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## Expanding Affairs

The new economy has markedly transformed the structural parameters of the economic landscape and contracted the prism for time and space. The role of information technology in the new economy has been pivotal. It is particularly potent in the changing structure of international transactions and production. Digital development brings a whole new collection of challenges. One of the most important is to understand the question of globalization vs. localization, and how these terminologies differ from internationalization. Companies must adapt their strategy to every new target market, especially when doing business in a completely different culture. The last 15 years of innovation have generated many international possibilities for businesses large and small.

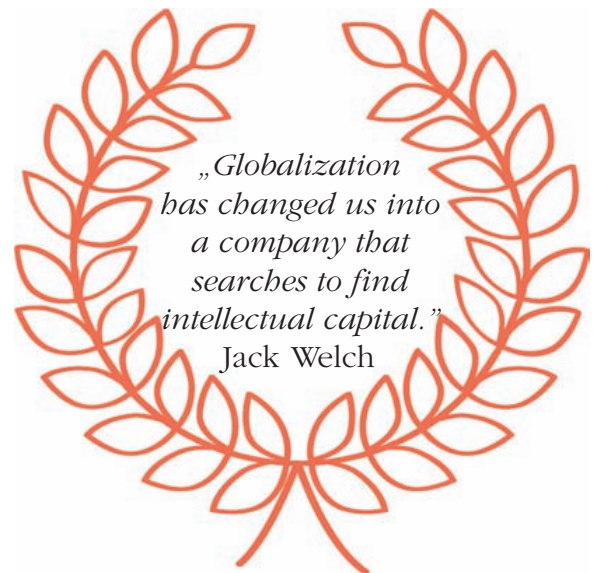
The economic profile of the new global economy has been driven by technology, fueled by innovation and entrepreneurial initiative, and is based on new ideas, new perspectives and new business strategies. It has opened the door to new investment opportunities and acted as a catalyst for employment creation.

As you launch your business in new countries, you become part of a growing infrastructure that allows you to consolidate your brand globally and diversify your customer portfolio. However, not all markets are a good fit for your brand.

The first step to a successful expansion into emerging markets is to know what you're dealing with. If you can't make a distinction between globalization vs. localization, you'll find it hard to build a cohesive strategy and prepare your business for multiple markets. We present the main differences you should consider when talking about globalization, internationalization, and localization.

**Globalization** refers mostly to the strategy of expanding your business outside national borders. It includes the processes through which you learn about both international law and local regulations, how to build a multinational business environment, and connect with international partners to increase your chances of success. Globalization includes the internationalization and localization processes.

**Internationalization** is the part of your global strategy in which you create a product that can be localized. That means you design and develop a flexible website, game, app, software, or any other product, that can be





adapted to local markets. This includes a series of technical measures that make your product easy to tailor to the tastes of a new audience.

Internationalization is an essential step that allows you to begin your localization project.

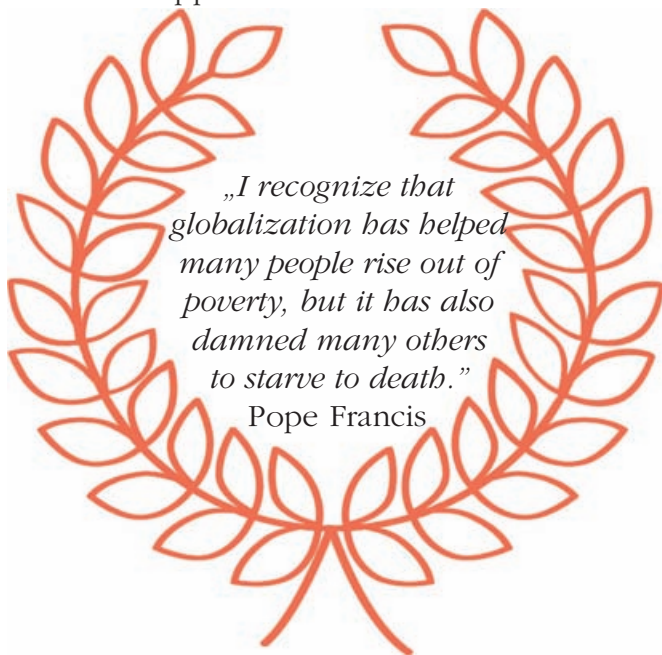
**Localization** is the process of adapting your product to local markets by making it sound and 'feel' local. It goes beyond the translation of your content. You should consider aspects like culture, religion, and local preferen-

ces to create a product that can meet the locals' expectations. Localization also means customizing many elements like currency, time format, colours, icons, and every part of your product that could make it feel foreign to your audience.

As you can see, there are significant differences between globalization, internationalization, and localization. However, each of these concepts is equally as important when you expand to emerging markets. Skipping any step could slow you down and keep you from building a stable global brand.

Understanding the difference between globalization and localization as well as their relation to internationalization puts you one step closer to forming a cohesive global strategy. Behind these long and complicated words, the idea is simple: **think global, act locally**. For successful localization, you should find a balance between your global brand and the local versions that you create for each target market. It's easier when dealing with countries that share a common cultural background, and gets more complicated when you approach nations with a different vision of life.

The world that is experiencing globalization intensely is also in need of localization. Participation, pluralism, autonomy and decentralization stigmatize the state understanding of the new century, and the collective expression of these concepts, 'localization', emerges as a concept that has been researched and accepted almost all over the world. It is aimed to create a more democratic and participatory government to overcome the negativities of globalization with localization.



*Florin Dănălache*  
Senior Editor



# A Field of Globalization – ICT Affairs

**Lea Nedomova, Petr Doucek**

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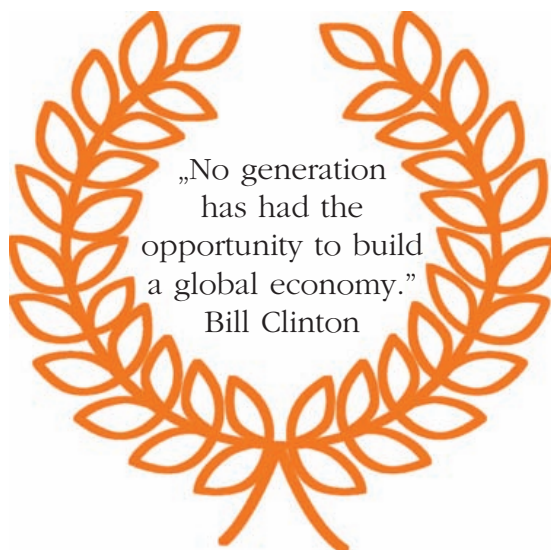
Abstract

*E-economy, so-called new economy, has brought some major changes in people's behaviour. One of its features is that the ICT sector has become the leading driver of innovation processes in all countries around the world in the last 20 years. Thanks to the mass implementation of this technology, the concept of organizations and companies has considerably changed. However, what has not changed much is the position of women in society. This article analyses the position of women – ICT professionals – in the Czech economy. It uses publicly accessible open data and analyses these data using basic statistical methods. Our analysis focuses on the representation of women in ICT professions and their wages and compares them with the wages of men and the average wage in the Czech economy. At the end, we make some recommendations especially for the education sector to increase the number of women in ICT education.*

**Keywords:** ICT, wages in ICT, Gender Earnings Ratio, number of women in Czech ICT, gender inequality in ICT wages

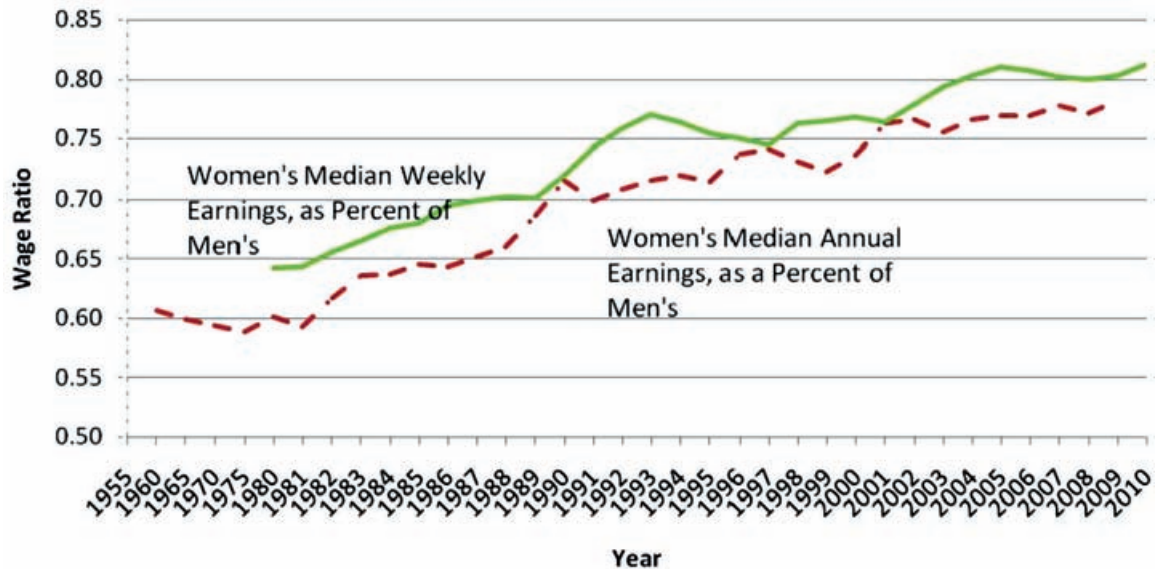
## Introduction

In the past years, information and communication technology (ICT) was the major source of the development of economies of European countries (Pridavok & Delina 2013), (Hanclova & Doucek 2012). Its expansion and implementation in the different areas of human activity and practically in all sectors of the economy usually increases labour productivity and the effectiveness and efficiency of investments (Hanclová, *et al.* 2015). This worldwide trend was also a part of the development of the economies of Central and Eastern Europe's



post-Communist countries (Bernroider *et al.* 2011). However, not all authors evaluate the discovered effects of ICT implementation in economy the same way, for instance (Fischer, J. *et al.* 2013). Equality

in the remuneration of men and women is viewed the same way in all European Union Member States and in the USA but Figure 1 shows the actual facts.



**Figure 1** – *The Gender Earnings Ratio in USA*  
(Source: The Gender Earnings Ratio in USA 2011)

The Figure 1 shows the wage gap as it has narrowed over time. In 1955, women earned about 64 percent of what men earned. Women now earn 81 percent of what men earn. Although narrowing, this chart shows that it has taken American women 55 years to close the wage gap a mere 13 percent (The Gender Earnings Ratio USA 2011).

The Faculty of Informatics and Statistics of the University of Economics in Prague has been researching the macroeconomic impact of ICT on both economic sectors and the social area for a long time. The goal of our article was to analyse the wage trend in ICT professions during the time period of 2011–2013 and in particular the disparity between men's wages and women's wages. We mainly analysed the trend in the wages of ICT professional in

general, the trend in the wages of ICT professionals by profession groups and the wage disparity between men and women (Doucek, 2010), (Marek 2010), (Marek 2013). We focused on two groups based on the CZ-ISCO methodology, i.e. ICT specialists and ICT technicians.

The following question arising from this analysis has already been mentioned in the beginning of this article. What will the comparison of the average wage in ICT by profession (ICT professionals, ICT experts and ICT technicians) and by gender look like? And what is the trend of any potential discovered disparity?

## Methodology and Data Collection

For this article we mainly used open data from the publicly accessible databases of Czech institutions – the Czech Statistical

Office (in particular inflation trend data), the Ministry of Labour and Social Affairs and the Ministry of Industry and Commerce of the Czech Republic. In addition to local data sources, we used data from the databases of international institutions, such as Eurostat, OECD and the World Bank. For our research and analysis of the gross wages of ICT professionals in the Czech economy, we used the methodology of ICT professions classification – CZ-ISCO. The classification of ICT professionals is provided below.

**ICT technicians** (CZ-ISCO 35) support the regular operation of computer and communication systems and networks and perform technical tasks related to telecommunications and to the transmission of image, sound and other types of telecommunications signals on land, on the sea or in the air. These professions require ICT skill on level of one category lower [10] than ICT Specialists.

**ICT specialists** (CZ-ISCO 25) research, plan, design, write, test, provide consultations and improve ICT systems, hardware, software and related concepts for specific applications; process related documentation, including policies, principles and methods; design, develop, supervise, maintain and support databases and other information systems to ensure optimal performance and data integrity and security (CZ-ISCO 2010).

We then analysed the data using MS Excel statistical tools and R software application.

## Data Analysis

The overall results of the analysis of the wages of ICT professionals are presented in this article mainly by gender; other criteria used are considered supplementary

only. We also performed many other analyses as part of our research but could not include them in this article due to a lack of space.

The Czech economy has made a long journey during the past years – from a centrally planned economy, through a „transition economy,” all the way to today’s relatively developed economy of an EU Member State (Doucek 2009). One of the factors that kicked off this trend was the level of involvement of the Czech Republic in the informatization of the European Union not only based on the wide selection of provided services but also based on the number of ICT professionals. Figure 2 shows the trend in the number and share of ICT professionals from the total employed population in the Czech Republic. The discovered trend shows slow growth during the years of 1993–2013, except for a drop in the year 2003 and especially in the year 2004. Since the year 2004, i.e. during the past nine years, the number of ICT professionals in the Czech economy has kept growing.





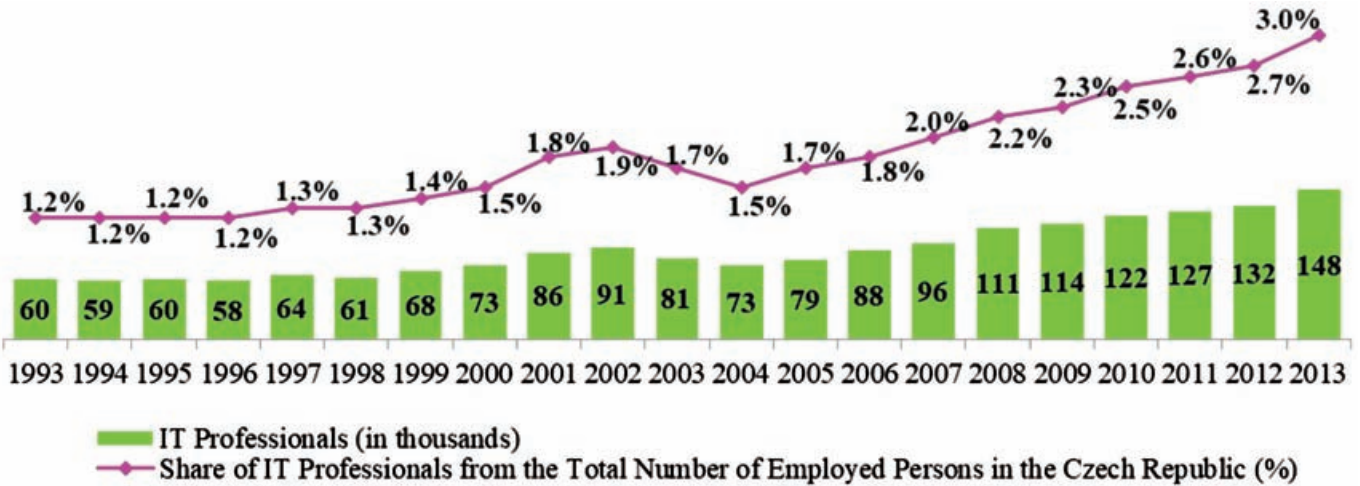


Figure 2 – Share of ICT Professionals in Czech Economy

(Source: IT 2015)

The number of ICT professionals was the highest in the year 2013 – 148,000 active ICT professionals – 13,300 women and 134,700 men. A more detailed analysis of the number of ICT professionals in the Czech economy during years 2011–2013

is provided e.g. in (Nedomova *et al.* 2015). These professionals practically worked in all sectors of the economy.

The trend in the number of women and men during the analysed time period is shown in following Figure 3.

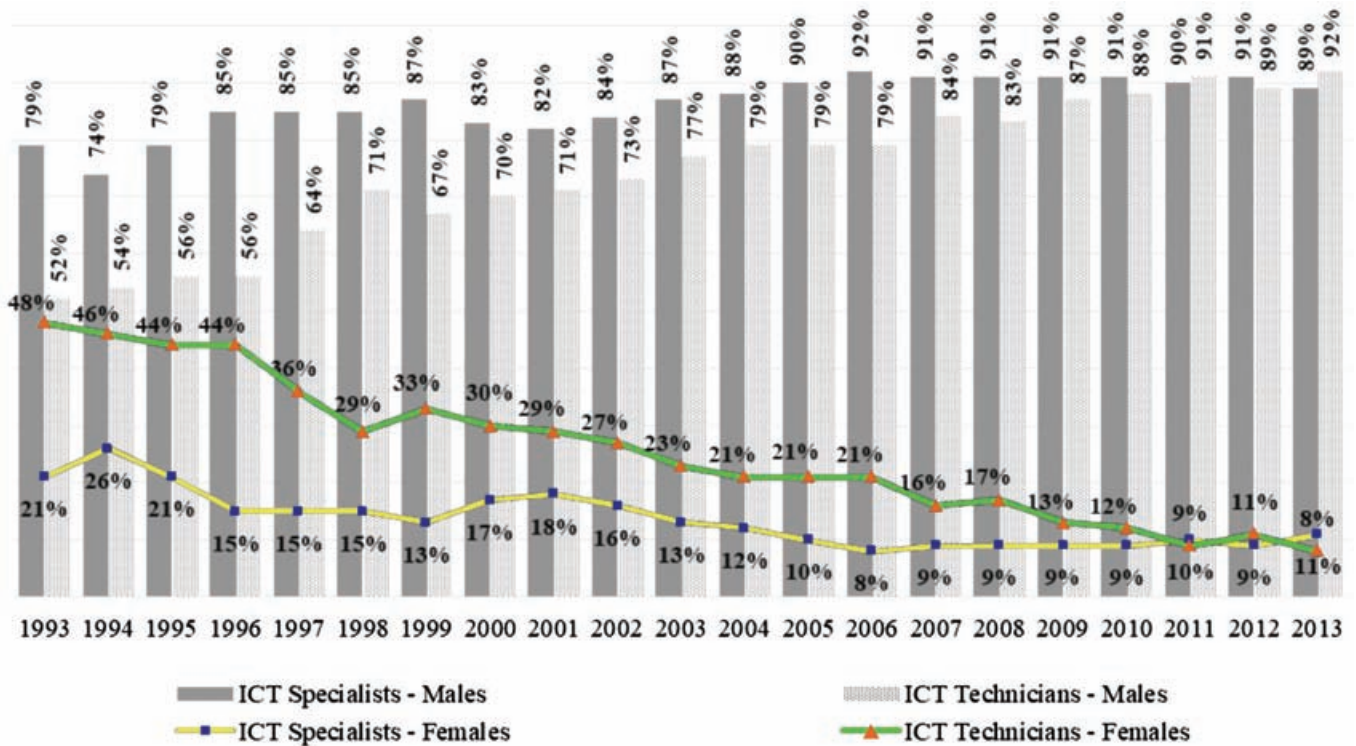


Figure 3 – Share of ICT Professionals

(Source: IT 2015)



It shows that the number of men in ICT is rather dominant and that the number of women in both groups of professions has dropped. The drop in the number of women has continued in the past years, in particular in the position of ICT technician, which is rather understandable since it is a technical profession, while the number of women in the position of ICT specialist stopped dropping and even went up by 2% in 2012 and 2013. Yet, it has been proven by Oskrdal and Jelinkova (2010), that female ICT specialists are important mainly in project management and in soft based activities in ICT oriented jobs.

