Wal-Mart**. Sam Walton's decision to hold Saturday morning, all-employee meetings led to a culture of rapid information and decision making, which in turn created one of the biggest companies in the world.
- **Greatest Decision—Apple**. The board's decision to bring back Steve Jobs, after firing him a decade earlier, led to amazing product innovation and to the creation of one of the most valuable companies in the world.
- **Greatest Decision—Ford**. Henry Ford's decision to double the wages of his workers enabled him to attract the talent he needed, and helped insure a class of worker who could afford the very products they were building.

Conclusion

The decision making is a really complex process which involves time, knowledges and attention. Even though people tend to think that companies are in control of their own decisions, there are traps that reveal their irrationality in making choices. This article shows multiple causes why managers, groups and leaders fail to make rational decisions.

Despite their qualification, in most cases, they are influenced by bounded rationality.

Managers are focusing on past events or on intricacy of the problem rather than on workable alternatives to solve it. Due to uncertainty, they can be easily influenced by inaccurate information which in most cases is not connected to the actual issues they face.

Even though it is common to hear that groups make more rational decisions than individuals, this paper reveals that there are factors that have negative impacts on their decision making process. The fear of not being irrational, similar judgments or limited time can be potential factors of irrational decisions.

In most cases, leaders are seen as professionals in their field of activity, however, the chase after money, power and self-interest influence them to make rational decisions.

Despite this, in this work paper are shown solutions to rational decisions: responsibility, emotional equilibrium, the willingness to find more alternatives and open discussion is among the factors which assure the control of their own decisions.

References:

[1] Hammond, S. John, Keeney, L. Ralph & Raiffa, H. (1999). *Smart Choices.* Boston, Massachusetts, Harvard Business School Press.

[2] Harrison, E. Frank (1995). *The Managerial Decision making process.* Boston, Massachusetts, Houghton Mifflin Company.

[3] http://www.businessdictionary.com/definition/decision-making.html

[4] Blanchard, K., & Peale, N. V. (1988). The power of ethical management. New York: William Morrow.

[5]http://economia.unipr.it/DOCENTI/CILLONI/docs/files/Lesson%2004%20Reading%20facoltativa.pdf

[6] Garvin, D. A. (2006, January). All the wrong moves. *Harvard Business Review*, 18–23.

[7] Hammond, S., Keeney, L., and Raiffa,H. (2001). *Harvard Business Review on Decision Making: The hidden traps in decision making.* Boston, Massachusetts, Harvard Business School Press.

[8] Dipaolo, T. (2014). *The secret to leadership. An explanation as to why leaders fail and a simplified and different approach to becoming an effective and respected leader.* CreateSpace Independent Publishing Platform.

[9] Watson, R. Stephen & Buede, M. Dennis (1994). *Decision synthesis. The principles and practice of decision analysis.* New York, Press Syndicate of the University of Cambridge.

[10] Howard, A. Ronald &Abbas, E. Ali (2015). *Foundation of Decision Analysis.* Harlow, Pearson Education.

[11] Hastie, R. & Sunstein, R. Cass (2015). Wiser. *Getting beyond groupthink to make groups smarter.* Boston, Massachusetts, Harvard Business Review Press.

[12] Goodwin, P. & Wright, G. (2004). *Decision Analysis for Management Judgment.* West Sussex, John Wiley & Sons Ltd.

[13] Thompson, L. Henry (2010). Stress Effect. *Why smart leaders make dumb decisions and what to do about it.* San Francisco, Jossey-Bass.

[14] Koestenbaum, P. (2002). *Leadership. The inner side of greatness. The philosophy for leaders.* San Francisco, Jossey-Bass.

[15] Nutt, P. C. Types of organizational decision processes. Administrative Science Quarterly, 29, 414–550).

[16] Nutt, P. C. Surprising but true: Half the decisions in organizations fail. Academy of Management Executive, 13, 75–90).

[17] Zell, D. M., Glassman, A. M., & Duron, S. A. (2007). Strategic management in turbulent times: The short and glorious history of accelerated decision making at Hewlett-Packard. *Organizational Dynamics, 36*, 93–104).

[18] Jennings, D. &Wattam, S. (1994). *Decision making. An integrated approach.* London, Pitman Publishing.

[19] http://www.businessinsurance.org/10-worst-business-decisions-in-history/)

E-COMMERCE: CONCEPTS, PERSPECTIVES AND CHALLENGES

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Abstract

Internet commerce has become the frontier for businesses around the world. Traditional. The Internet's World Wide Web has become the prime driver of contemporary E-commerce. This paper presents a hierarchical framework of E-commerce development, as well as of analysis, range from the wide-area telecommunications infrastructure to electronic marketplaces and electronic hierarchies enabled by E-commerce. Several nodal problems are discussed that will define future development in E-commerce.

Keywords: Internet commerce, World Wide Web, E –commerce, problems, business transactions, customers.

Introduction to e- commerce

There are many different definitions and understanding about E-Commerce.

Vladimir Zwass defines e-commerce as "… the sharing of business information, maintaining business relationships, and the conducting business transactions by means of telecommunications networks" [9, p.3]. He pointed out that e-commerce includes not only buying and selling goods over Internet, but also various business processes within individual organizations that support the goal.

G. Winfield Treese and Lawrence C. Stewart gave their view of Internet-commerce as follows: "… the use of the global Internet for purchase and sale of goods and services, including service and support after the sale. Historically speaking, the best known idea in electronic commerce has been Electronic Data Interchange (EDI)" [8] p.6]

So E-Commerce is a methodology of modern business, which addresses the need of business organizations, vendors and customers to reduce cost and improve the quality of goods and services while increasing the speed of delivery.