However, it seems that the situation in the number of women working in ICT is getting better. Our analysis of the number of students accepted for bachelor studies in informatics at the University of Economics in Prague shows the following trend in the number of women (Table 1).



**Table 1** – *Trend in the number of applicants*

Year	Accepted students		Applicants	
	Females	Males	Females	Males
2010	19,47%	80,53%	20,51%	79,49%
2011	18,08%	81,92%	17,42%	82,58%
2012	20,78%	79,22%	18,91%	81,09%
2013	21,57%	78,43%	19,70%	80,30%
2014	25,84%	74,16%	21,48%	78,52%

Based on this trend, we can reach an optimistic conclusion that young women are more and more interested in informatics and that the unfavourable ratio will slowly start changing in the future. However, it is true that women graduating in the analysed fields of study will mainly obtain education for the position of ICT specialist rather than the position of ICT technician.

Wages represent another analysed and currently very often discussed area.

Figure 4 shows that the wages of ICT professionals kept growing during years 2003–2009. The relatively fast growth of nominal wages stopped in 2009 (when the first slight effects of the financial crisis appeared) and in 2011 when the crisis fully hit ICT professionals. The average nominal wage of ICT professionals dropped, and by the year 2013 had not reached the level of 2010 or even the level of 2008. (Note to Figure 4 and Table 2: 1 Euro = 28 CZK)



**Figure 4** – *Nominal wages of ICT professionals*

(Source: CZSO, 2014)

The follow-up analysis of wages by gender and profession group clearly shows a wage disparity in the remuneration of men and women in the Czech Republic – both in wages in the ICT sector and the average wage by profession group. The data are

analysed for the time period 2011–2013 only because the professions classification methodology in the Czech economy changed in the year 2011 and it would be too complicated to transform the data to the previous methodology.

**Table 2** – *Wages of ICT professionals*

	2011		2012		2013	
	Males	Females	Males	Females	Males	Females
Nominal ICT Professionals	1 502	1 277	1 550	1 335	1 576	1 319
Real ICT Professionals	1 474	1 253	1 473	1 268	1 477	1 236
Nominal ICT Specialists	1 660	1 429	1 714	1 480	1 748	1 448
Real ICT Specialists	1 629	1 403	1 628	1 406	1 638	1 356
Nominal ICT Technicians	1 279	1 053	1 313	1 103	1 309	1 114
Real ICT Technicians	1 256	1 033	1 247	1 048	1 226	1 043
Nominal Average All Economy	1 015	790	1 034	809	1 045	820
Real Average All Economy	996	776	983	768	979	768

Table 2 clearly shows that the average gross wage of women is lower than that of men in the Czech economy. During the years 2011–2012, the gap was 22% on average. The only positive thing is perhaps the fact that this gap is slowly, but really very slowly, closing. During the analysed three years, this gap closed by 0.6%.

In the case of ICT specialists, this gap is smaller, representing only 14.9% on average during the years 2011–2013, while in the

case of ICT technicians, the average gap was 16.3%. For the entire category of ICT professionals, this gap was 15.1% also due to the fact that considerably less women work in ICT technician professions. A comparison with the average gross wage is rather favourable for women but only because the average wage of women in the Czech economy was lower by 22% than that of men.

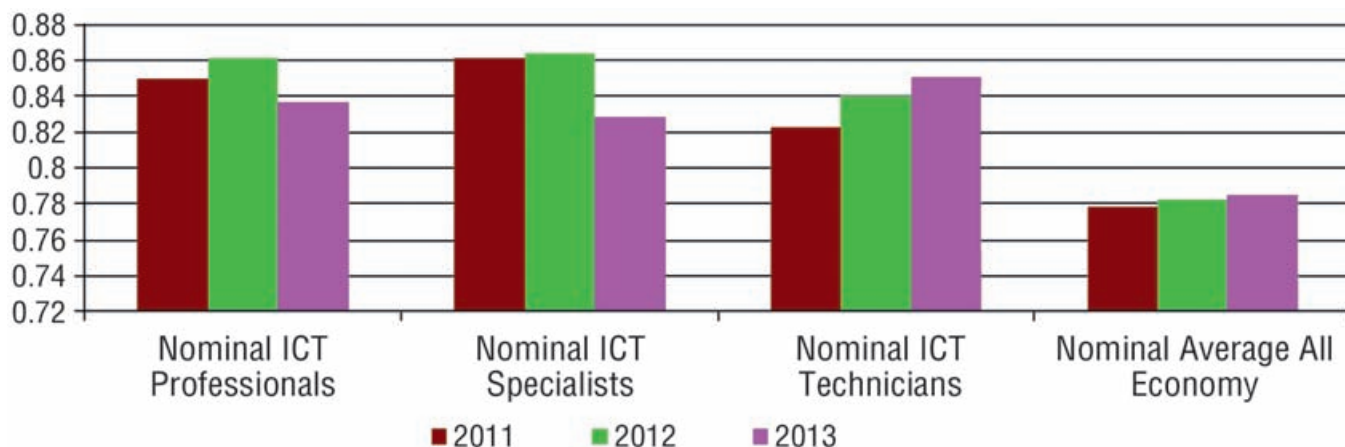
**Table 3** – Average wage index by gender

	2011		2012		2013	
	Males	Females	Males	Females	Males	Females
Real ICT Professionals	1.48	1.62	1.50	1.65	1.51	1.61
Real ICT Specialists	1.63	1.81	1.66	1.83	1.67	1.77
Real ICT Technicians	1.26	1.33	1.27	1.36	1.25	1.36

The positive information is that the average wage of female ICT professionals is considerably higher than the average wage of women in the Czech economy. The negative information on the other hand is that the average wage of female ICT professionals is lower than that of men by approximately 20%. The positive information is that the gap is not as large as that in the case of the average wage in the Czech economy, which was 27.4% in 2012 and even 27.8% in 2013.

In the year 2012, the year-to-year increase in the average wage of ICT pro-

fessionals (3.5%) was a result of a 4.5% year-to-year increase in the average wage of women and a 3.2% year-to-year increase in the average wage of men. In the year 2013, the year-to-year increase in the wages of ICT professionals (by 1.3%) was a result of an increase in wages of men (even though the average wage of ICT technicians slightly dropped); the wage of women dropped from year to year by 1.3% on average. The Gender Earning Ratio (GER) in the Czech economy and in ICT professions is shown in following Figure 5.



**Figure 5** – Gender Earning Ratio in ICT professions  
(Source CZSO, 2014)

Figure 5 shows that the gap between the average wage of men and women slowly closed by 0.6% during the analysed three years. The trend in other ICT professions is a little bit different. The scissors gap between the wages of men and women working as ICT technicians closed by 2.7%

during the analysed time period. The GER for ICT specialists dropped in 2013 by 3.5% while in 2011 and 2012 the GER was around 0.86. Because of the drop in the wages of female ICT specialists, the gap between the wages of male and female ICT professionals increased in 2013 by 2.3%.



The overall positive growth in this group has stopped for now.

## Conclusion

Comparing the GER in the Czech economy with the GER in the US economy, we can see that the GER in the Czech Republic

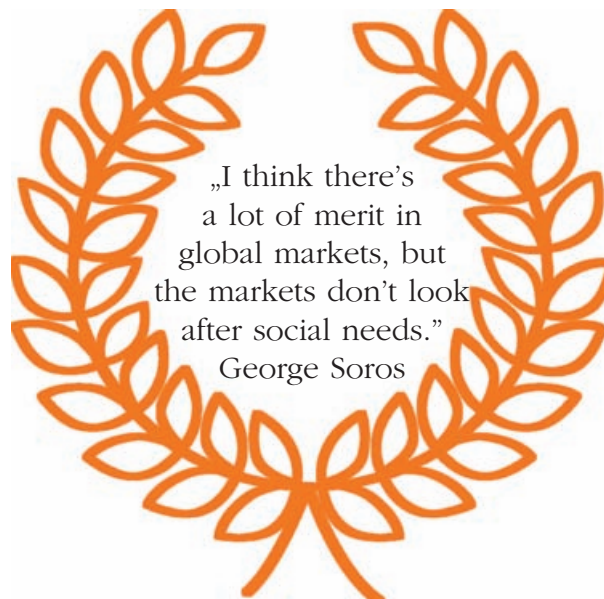
was about 0.78 during the analysed time period. The GER in the USA was about 0.81 in the year 2010 and is expected to go up in the future. Based on the aforesaid, the task of the Czech economy and politics is to equalize the wages of men and women not only in the ICT sector but also in the entire Czech Republic as fast as possible.

## REFERENCES

1. Bernroider, E.W.N.; Sudzina, F. Pucihar, A. (2011), Contrasting ERP Absorption Between Transition and Developed Economies From Central and Eastern Europe (CEE), *Information Systems Management*, Vol.: 28, No. 3, Special Issue: SI, pp. 240-257, ISSN 1934-8703
2. CZ-ISCO (2010), Klasifikace zaměstnání (in English: Classification of employment) Available from [http://www.czso.cz/csu/2010\\_edicniplan.nsf/p/0011-10](http://www.czso.cz/csu/2010_edicniplan.nsf/p/0011-10), Accessed: 2015-01-10.
3. Doucek, P. (2009), ICT Human Capital – Research and Development work in ICT, *Proceedings of IDIMT – 2009 System and Humans – A Complex Relationship*, Doucek, P.; Chroust, G. & Oškrdal, V. (Ed.), pp. 83-94, ISBN 978-3-85499-624-8, Jindřichův Hradec, September 2009, Trauner Verlag universitat, Linz.
4. Doucek, P. (2010), Human Resources in ICT – ICT Effects on GDP, *Proceedings of IDIMT-2010 Information Technology – Human Values, Innovation and Economy*, Doucek, P.; Chroust, G. & Oškrdal, V. (Ed.), pp. 97-105, ISBN 978-3-85499-760-3, Jindřichův Hradec, September 2010, Trauner Verlag universitat, Linz.
5. Fischer, J. *et al.* (2013), Vliv informačních a komunikačních technologií na produktivitu práce a souhrnnou produktivitu faktorů (in English: Influence of ICT on labor productivity and overall factor productivity), *Politická ekonomie*, Vol. 61, No. 5, pp. 653-674, ISSN 0032-3233.
6. Hanclova, J. Doucek, P. (2012), The Impact of ICT Capital on Labor Productivity Development in the Sectors of the Czech Economy, *Proceedings of IDIMT-2012 – ICT Support for Complex Systems*, Doucek, P.; Chroust, G. & Oškrdal, V. (Ed.), pp. 123-133, ISBN 978-3-99033-022-7, Jindřichův Hradec, September 2012, Trauner Verlag universitat, Linz, (2012).
7. Hanclová, J. *et al.* (2015): Does ICT capital affect economic growth in the EU-15 and EU-12 countries? *Journal of business economics and management (online)*, Vol. 16 (2015), No. 2, pp. 387-406, ISSN 1611-1699.
8. IT (2015), Available from [http://www.czso.cz/csu/redakce.nsf/i/lidskezdroje\\_v\\_informacni\\_spolecnosti\\_it\\_odbornici](http://www.czso.cz/csu/redakce.nsf/i/lidskezdroje_v_informacni_spolecnosti_it_odbornici), Accessed: 2015-01-10.
9. Marek, L. (2010), Analýza vývoje mezd v ČR v letech 1995-2008 (in English: Analysis of wage development in the Czech Republic in 1995-2008), *Politická ekonomie*, Vol. 58, No. 2, pp. 186-206, ISSN 0032-3233.



10. Marek, L. (2013), Some Aspects of Average Wage Evolution in the Czech Republic, *The 7th International Days of Statistics and Economics*, Löster, T. & Pavelka, T. (Ed.), pp. 947-958, ISBN 978-80-86175-87-4, Prague, September, 2013, Melandrium, Slaný.
11. Nedomova, L.; Doucek, P. Maryska, M. (2015), ICT Professionals in the Czech Economy, Structural Changes, in *Human Resources, 11th International Conference on Strategic Management and its Support by Information Systems 2015*, Nemeč, R. & Zapletal, F. (Ed.), pp. 419-430, ISBN 978-80-248-3741-3, Uherské Hradiště, May 2015, VŠB-Technical University of Ostrava, Faculty of Economics, Ostrava.
12. Oškrdal, V. Jelinkova, P. (2010), Human resources management in ICT context – the drivers of professional performance. *Proceedings of IDIMT-2010 Information Technology – Human Values, Innovation and Economy*, Doucek, P.; Chroust, G. & Oškrdal, V. (Ed.), pp. 145-152, ISBN: 978-3-85499-760-3, Jindřichův Hradec, September 2010, Trauner Verlag universitat, Linz.
13. Pridavok, M. Delina, R. (2013), Effective spend management through electronic reverse auction configurations, *Quality Innovation Prosperity*, Vol. 17, No. 1, pp. 1-8, ISSN 1335-1745.
14. The Gender Earnings Ratio USA (2011), Available from <https://iwprfemchat.files.wordpress.com/2011/04/pages-from-c350-gender-wage-gap-april-2011.jpg>, Accessed: 2015-03-22.



# The Influence of Emotional Intelligence

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Abstract

*The aim of this paper is to observe the impact that emotional intelligence has on the academic activity of students in the technical universities from Romania. Changes that occur in contemporary society make its members analyse the changes that occur in their community in their personal and professional lives. Thus, every member of society must know their emotional feelings so that they can properly manage both their own emotions and those around them. Student assessment is based on their academic performance, which is formed both by changes in knowledge accumulation and by changes in personality development. Considering these, we can see the impact of emotional intelligence on academic performance of students. In order to accomplish the purpose of this paper, online questionnaires have been applied to measure the level of emotional intelligence of students in a technical university. The results of the respondents were analysed on their behaviour in certain situations and correlated with the academic results. Analysing the results of respondents, we can see that students with a high capacity to manage their own emotions and interpersonal relationships can achieve a high academic performance compared to students who cannot manage their emotional intelligence. The development of emotional intelligence within faculties can highlight the intellectual and creative skills of students, and this is an important step towards achieving professional success. This study offers a new perspective on the impact that emotional intelligence has on students in technical faculties. Analysing the results leads to the idea that the development of the students' emotional intelligence within the faculties is very important, leading to an increase in their academic performance.*

**Keywords:** emotional intelligence,  
academic performance,  
student, human resources



## Introduction

Changes that occur in contemporary society have a strong impact on its members, prompting them to reflect on all the changes that occur both in the community and in their personal and professional lives. The speed with which these changes occur may cause a person's personality to change and shape another set of moral values to guide. In this sense, in order to cope with all the changes and challenges that take place, it is very important to prioritize the behaviour of emotional balance, emotional affections, the ability to relate and to cooperate, the understanding and correct management of one's own emotions, and those around.

The theme of this research is the study of the impact of emotional intelligence on the academic activity of students in technical universities in Romania. This research is based on assertions that some people have extraordinary results in practice and have the ability to do better in life than others with a higher IQ.

Emotional intelligence is a „form of intelligence that involves the ability to monitor feelings, emotions, and others, facilitate discrimination and use the information to control situations or actions” (Salovey & Mayer, 1990). This is the ability to identify and manage your own emotions in an effective manner with respect to your personal goals so that the goals of the person in question can be achieved.

On the other hand, cognitive intelligence is the ability of a person to learn new things, to update information, to apply knowledge to solve problems, to adapt to the various situations that can occur in life. It is considered that, unlike cognitive intelligence, which, once acquired, remains constant throughout life, emotional intelligence can be largely learned, although

some of its components are described as personality traits, being more difficult to modify.

The complexity of contemporary society proves in many situations that intelligence acquired within the educational context may be insufficient for many people to solve their problems in everyday life. As far as the situation of the Romanian Technical University students is concerned, we can recall many cases of students with extraordinary intellectual capacity, but who during the schooling did not notice from the point of view of the academic performances towards their colleagues, who later did not resolve to use their knowledge in the professional environment because of lack of practical and social skills. There is also the opposite of these situations, in which some students, with an intellectual



capacity not very developed, succeed to become successful people, due to their adaptation to various social contexts.

The two environments, educational and social, place us at the forefront of the problem to be solved, but they are quite different. In the educational environment, we are confronted with well-defined issues, which usually only present a fair answer, while the social environment is subject to life problems that can be interpreted and solved from multiple perspectives with multiple responses. With the desire to combine these two environments so that knowledge of an environment can be used in the other, researchers have introduced the term emotional intelligence, demonstrating that emotional development of students is important both for academic performance and for a successful life (Goleman, 2001).

## Literature Review

Over time, more research has been done on intelligence, prompting specialists to

express their views about it, different at first glance, but very close after careful observation. Thus, in the sense of Stephen Covey, there are four typologies of intelligence, presented in figure 1. Among these, we can remember that the most well-known and most often studied are:

- Thinking (IQ) – represents the ability to rationalize, communicate and analyze;
- Feeling (EQ) – represents self-knowledge, empathy, self-consciousness.