Table1. Traditional Commerce v/s E-Commerce

Traditional Commerce	E-Commerce
Heavy dependency on information exchange from person to person.	Information sharing is made easy via electronic communication channels making a little dependency on person to person information exchange.
Manual intervention is required for each communication or transaction.	The whole process is completely automated.
Communications of business depends upon individual skills.	In e-commerce, there is no human intervention.

Source: elaborated by authors

Generally speaking, when we think of e-commerce, we think of an online commercial transaction between a supplier and a client. However, and although this idea is right, we can be more specific and actually divide e-commerce into six major types, all with different characteristics. E-commerce business models can generally be categorized into the following categories:

- ✓ Business - to - Business (B2B). A website following the B2B business model sells its products to an intermediate buyer who then sells the product to the final customer. Following are the key technologies used in B2B e-commerce: Electronic Data Interchange (EDI), Internet, Intranet, Back-End Information System Integration. (*freemarket.com*)
- ✓ Business - to - Consumer (B2C). A website following the B2C business model sells its products directly to a customer. A customer can view the products shown on the website. The customer can choose a product and order the same. (*amazon.com*)
- ✓ Consumer - to - Consumer (C2C). A website following the C2C business model helps consumers to sell their assets like residential property, cars, motorcycles, etc., or rent a room by publishing their information on the website. Website may or may not charge the consumer for its services. Another consumer may opt to buy the product of the first customer by viewing the post or the advertisement on the website. (*e-bay.com*)
- ✓ Consumer - to - Business (C2B). In this model, a consumer approaches a website showing multiple business organizations for a particular service. The consumer places an estimate of amount he/she wants to spend for a particular service. For example, the comparison of interest rates of personal loan/car loan provided by various banks via websites. A business organization who fulfills the consumer's requirement within the specified budget, approaches the customer and provides its services. (*priceline.com*)

- ✓ Business - to - Government (B2G). B2G model is a variant of B2B model. Such websites are used by governments to trade and exchange information with various business organizations. Such websites are accredited by the government and provide a medium to businesses to submit application forms to the government.
- ✓ Government - to - Business (G2B). Governments use B2G model websites to approach business organizations. Such websites support auctions, tenders, and application submission functionalities.
- ✓ Government - to - Citizen (G2C). Governments use G2C model websites to approach citizen in general. Such websites support auctions of vehicles, machinery, or any other material. Such website also provides services like registration for birth, marriage or death certificates. The main objective of G2C websites is to reduce the average time for fulfilling citizen's requests for various government services.

For ecommerce retailers, website security is the cornerstone of a successful online business. Why? It's simple: customers will lose his/her faith in e-business if its security is compromised. Following are the essential requirements for safe epayments/transactions:

- ✓ Confidentiality - Information should not be accessible to an unauthorized person.
- ✓ Integrity - Information should not be altered during its transmission over the network.
- ✓ Availability - Information should be available wherever and whenever required within a time limit specified.
- ✓ Authenticity - There should be a mechanism to authenticate a user before giving him/her an access to the required information.
- ✓ Encryption - Information should be encrypted and decrypted only by an authorized user.
- ✓ Auditability - Data should be recorded in such a way that it can be audited for integrity requirements.

I. Why the internet and why now?
Drivers and barriers for online shopping success.

There are many reasons for so-called dot-com companies to get involved in Internet commerce:

- Using e-commerce, organizations can expand their market to national and international markets with minimum capital investment.
- E-commerce improves the brand image of the company.

- E-commerce helps organizations to provide better customer service, to simplify the business processes and makes them faster and efficient.
- E-commerce reduces the paper work.
- E-commerce increases the productivity of organizations.

There is what motivates consumers to purchase online:

- It provides 24x7 support. Customers can enquire about a product or service and place orders anytime, anywhere from any location.
- E-commerce application provides users with more options to compare and select the cheaper and better options and quicker delivery of products.
- A customer can put review comments about a product and can see what others are buying, or see the review comments of other customers before making a final purchase.
- E-Commerce increases the competition among organizations and as a result, organizations provides substantial discounts to customers.

The following are some of the advantages that e-commerce offers to the society:

- Customers need not travel to shop a product, thus less traffic on road and low air pollution.
- E-commerce helps in reducing the cost of products, so less affluent people can also afford the products.
- E-commerce has enabled rural areas to access services and products, which are otherwise not available to them.
- E-commerce helps the government to deliver public services such as healthcare, education, social services at a reduced cost and in an improved manner.

The disadvantages of e-commerce can be broadly classified into two major categories:

Technical Disadvantages:

- ✓ There can be lack of system security
- ✓ In many countries, network bandwidth might cause an issue
- ✓ Sometimes, it becomes difficult to integrate an e-commerce software or website with existing applications or databases

Non-Technical Disadvantages:

- ✓ Initial cost: The cost of creating/building an e-commerce application inhouse may be very high

- ✓ User resistance: Users may not trust the site being an unknown faceless seller. Such mistrust makes it difficult to convince traditional users to switch from physical stores to online/virtual stores
- ✓ Security/ Privacy: It is difficult to ensure the security or privacy on online transactions
- ✓ Lack of touch or feel of products during online shopping is a drawback
- ✓ E-commerce applications are still evolving and changing rapidly
- ✓ Internet access is still not cheaper and is inconvenient to use for many potential customers, for example, those living in remote villages.

II. Around the world

Cross-border e-commerce is a growing phenomenon. More than half of customers (57%) say they purchased from an e-tailer outside their country's border in the past six months.[2] p.6-11]

1. The magic of Search and the Consumer Buying Behaviour

Online research is a common practice across the globe, but there are some cultural differences. The respondents of Nielsen Global Connected Commerce Survey (Q4 2015) in Asian countries such as Thailand, the Philippines, India and China frequently research products online before buying in stores or use online reviews to help make grocery purchasing decisions. Online research and reviews are also used frequently in Spain and Nigeria. The importance of online research in all of these markets is likely driven by wide variation in product quality, the prevalence of social networks and the importance of keeping up with thelatest trends.