When psychologists began to study and write about the concept of intelligence, the main issues that they focused on were cognitive ones, such as the ability to solve problems or people's memory (Brackett *et al.*, 2011). At the same time, other researchers have begun to focus their attention on non-cognitive aspects. For example, David Wechsler defines intelligence as „the global ability of an individual to act for a particular purpose, to reasonably think, and to adapt effectively to the environment in which he lives” (Wechsler, 1958).

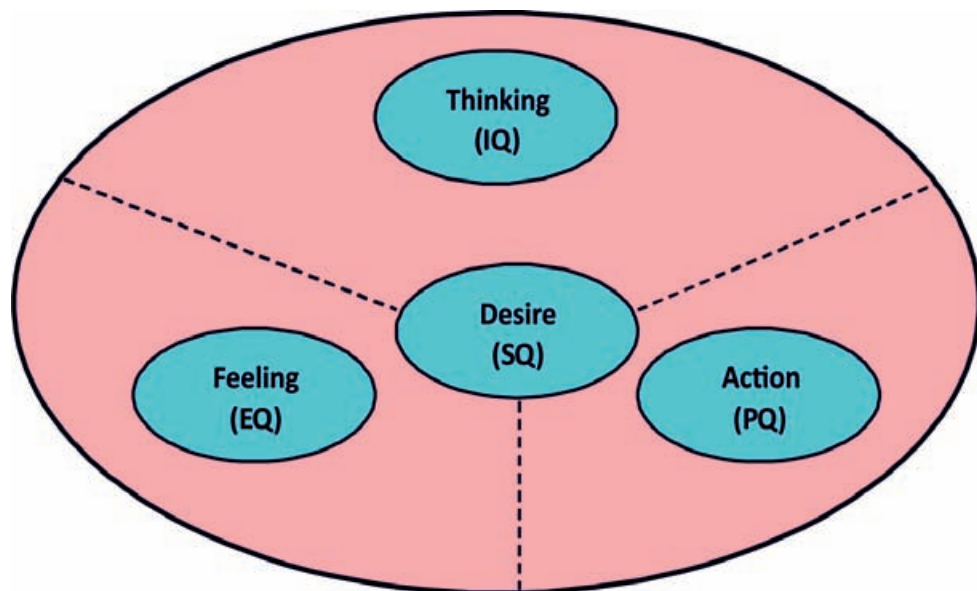
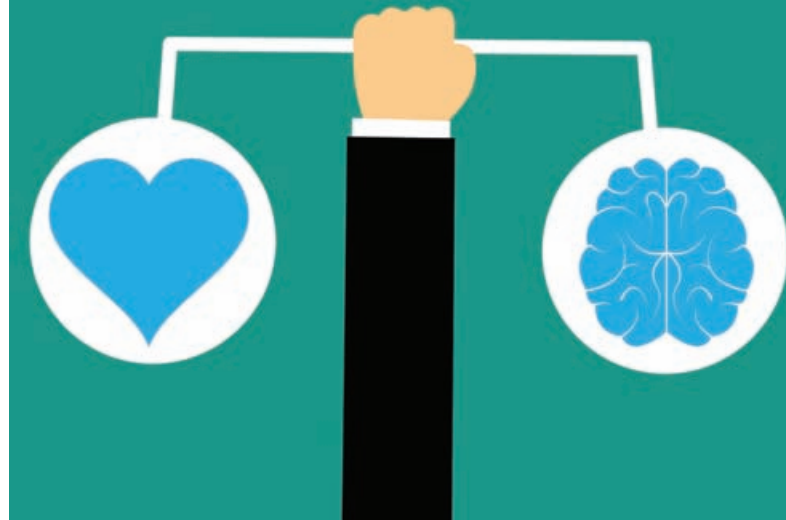


Figure 1 – S. Covey's conception of intelligence types

(Source: Covey, 2004)





Since 1940, Wechsler begins to refer to elements of intellect and non-intellect, ie personal, social and affective factors. Then, at the beginning of 1943, Wechsler argues that non-intellectual abilities are essential in predicting the success of a person alive (Wechsler, 1943).

Wechsler was not the only researcher who identified these non-cognitive aspects of intelligence as important for a person's ability to adapt and succeed. The person whose name is most often associated with the term „emotional intelligence” is the writer Daniel Goleman. In his book, Goleman presents a wealth of interesting information about the brain, emotions and behaviour.

According to Daniel Goleman's vision, emotional intelligence is composed of: self-control – adaptability, innovation, the desire for truth; social skills – communication, conflict management, relationship establishment, collaboration, teamwork skills; self-consciousness – self-confidence; empathy – the ability to understand others; motivation – initiative, optimism, dedication (Goleman, 2001).

Goleman demonstrates, based on an analysis of thousands of men and women, that when we talk about total emotional intelligence, women are no „smarter” than men, nor are they superior to women, each with a profile personal strengths and weaknesses in each of the areas of emotional intelligence. It also shows that the level of emotional intelligence is not genetically fixed and does not develop only at the beginning of childhood.

Daniel Goleman believes that in order to succeed in life, each person should learn to practice the main dimensions of emotional intelligence, namely emotion control, empathy and emotion reading, the consciousness of emotions, personal motivation, and the leadership of interpersonal

relationships. Each of these elements has a unique contribution to performance (whether it's academic performance or work performance), but at the same time, it is in a close relationship with all the other elements of emotional intelligence.

The five dimensions of emotional intelligence correspond to a number of twenty-five emotional skills, but they do not correspond to any person in the complete formula. In order to achieve remarkable performance, it is important that a person has developed some of these skills (around six) and these are found in all five areas of emotional intelligence, Daniel Goleman explains that there may be many combinations of emotional skills, and a different combination can fit each person (Goleman, 1998).

Mayer and Salovey think that emotional intelligence implies the ability to perceive emotions as accurately as possible and to express them, the ability to generate feelings when they facilitate thinking and the ability to know and perceive emotions and to regulate them to promote emotional and intellectual development (Mayer & Salovey, 1990).

If it is desired to measure a person's emotional abilities, seen as the ability to sense and control feelings, then an abilities



test should be used. The model of emotional intelligence skills developed by Mayer and Salovey is new and unique. Moreover, it defines a set of abilities, competencies that provide HR professionals, managers and anyone else interested in the field with an explicit tool for defining, measuring and developing emotional abilities.

Emotional intelligence is a set of competencies that can be measured. The measurement tool presented below is based on abilities and can be adapted to the situation. The instrument is called the Multifactorial Emotional Intelligence Scale (SMIE™) and can be adapted to individual or organization requirements.

One of the most important aspects of the Mayer Salovey model is that it is based on abilities and that any person of any age can improve their score and learn how to be more emotionally emotional.

The Emotional Intelligence Multifactorial Scale (SMIETM) is a skill test designed to measure the following four branches of the Emotional Intelligence Ability Model described by Mayer and Salovey:

- Identify Emotions – the ability to recognize how you and those around you feel.

- Using Emotions – the ability to generate emotions and then the reasons for these emotions.
- Understanding Emotions – the ability to understand complex emotions as well as emotional „chains,” as emotions evolve from one stage to another.
- Emotion control – a skill that allows you to work with both internal and other emotions.

One of the definitions that Caruso and his predecessors propose is „the ability to process emotional information, especially those that involve perception, assimilation, understanding, and control of emotions” (Mayer *et al.*, 2001). This goes further, explaining that this consists of the following „four branches of mental ability”: emotional perception; emotional facilitation of thoughts; emotional understanding; emotional management, which can be described as follows:

- First, Emotional Perception includes abilities such as identifying emotions, in music and stories;
- Secondly, Emotional Thinking, includes abilities such as connecting emotions to other mental sensations such as taste or colour (connections that can give birth to artwork), and using emotions to reason and solve problems;
- The third area, Emotional Understanding, includes solving emotional problems, such as which emotions are similar, which are opposite, and what relationships exist between them;
- The fourth area, Emotional Management, includes understanding the implications of social actions on emotions and controlling your own emotions and those around you.

Pedagogical activity requires continuous monitoring of performance, providing a clear picture of affective product changes. If outside of the knowledge they accumulate in the university, students are not appreciated and other values are instilled, some of them may suffer, at some point, certain special social situations. The level of performance of a student denotes his or her ability to adapt to the pedagogical methods applied within the university. Differences in performance between students are not only manifested by their intellectual level but also by students' ability to adapt and accept the different types of activities they take part in (Kotomina & Sazhina, 2018).

According to the researchers' approach, performance has two meanings: an over medium result, to which all students have to come, and in this case we call this result – the performance and the exceptional result that only 15-20% of the students are capable of, and in this case we call the result – superior performance. The researchers set out the following principles for performance: the principle of complexity, the principle of becoming, the principle of contiguity, the principle of consciousness and the dissertational principle. With this in mind, performance can be defined in two ways: the student's learning outcomes and the exceptional outcome that exceeds the level commonly reached.

In contemporary society, the problem is represented by the distinction between educational intelligence and emotional intelligence. In a broad space, the concept of intelligence is described as a general ability, often inherited, to make the transformation of existing information into new concepts and skills. Intelligence theorists think that these are two distinct concepts, but they also have things in common. Both

concepts of intelligence operate with factual and declarative knowledge, applying this knowledge in a flexible manner (Bar-On, 1997).

The two concepts of intelligence are distinguished by the contexts and the ways in which they are used and the way they apply the knowledge. Educational intelligence is used to solve well defined problems for which the initial state, the final state and the steps to be taken from one state to the next can be established, while emotional intelligence is used to solve weak defects, which can be interpreted in different ways and for which there is no objectively optimal solution.

A series of researches has shown that young people with social behavioural disturbances lack the skills to monitor and interpret the emotions of others. Thus, they do not have the ability to correctly interpret the emotions and emotions of the social partners, probing the absence of emotional intelligence. The question of these findings is that emotional intelligence can predict the variability of success in the social environment to a more precise extent than personality traits.





## Research Methodology

The purpose of this study is to highlight the need to use methods by which emotional intelligence can be developed within Romanian universities, so that students can learn their own emotions, learn how to manage and direct them in an appropriate way, to develop empathy and relationships with people around, and their results can be an important point in the academic performance of each student.

In order to implement this study, a questionnaire was developed that was applied to a sample of students recruited from the University Politehnica of Bucharest in December 2018. This university is the largest and oldest technical university in Romania. The responses received from the questionnaire were used as data for the quantitative analysis of the study. To ensure the validity of the study, all variables included in the applied questionnaire were derived from empirical observations and theoretical reviews.

The sample was represented by students recruited from the 2nd, 3rd and 4th years

of the program, as well as from the second year of Master's programs, because they have knowledge of the teaching-learning process within the university as well as about teachers and the material resources made available to the students of the University Politehnica of Bucharest. Thus, we have tried to reduce situations where students are not aware of certain variables in the questionnaire, providing random answers.

Respondents were asked to tick the answer that best describes the existing state, providing a single score for each studied variable. The response rate was 100% and generated 53 valid questionnaires ( $N = 53$ ). Out of the existing respondents, 84% were women, and 16% were men. All respondents are up to 25 years of age, in the form of regular education, budgeted from the state system. 81% of respondents come from urban areas, while 19% from rural areas. Expenditure on university studies is provided from family income by 84.4% of respondents, from personal income by 9.4% of respondents and from the scholarship or other means of financing for the rest of the respondents.

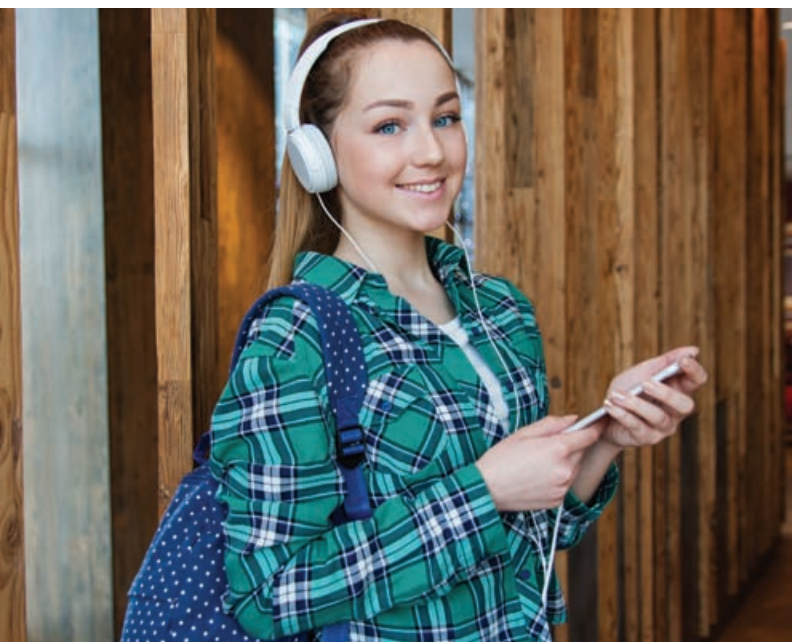
The study aims to verify hypotheses created on the basis of existing theories, based on the studied sample. Thus, there is a general hypothesis, from which we varied two specific hypotheses:

### ***General Hypothesis:***

- emotional intelligence influences learning outcomes expressed through academic performance.

### ***Specific Hypothesis:***

- Hs1: High academic performance is associated with a high level of emotional intelligence.





### ***Specific Hypothesis:***

- Hs2: Students with a high level of emotional intelligence have higher academic performance than students with low levels of emotional intelligence.

In order to be able to verify these assumptions, the questionnaire on the factors influencing the activity and performance of the students was applied. Academic performance data is represented by the average of each student for the year of study prior to the date of application of the questionnaire. In order to do this, the students answered a question in the questionnaire, in which they had to complete the general average for the study year prior to the date of application of the questionnaire.

The questionnaire is designed to measure one of the branches of the emotional intelligence model described by Mayer and Salovey, namely identifying their own emotions about the things they face in day-to-day life at the theoretical and practical classes at the University Politehnica of Bucharest.

The scale used in the questionnaire was taken from previous research and existing literature and adapted to the requirements of this study. All responses to the applied questionnaire were measured using the five-point Likert score scale, with a score of 1 representing the unsatisfactory score to score 5 representing the excellent score. The final score of each respondent is obtained by adding up all the scores awarded for each question contained in the applied questionnaire. We are concerned about the degree to which the students of the University Politehnica of Bucharest are satisfied and satisfied with the material, human, theoretical and practical resources that the faculty offers and influence their academic performance and performance.



In order for the statistical results obtained by testing not to be distorted, the possibility of error sources such as:

- Some external events that may be of major relevance to the study, such as exams, certain cultural events, or university-led conferences;
- Loss of subjects, that is, questionnaires were applied only once so that no subjects are lost by not presenting;
- Selection errors in the fact that these questionnaires were administered to students in the 2nd, 3rd and 4th years of the program, as well as in the second-year master programs, without interfering with them and students who were not part of the target population;
- The application of these questionnaires has not been announced in advance so that the answers to the questions can't be prepared and discussed with the people around.

## **Results and Discussions**

To test the level of emotional intelligence, respondents could get scores ranging from 34 to 170 points. For the students enrolled in this study, the minimum score

of emotional intelligence is 66 points (1 case) and the maximum score is 170 points (2 cases). The average score on this questionnaire is 119.75 points, with a standard

deviation of 23.3974 and a standard error of average of 4.20229. The distribution of results for this questionnaire is shown in Table 1.

**Table 1 – Level of emotional intelligence**

Level	Frequency	Percentage
Exceptional	2	4%
Above average	18	34%
Average	32	60%
Below average	1	2%
Total	53	100

From this table, we can see that a student has a low level of emotional intelligence, which is below average. It can be considered that this student is characterized by weak control of his or her own emotions, incapacity for mania, frustration, and a low empathy level characterized by an inability to understand the emotional states of others, understand them or look at their perspective. The low level of emotional intelligence has a direct effect on in-

terpersonal relationships, this student lacking the ability to communicate, resolve conflicts or negotiate misunderstandings.

Regarding academic performance, there was no minimum or maximum among which the respondents had to fit, with an open question about the general average of the study year preceding the date of application of the questionnaire. In Table 2 we can see the frequencies with which this question was answered.

**Table 2 – Level of academic performance**

General average	Frequency	Percentaje
Between 9 and 10	7	13%
Between 8 and 9	28	53%
Between 7 and 8	13	25%
Between 6 and 7	5	9%
Between 5 and 6	0	0%
Below 5	0	0%
Total	53	100

For both the emotional intelligence and the academic performance as measured in this study, the minima and maxima were calculated, as well as the average value of the collected data, all of which are concretized in Table 3.

Distributions of variable data emotional intelligence and academic performance for the studied sample are within normality limits according to the proportions of the values and the standard errors of the Skewness and Kurtosis tests ( $\pm 1.96$ ).

**Table 3** – *Statistical indicators of collected data*

Indicator	Emotional intelligence	Academic performance
Minimum	66	6,4
Maximum	170	9,85
Average	119,75	8,47
Median	117,5	8,63
Mode	126	7,65

**Table 4** – *The Skewness and Kurtosis reports*

Indicator	Emotional intelligence	Academic performance
The Skewness report	0,33795	0,81211
The Kurtosis report	0,24287	0,83668

Given the Pearson coefficient calculation between emotional intelligence and academic performance and obtaining the value of  $r = 0.83206$ , we can conclude that academic performance is significantly interdependent with emotional intelligence. Thus, students with a high level of emotional intelligence have higher academic performance than students with low levels of emotional intelligence. Through this analysis, the two specific hypotheses are accepted.

The study highlighted the need for emotional intelligence to students, revealing important facts about a component of emotional intelligence, namely knowing their own emotions. Relationships with people around you are transmitted with different types of information, reactions or feelings, which are quite difficult to express in a clear and concise way, without proper decoding of their content. These types of situations are quite often conflicting, and for their avoidance, it is important for students to learn to decipher these emotions, inner feelings and messages transmitted verbally and nonverbally, these being extremely important in establishing interpersonal relationships.

## Conclusion

Our study is a response to the theoretical assumptions about the importance of developing emotional intelligence since the schooling, academic period of a person. Developing emotional intelligence within universities allows students to value their intellectual skills, creativity, and to a great extent contribute to professional success. By developing their personal capacity to identify and effectively manage their own emotions in relation to the goals they are directed to, students who have accumulated this knowledge can achieve favourable results, increasing their academic performance.

Through this study, we have tried to identify the reason why emotional intelligence is considered one of the most important competencies that can determine the success of a person both professionally and personally. I have noticed that emotional intelligence is the ability to make people work together, to encourage people and of course to motivate them to work as much as possible to achieve their goals. We have also noticed that emotional intelligence is the confidence to build relationships with people around us, the power to

work under pressure, the courage to make decisions and to make people develop their creativity.

Although it is often compared with analytical intelligence, which is largely inherited and slightly altered after adolescence, emotional intelligence demonstrates that it can be learned throughout life based on the experiences we live in.

Research in the field has shown that emotional intelligence is a better predictor of success in personal and professional life than analytical intelligence, but nevertheless, it should not be ignored that the two types of intelligence work together very well, none of which can work in normal parameters without the other.

Emotional intelligence appears and is very important in many areas of a human's life. For example, in the professional field, we can meet various posts that do not require a high level of emotional intelligence, with responsibilities being linear and fixed, but this does not mean that a person with a high level of emotional intelligence can not work on such a post. It is precisely emotional intelligence that is the key factor that can differentiate it from its colleagues, thus drawing attention in a positive way to the bosses, thus having the potential for success and professional development. There are also many jobs that require teamwork, the development of professional relationships with people around, which can require empathy and understanding of the feelings and feelings of the people around you. In these situations, a person with a low level of emotional intelligence can be challenged and unable to fulfil their job duties.

In order to be a good user of emotional intelligence, it must be understood and accepted that this is not a substitute for the skills, knowledge and abilities that each



person has or acquires over time. Emotional intelligence increases the chances of success but does not guarantee it in the absence of the necessary knowledge.

The development of emotional skills differs from courses of deepening certain abilities, especially through duration, because the development of emotional abilities requires more study and more time than the development of cognitive skills; emotional intelligence is the change of the person in question and the learning from his own experiences, and this change takes time, which proves that a person can not acquire certain qualities only by observing carefully and constantly both his own person and those around him.

Emotional Intelligence is an innovative idea in the field of business, the promoters of this concept emphasizing its importance in all the activities that a person takes in the business environment. In order to be able to use emotional intelligence in professional life, it is good to start developing it as early as possible, even during school preparation or university studies.

Given the study, we can conclude that emotional intelligence is consistent with academic performance, but this is not the only determining factor. The efficiency of emotional intelligence is conditioned by the degree of organization of the student's entire personality, his affective, motivational, and characteristic traits.





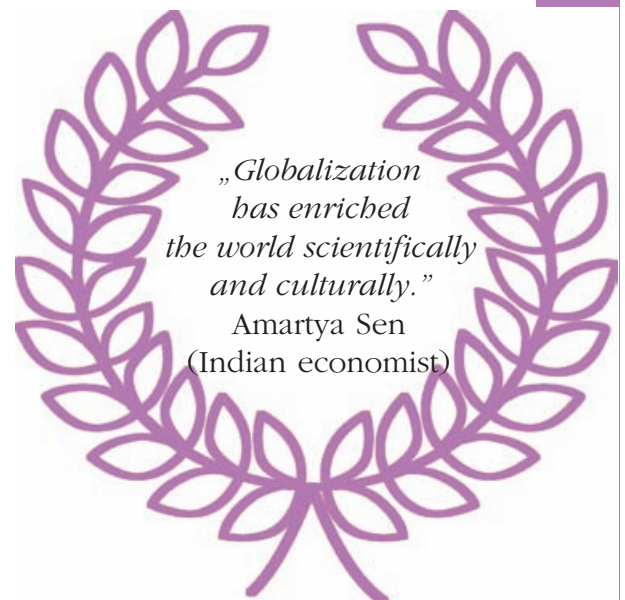
Increasing attention to the concept of emotional intelligence, both internationally and nationally, can be a starting point for

the definition of intelligence; supporting programs at universities designed to develop emotional intelligence can be very important tools for popularizing and raising awareness of the impact that it has on everyday life and professional life.

For greater efficiency in the development of the concept of emotional intelligence, this study can be expanded by studying the relationship between emotional intelligence and self-esteem of interviewed people, analyzing the relationships they have in extra-university groups.

## REFERENCES

1. Bar – On, R. (1997) *Development of the BarOn EQ-i: A measure of emotional and social intelligence*. In the 105th Annual Convention of the American Psychological Association in Chicago.
2. Brackett Marc, A., Rivers Susan, E., Salovey, P. (2011) *Emotional Intelligence: Implications for Personal, Social, Academic and Workplace Success*. Yale University.
3. Covey, Stephen.R. (2004) *The 8th Habit From Effectiveness to Greatness*. Free Press.
4. Goleman, D. (2001) *Emotional intelligence*. Curtea Veche. Bucharest.
5. Goleman, D. (1998) *Working with Emotional Intelligence*. Bantam Books. New York.
6. Goleman, D. (2001) *Emotional intelligence: Perspectives on a theory of performance*. In press.
7. Kotomina, O., Sazhina A. (2018) *Exploring emotional intelligence in higher education: management programme students in Russia*. National Research University Higher School of Economics.
8. Mayer, J.D., Salovey, P., Caruso D.R. (2000) *Competing models of emotional intelligence*. In R.J. Sternberg (ed.). *Handbook of Human Intelligence* (2nd ed.). Cambridge University Press. New York.
9. Mayer, J.D. Salovey, P., Caruso, D.R., Sitarenios, G. (2001) *Emotional intelligence as a Standard Intelligence*. *Emotion* (vol. 1). American Psychological Association.
10. Salovey, P., Mayer, J.D. (1990) *Emotional Intelligence in Imagination, Cognition and Personality*. National Professional Resources. 9. 189.
11. Wechsler, D. (1958) *Two approaches to human relations*. *American Journal of Psychotherapy*.
12. Wechsler, D. (1943) *A note on concomitant changes in I.Q. in a pair of siblings*. *Journal of Genetic Psychology*.



# Stakeholders' Analysis

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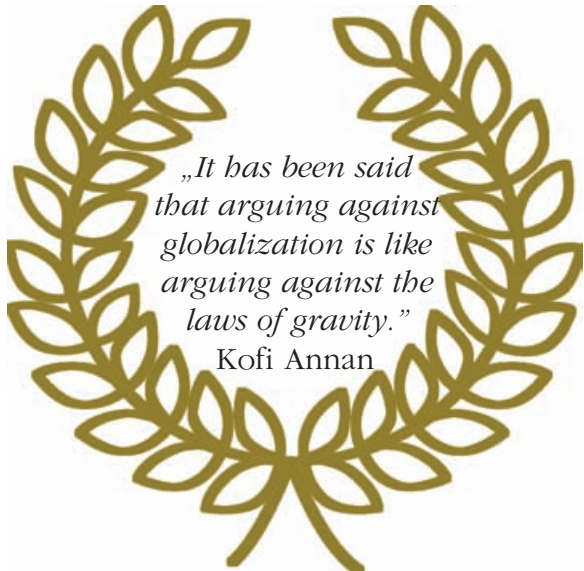
Abstract

*Evidence from contemporary business literature and practice shows a strong focus on stakeholders. The main reasons for the academic and practical interests in the stakeholders' analysis are practical and moral. The practical attitude concerns gaining support in order to achieve the aims of any business initiative. The moral reason is regarding the social responsibility of each company undertaking business activities. These two motives are important enough to explain the need for a well- performed stakeholders' analysis. The paper is dedicated to studying how stakeholders' analysis affects the success of a business project. Regarding researches made earlier and adding our considerations on the significance of different factors that affect a project's success, we focus on the crucial role of communication with stakeholders within the project as well as external ones. Following the necessary steps in conducting stakeholders' analysis and challenges managers are faced with, we aim to trace out common problems in each step and to add some suggestions regarding the communication process for dealing with them. The role of communication not only for gathering information during the process of analysis but also for gaining support and reducing resistance is emphasized.*

**Keywords:** stakeholder, stakeholders' analysis, project success, communication

## Introduction

Stakeholders' analysis is a tool drawing many researchers' attention because of its role in generating knowledge useful for performing any initiative successfully. The knowledge we expect to gain from the analysis concerns the needs, expectations and interests of many groups and individuals (sometimes organizations and institutions as well) and their ability to



*„It has been said that arguing against globalization is like arguing against the laws of gravity.”*

Kofi Annan



influence the execution of the project, and hence its outcome.

To understand the connection between the project's success and the way the stakeholders' analysis will be done, we first need to see how the project's success is defined and how this definition evolves to a broader one that brings stakeholders' satisfaction out as an important measure of success. Then other authors' researches on factors for success are revised in order to focus our attention on the important ones.

Acquainted with the important factors for project success, we consider how these factors may affect the process of stakeholders' analysis and how through them managers can overcome some of the common problems accompanying each of the analysis steps. Suggestions are given to improve the stakeholders' analysis process take these very key success factors into consideration.

## Project Success Criteria and Factors

The issue of project success evolves along with the evolution of project management theory. Researchers and practitioners shift their views from immediate and more direct outcomes of the project to gather longer-term oriented impacts of project activities. Early work into the success

criteria assumed that the main criteria for success were the so-called golden triangle of time, budget and required quality. As the view broadens to long-term effects, a bigger number of even competing criteria emerges. „Not only is there a basket of potentially competing criteria, but the judgement is also made by a wide range of potential stakeholders, over different time horizons”, Westerveld points out, adding that some researchers even see „the satisfaction of all stakeholders” as a project success criterion (Andersen *et al.*, 2006). Perceiving project success simply as the compliance with time, cost and quality constraints are seen as a more ‘narrow’ view on this issue.

Aiming to cover the whole issue of project success in the broadest sense, Westerveld forms six groups of success criteria that represent the result areas of his Project Excellence Model (Westerveld 2003). Besides the common „time-budget-quality” – criteria in the first group, the other five are directly connected to the way stakeholders perceive the project results – as successful or unsuccessful. These five result areas (success criteria) are namely: Appreciation by the client, Appreciation by project personnel, Appreciation by users, Appreciation by contracting partners, Appreciation by stakeholders. Westerveld explains stakeholders as „Those parties that are not directly involved in the project but have a large influence. For example environmental groups, citizens and government agencies”. As we assume a broader definition for project stakeholders given by Project Management Institute, namely „an individual, group, or organization, who may affect, be affected by, or perceive itself to be affected by a decision, activity, or outcome of a project” (PMI, 2013), we see all five groups listed by Westerveld as stakeholders.



Turner, Zolin and Remington (2009) emphasize the importance of stakeholders' opinion on the overall assessment of project success as well. They averred that the perceptions of the multiple project stakeholders should be taken as an important factor in assessing project success. Moreover, they defined or identified the different project stakeholders as „the investor or owner, the consumers, the operators or users, the project sponsor or project executive, the senior supplier, the project manager and project team, other suppliers and the public”

Andersen *et al.* (2006) studied the relationship between project success factors and actual project success. The research includes factors project managers have control or direct influence on. It is a cross-cultural one (includes a total of 529 respon-

dents from four culturally different regions – UK, France, Norway and China). Authors report having found nine (out of 60) distinctively different critical success factors and extracted three (out of 10) distinctively different project success criteria using Principal Components Analysis. The list of ten criteria included in the research consists of ones directly connected to the projects' execution (the common success criteria – time, costs and quality) and project goals (the business achievements), ones reflecting the project's long term effects, ones going beyond the project and influencing the organization as a whole (the knowledge gained from project work). The main results of their research are summarized in Table 1. It shows the factors in the research with the strongest correlations to the success criteria.

**Table 1** – *Project success criteria and factors influencing them*

Critical success factors	Success Criteria	Characteristics of criteria
Rich project communications Strong project commitment Influence over on-going project processes Well understood and accepted project purpose	Project impact	A dimension representing the potential for the longer-term impact of the project endeavour
Well structured and formal project approach Rich project communications	Captured experience	Represent the project's ongoing contribution to organisational success (through a knowledge creation)
Strong project commitment Early stakeholder influence Stakeholder endorsement of project plans Rich project communications	Managerial ability to deliver results in time and at cost	Reflect mostly the immediate short term, predefined project goals (completion on time and to budget)

(Source: Andersen *et al.* 2006)

The results concerning the projects' success (measured by the criteria shown above) and its connection to the described success factors, give the authors a reason to consider those factors as „differentiators of successful outcomes” or „success predictors”. That is a clear sign to

the practitioners that they should closely monitor the variables in the table's left column. What we can see in this column is that a key variable impacting success on the three dimensions is rich project communication, as the researchers notice, „one of the predominantly softer factors”.



Moreover, its impact is greater on the success criteria representing the long-term effect of project realization, namely „project impact” and „captured experience” (Andersen *et al.* 2006 p. 138). As a conclusion, the authors emphasize that „these findings would suggest that as the project approach increases in use as a means for implementing strategic goals and hence success is measured more on long-term benefits and impacts, project managers should devote increasing energies into rich communication both within the project and towards the project environment. This implies a stronger stakeholder orientation as a mean for ensuring project success regardless if the stakeholder is internal or external to the organisation” (Andersen *et al.* 2006 p. 146).

Jepsen and Eskerod also focus on long-term effects managers should aim towards, emphasizing on the stakeholder orientation and the learning possibility through involving stakeholders in dialogue. The two authors point out that „the pro-active project manager should see the analysis not only as resource demanding activity but as an ongoing learning process and an opportunity to engage in dialogue with the stakeholders to take their thoughts regarding the project into consideration at an early stage” (Jepsen, Eskerod, pp 342). Thus, undoubtedly, the stakeholders' analysis became a process of high importance within a whole project management process.

## Discussing the Connection

Stakeholders' analysis aim is commonly perceived to be identifying stakeholders and understanding their interests, power and attitude to the project in order to choose a proper strategy for involving them in the process of project realization or for reducing their resistance to that

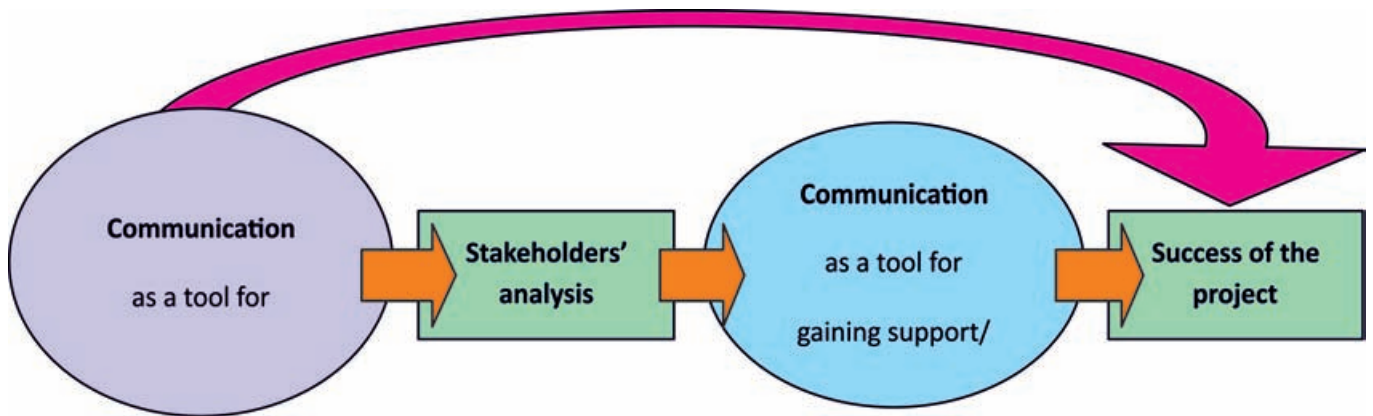


process. Acquainted with the notion that rich project communications are a key factor for success (according to Andersen survey's results), we state that besides the common purpose discussed above, managers should utilize the analysis' activities for actively communicate with the stakeholders. Further benefits are intended trough such as active communication. Jepsen & Eskerod report the presence of such benefits that they call „by-product”. In their research, they find out „project marketing” as an additional benefit from communication during the process of stakeholders' analysis. „The outcome of the interviewing process was supposed to be data collection, but project marketing became a positive and unintentional by-product”, report the authors (Jepsen, Eskerod 2009, p. 340).

We consider that, on the one hand, the communication with the stakeholders itself can be a useful tool for gathering information at various steps of the analysis and clarifying some problem issues accompanying them. On the other hand, a carefully conducted analysis will indicate the

stakeholders to communicate in priority (as a strategy to involve the stakeholders in the project, gaining their support and/or overcoming their resistance). Further benefit can be found in what Jepsen and Eskerod call „by-product”. Moreover, this benefit may emerge as early as the stage of gathering information for the analysis (either during the interviewing, the organized focus groups, two-way dialogues, or through more formally structured communication) Thus, communication brings numerous benefits – it can be useful not only for informing stakeholders or simply gathering information for the analysis, but for actively managing stakeholders’ expectations, changing their attitudes towards the project issue, lessening their uncertainty or reducing resistance as well. Such way, the process of involving stakeholders that commonly follow the process of analysis may now become a part of the latter.

Figure 1 represents our understanding of the variety of roles communication plays for the overall success of a business project. The chain of sequential straight arrows represents commonly intended roles of communication – as a tool that helps gather information for the first steps of the analysis, as well as a tool helping the chosen strategy for engaging stakeholders after the analysis and thus leading to project success and to enhancing stakeholders’ perception of project success. The upside arc arrow presents the additional benefits that could be gained through communication even at that early stage of gathering information. As the flow of communication at this starting point may be two-way oriented, it may produce so-called „by products” such as project marketing (Jepsen, Eskerod 2009), reducing stakeholders’ uncertainty, changing their attitudes towards the project, etc.



**Figure 1** – *The impact of communication on project success*

After we have given such multiple roles to communication, it is completely reasonable that, as Bourne puts it, „effectively planning and implementing the specific communication strategy tailored for the project’s stakeholder community often consuming between 75% and 90% of the total time of the project manager” and, as the

author emphasizes „must be considered one of the most important roles of the team and the project manager” (Bourne, 2010).

### Steps for Stakeholders’ Analysis

Though formulated somewhat differently by different authors, the steps of stakeholders’ analysis always follow the

same logic, being directed towards fulfilling the main aim of the analysis – giving reasons for the choice of a proper strategy directed towards each group of stakeholders in order to ensure support for the project's realization and for short-term as well as long-term success.