Clothing is the top category purchased online in every region except North America (the U.S. and Canada). More than half of all respondents in the online study (55%) say they've ever purchased fashion products online. Travel products are among the top five categories purchased online in every region and books are among the top five everywhere except the countries in the Middle East. In fact, books/music/stationery tops the list of categories purchased in the U.S., Australia, Japan and South Africa.

South Korean respondents report the highest incidence of buying clothes online (77%) and Japan had the highest levels of purchasing of books/music/stationery (79%).

2. Payment practices : Credit, digital or cash on delivery?

E-commerce sites use electronic payment. Electronic payment has revolutionized the business processing by reducing the paperwork, transaction costs, and labor cost. Being user friendly and less time-consuming than manual processing, it helps business organization to expand its market reach/expansion. Listed below are some of the modes of electronic payments:

- ✓ Credit Card
- ✓ Debit Card
- ✓ Smart Card (Smart card is similar to a credit card or a debit card in appearance, but it has a small microprocessor chip embedded in it. It has the capacity to store a customer's work-related and/or personal information. Mondex and Visa Cash cards are examples of smart cards.)
- ✓ E-Money (Online payments done via credit cards, debit cards, or smart cards are examples of e-money transactions. Another popular example is e-cash.)
- ✓ Electronic Fund Transfer - EFT (It is a very popular electronic payment method to transfer money from one bank account to another bank account. Fund transfer can be done using ATM (Automated Teller Machine) or using a computer. Nowadays, internet-based EFT is getting popular.)

In order to sell, retailers must make it easy for consumers to buy. So which payment methods are the most preferred? It depends on where you ask.

Around the world, credit cards are the most commonly used payment method. More than half of online respondents who say they shopped online during the past six months paid with a credit card (53%). [3, p.6-12] In addition, roughly four-in-10 used a digital payment system such as PayPal or Alipay (43%), debit card (39%) or direct debit from their bank account (38%).

During the past six months, 66% of U.S. online shoppers and 81% of Canadian online shoppers say they paid with a credit card, well above the percentage that used the next closest option—debit card in the U.S. (38%) and digital payment systems in Canada (41%). Credit card is also the most used payment option in several of the Latin American countries in the study (52% - 80% across the countries) and Japan and Korea (76% and 79%, respectively).

In India, cash on delivery is the most widely used option, cited by 83% of online respondents. The popularity of cash on delivery is driven by a few factors. There is a sizeable group of unbanked consumers in India, credit card penetration is relatively low, and many consumers avoid paying with plastic due to security concerns. Moreover, e-commerce is still in its early stages of development in the country, and the ability to touch, feel and try on merchandise prior to purchasing reduces the risk of not getting what they paid for.

Cash on delivery is also popular in many other developing markets, including Nigeria (76%), the Philippines (73%), Russia (70%), United Arab Emirates (68%), Saudi Arabia (59%), Colombia (57%), Poland (57%) and Thailand (56%).

Retailers looking to expand internationally need to understand local market nuances and cater their offerings accordingly. Increasing the number of available payment options can improve the odds of converting browsers to buyers.

III. Feel the pulse of the market

1. The 5 digital commerce and marketing trends to look out for in 2017:

✓ Consumers will use mobile to make high-value purchases. Desktop was once the king of high-ticket purchases, but in 2017, consumers will feel equally comfortable purchasing expensive items on smartphones. The AOV (Average Order Value) on mobile apps was 27 percent higher than desktop in Q2 2016 [10] p. 17]. *Implications for retailers*: Ensure a perfect mobile checkout experience for every transaction.

✓ Retailers will seek opportunities to pool resources as they face increasing competition from Amazon. In 2017, a growing number of independent companies will enable retailers to pool resources to better compete with Amazon and decrease dependence on Facebook and Google. Implications for retailers: Look for the right partnerships in 2017. *Retailers need to* partner with technology companies that can make their products more discoverable online.

✓ Product Listing Ads will emerge as a key channel for customer acquisition. In 2017, retailers will invest more in Google Shopping and expand their search capabilities to improve customer discovery and conversions. *Implications for marketers*: Focus on discovery with continued pressure on efficiency. Retailers should invest in search channels.

✓ Manufacturer brands will demand more transparency in trade marketing. *Implications for retailers*: Manufacturers will direct budgets to programs that demonstrate sales growth at scale.

✓ Developed markets, too, will prioritize mobile over desktop, modeling emerging markets. In 2017, expect a majority of online retailers to become “mobile first” brands. Asia, especially China, leads the world in share of mobile sales and in mobile innovation, such as in-store payments, taxi hailing, and other superior user experiences [11]. With mobile becoming the primary digital channel to interact with consumers, retailers must make mobile the priority in their site designs.

2. How people will shop in 10 years?

We don’t have a crystal ball and can only guess about the future, but Ovum issued in 2016 a report called “The Future of E-commerce: The Road to 2026”.[12] We will try to share the most interesting prediction from this report.

The desire for instant access and fast turnaround, 24/7, will be the norm by 2026, driven in particular by millennial (born approximately 1980–95) and also by Generation Z consumers (born approximately 1996–2010). Generation Z are digital natives to the power of 10, with technology use their second nature. These generations are constantly connected and inhabit an online environment where events happen in real time without them having to wait, and where social media enables them to dictate terms.

The desire for shopping experiences will intensify. By 2026, many consumers will want retailers to provide an environment where shopping is an event experience in its own right. This will translate into a world where augmented reality (AR) plays a key role.