Thus, the stakeholders' analysis process goes through the following steps:

**Identifying stakeholders** – the aim is to make a list, as complete as possible, of all individuals, groups and organizations that can influence the project realization process or be affected by it. Although it is possible that some groups turn out to be insignificant for the project realization at a certain point in the process, making a complete list at this step is a prerequisite to lessening the possibility that something is missed in the following steps.

**Categorizing stakeholders** – by interests, ability to influence (power), positions, or attitudes towards the project issue – if they support, resist or remain neutral to the project

**Investigating relationships** – between stakeholders (Reed, M. *et al.* 2009) – this analytical activity is not present as a separate step in all stakeholders' analysis guidelines. Meanwhile, some authors do pay attention to the necessity of investigating the relationships between groups of stakeholders as early as defining the main goals of the analysis. „Stakeholder analysis can be used to map the positions of the actors in relation to the issue, as well as to each other” (Varvasovszky, Brugha 2000 p. 341). Our position is that finding such relations out is crucial for the correct judgment the next step, prioritizing stakeholders, requires. It, in turn, is a starting point

for choosing a proper mean of influence, including communication adjusted to the groups of stakeholders that are formed. The analysis of interrelations helps foresee the dynamics in each group's position. Once categorized, there is no guarantee that the groups' attitude will remain the same throughout the whole project. The change of attitude can be influenced by interacting with the project team as well as by this very interaction between the groups of stakeholders.

**Prioritizing the stakeholders** – possibly the most difficult step of the analysis, whose quality depends highly on how correctly the previous ones are performed. The difficulty comes from the need to balance the different interests of stakeholders. A solution that could somewhat reduce this difficulty is grouping







up the stakeholders by the compatibility of their interests. This way, it would be traced out what the common interests that most stakeholders have been. Thus, the work in compliance with these interests would satisfy more stakeholders and reduce possible resistance. Ethical dilemmas are another challenge managers are faced with in the stage of prioritizing.

The effective execution of these steps respecting the possible problems that could emerge or omissions that could be done is crucial for selecting an appropriate strategy for managing different groups of stakeholders. However, if we have categorized and prioritized stakeholders properly, and the analysis has allowed us to foresee interactions among them, „the optimal fits”, as Blair *et al.* define are:

- to collaborate with ‘mixed-blessing’ stakeholders, i.e. those which combine elements of support and non-support and offer high potential for cooperation and are also a potential threat;
- involve supportive ones;

- defend against non-supportive ones, i.e. those who represent a high threat and low potential for cooperation; and
- to monitor marginal stakeholders who represent a low threat and low potential for cooperation (Varvasovszky, Brugha 2000), (Blair *et al.* 1996).

All these activities that good stakeholders’ management demands could be supported by communication process. As we exposed our belief in the importance of stakeholders’ analysis for successful outcome of the project, as well as in the multiple roles of communication in the analysis process, we show in table 2 the common possible problems at each of the analysis steps and give some suggestions about possible solutions to reduce or overcome problems. Solutions gave concern communication strategies and/or choices of communication tools as far as we share the position of other researchers for strong necessity of effectively planning and implementing communication strategies by the project manager (Bourne, 2010). In the last column, in compliance with our understanding of the multiple roles of communication in the stakeholders’ management process, and thus in project management, we point out the effect intended of the utilization of a given communication tool – if, in addition to the usual role of the analysis, namely information gathering, we can also expect the utilization of this tool to result in gaining stakeholders’ support or reducing the resistance towards the project issue.

Other than the problem areas described for any of the steps in the table, there are some that are not specific for a single step and could appear at any stage. No pretending to be thorough, we try to take into account as many factors as possible that the successful stakeholders’ analysis depends



**Table 2** – *Steps of stakeholders' analysis – accompanying problems and solutions*

Step of the analysis	Common possible problems	Choices/solutions concerning communication process to reduce problems	Effect intended *
Identifying stakeholders	<ul style="list-style-type: none"> <li>• Missing a stakeholder that could turn out to have an influence at a certain stage of the realization of the project.</li> <li>• Some groups might not be homogeneous – it is possible not to identify individuals within the group that have a bigger influence and demand different communicational efforts to be involved</li> <li>• Not taking into account that the list can change in time</li> </ul>	<ul style="list-style-type: none"> <li>• A 'snowball technique' is recommended – at the end of each interview, respondents to be asked to identify all other important stakeholders who have, or could have considerable influence</li> <li>• The project representer initiating an open dialogue among participants within the group would help identify differences as well as select a proper individual for further communication.</li> </ul>	<p>GI</p> <p>GI</p>
Categorizing	<ul style="list-style-type: none"> <li>• To under- (or over-) estimate the influence of stakeholders.</li> <li>• Not revealing stakeholders' interests and attitudes fully and correctly because of low trust among participants as well as because of prejudice having to do with the interviewer's status.</li> <li>• The level of influence might change in time – at the stage of planning, of execution or assessment.</li> </ul>	<ul style="list-style-type: none"> <li>• Preferring face-to-face meetings to technology-assisted ones as a form of communication to overcome mistrust.</li> <li>• An independent researcher/interviewer to be considered in order to be perceived as a neutral player and reduce biases.</li> <li>• Semi-structured interviews to keep the focus sufficiently broad to allow for hidden or emerging themes.</li> <li>• Interactive two-way communication to clarify interests as well as to prevent possible escalation of expectations.</li> <li>• Keep communicating at least with medium- to- highly interested stakeholders throughout the whole project realization, including during the assessment of its results.</li> </ul>	<p>GI, GS, RR</p> <p>GI, GS, RR</p> <p>GI, GS, RR</p> <p>GI, GS, RR</p> <p>GI, GS, RR</p>
Investigating relationships between stakeholders	<ul style="list-style-type: none"> <li>• it is difficult to identify which coalitions are stable and which ones are more dynamic</li> <li>• it is very difficult to foresee interactions with stakeholders in the distant future</li> </ul>	<ul style="list-style-type: none"> <li>• Try to find out (regardless if through direct communication, through observations or by a third person, etc.) how long ago the interrelations between the groups or individuals started – this is an indirect indicator for their lasting in the future.</li> <li>• To revise the initial view on positions and interrelations during the process of the project's realization.</li> </ul>	<p>GI</p> <p>GI, GS, RR</p>
Prioritizing	<ul style="list-style-type: none"> <li>• The project manager often faces ethical dilemmas – conforming to the interests of those who can affect the realization of the project and disregarding the interests of those who are vulnerable, who can be affected by the project but are rather powerless.</li> <li>• There is a risk that if certain group's interests are ignored in favour of other ones', the first ones may form a new coalition and increase their possible impact on the project's realization.</li> <li>• It may be difficult to prioritize when the groups have both a high influence and a high interest, but their interests are different.</li> </ul>	<ul style="list-style-type: none"> <li>• At least inform groups with high interest and a low influence to decrease their perception of uncertainty and neglect.</li> <li>• Communication with groups with high interest (though with a low influence) is not to be neglected at least because of the possibility of gaining information from them – such groups/ individuals could have information we do not expect them to.</li> <li>• An open discussion to find out a minimum set of common interests and negotiate between groups can be useful.</li> </ul>	<p>GI, GS, RR</p> <p>GI, RR</p> <p>GI, RR</p>

\*GI – gathering information GS – gaining support RR – reducing resistance

on, and that could influence the overall success of the project in turn. Other issues having to do with at any of the stages researchers pay attention to concern:

- the level of analysis – As Varvasovszky and Brugha point out, „a local level analysis often means that all stakeholders can be reached and interviewed individually, while a supranational analysis, involving international actors, is likely to rely more on a review of policy documents, reports and existing data” (Varvasovszky, Brugha, 2000 p. 340). The higher the level, the more limited the communication opportunities and hence the possibility to benefit from that communication.
- the analyzing team – are its members employed in the organization, do they have an interest in the project – these circumstances would change the analysis quality. „Managers (insiders) can sometimes hold strong opinions about stakeholders which conflict with generalized perceptions of the environment” Crosby (1992), points out. Varvasovszky and Brugha (2000 p. 340), add that „a potential limitation of the insider, especially one with a stake in the issue, is if pre-existing relationships with (other) stakeholders influence the latter’s willingness

to participate and their responses. The external analyst can play a valuable role as an ‘independent auditor’ of those stakeholders” Crosby (1992) suggests.

- the time – stakeholders’ attitude, ability to influence or mutual relationships can change during the course of a project, so the analyzers have to regularly update the analysis.

## Conclusion

As other researchers’ findings show a strong dependence of project success on stakeholders’ attitudes and influence on the project issue and hence give a significant role to rich project communication as a „differentiator of successful outcomes” (Andersen *et al.* 2006), we try to broaden the understanding of how to draw out numerous possible benefits from communication as early as the process of stakeholders’ analysis performed. Common problems in each stage of the stakeholders’ analysis were traced out and suggestions concerning communication tools to deal with these problems were given. A conclusion is made that if the project manager is to be long-term oriented, knowledge acquisition through communication should be in priority in strategy planning as well as in day-to-day managerial activities.



## REFERENCES

1. Andersen *et al.* (2006) *Exploring project success*, Baltic Journal of Management, ISSN: 1746-5265. Vol. 1 Issue:2. pp. 127-147.
2. Blair, J.D, Rock T.T, Rotarius, T.M, Fottler, M.D, Bosse, G.C, Driskill, J.M. (1996) *The problematic fit of diagnosis and strategy for medical group stakeholders—including IDS.Ns*. Health Care Management Review 21(1): 7–28.
3. Bourne, L. (2010) *Beyond reporting – the communication strategy*. Paper presented at PMI® Global Congress 2010—Asia Pacific, Melbourne, Victoria. Australia. Newtown Square, PA: Project Management Institute. [Online] Available from: <https://www.pmi.org/learning/library/communication-strategy-stakeholder-generating-reports-6887>. [Accessed: 19<sup>th</sup> June 2017].
4. Crosby, B. (1992) *Stakeholder analysis: A vital tool for strategic managers*. Washington DC: USAID.
5. Jepsen, A., Eskerod P. (2009) *Stakeholder analysis in projects: Challenges in using current guidelines in the real world*. International Journal of Project Management 27. 2009. pp. 335-343.
6. PMI (2013) *A Guide to the Project Management Body of Knowledge, fifth edition*. Project management Institute.
7. Reed, M., *et al.* (2009) *Who's in and why? A typology of stakeholder analysis methods for natural resource management*. Journal of Environmental Management 90. pp. 1933-1949.
8. Turner, J.R., Zolin, R., Remington, K. (2009) *Modeling success on complex projects: multiple perspectives over multiple time frames*. In: Gemuenden, H.-G.(Ed.). The Proceedings of IRNOP9, the 9th Conference of The International Research Network of Organizing by Projects, Berlin, June. Technical University of Berlin, Berlin. [Online] Available from: <http://eprints.qut.edu.au/> [Accessed: 10<sup>th</sup> June 2017].
9. Varvasovszky, Z., Brugha, R. (2000) *How to do (or not to do)... A stakeholder analysis*. Health Policy and Planning. Vol. 15(3). pp. 338-345.
10. Westerveld, E. (2003) *The Project Excellence Model®: linking success criteria and critical success factors*, International Journal of Project Management 21. pp. 411-418.





# The Perception of the Organization by Employees

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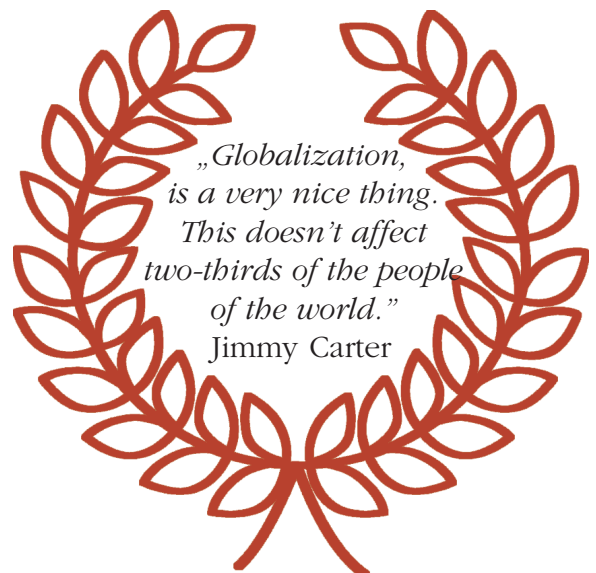
Abstract

*The perception that employees have about the organization they work is largely influencing their behaviour. For that reason, it's essential to create the best organizational climate that helps develop employees. Motivation is very important, by rewarding employees in different methods it is expected a productivity increase, and automatically a turnover increase. A satisfactory internal environment can create a competitive edge and improve performance. Employee perceptions of the work environment can have a major influence on their behaviour, not to have depressive state and to automatically escape from taking over tasks. The article presents some of the research published in the literature on how the organization influences employees perceptions.*

**Keywords:** perception, organization, organizational policy, organizational climate, employees, motivation, intrinsic motivation, extrinsic motivation

## Introduction

Perception is a process that creates the image of an object, phenomenon, thing. At the moment of forming a judgment on a thing, we automatically associate it with everything we saw in the first moment. Most perceptions reflect reality and help create opinions. Unfortunately, it is possible to create perceptions that distort some aspects of the image, these are also the perceptual illusions. Perception is a complex sensory process, containing all the information about the concrete attributes of objects and phenomena. The image you perceive is very complex, it may involve both significant qualities, but also the least important. The perception of an object is





associated with that of the objects surrounding it, with which it is in a certain space and thus the perception can change through this association. Hearing, visual and tactile-kinesthetic to be indispensable for making a speech, reading or writing, helping to create the outline of the perceived image. Perception is not automatic when the stimulus acts on an object, the process runs phased through orientation, detection, contrast, identification and ultimately interpretation.

## Studies on Organization's Perception

### 1. The theory of self-determination

In the study of perception, a particular role was played by the use of the theory of self-determination. Basic research in the theory of self-determination has demonstrated that the motivation is affected by environmental factors, which by their psychological effects at their own level represent the organizational and individual results. Therefore, the working environments that had a crucial impact on the environmental factors and on the affected way of work, in this case, the theory of self-determination were also affected. (Ferris *et al.*, 2000).

According to the theory of self-determination, the environment influences people's motivation by giving them a sense of work satisfaction. People have control over their independent, as a result of the controlled behavioural sensation, representing self-interest in real interest. Competence involves self-efficacy, which is a winning sensation, ability and obstruction. Relationship is helpful for realizing relationships with others and is associated with reducing the work of foreigners.



The theory of self-determination states that people have fundamental psychological needs and that the sense of satisfaction is essential for their development, integrity, growth and well-being. When these needs are met, the body knows the state of vitality (Ryan and Frederick, 1997) and psychological integration (Deci and Ryan, 1991). Satisfying these needs is seen as an essential objective in life, needs are more of a role to provide the meaning and intents that underlie human activity (Deci and Ryan, 1991).

### 2. Researches on the perception of working conditions

Research on environmental perception where the activities take place, they have shown a high level of comfort as it operates is associated with a variety of carrying you can influence increased productivity and employees satisfaction. (Ferris *et al.*, 2002).

The location of the office has a great influence on the work of the employees, they need to be attracted to the area in which they work. Much of the research on the scope of the work was focused on the differences between closed offices and



alternative forms for office design in open spaces. Office design can influence the attitude of the employees and their performance, in particular, it has been shown to influence job satisfaction. Previous studies by researchers (Elsbach & Prat and collaborators, 2007) have concluded that the work environment also has an important influence on interpersonal relationships. Different levels of comfort in the workspace can make the difference between the work performed, most employees want to be treated equally, should not be differences that could affect communication between employees.

An important feature of the physical work environment is represented by the familiarity that people have with the office in which they work. A state of too much familiarity can create distraction because they are preoccupied with other things and not give so much attention to tasks. Low levels of familiarity can have both positive and negative effects, people perceive offices differently, with walls and well-insulated doors that give the impression of being locked in a room with no

way out it, feeling constrained by space. The appearance of the office can influence the organizational culture (Cameron & Quinn, 2011).

The visual contact between people in the workplace can influence productivity, the advantages of this aspect are that it improves communication, can help solve problems much faster because travelling time is excluded, even conflict can be avoided. Becker and Sims (2001) conducted a survey using of 347 of respondents, observing over 3000 interactions in a total of 130 hours. They found that people with a high level of visual access are more attentive to the interlocutor and, before initiating any communication, they are looking at if the possible interlocutor is busy. This was also true with managers who started a discussion with team members, which facilitated communication. They concluded that high levels of access can lead to better communication between managers and subordinates, thus helping to guide and reduce the psychological distance between managers and staff (Zerella *et al.*, 2017)

Another office feature that was investigated is the one that refers to the physical distance between people. Studies from this point of view show that face-to-face communication is far more effective than virtual communication because it puts its mark on the correct exchange of information needed for teamwork. Researches conducted by Kraut (1990) concluded that physical closeness may be the most important characteristic of the work environment. Office arrangement is another aspect that influences employee behaviour and professional satisfaction.

### **3. Research on the perception of the organization policy**

Through the perception of policy in organizations, there is expected a decline in

autonomy and a reduction in the intrinsic motivation, resulting in the perception of organizational policy being in a negative relationship with this type of motivation.

Intrinsic motivation can be generated both from internal sources but also from sources from the developed activity. The most important feature of this type of motivation is to achieve satisfaction by performing appropriate action. An example is that people doing certain activities practice them for pleasure and development.

The extrinsic motivation is generated by external sources, it may be imposed by other persons or by favourable circumstances or not. For example, an employee may be conducted an activity by obligation or to create a good image in front of management, not because it is a great pleasure for him.

Literature has shown three hypotheses in the study of intrinsic and extrinsic motivation:

**Hypothesis 1.** The perception of the organizational policy is in harmony with intrinsic motivation and can be used to educate external motivation. Being internally motivated from an extrinsic point of view requires the internalization of employees taking into account a set of organizational values in their own selections. In organizations, employees recognize managers behavior as directed to promote their own interests (Gagne, Deci, 2005), (Kacmar, Baron, 1999).

**Hypothesis 2.** The perception of the organizational policy has a negative relation with extrinsic motivation in work motivation. Controlling extrinsic motivation occurs when the behaviour is seductive or coercive, depending on the external environment by rewards or having negative consequences. The

perception of organizational policy helps to increase people's perception of the uncertainty of getting rewards. From studies conducted to date, perceptions of organizational policy are expected to reduce control over extrinsic motivation (Eisenberger *et al.*, 2002).

**Hypothesis 3.** The perception of the organizational policy has a negative link with the extrinsic control of work motivation. This hypothesis expects the perception of organizational policy to increase motivation that is totally devoid of self-determination. When not motivated, people's productivity is lacking. (Gagne, Deci, 2005; Guay *et al.*, 2000).

Work motivation is an energetic set of original forces for determining the shapes, direction, intensity and duration of work performed for higher productivity.

In the theory of self-determination, the extrinsic work motivation is categorized in autonomy and control of intrinsic motivation. Controlling extrinsic motivation includes the external regulation that controls motivation (Gagne, Deci, 2005). The autonomy of intrinsic motivation is less





autonomous because, in the regular behaviour for which the reported values have been internalized, it is not necessary to be present at unforeseen external events.

From the studies carried out, we follow the typologies typified to the theory of self-determination, by which four types of self-determined motivation are extinguished: intrinsic motivation, autonomous extrinsic motivation, controlled extrinsic motivation and self-motivation.

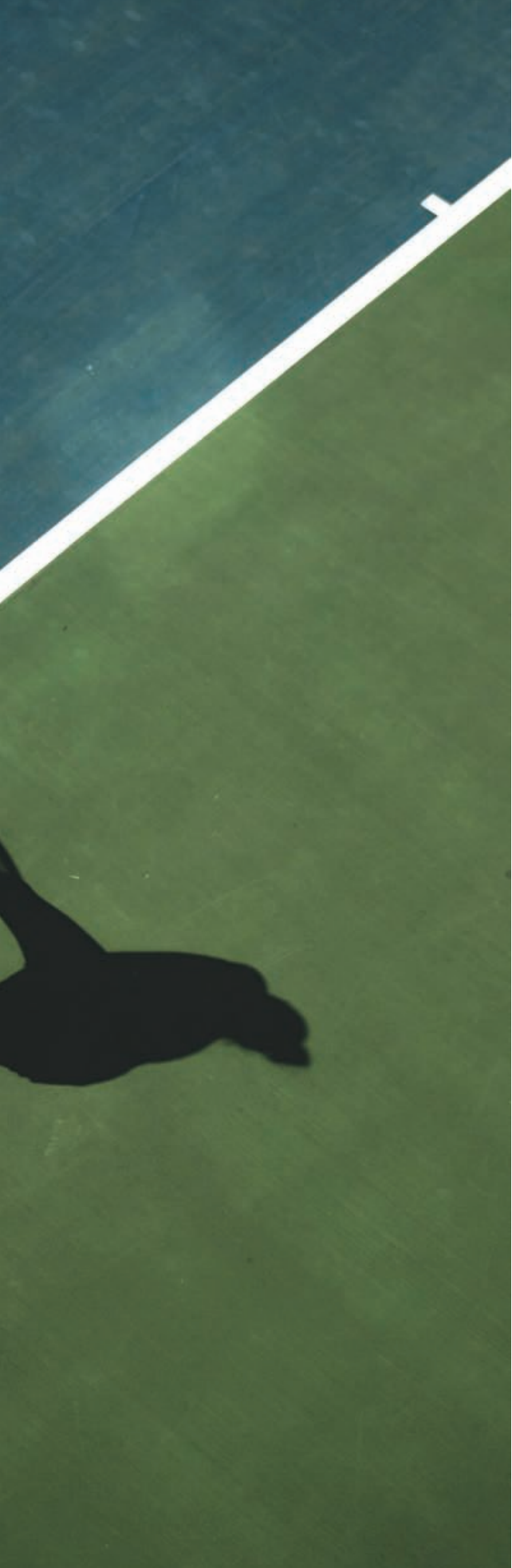
#### **4. Research on risk perception**

Risk perception is the key component for the protection of natural hazards, being closely related to actual risk (Lindell, Perry, 2012; Wachinger *et al.*, 2013). The perceived risk is divided into three aspects than the real one. The first is that although it is different from real risk, in the notion of probability there is still a perceived risk. Secondly, perceived risk includes the uncertainty and severity of the outcomes for an individual or group that interprets the risk. In the latter case, there is a social risk-related construction that refers to the level of risk when society is willing to accept in social exchange the benefits associated with its cause, a relationship that is influenced by the perceptions of those in charge of risk (Bronfman *et al.*, 2009; Kaspersen *et al.*, 1988).

Wachinger and colleagues have investigated how people perceive risks as technological risk associated with it, (such as that caused by nuclear energy, genetically modified organisms (Wachinger *et al.*, 2013). These investigations show us that risk perception varies according to the characteristics of the perceiver and the characteristics of the hazard itself. Previous research has identified differences in how experts and non-experts perceive the risk. Sex, age and level of education







may in some cases be considered as a risk factor for changing perceptions. Women perceive risks faster than men, adults see the risk much faster than young people who are easily influenced, as well as people from poor backgrounds and tend to have a much higher perception of risk (Bronfman *et al.*, 2009; Kasperson *et al.*, 1988). Risk perception is also influenced by risk communication from external sources. Paton (2008) found that trust is an important component of communication when people make decisions in uncertainty, in which case, trust is seen as an important feeling in place of complete information allowing a simplified message to be believed and taken over by people. Trust is influenced by the characteristics of the person who conveys information as perceived by the individual. The researchers said that confidence is enhanced through knowledge, expertise, openness and honesty (Fisher *et al.*, 2013).

Earle (2010) suggests that trust is influenced by perceived morality, interpreted by „heuristic similitude,” reflecting common values and people’s priorities. The feeling of trust can be influenced by the perceived differences in values and priorities that trigger perception. Perceptual studies that assess the perception of multiple risks are few and focus on highly industrialized countries. Reducing vulnerability to multiple risks and subsequent economic development are perceived as multiple threats. There are very few studies where the overlaps are analyzed in an environment with more problems. From the researchers’ findings, factors that influence risk perception are specific to particular dangers, suggesting that they enhance perception and may reflect a better understanding. Further research is needed to improve risk management.

## Studies on the Effects of Organizational Policy


The perception of organizational policy affects the attributions of the people in the compartments, the way in which the individual tasks of the employees are divided.

With the help of the theory of self-determination, the relationships between the perception of organizational policy and the self-determined motivation are studied, having their role in mediating in the way of work. The theory of self-determination identifies four types of self-determined motivation. The main difference between self-motivated motivation and other types of motivation is that self-directed motivation focuses on relative autonomous versus controlled motivation.

The effects of organizational policy have a great influence on employee behaviour by modifying workplace efficiency. If they dive into anxiety and depression, then comes the fear of work, to interact with people and fear of taking risks. A solid organizational policy is one of the most important elements of an organization, as the employees are better, the more the organization develops, but it can also destroy it.

### **The link between organization policy, perception and anxiety**

Resource conservation theory has a particular utility in predicting the relationship between perception of policy and anxiety, helps people to obtain, retain, protect the quality and quantity of resources, and other limited categories. When the human resource is threatened with loss of confidence in their own forces, or when people follow the path of investing in other mental resources or that cause psychological stress, they lead to unpleasant results. These results include anger, frustration, short-term anxiety, depression and long-term coronary artery disease (Hobfoll, 1989, 2002).



Anxiety is triggered when people face existential threats. Many people who perceive a higher degree of risk in political organizations perceive threats as a valid resource. For example, employees with a high level of perception of the organization tend to feel anxious when their colleagues are trying to receive prizes, sabotaging their work and are more upset. Eventually, employee anxiety increases as they worry for the anticipated loss of earned resources (Hobfoll, 1989, 2002).

### **The link between working conditions and depression**

It was found that the negative perception of the workplace is closely related with depressed employees. Previous studies have shown that they are interpersonal relationships: distrust, difficulties in the framework of a partnership, work stress and the ambiguity of the role, all closely related to depression. (Caplan, *et al.*, 1975). Many studies have shown that perception of certain aspects that causes depression is capable of causing stress and tension.



Researchers have confirmed that environmental factors/psychological mediators/self-determined motivation has a very important role in motivating work. Anxiety can undermine self-determined motivation because it activates perceptions of low competence and autonomy. Anxiety is part of the same emotional family with fear. People who have fear or anxiety tend to get close to a safe feeling, a place where they can escape danger. In some cases, it may tend to assess uncertainty, low control of the situation and the ability to cope with certain situations.

Perceptions of competence and autonomy are low in anxious people because they are aware of the low ability to cope with situations associated with uncertainty and obstacles, this leads to a lack of self-determination. Many situations support the idea that anxiety has negative effects on self-determined motivation. It is difficult for anxious people to enjoy jobs, they feel threatened with responsibility. To analyze whether the organizational perception can

increase non-motivation by activating anxiety, the following hypothesis was proposed:

1. Anxious employees mediate the relationship between perception and intrinsic motivation;
2. Anxious employees mediate the relationship between perception and autonomous extrinsic motivation;
3. Anxious employees mediate the relationship between perception and extrinsic controlled motivation;
4. Anxious employees do not mediate the relationship between perception and motivation. (Ferris *et al.*, 2000).

Ferris *et al.* have expected that depression can affect self-determination motivation, can be characterized in terms of perception arise when employee's autonomy and competence is declining. The tendency of sad/depressed people is manifested through the sense of helplessness, decreased control of the situations they face, low power.

### **The link between organization policy, perception and motivation**

The mode who is it organized and perceived organizational policy is very important, at the same time it can strengthen as being very good to everything that happens in the organizational environment, but also it can destroy it. Intrinsic motivation has a very important role, people are motivated by other methods when compared to extrinsic motivation where reward methods are visible.

Researches had shown that the perception of organizational policy can affect the motivation of self-determination through a mechanism that is well understood. Link between perception of organizational policy and self-determined motivation has shown



that the effort to understand the effects of organizational politics perception has impressive implications on the organization's results. In all cases, women have more control over the extrinsic motivation.

From the research on organizational policy made so far by Ferris and colab. 2002, it appears that most of the research on the perception of organizational policy has been negatively assessed in terms of the definitions and measures that have led to further research. Organizational policy was defined as a complex activity that sometimes damages the organization and its members. The negative ideas of organizational policy have been reinforced by the widespread use of researchers perceptions of organizational policy.

### **The link between organizational policy, perception and the organizational climate**

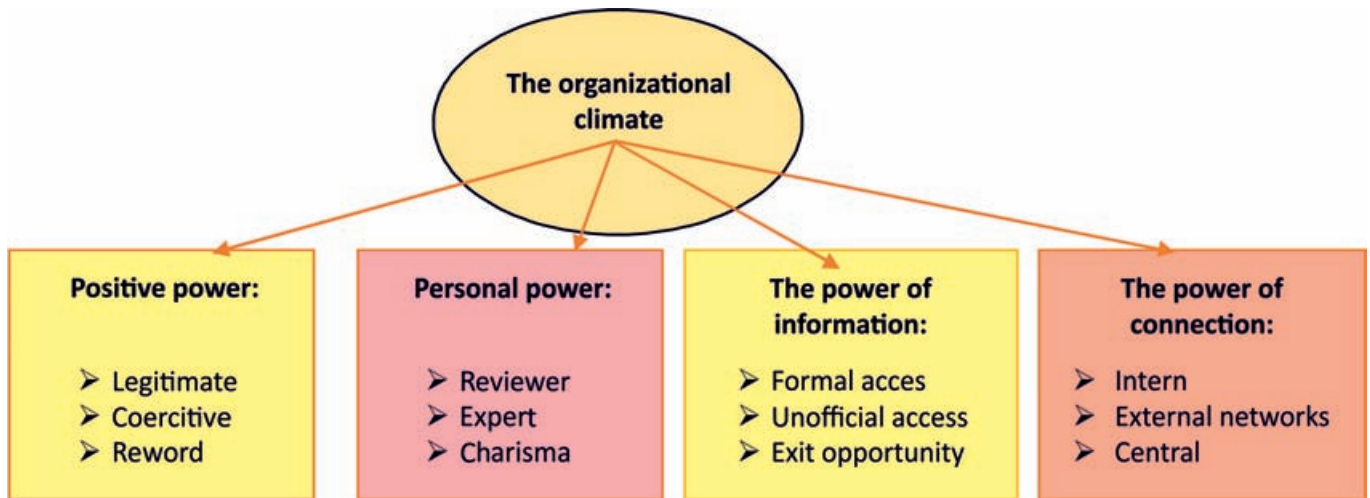
The organizational climate is defined as having common perceptions about the building, the use of power practical solutions, policies and procedures that influence decision-making, all resources and

achievement of individual, team and organizational goals.

The perceptions of organizational policy were evaluated at different levels, including individually (Figure 1). A large number of researchers have noted a relationship between policy issues and the organizational climate, climate and policy research continued in an independent manner. Dipboye and Foster noted that collective perceptions and policy units have different sizes at climate, group or organizational level. A very small number of researchers have recognized the notion of organizational political climate, arguing for an autonomous political climate. The organizational climate has been defined and conceptualized in a number of ways, and the dimensions remain in the debate. There were disagreements about the definition and size of organizational policy perception, as suggested by the Dipboye and Foster researchers, who noted that policy perceptions were treated differently as a one-dimensional structure. The climate organizational approach consists in sharing the perceptions that people build and use in practice and policy solutions that influence organizational decision-making, resource allocation, and achievement of goals, as described below in a figure area (Erin, 2017).

The four power bases of the organizational climate shown in the figure above derived from the widely recognized power base. French and Ravel have described five bases of power, for example coercive power, reward power, legitimate power, referent power, and expert power. These powers were subclassed by Bass in 1960 as the basis of personal or positional power. Landells and Albrecht (2017), concluded that the four power bases provide practical coverage on the political climate organization.





**Figure 1** – *The powers of the organizational climate*

(Source: Landells, Albrecht, 2017)

The organizational climate can be defined in terms of different perceptions of the extent to which members of the organization build and use power bases in the service of making decisions, allocating resources and filling any gaps.

„Positive power” is the power offered by a person’s position. In the context of the organizational climate, members of the organization perceive that people build their power by looking for positions through which they can exert a significant influence through which they will have control over significant resources. These practices but can be perceived as negative or positive, helping to organize functional or dysfunctional political climate.

„Personal power” is represented by the power associated with reputation, charm, charisma, merit and the right to respect for the laths (Bass, 1960, French, Raven, 1959). In a functionally organizational climate, people can be perceived to be able to build their reputation and personality, which is based on the experience and success shown. In another way, if we analyze a dysfunctional organizational climate, people may be perceived to build their per-

sonal power based on exaggerated expertise, the success they hold to the detriment of the organization.

„Power Information” third power base described in Figure 1, Raven suggests that informational power is evidenced by persuading others to comply, based on logical information (Raven, 2008). Information power can stem from access to information (meetings, policy projects), production or distribution opportunities. People can be seen as constructed and informational power when investing time and energy in trying to understand the agendas of others to gather as much information.

The „connection power,” as proposed by Hersey and collaborators, is closely related to the notion of networking and relationships. The power connection can





be derived from the internal network, external network and centralize market. Organizational climate where people invest considerable time and effort to align with people who have a certain influence on society. These activities can be perceived as positive or negative, conducting to functional or dysfunctional results.

HR professionals need to consider the development and implementation of systems, policies, practices and procedures and to support organizational climate policy to be functional. Building and using power bases provides a framework that HR specialists can use to shape their organizational effectiveness strategies. In order to develop a clearer understanding of the conditions that influence both the perception of organizational policy and whether

it is perceived positively or negatively, human resources specialists can clearly and comprehensively identify the antecedents and results that are most strongly associated with a climatic and organizational politics.

## Conclusions

This article summarizes the findings of some research presented in the literature on perception in organizations and expressly about the perception of the policy of the organizations.

From research done primarily about the perception that the company's policy shows that people's perception may change depending on several issues such as work environment, stress they are subjected to moment that deadlines and risks arise.



Following this research, it was concluded that stress should be reduced at work. People should be more relaxed, perceive new tasks as being for their benefit for professional development. As it is developed in the article, the effects of organizational policy have a great influence on employee behaviour because it impacts on workplace efficiency.

Anxiety and depression have a negative role in people's behaviour, effectively reducing their effectiveness through negative

thinking, such as losing their jobs. Also, intrinsic motivation plays a very important role in motivating people, positive thinking can increase work efficiency.

Overall, research shows that organizational policy should not be ignored and for the future, it is proposed focusing on developing other aspects of organizational policy like harmony in the team, trust, respect and involvement in various projects to develop the confidence of employees.

## REFERENCES

1. Bass, B.M. (1960) *Leadership, psychology, and organization behaviour*. New York: Harper and Brothers.
2. Bronfman, N.C., López Vázquez, E., Dorantes, G. (2009) *An empirical study of direct and indirect links between trust in regulatory institutions and acceptability of hazards*. Safety Science, 47 (5), pp. 686-692.
3. Cameron, K.S., Quinn, R.E. (2011) *Diagnosing and changing organizational culture: Based on competitive values* (3rd ed.). San Francisco, CA: Jossey-Bass.
4. Caplan, R.D., Jones, K.W. (1975) *Effect of working load, role of ambiguity, type and personality on anxiety, depression, and heart rate*. Journal of Applied Psychology, 60 (6), pp. 713-719.
5. Earle, T.C. (2010) *Trust in risk management: A model-based review of empirical research*. Risk Analysis: An Official Journal of the Society for Risk Analysis, 30(4), pp. 541-574.
6. Erin, L., Simon, L.A. (2017) *Organizational Political Climate: Shared perceptions on the building and use of power bases*. Human Resource Management Review. 23 (2013) pp. 357-365.
7. Ferris, G.R., Harrell-Cook, G., Dulebohn, J.H. (2000) *Organizational policy: the nature of the relationship between political perceptions and political behavior*. Research in Sociology of Organizations. pp. 89-130.
8. Ferris, G.R., Adams, G., Kolodinsky, R.W., Hochwarter W.A., Ammeter A.P. (2002) *Perceptions of organizational politics: Theory and research directions*. In F. Yammarino, F. Dansereau (Eds.). Research in multi-level issues. The Many Faces of Multi-Level Issues, Volume 1 (pp. 179-254) Oxford, UK: JAI Press / Elsevier Science.
9. French, JRP, Raven, B. (1959) *The bases of social power*. In D. Cartwright, & A. Zander (Eds.), Group Dynamics. New York: Harper & Row.