There are a number of factors driving this trend. Many consumers today already treat shopping as a leisure activity. Another driver is the seemingly insatiable need for people to showcase their participation in activities and experiences on social media. Retailers will increasingly align not only their brands but also the shopping experience itself to this consumer desire. In 2015, Victoria's Secret encouraged shoppers to take selfies in front of displays and show them to sales assistants in return for a free gift – and hopefully share their selfies/experiences with friends.

IKEA has also developed a table as part of its concept kitchen that suggests recipes based on the ingredients on the table, which is a great example of AR working in the real world, potentially.

The sharing economy will become more pronounced by 2026. Smart retailers will need to learn how to exploit the *sharing economy* to their benefit, and there are several examples of retailers that have found innovative and creative ways to do this. One example is the partnership between Marks & Spencer (M&S) and the charity Oxfam. For three years, M&S and Oxfam ran a program whereby consumers could donate old M&S clothes to Oxfam charity shops and, in return, receive a discount voucher against new M&S apparel. This type of program has since been copied by other retailers, such as H&M and Ikea. Ikea allows customers to return their unwanted Ikea furniture to participating stores, where it is resold or donated to charity.

Online moves into the real world. The online giant Amazon has opened its first physical Amazon Books in Seattle in late 2015, following experiments with pop--up stores. In January 2016 Alibaba, China's leading e-commerce player, opened its first physical store in Tianjin (a Free Trade Zone), North China to boost sales of its imported products.

Today, the majority of retailers are utilizing pickup. In the UK, which has the most mature click-and--collect retail market (A shopping facility whereby a customer can buy or order goods from a store's website and collect them from a local branch), the value of goods collected in store is expected to rise by 78 percent by 2020.

The widespread adoption of increasingly powerful smartphones with larger screens is improving the m-commerce experience. Meanwhile, more and more retailers are optimizing their sites for mobile shopping. At the global level, Android--based smartphones will continue to dominate the market going forward and eclipse Apple iOS devices.

IV. Managing paradoxes in ecommerce

There's a negative side to offering shoppers so many choice via ecommerce. The problem is getting worse and screams for a solution.

In his recent blog "The Dark Side of eCommerce"[13], Darren Hitchcock showcases the challenge of offering too much choice – many items in a retailer's offer just don't get consideration. He cites a RichRelevance that found "only 44% of products online are getting attention; leaving 56% bypassed. Furthermore, just 10% of products on an online retail site garner 75% of page views."

The explosive growth of transactional and online shopper data means consumers are swamped with information. In just one internet minute, there are now 2m Google search queries, £83,000 in sales on Amazon.co.uk, 100,000 new Tweets and 6m Facebook views. [14] This leaves consumers with overwhelming choice.

The author stresses the need for greater personalization in order to draw attention to products. Two examples are Asos, which offers dedicated online advisers, and the new L'Oreal Paris USA website, which invites customers to create their own user profile to drive product offerings.

Site search is a vital feature for ecommerce sites, as it allows visitors to take a shortcut to the products they have in mind. On ecommerce sites, up to 30% [7] of visitors will use the site search box. So users should be able to find products quickly, and with a minimum of cognitive effort.

References

[1]CRITEO "eCommerce Industry Outlook", 2016 (Disponible at http://www.criteo.com/media/3588/criteo-ecommerce-industry-outlook-2016.pdf)

[2] NIELSEN "Global Connected Commerce. Is e-tail therapy the new retail therapy?", 2016 (Disponible at https://www.nielsen.com/content/dam/nielsenglobal/jp/docs/report/2016/Nielsen-Global-Connected-Commerce-Report-January-2016)

[3] Nielsen Global Connected Commerce Survey, Q4 2015

[4] OSTROFSKY M. "Get Rich Click!", Free Press 2013, ISBN: 978-1451668391

[5] OVUM "The future of e-commerce. The road to 2026" (Disponible at http://www.criteo.com/media/4094/ovum-the-future-of-e-commerce-the-road-to-2026.pdf)

[6] REYNOLDS J. "The Complete E-Commerce Book: Design, Build, & Maintain a Successful Web-based Business", Second Edition 2004, ISBN:1578203120

[7] SAMPLE-Econsultancy-Ecommerce-Best-Practice-Compendium, 170+ tips and recommendations to improve your conversion rates 2016

[8] Treese , L. C. Stewart L. C. "Designing Systems for Internet Commerce", 2nd ed, Addison-Wesley 2003, IBSN: 0-201-76035-5

[9] Zwass Vladimir "Electronic Commerce: Structures and Issues", International Journal of Electronic Commerce, Volume 1, Number 1, Fall, 1996, pp. 3 - 23. (Disponible at http://www.ijec-web.org/v1n1/p003full.html)

[10] Source: Criteo, State of Mobile Commerce Report, H1 2016 US

[11] http://www.criteo.com/media/6443/criteo-digital-commerce-marketing-trends-2017.pdf

[12] https://magenable.com.au/researches-2/ecommerce-future-trends-will-shape-retail-2026/

[13] https://econsultancy.com/blog/62619-the-dark-side-of-ecommerce (Published 1 May, 2013 by Darren Hitchcock

[14] http://www.brickmeetsclick.com/managing-the-paradox-of-choice-in-ecommerce

CONCEPTE TEORETICE CU PRIVIRE LA POLITICA TERMOENERGETICĂ REGIONALĂ EUROPEANĂ ÎN DOMENIUL PROTECŢIEI MEDIULUI AMBIANT

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Abstract

The present study provides an overview of a complex problem of environmental protection in the context of the thermo-energetic activity of the state. The major objective of our country's environmental policies lies in the increasing focus of programs, strategies and environmental legislation on the goal and consistent implementation. Achieving this goal requires organic state-level control, institutionalized according to the socio-economic situation, with broad and well-targeted competencies.