10. Fisher, R. (2013) *'A gentleman's handshake': The role of social capital and trust in transforming information into usable knowledge*. Journal of Rural Studies, 31. pp. 13-22.
11. Gagne, M., Deci, E.L. (2005) *Self-determination theory and work motivation*. Journal of Organizational Behavior. 26. pp. 331-362.
12. Hobfoll, S.E. (1989) *Conservation of resources: A new attempt at conceptualizing stress*. American Psychologist. 44. pp. 513-524.
13. Hsiu-Tsu Cho, Jen-Shou Yang, (2017) *How perception of organizational politics influences self-determined motivation: The mediating role of work mood*.
14. Kasperon, R., Renn, O., Slovic, P. (1988) *The social amplification of the risk: A conceptual one framework*. Risk Analysis, 8 (2). pp. 177-187.
15. Lindell, M.K., Perry, R. W. (2012) *The protective action decision model: Theoretical modifications and additional evidence*. Risk Analysis, 32 (4). pp. 616-632.
16. Paton, D. (2008) *Risk communication and natural hazard mitigation: How trust affects its effectiveness*. International Journals of Global Environmental Issues. 8 (1-2).
17. Sarah, Z. Von Treuer, K., Simon, L.A. (2001) *The influence of office layout features on employee perception of organizational culture*, Becker & Sims, 2001; Mehrabian, 1978; Stryker & Santoro, 2012; Stryker, 2004.
18. Wachinger, G., Renn, O., Begg, C. (2013) *The risk perception paradox-implications for governance and communication of natural hazards*. Risk Analysis. 33. pp. 1049-1065.



# Implementing an Energy Management System

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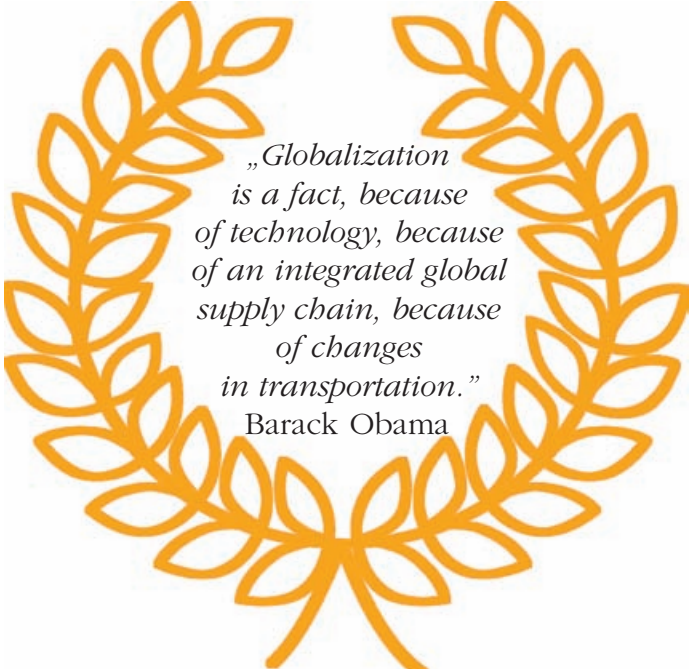
Abstract

*At the level of an industrial company, generically referred to as the industrial reference perimeter, the implementation of the energy management system (EMS) involves the inclusion of all the technological processes from the reference perimeter that participate in the production of finished or semi-finished products (depending on the company profile), the energy utilities and the related support activities. The forms of energy flow within the analyzed system (generated by internal sources or ensured from external sources), including water, are of particular importance. The methodology of implementing an energy management system has a generally valid character, from a procedural point of view, because EMS is not dependent on the company profile, the structure of the production, the specificity of the activity.*

**Keywords:** energy management, efficiency, industrial

## Introduction

The implementation of a coherent industrial energy management system is a generally applicable procedure with a modular structure. Within this paragraph, the main modules will be detailed and they can be assimilated as a unitary procedure. Therefore, Gangoells, M. *et al.* (2016) showed that the methodology can be implemented by applying the phased algorithm, presented below, regardless of the industrial branch in which the reference perimeter is located.



*„Globalization is a fact, because of technology, because of an integrated global supply chain, because of changes in transportation.”*  
Barack Obama





Thus, the central objective envisaged in the implementation of an EMS is to ensure the security, quality and efficiency in the short-term energy supply as well as in perspective, and among the levers adopted, the following could be mentioned:

- efficient use of energy throughout the entire energy conversion cycle within the company;
- integrating energy efficiency in the industrial reference perimeter at the level of the existing equipment, facilities and processes, is also a priority objective in the selection criteria for the procurement of new equipment and technologies;
- compliance with energy and environmental regulations at EU, national and/or local level as noted in the Romanian Regulation for the authorization of auditors and energy managers (2013).

The case study presents the particularities regarding the applicability of the algorithm depending on the specificity of the industrial process carried out within the analyzed perimeter.

### ***Module 1. Substantiation of a portfolio for the implementation of an energy management system***

The overall objective of this preliminary module is the real empowerment of „leadership-employee partnership”. The success of implementing an energy management system depends to a large extent on the level of responsibility and knowledge of the issues involved in promoting energy efficiency in the form of a partnership with commitments from the both parties involved. The commitment of the industrial company management is demonstrated by its actions and results. At the operational level, the commitment can be demonstrated by developing and communicating a statement/energy policy of that company. The commitment is not just a „statement of support” – it should introduce direct responsibility among all the employees involved in the system implementation, as well as regular reporting on the progress of the implementation phases.

Jovanović, B. and Filipović, J. (2016) noted that if there is a strong commitment of the management of the industrial company, the next phase consists in defining and documenting the scope and the limits of the EMS, the system generally covering part of/all the technological processes within the studied perimeter, the utilities and the public services.

The energy policy of the industrial company must be succinct and include at least the following elements:

- the commitment (protocol) for the implementation of an energy management system,
- continuous improvement of energy performance,
- setting clear and achievable energy targets,

- commitment to provide information and resources to meet the objectives,
- the commitment to support the procurement of low energy (energy efficient) products and services,
- designation of the person (s) responsible for implementation.

### ***Module 2. Appointment of the energy manager and the team involved in the management of the energy processes***

**The energy management in a given perimeter** (according to the legal framework) is defined as all the activities of organizing and managing the energy processes within it. This activity is coordinated by an **energy manager**, designated according to the ANRE (Romanian Energy Regulatory Authority) procedures in force. In the Romanian Regulation for the authorization of auditors and energy managers (2013) is stipulated that the training of the energy managers in order to function in the labor market is the responsibility of the specialized universities, accredited according to the legislation in force, through short-term continuous training.

DzeneI, I. *et al.* (2015), argue that **the purpose of energy management application** is to use with maximum efficiency the energy input, entered in various forms, in an organized manner and for a cost in the analyzed perimeter. Among the main activities carried out by **the energy manager**, the following are mentioned:

- collecting and storing (managing) information and useful data in the field of energy efficiency;
- getting support from as many employees and executives as possible for continuous energy efficiency promotion;
- providing advice, solutions and technical information to all other sectors



of the organization in order to make more efficient the energy acquisition, transformation, distribution and consumption;

- estimating the effects of the proposed and promoted energy efficiency improvement measures.

### ***Module 3. Identification of legal and other regulations***

The energy policies at the level of the industrial companies are based on regulations providing the following:

- financial tools to support demonstration activities and pilot projects in the field;
- promoting research and technological development in the field;
- free technical support for the implementation of new technologies;
- rapid dissemination of the positive results obtained;
- providing the framework and necessary tools for staff training;
- exchanges of experience and good practice, collaborations and domestic and international contacts.

The experience in this field has highlighted four categories of impediments to the implementation of energy policies:

- **of technical nature** consisting of the lack of equipment and performance devices, lack of the appropriate framework for scientific research, development, innovation and technological transfer, lack of knowledge and experience in energy management.
- **of economic nature** that can be exemplified by the prices and tariffs of energy carriers which do not reflect the costs of production, transport and distribution, in the price control system, and the neglect of marginal prices and the deformation of energy participation in the cost price of the products.
- **of financial nature** are related to the limited nature of the funds available for energy saving measures and the lack of an appropriate framework for accessing these funds (financial and fiscal bids etc.).
- **of institutional and managerial nature** derived as Negoita, O.D. (2018), noted, from the inadequate decision-making structure at local and national level, from the incomplete nature of energy efficiency legislation and regulations, the lack of economic and financial consultancy and the lack of modern energy management techniques in enterprises.

Knowing and understanding these impediments is an essential element in developing energy efficiency strategies because both the choice of strategic objectives and the methods and nature of the proposed and implemented programs must be made in such a way that they can be overcome as stipulated in the Model for the elaboration of the Energy Efficiency Improvement Program for Industrial Units (2015).



#### **Module 4. Energy analysis**

It is the main module of the algorithm and consists of the following methodological steps:

- a. Collection of energy data** – broken down on different types of energy and/or consumer category.
- b. Identification of the areas of use of energy**, installations, equipment, systems and processes, establishing their weight in the total energy consumption of the company
- c. Identification of factors that significantly influence the energy consumption** of equipment, installations, processes
- d. Determining the current energy performance** of the equipment, installations, systems and processes related to the use of energy.





**e. Measuring and monitoring energy consumption – is the core component of energy management.** The aim is to create a *specific data base* related to energy consumption, as well as the determined energy performance indicators (in order to monitor the subsequent evolution over time).

**f. Estimation of energy consumption** allows highlighting the general tendencies of evolution of energy consumption, which is very useful for the forecasts and the elaboration of the budgets dedicated to the implementation of the measures for the increase of the energy efficiency.

**g. Identifying opportunities to improve energy performance.**

Based on energy analysis, solutions to improve energy performance can be identified as energy savings opportunities (ESO).

It is recommended to develop an ESO database with the possibility of permanent updating. When identifying saving opportunities, other potential sources of energy, such as the use of renewable energy or other alternative energy sources, such as secondary energy resources, will also be considered.

**The level of complexity and management** of this database is the primary objective of continuous improvement of the EMS as noted by Băjenescu T.M. (2018). Ngai, E.W.T. *et al.* (2013), noted that the tools used to identify and prioritize the proposed energy savings solutions can be: energy auditing, industry expertise, participation in conferences, training, professional networks, specialist literature, journals, magazines, good practice guides, project web pages.

**h. Determination of reference energy consumption**

**i. Establishment of energy performance indicators**

**j. Establishment of the objectives and develop an action plan to increase energy efficiency.**

## Analysis of the Implementation of EMS

The particularization of the EMS implementation algorithm from the chemical industry within an industrial perimeter included in the previous paragraph has highlighted the general characteristics of the modules 1-3, regardless of the industrial branch in which it is applied. Therefore, only the specific aspects of the Energy Analysis (Module 4 of the algorithm) determined by the characteristics of the industrial branch and especially of the type of the analyzed process will be emphasized.



**Characteristics.** Generally, the production facilities in the chemical and petrochemical sector are characterized by good energy utilization within the industrial perimeter. It is a characteristic fact of the installations and chemical equipment that, in most cases, the equipment and installations within the technological flows take into account the energy aspects since the conception phase.

Integrating the concept of power supply into the technological flow is more justified if it includes to a significant extent the internal recovery of the secondary energy resources resulting from the technological flow. This results in a specific situation for the entire industrial sector with a chemical profile, where technological installations cannot be separated into production facilities and energy utilities. They are integrated and although they have different destinations, the component parts are organically and technologically interconnected and cannot function separately argue Introna, V., *et al.* (2014).

**Application description.** The ammonia synthesis plant can operate separately or can be integrated into a chemical/petrochemical combination. In terms of „circulation of energy flows” between the component parts, the synthesis plant includes 3 functional modules:

**Module 1** – The Technological Module consists of the technological plant itself in which the raw materials are processed through a series of consecutive processes and finally the main product is obtained.

**Module 2** – The Energy Module consists of the installation (the energy equipment assembly) which **recovers the heat disposed of as the secondary energy resource resulting from the Technological Module** and which supplies **the mechanical energy for the drive and the thermal energy in the form of technological steam** necessary for the smooth running of the synthesis process, being practically reintroduced in the Technological Module (after conversion).

**Module 3** – The Refrigeration Module consists of a refrigeration installation that receives mechanical energy produced in the Energy Module and ensures gas cooling and condensation separation of the main product, thus contributing practically to the Technological Module, to the development of the basic technological process. The chemical reactions that take place along the technological flow, which consists of three stages, are exothermic reactions, generating heat and helping to cover the heat requirement of the synthesis process. The mechanical work consumed to drive rotary machines is also largely regained in the sensible heat of the circulated fluids (recovered energy).

**The three mentioned modules are integrated into the process and represent the technological process of ammonia synthesis.** The energy flows in the ammonia synthesis process are:

- Natural gas plays the role of raw material and primary energy carrier (fuel) in the synthesis of technological installation.
- Heat as technological steam – it is used in the technological process itself.
- Mechanical work – it is necessary for the driving of the rotary machines within the technological flow: compressors, fans, pumps.

Both the mechanical drive and the technological steam are provided by recovering and utilizing the heat released (secondary energy resource) for technological reasons in a direct thermodynamic cycle. The Energy Module of the synthesis installation includes:

- recovery steam boilers;
- steam turbines, their facilities;
- machines are directly driven by the turbines.

This Energy Module can be considered similar to a Cogeneration Plant with Residual Gas Recovery (CHPGRec).

- Thermal energy in the form of cold – separating the synthesized product (involves the cooling of large flow rates of process gases well below the ambient temperature (refrigeration), conditions in which the substance condenses and can thus be separated from the process gas mixture.

The cooling is provided by a mechanical Vapor Compression Refrigeration System (VCRS) designed specifically for this technological process and adapted to this purpose.

Regardless of the „legal status” of the synthesis plant (which can operate separately or be integrated into a chemical plant), the energy consumption is monitored separately and the related costs have their own accounting records.

**Monitoring and analysis of energy consumption.** It is mentioned that the synthesis plant consumes natural gas both for technological purposes (main raw material) and for energy purposes (gas fuel). Of the externally purchased energy carriers, diesel is intended exclusively for internal transport and for the sale of the finished product, which involves the transport by truck with heat-insulated tanks.

**Table 1 – Energy flows (purchased from outside)**

No.	Type of energy carrier (external source)	UM	Consumption
1	Natural gas (fuel)	TJ/year	680.0
2	Natural gas (technological processing)	TJ/year	1295.0
3	Diesel fuel (internal transport)	TJ/year	10.0
4	Power	TJ/year	25.0
5	<b>Total energy input</b>	TJ/year	2010.0

**Energy analysis.** The energy balance for a year of activity under normal conditions is established for each of the parts of

the unit and for the whole unit. The four balances are presented in Tables 2-5.



**Table 2** – Energy analysis of the Technological Module

No.	Energy flows (the term of the energy balance)	TJ/year	%
	<b>Balance energy flows input</b>		
1	Natural gas as fuel	680.0	57.87
2	Mechanical compression work transformed into sensible heat	112.0	9.36
3	Heat as technological steam	280.0	23.83
4	Heat resulting from the exothermic effect of chemical reactions	105.0	8.94
5	<b>Balance total energy input</b>	<b>1177.0</b>	<b>100.00</b>
	<b>Balance energy flows output</b>		
1	Recovered heat within CHPGRec	890.0	75.74
2	Heat taken up by cooling water	107.0	8.94
3	Cold generated by VCRS	107.5	9.15
4	Sensible heat of gases exhausted from the system	50.0	4.25
5	Other energy losses	22.5	1.92
6	<b>Balance total energy output</b>	<b>1177.0</b>	<b>100.00</b>

**Table 3** – Energy analysis of the Energy Module

No.	Energy flows (the term of the energy balance)	TJ/year	%
	<b>Balance energy flows input</b>		
1	Heat recovered from the plant (from the Technological Module)	890.0	100.00
2	<b>Balance total energy input</b>	<b>890.0</b>	<b>100.00</b>
	<b>Balance energy flows output</b>		
1	Mechanical work for driving	175.0	19.66
2	Heat as technological steam	280.0	31.46
3	Energy losses	435.0	48.88
4	<b>Balance total energy output</b>	<b>890.0</b>	<b>100.00</b>

**Table 4** – Energy analysis of the Refrigeration Module

No.	Energy flows (the term of the energy balance)	J/year	%
	<b>Balance energy flows input</b>		
1	Mechanical work to drive the compressor	40.0	27.12
2	Cold (heat removed from the plant)	107.5	72.88
3	<b>Balance total energy input</b>	<b>147.5</b>	<b>100.00</b>
	<b>Balance energy flows output</b>		
1	Heat released into the atmosphere	144.0	97.63
2	Energy losses	3.5	2.37
3	<b>Balance total energy output</b>	<b>147.5</b>	<b>100.00</b>

The energy analysis of the industrial perimeter as a whole – the synthesis installation results from the integrated functional analysis from the point of view of the tech-

nological flow of the assembly of the three component modules. Their summary is presented in Table 5.

**Table 5** – Energy analysis of the ammonia synthesis installation

Nr.	Energy flows (the term of the energy balance)	TJ/year	%
<b>Perimeter energy flows input</b>			
1	Natural gas (fuel – external source, Table 1)	680.0	83.95
2	Heat resulting from the exothermic effect of chemical reactions (Technological Module, Table 2)	105.0	12.96
3	Electricity consumed to drive the rotary machines (external source, Table 1)	25.0	3.09
4	<b>Perimeter total energy input</b>	<b>810.0</b>	<b>100.00</b>
<b>Perimeter energy flows output</b>			
1	Heat took up by cooling water	107.0	13.21
3	Sensible heat of exhaust gases from the system	50.0	6.17
4	Heat losses of CHPGRec	435.0	53.71
5	Heat exhausted by VCRS in the atmosphere	144.0	17.77
6	Other energy losses	74.0	9.14
7	<b>Perimeter total energy output</b>	<b>810.0</b>	<b>100.00</b>

## Results and Discussion

The high degree of complexity of the ammonia synthesis process, a general feature of processes in the chemical industry, necessitates as noted by Eleftheriou, K. and Iyanna, S. (2016) the implementation of a core and functional energy management system (EMS). At the conceptual level within these types of processes, the direct integration of the recuperative modules into the technological flow aims to ensure a higher share of the power supply of the process (in various forms). Thus, technological installations cannot be separated into production facilities (given the final product) and energy utilities (which provide the various forms of energy necessary to obtain the final product).