Key words: thermal pollution, oxygen, water, energy, industry, climate, nature

Abstract

Prezentul studiu oferă o privire în ansamblu asupra unei probleme complexe ce o reprezintă protecția mediului înconjurător în contextul desfășurării activității termoenergice ale statului. Obiectivul major pentru politicile de mediu ale țării noastre rezidă în axarea tot mai accentuată a programelor, strategiilor şi legislaţiei de mediu pe finalitate şi implementare consecventă. Atingerea acestui obiectiv presupune un control ecologic la nivel de stat efectiv, instituţionalizat conform situaţiei social-economice, cu competenţe largi şi bine direcţionate.

Cuvinte chee: poluarea termică, oxigen, apă, energie, industrie, climă, natură, sănanate,

1. Introducere

Din cele mai vechi timpuri, omul a încercat să modeleze natura ale cărei legi trebuiau respectate pentru a supraviețui. În ultimile doua secole s-a făcut însă simţită prin coporament și concepție, încercarea omului de a domina natura, de a utiliza în folos propriu toate bogățiile naturale, accentuându-se progresiv conflictul dintre procesele ciclice naturale ale ecosferei și cele liniare ale tehnologiilor create și susținute de civilizația umană, ajungîndu-se la „criza-ecologică”

Cauzele acestei crize se datorează, în primul rînd, dezvoltării civilizației industriale de la mijlocul secolului XIX, care a produs modificări profunde și accelerate a mediului înconjurător.

Pornind de la noţiunea generală de poluare, menţionăm că sub aspect teoretic aceasta reprezintă modificarea componentelor naturale prin prezenta unor componente străine, numite poluanţi, ca urmare a activitaţii omului, şi care provoacă prin natura lor, prin concentraţia în care se găsesc şi prin timpul cat actioneaza, efecte nocive asupra sanatatii, ce creeaza într-un final disconfort sau împiedica folosirea unor componente ale mediului esentiale vietii. [1]

2. Rezultate şi cercetări

Astfel o serie de specialiști în domeniu afirmă că, perioada pe care o parcurge omenirea în prezent poate fi considerată ca era poluării și distrugerii mediului. Poluarea mediului privită îndeosebi prin prisma efectelor nocive asupra sănătății viețuitoarelor a îmbrăcat de-a lungul timpului mai multe domenii concretizate în diferite tipuri de poluare și anume: poluarea biologică, poluarea chimică, poluarea fizică, poluarea radioactivă și nu în ultimul rînd cea mai recentă formă fiind poluarea termică.

Așa dar, dezvoltarea industriei şi creşterea consumului de energie primară, antrenează poluarea mediului ambiant (aer, ape, pânzele freatice etc.), astfel încât această activitate determină efecte negative asupra nivelului de sănătate al oamenilor şi asupra modificării climei

Sub aspect definitoriu, poluarea termică prezintă degradarea calității apei prin orice proces, care schimbă temperatura apei a mediului ambiant. O cauză comună a poluării termice este, utilizarea apei ca agent de răcire de către centralele electrice și producătorii industriali. Când apa folosită ca agent de răcire se întoarce în mediul natural, la o temperatură mai ridicată.

Drept consecință, poluarea termică apare în urma deversării în apa a lichidelor calde ce au servit la racirea instalațiilor industriale sau a centralelor termoelectrice și atomoelectrice. Se apreciază ca în momentul de față peste 20% din debitul apelor curgătoare din lume este afectat de poluarea termică.

În mod evident necesităţile globale de energie actualmente cca 90% sunt acoperite prin arderea combustibilului fosil, din care petrol – 39%, cărbune – 27%, gaze naturale – 24%. Ponderea combustibilului fosil în producerea energiei pe plan mondial constituie 63% din care cărbune – 37%, gaze naturale – 16%, ţiţei – 10%.

Conform unor cercetări stiințifice cererea totala de energie în 2030 va înregistra o creștere de peste 40%. În acest sens rezervele certe cunoscute de petrol pot susține un nivel actual de consum doar pana in anul 2040, iar cele de gaze naturale pana in anul 2070, în timp ce rezervele mondiale ne asigură o perioadă de peste 200 de ani chiar la o creştere a nivelului de exploatare.

Previziunile indică o creştere economică, ceea ce va implica un consum sporit de resurse energetice. Din punct de vedere al structurii consumului de energie primară la nivel mondial, evoluţia și prognoza de referinţă realizată de Agenţia Internațională pentru Energie (IEA) evidenţiază pentru perioada 2010 - 2020 o creștere mai rapidă a ponderii surselor regenerabile, dar şi a gazelor naturale.

Azi în lume, peste 6% din energia calorica a centralelor electrice se prezintă sub forma de apa calda deversată în râuri ce degradează apa și biocenoza sa. De aceea s-a luat măsura reciclării apei calde, prin folosirea acesteia la incalzirea locuințelor, sau irigații primăvăratice pentru dezghețul solului.

Între timp, efectele negative ale poluării termice se reflectă direct asupra apei, aerului cît și indirect asupra sănătății oamenilor, care necesită eforturi deosebite de investigare și cercetare pentru a putea fi stăpânită în viitorul apropiat. Astfel printre cauzele generatoare de poluarea termică putem idendifica: [4, pp.203-366]

1. Procesul de producție a plantelor industriale – în fapt aceste plante atrag apa din sursa din apropiere pentru a menține mașinile se răcească, ulterior le eliberează înapoi la sursa cu temperatura mai mare. Atunci când este încălzită apa revine la râu sau la ocean, temperatura apei crește brusc. Totodată nivelurile de oxigen sunt modificate în apă, iar acest lucru poate degrada, de asemenea, calitatea și longevitatea vieții în fauna sălbatică, care trăiește sub apă. Acest proces poat, de asemenea, distruge vegetația acvatică care depinde în mod constant de oxigen și de temperatură. Prin modificarea acestor medii naturale, industriile contribuie în mod esențial scad calitatea vieții acestor forme de viață bazate pe puscasii marini și pot distruge în cele din urmă habitate în cazul în care nu sunt controlate și atent cu privire la practicile lor.
2. Eroziuni ale solului: fiind un alt factor major care cauzează poluarea termică ce constă expunerea la lumina soarelui a corpurilor de apă care generează o temperatura ridicată care s-ar putea dovedi fatală pentru biomase acvatice, deoarece poate da naștere unor condiții anaerobe.
3. Defrișarea: arborii și plantele împiedică lumina soarelui de la care se încadrează în mod direct pe lacuri, iazuri sau râuri. Atunci când are loc defrișări, aceste corpuri de apă sunt expuse direct la lumina soarelui, pentru a absorbi mai multă căldură și creșterea temperaturii acestuia. Despădurirea este, de asemenea, o cauză principală a

concentrațiilor mai mari de gaze cu efect de seră, adică încălzirea globală în atmosferă.

4. Scurgerile din pavă: scurgerile urbane evacuate de pe suprafețele pavate, cum ar fi drumuri si locuri de parcare pot face apa mai calda. În timpul sezonului de vară, asfaltul devine destul de cald, ceea ce creează scurgerile de cald care pătrunde în sistemele de canalizare și în corpurile de apă.
5. Cauze naturale: cum ar fi vulcani și activitatea geotermală sub oceane și mări ce pot declanșa o lavă caldă pentru a crește temperatura corpurilor de apă. De asemenea, poate introduce cantități masive de căldură în oceane.

Printre oamenii de știință și cercetători recunoscuți, în general, există două școli de gândire atunci când vine vorba de efectele poluării termice. Unii susțin partea negativă ale acestei poluări asupra ecosistemelor marine și modul în care aceasta acționează în detrimentul practicilor pozitive de mediu. Alții însă sunt de părere că fără aceste industrii care funcționează în modul actual dacă ar fi stopate nu am avea nici industrii care ar putea produce bunurile de care avem nevoie, și așa mai departe.

Între timp nu întîrzie și efectele poluării termice asupra ecosistemelor ce depășesc cu mult beneficiile printre care menționăm: [6] p.180]

1. Scăderea DO (oxigen dizolvat) Niveluri: Temperatura caldă scade nivelul de DO (oxigen dizolvat) în apă. Apa caldă deține relativ mai puțin oxigen decât apa rece. Scăderea numărului DO poate crea sufocare pentru plante și animale, cum ar fi pești, amfibieni, ceea ce poate da naștere unor condiții anaerobe. Apa calda permite alge să se dezvolte pe suprafața apei și pe termen lung, cresterea algelor poate scadea nivelul de oxigen în apă.â
2. Creșterea toxinelor: cu fluxul constant de descărcare de gestiune a temperaturii ridicate din industrii, există o creștere uriașă a toxinelor, care sunt în corpul natural al apei. Aceste toxine pot conține substanțe chimice sau radiații care ar putea avea un impact dur asupra ecologiei locale și a le face susceptibile la diferite boli.
3. Pierderea biodiversității: O adâncitură în activitatea biologică în apă poate duce la o pierdere semnificativă a biodiversității. Modificări în mediu pot provoca anumite specii de organisme să se mute baza lor la un alt loc în timp ce lor ar putea fi număr semnificativ de specii care își poate schimba din cauza apelor calde. Organismele care se pot adapta cu ușurință ar putea avea un avantaj asupra organismelor care nu sunt utilizate la temperaturi mai calde.

4. Impactul ecologic: un șoc termic bruscă poate duce la uciderea în masă de pește,
5. Impactul asupra insectelor, plantelor sau amfibienilor – astfel apa mai fierbinte se poate dovedi favorabil pentru unele specii în timp ce ar putea fi letală pentru alte specii. Temperatura mică a apei crește nivelul de activitate în timp ce temperaturi mai mari scade nivelul de activitate. Multe dintre speciile acvatice sunt sensibile la schimbările de temperatură mici, cum ar fi de un grad Celsius, care poate provoca schimbări semnificative în metabolismul organismului și alte efecte adverse biologiei celulare.
6. Afectează sistemele reproductive - care generează periclitarea semnificativă în reproducerea faunei marine (deși acest lucru poate fi adevărat, reproducerea poate să apară încă între pești - dar probabilitatea defectelor la nou-nascuti este semnificativ mai mare), se poate întâmpla din cauza creșterii temperaturilor ca reproducere se poate întâmpla cu în anumit interval de temperatură. Temperatura excesivă poate duce la eliberarea de ouă imature sau pot împiedica dezvoltarea normală a anumitor ouă.
7. Crește rata metabolică: Poluarea termică crește rata metabolismului a organismelor ca o creștere a activității enzimei are loc care cauzează organisme să consume mai multe alimente decât ceea ce este necesar în mod normal, în cazul în care mediul lor nu au fost modificate. Perturbarea stabilității lanțului alimentar și modificarea echilibrului compoziției speciilor.
8. Migrația: Apa caldă poate provoca, de asemenea, anumite specii de organisme de a migra la mediu adecvat, care ar satisface cerințele sale pentru supraviețuire. Acest lucru poate duce la pierderi pentru acele specii care depind de ele pentru hrana lor de zi cu zi ca lanțul lor alimentar este întreruptă.

În acest context, declanşarea crizei ecologice şi amplificarea efectelor sale, intensificarea şi diversificarea poluării, degradarea de o manieră generală a stării factorilor de mediu au impus, alături de acţiunile desfăşurate la nivel naţional, concertarea bi şi multilaterală a activităţii statelor în direcţia soluţionării acestor probleme.

Prin urmare, având în vedere rolul primordial al energiei sub aspect general pentru întreaga societate modernă precum şi pentru toate ramurile ce le cuprinde țin să menționez că utilizarea necorespunzătoare a acesteia împiedică crearea unui sistem energetic inofensive pentru mediu.

Mai presus de toate, trebuie luat în considerare faptul că efectele poluării termice depășesc considerabil nevoia umană pentru că acesta să fie satisfăcută. Dacă ne dorim să promovăm mediul prosper care înconjoară biologia acvatică, atunci atitudinea în jurul valorii de poluare termică trebuie să ia o întorsătură drastică.

Astfel, în 1992 a avut loc conferința de la Rio care a unit cel mai mare numar de șefi de state și guverne (179), unde s-au formulat 27 de principii, drepturi și responsabilități ce trebuiesc respectate de fiecare stat în parte. S-au creat o serie de organizații internaționale care încearca să se ocupe de degradare mediului înconjurător.

Mai avantajoase decât măsurile de combatere, sunt cele de prevenire a poluării. Acestea se referă la: buna întreținere și îngrijire a utilajelor industriale, adaptarea unor tehnologii nepoluante, folosirea surselor de energie nepoluante, buna funcționare a motoarelor cu ardere internă, amplasarea judicioasă a întreprinderilor poluante.

Un centru urban reprezintă un ecosistem artificializat la maximum, un ansamblu de elemente alogene care reprezintă utilități, fantezii și facilități pe care societatea modernă le-a creat și care tinde să-și adune tot mai mulți membri. Diminuarea spațiului natural în favoarea celui antropic duce la o serie de dezechilibre care pot sa nu-și manifeste efectele imediat dar, în timp, acestea sunt de cele mai multe ori ireversibile.

Elementele de mai sus stau la baza reorientării politicilor energetice ale ţărilor care sunt net importatoare de energie printre care se statuiază și Republica Moldova.

Protecţia mediului a devenit una din direcţiile prioritare ale politicii promovate de Republica Moldova, îndeosebi după Conferinţa ONU „Mediul şi dezvoltarea" de la Rio de Janeiro (iunie, 1992), în cadrul căreia au fost semnate cele 3 documente oficiale: Agenda 21 şi Convenţiile, Conservarea biodiversităţii, Schimbările climei.

În acest context politica termoenergetică a Republicii Moldova trebuie să fie corelată cu documentele similare existente la nivel internaţional pentru a asigura convergenţa politicii ţării noastre cu politica Uniunii Europene în acest domeniu controversat, ceea ce ar presupune îndeplinirea principalelor obiective ale noii politici energetice ale Uniunii Europene și armonizarea problemei în domeniile cheie.

La etapa actuală, principiile şi obiectivele politicii de stat în sectorul termoenergetic pentru asigurarea securităţii energetice, protecţiei mediului, apărării drepturilor şi a intereselor consumatorilor, sunt: [6]

a) promovarea şi asigurarea competitivităţii în sectorul termoenergetic;

b) respectarea principiului fiabilităţii şi al eficienţei maxime la costuri minime;

c) promovarea eficienţei energetice, a producerii energiei termice din surse regenerabile şi a producerii energiei termice prin cogenerare, inclusiv prin procurarea prioritară a energiei termice produse de centralele electrice de termoficare şi de centralele de producere a energiei electrice şi termice în regim de cogenerare de înaltă eficienţă;

d) susţinerea prin intermediul statului, al autorităţilor publice centrale şi locale a iniţiativelor private şi atragerea investiţiilor private în sectorul termoenergetic.

Totodată, obiectivele politicii de stat în sectorul termoenergetic sunt orientate spre:

a) asigurarea unui cadru legal favorabil pentru efectuarea de investiţii în sisteme centralizate de alimentare cu energie termică, inclusiv pentru modernizarea instalaţiilor de producere a energiei termice şi extinderea reţelelor termice;

b) diversificarea resurselor energetice primare, a instalaţiilor de producere a energiei termice şi a formelor de proprietate în sectorul termoenergetic;

c) protecţia intereselor legitime ale consumatorilor;

d) protecţia mediului prin luarea tuturor măsurilor adecvate de prevenire a poluării, inclusiv prevenirea accidentelor sau limitarea consecinţelor acestora.

Prin urmare Republica Moldova în activitatea sectorului energetic conduce de directivele: [10]

- Directiva 2009/73/CE a Parlamentului European și a Consiliului din 13 iulie 2009 privind normele comune pentru piaţa internă în sectorul gazelor naturale și de abrogare a Directivei
- Directiva 2009/28/CE a Parlamentului European și a Consiliului din 23 aprilie 2009 privind promovarea utilizării energiei din surse regenerabile, de modificare și ulterior de abrogare a Directivelor 2001/77/CE și 2003/30/CE
- Directiva 2009/72/CE a Parlamentului European și a Consiliului din 13 iulie 2009 privind normele comune pentru piaţa internă a energiei electrice și de abrogare a Directivei 2003/54/CE
- Directiva 2004/8/CE a Parlamentului European și a Consiliului din 11 februarie 2004 privind promovarea cogenerării pe baza cererii de energie termică utilă pe piaţa internă a energiei și de modificare a Directivei 92/42/CEE
- Directiva 2004/17/CE a Parlamentului European și a Consiliului din 31 martie 2004 de coordonare a procedurilor de atribuire a contractelor de achiziţii în sectoarele apei, energiei, transporturilor şi serviciilor poştale

- Directiva 2004/18/CE a Parlamentului European și a Consiliului din 31 martie 2004 privind coordonarea procedurilor de atribuire a contractelor de achiziþii publice de lucrãri, de bunuri și de servicii
- Directiva 2003/54/EC a Parlamentului European și a Consiliului din 26 Iunie 2003 privind reguli comune pentru piata interna de electricitatate care revoca Directiva 96/92/EC
- Directiva 2003/55/CE a Parlamentului European și a Consiliului din 26 iunie 2003 privind reglementarile comune pentru piata interna în sectorul gazelor naturale si de abrogare a
- Directivei 98/30/CE Directiva EC/2003/30 a Parlamentului European și a Consiliului din 8 mai 2003 privind promovarea utilizării biocombustibililor sau a altor combustibili regenerabili destinaţi transportului
- Directiva 2001/77/CE a Parlamentului European și a Consiliului din 27 septembrie 2001 privind promovarea electricităţii produse din surse de energie regenerabile pe piaţa internă a electricităţii

În Rezoluţia din 15 noiembrie 2001 privind cartea verde (6), Parlamentul European a solicitat stabilirea unor măsuri de încurajare în favoarea unei schimbări în direcţia centralelor de producere a energiei electrice eficiente, inclusiv producerea combinată de energie electrică și energie termică.

Măsurile de bază impuse vizează domeniul ocrotirii mediului înconjurător la nivel de ţară, oraş, raion, comună, precum şi la nivel de sectoare ale economiei naţionale (minister, departament) prevăd [7] p. 562]:

1. Ocrotirea şi utilizarea raţională a resurselor funciare ca fiind cea mai preţioasă avuţie a societăţii - realizarea unui complex de măsuri orientate spre ameliorarea solului şi ocrotirea lui contra proceselor de eroziune în condiţiile folosirii intensive a pământului în agricultură etc.
2. Folosirea complexă, raţională a resurselor de materii prime minerale la extragerea şi fabricarea materialelor de construcţie.
3. Ocrotirea şi utilizarea raţională a resurselor acvatice - consumarea apei în industrie, agricultură, gospodăria locativ-comunală şi de către orice consumator în parte.
4. Ocrotirea aerului atmosferic. E necesar de a reduce la maximum gradul de poluare a aerului atmosferic cu elemente dăunătoare degajate de diverse întreprinderi industriale, toate tipurile de transport ca rezultat al chimizării în agricultură etc.

5. Ocrotirea şi folosirea raţională a resurselor silvice - efectuarea unor măsuri atât pentru utilizarea raţională a resurselor forestiere, cât şi pentru îmbunătăţirea lor, protecţia contra incendiilor, curăţirea pădurilor de materiale uşor inflamabile, reproducerea pădurilor, perdelelor forestiere, crearea masivelor silvice în jurul 136 oraşelor, efectuarea măsurilor de combatere a dăunătorilor şi bolilor, de prevenire a răspândirii vătămătorilor (cu acest scop se aplică diferite metode biologice) etc
6. Crearea diferieltor zone de păduri-parcuri, organizarea grădinilor publice naţionale, rezervaţiilor naturale, grădinilor botanice, dendrariilor, parcurilor zoologice etc.
7. Protecţia şi reproducerea animalelor sălbatice şi a păsărilor.
8. Protecţia bogăţiilor subsolului şi folosirea lor raţională.
9. Producerea utilajului şi a aparatelor, dispozitivelor, diferitor mecanisme pentru instalaţiile de purificare şi a altor obiecte cu destinaţie de ocrotire a naturii. Totodată, din cauza finanţăriii insuficiente majoritatea întreprinderilor şi-au redus esenţial în ultimii ani cheltuielile pentru efectuarea măsurilor de protecţie a mediului înconjurător. Pentru a intensifica activitatea în acest domeniu, în republică se desfăşoară intens crearea bazei normativ-juridice în

3. Concluzie

Obiectivul major pentru politicile de mediu ale ţării rezidă în axarea tot mai accentuată a programelor, strategiilor şi legislaţiei de mediu pe finalitate şi implementare consecventă. Atingerea acestui obiectiv presupune un control ecologic la nivel de stat efectiv, instituţionalizat conform situaţiei social-economice, cu competenţe largi şi bine direcţionate.

Protecţia mediului înconjurător (ecosistemelor umane) prezintă un complex de acţiuni ştiinţifice, juridice şi tehnice, orientate spre utilizarea raţională, reproducerea şi păstrarea resurselor naturale şi a spaţiului cosmic în interesul oamenilor, spre asigurarea echilibrului biologic în natură şi spre îmbunătăţirea calităţii mediului. Protecţia mediului înconjurător include utilizarea raţională şi protecţia aerului atmosferic, solului, hidrosferei, utilizarea sau neutralizarea deşeu-rilor, protecţia contra zgomotului, radiaţiei ionizante, câmpului electric etc

Referinţe bibliografice

[1] Conferinta Mondiala a O.N.U., Stockholm, 1972

[2] Henry, J. Glenn, and Heinke, Gary W. (1996). Environmental Science and Engineering. Upper Saddle River, NJ: Prentice-Hall.

[3] Hinrichs, Roger A., and Kleinbach, Merlin. (2001). Energy: Its Use and the Environment, 3rd edition. Monterey, CA: Brooks/Cole Publishing Company.

[4] Langford, Terry E. (1990). Ecological Effects of Thermal Discharges. New York: Elsevier Applied Science.

[5] Larminie, James, and Dicks, Andrew. (2000). Fuel Cell Systems Explained. New York: John Wiley & Sons.

[6] Liu, Paul Ih-fei. (1997). Introduction to Energy and the Environment. New York: John Wiley & Sons.

[7] Legea nr. 92 din 29.05.2014 cu privire la energia termică şi promovarea cogenerării Republica Moldova.

[8] Ristinen, Robert A., and Kraushaar, Jack J. (1998). Energy and the Environment. New York: John Wiley & Sons.

[9] Slovic, Paul. (2000). The Perception of Risk. London: Earthscan Publications Ltd.

[10] http://www.anre.md/ro/content/directive-ale-uniunii-europene vizitat la (02-11-2016)