Although the useful effect of each module is different, the component modules are integrated and are organically and functionally linked and unable to be separated. The main objectives envisaged in the elaboration of the action plan to raise the energy efficiency of such a process are to increase the overall recovery of the available secondary energy resources. Integrating the concept of power supply into the tech-

nological flow is all the more justified if it includes to a significant extent the internal recovery of the secondary energy resources resulting from the technological flow.

Both mechanical drive and technological steam are provided by recovering and utilizing the heat released (secondary energy resource) for technological reasons in a direct thermodynamic cycle. It is an internal recovery; the recovered energy is directly used in the technological flow (Module 1) from which the residual heat resulted. The energy efficiency of this type of recovery of secondary energy resources also results from the elimination of the regime limitations by the „simultaneity” of the use of the recovered energy with its production, namely production and use in the same process.

The energy efficiency resulting from the increase of the recovery in the integrated functioning of the three functional modules of the process is quantified by the energy saving, both in the form of combustion (natural gas) and in the form of electric energy, provided from external sources to the industrial perimeter, affect directly reflected in the reduction of the specific costs of the final product.

## REFERENCES

1. ANRE (2013). *Regulament pentru autorizarea auditorilor si managerilor energetici* (in English: *Regulation for the authorization of auditors and energy managers*) MO. Part I. nr.400 bis/3.VII.
2. ANRE (2015) *Model pentru întocmirea Programului de îmbunătățire a eficienței energetice pentru unități industriale*, (in English: *Model for the elaboration of the Energy Efficiency Improvement Program for Industrial Units*). [Online] Available from: <https://www.anre.ro/ro/eficienta-energetica/legislatie/legislatie-efic-en> [Accessed: 10<sup>th</sup> January 2019].
3. Băjenescu, T.M. (2018) *Perception of Risk Management*. FAIMA Business & Management, Volume 6, (4). pp. 13, ISSN: 2344-4088.
4. DzeneI, I. et al. (2015). *Application of ISO 50001 for Implementation of Sustainable Energy Action Plans*. Energy Procedia, Volume 72. pp. 111-118.
5. Eleftheriou, K. and Iyanna, S. (2016) *Special issue on sustainable production and consumption in the UAE*, Renewable and Sustainable Energy Reviews, Volume 55. pp. 1164-1165.
6. Gangoells, M., Casals, M., Forcada, N. (2016) *Energy performance assessment of an intelligent energy management system*, Renewable and Sustainable Energy Reviews, (55), March 2016. pp. 662-667.
7. Introna, V., et al. (2014) *Energy Management Maturity Model: an organizational tool to foster the continuous reduction of energy consumption in companies*, Journal of Cleaner Production, Volume 83, (15). pp. 108-117.
8. Jovanović, B., Filipović, J. (2016) *ISO 50001 standard-based energy management maturity model – proposal and validation in industry*, Journal of Cleaner Production, Volume 112, (4). pp. 2744-2755.
9. Negoita, O.D. (2018) *The Use of Performance Management Systems*, FAIMA BUSINESS & MANAGEMENT. Volume 6. (4). pp. 17. ISSN: 2344-4088.
10. Ngai, E.W.T. et al. (2013) *Energy and utility management maturity model for sustainable manufacturing process*, International Journal of Production Economics. Volume 146. (2). pp. 453-464.





# Marketing in a Globalized Market

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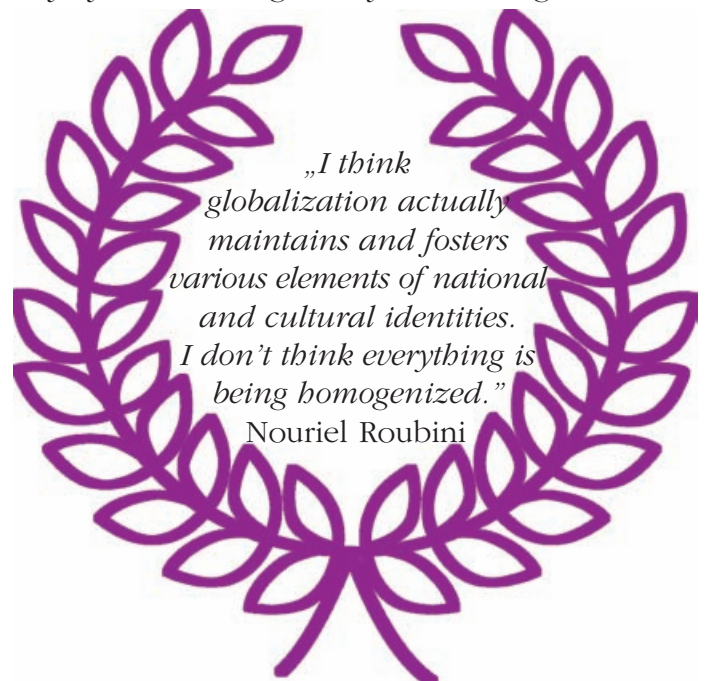
**Abstract**

*There has been an increased interest on the part of companies in innovation investment over the last decade. Balancing innovations in marketing at the company level, however, is a problem that is a research interest in its various aspects. The aim of the study is to present the advantages of balancing marketing innovations and to outline the main problems in achieving a balance between the individual components. The research is focused on the various marketing innovations, their specifics, the innovation activity drivers, the practical and applied aspects of their balancing on company level. The relevance and importance of the issue arise from the achievement of competitiveness of enterprises through intensive innovation activity and the search for opportunities to reduce the risks involved. The study is of interest to companies that invest in the development of marketing. The results highlight important issues concerning balancing business innovation that can support future decisions to achieve higher efficiency by coordinating and synchronizing on company level. The key contributions of the paper are expressed in the multi-dimensional review of marketing innovation and differentiation of the benefits of balancing them. Original ideas are put forward with practical application to help achieve a balance between the benefits, costs and risks for businesses and consumers.*

**Keywords:** marketing, innovation, marketing mix

## **Introduction**

The increased investment activity of companies over the last few decades brings forward the issue of balancing innovations in marketing. The reasons are generally



*„I think globalization actually maintains and fosters various elements of national and cultural identities.*

*I don't think everything is being homogenized.”*

Nouriel Roubini

connected with real and potential problems associated with capacity management, speed of marketing processes, return on investments and marketing effectiveness at company level. The balance/misbalance of innovations in the separate components of marketing is an issue that is rarely discussed in the scientific community but is, nevertheless, registered in the daily business activity as a problem that exposes companies to additional risks. There is limited research on the problem. This evokes interest in carrying out a study to clarify the state of marketing investment and innovations by means of collecting information from companies that agree to answer an online questionnaire.

Critics of marketing share opinions which occasionally bother on complete rejection. Among both specialists and non-specialists beliefs about the benefits of marketing sometimes vary from highly positive to downright negative. Companies, however, seem to show the benefits of marketing investments and take up the challenge of evaluating and directing them. Knowledge of the impact of each marketing investment (Marketo, 2011), helps for confidently identifying which parts of marketing truly deliver financial returns. The problems of measurements

(Hollinden, 2017), (Suárez, Estevez, 2016), and the assessment of the value of marketing (Hanssens, Pauwels, 2016), are the focus of a great deal of research. So while the problem of capacity management (Huang, Liu, 2015), within production and operations management is mostly studied through the variables (including those of the marketing mix) which influence it, from the point of view of marketing management an object of interest is maintaining the balance between production capacity and distribution channel capacity that is provided through balancing innovation investment in the basic functions. Authors express the opinion that long-term capacity management has implications on competitive performance in terms of cost, delivery speed, dependability and flexibility (Olhager *et al.*, 2001).

## Investments in Innovations

Over the last few years, one of the objectives of increased investment activity in the marketing mix components at company level has been increasing the capacity involved in the main activity of companies. Production and distribution capacity are the main dimensions where balance should be sought at company level (Table 1).

**Table 1** – *Conditions for marketing investment in production capacity*

Conditions	Specific points/peculiarities
New markets	Investments in innovations in production capacity are made when entering new markets of different sensitivity to product quality and product value.
New products	Such are, for instance, investments in new product lines/ products that cannot be produced with existing capacity.
Growth in demand	In cases of sustainable growth in demand for/ consumption of the product and when it is impossible to raise product price.
Higher productivity	Investing in high-performance technologies which could add to or completely replace those used at the moment.
New technologies	Partial or complete replacement of existing technologies for various reasons (effectiveness, productivity, environment friendliness, legal requirements, etc.).

Investments in production and product innovations only cannot compensate for lagging behind in the sphere of distribution. Over the last few years, company attention has shifted towards the possibilities for using multichannel distribution.

Investments in innovations, including investments in distribution channels, have accounted for a substantial share of marketing costs over the last two decades (Table 2).

**Table 2** – *Conditions for marketing investments in distribution capacity*

Conditions	Specific points
New markets	Investing in new channels which could provide access to new markets/segments/consumers. Can be tied up to the new marketing paradigm of „share of customer“ (Peppers, Rogers, M. 1995).
New products	When traditionally used channels are unable to handle the placement of the new products that are planned to be introduced to the market.
New channels	Investing in new channels that should meet customer needs and requirements for effectiveness.
A mismatch between production capacity and distribution capacity	In cases when distribution capacity is smaller than production capacity, possibilities are sought in two directions – increasing the capacity of existing channels or investing in new ones.
Higher effectiveness	Investments in distribution can be directed to enhancing effectiveness, mostly by increasing revenues and/or reducing costs.
New technologies	Using the capabilities for high-technology communication/distribution channels that are suitable for the products and services offered, innovations in digital activities and multichannel marketing (Shankar <i>et al.</i> 2011).

An opinion has been shared that too little production capacity to match its marketing capacity or too little marketing capacity to match production capacity could be equally detrimental to the firm (Johanson, 1985). Attention is also drawn to the possibilities for reducing conflict between marketing and manufacturing by managing diversity, conformity and dependability (Crittenden, 1993). It has been emphasized that under the conditions of market economy, in addition to innovations in products and production processes, there are also innovations in the marketing of products (Chen, 2006).

Another major aspect of marketing innovations is the speed of marketing processes and the speed of products reaching

the market. What is meant here is the time elapsed from the product development stage to product launch and customer service. Special attention is paid to the speed of market introduction and acceptance as important factors in marketing (CIM, 2015). Speed in marketing will determine company success on the market over the next decades (Table 3).

Undoubtedly, firms which invest in enhancing marketing speed achieve direct and transferable positive effects. Real-time marketing will continue to feature among the priorities of companies that have felt the effect of applying it, if only partially, in their business over the last few years (Table 4).



**Table 3** – *Drivers for improving marketing speed*

Drivers	Specific points
Development of communication technologies and improving their accessibility	Connected with transferring a lot of marketing processes and practices online, which strongly boosts the development of digital marketing. This, in turn, favourably impacts offline marketing at company level.
Development of automation	The advent of marketing automation, from gathering information and processing it, to decision-making and making an offer is a driver for improving the speed of processes involved in all elements of the marketing mix.
Investments in real-time marketing	Investments in developing platforms and applications for real-time marketing make it possible for clients to be served immediately. Here not only business is viewed, but also the experience of government institutions, municipalities, education establishments, etc.
Extending the range and growth of online market	Increasingly companies invest funds in developing online markets, due to the considerable growth in online sales over the last decade.
Consumer expectations of 'speed' and 'time' and taking these into consideration when designing the offer	Consumers are growing increasingly demanding in term of speed and service time. Their preferences change in favour of quick solutions. While in the past service speed was a luxury to be paid extra, these days, under the present conditions it is a necessity.

**Table 4** – *Key benefits from increasing marketing speed*

Benefits	Peculiarities
Increasing consumer satisfaction	Achieved by adapting the speed of marketing processes to customer expectations. Based on key parameters concerning 'speed', 'time' and 'duration'.
Increasing revenues	Enhancing speed positively impacts revenues in two ways – by attracting new consumers and raising purchase intensity of existing consumers.
Raising marketing effectiveness	Speeding up processes managed by the company and those managed by consumers have a positive impact on effectiveness in two aspects – increasing revenues and reducing costs.
More adequate use of market potential	Speed is particularly important in the marketing of seasonal products and services. Here a plan should be implemented for a limited time and no substantial deviation from the set values should be allowed. This also refers to new products on the market. With them, speed will reflect on the break-even point parameters.
Time-based competitive advantages	Marketing speed can turn into a major competitive advantage. First, marketing processes speed and placement speed is important from the point of view of product-market development. Second, the speed of consumer service is a key variable and one that companies focus on in search of advantages over direct competitors.
Reducing time-based foregone benefits	Marketing processes speed and their management is related to making an offer and its parameters (the exact offer to the client, at the right place and time).
Positive transfer effects connected with improving marketing speed	Improving marketing speed at company level may have positive transfer effects on the counterparty business, on the quality of life of the population and on a number of other entities in a social and economic aspect.

Companies will undoubtedly orientate towards using marketing applications fuelled by Big data and offering highly targeted and efficient ready-made solutions. Automated marketing which enables quick response to changes in the environment will be a priority to marketing-orientated companies. There will be a growing interest in adapting the various applications of automated marketing to the objectives of particular businesses and clients.

## Marketing Innovations

In order to establish the state of marketing innovations at company level in Bulgaria, a survey has been carried out by means of an online and offline questionnaire. The requirement companies must meet in order to be included in the survey is that they should be registered in the country. As a result of the performed survey, a sample has been obtained in a non-random selection of respondents, in-



cluding 336 respondents (companies registered in Bulgaria). The profile of researched firms is presented in Table 5.

**Table 5** – Distribution of researched companies

Criteria	Distribution of respondents (%)
<i>Priority target market</i>	
Local	25,5
Regional	18,2
National	25,5
International	30,9
<i>Type of customers</i>	
Final	31,5
Corporate	18,5
Final and corporate	50,0

The problems companies face in their business are various (Table 6), the most frequently registered being: problems with competitors (35,7%), declining sales (30,4%) and deteriorating financial results (23,2%).

Under the option „other” 8,9% of companies have pointed out „lack of qualified personnel”. (Note: Sum total of relative shares exceeds 100, as the question is given a multiple response options).



**Table 6** – *Business problems companies*

<b>Problems</b>	<b>Relative share (%)</b>
<b>Declining sales</b>	<b>30,4</b>
Withdrawing customers	19,6
<b>Deteriorating financial results</b>	<b>23,2</b>
Failure to fully use production capacity	14,3
Insufficient production capacity	8,9
Insufficient distribution capacity	7,1
Lack of balance in marketing investment	10,7
New administrative barriers imposed	17,9
Drastic increase in production costs	16,1
<b>Problems with competitors</b>	<b>35,7</b>
High market risk	5,4
Problems with the quality of products offered	7,1
Problems with survival	8,9
Problem with productivity of labour	16,1
Problem with process speed	5,4
Other (lack of qualified personnel)	8,9

The largest share is that of companies (out of a total number of companies investing in marketing) (Table 7), which invested in new products (58,9%), in new production

technologies (46,4%) and in communications (41,1%). (Note: The sum total of relative shares exceeds 100, as the question is given a multiple response options).

**Table 7** – *Investments of companies*

<b>Investment positions</b>	<b>Relative share (%)</b>
<b>In new production technologies</b>	<b>46,4</b>
Process innovation	17,9
<b>New products</b>	<b>58,9</b>
New commercial areas	26,8
New distribution channels	21,4
In customers	37,5
In pricing	28,6
<b>In communications</b>	<b>41,1</b>
Marketing applications	21,4
In other, specify what (in personnel)	5,4

The highest share (Table 8) is that of companies which invested their own funds in marketing (94,2%), followed by com-

panies investing EU project funds (3,8%) and those which used bank loans (1,9%).

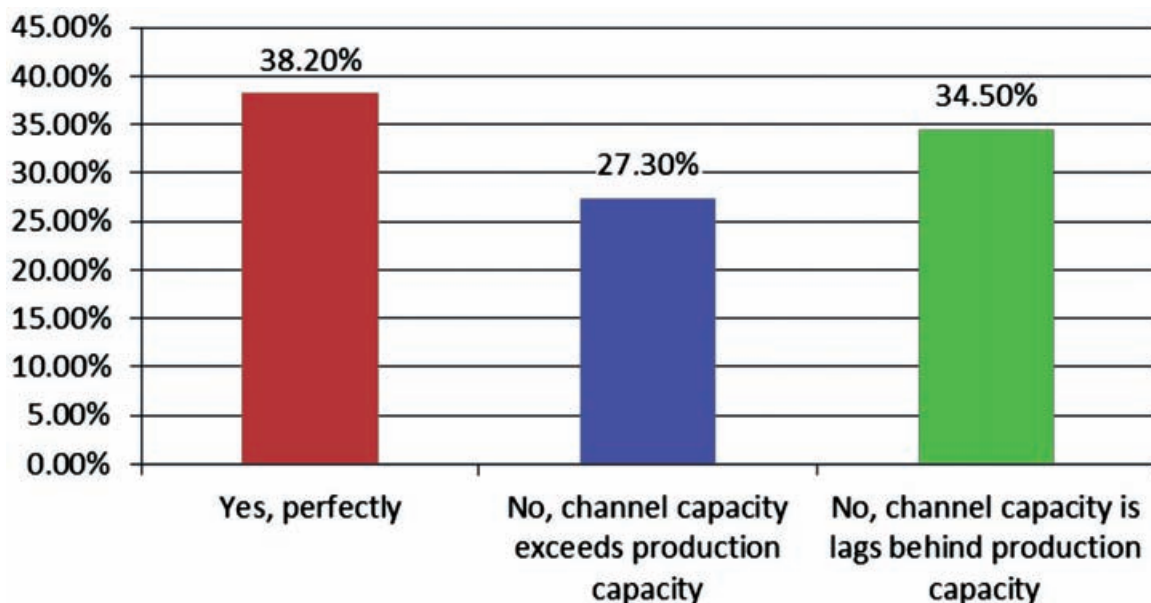


**Table 8** – Degree of satisfaction of companies

Degree of satisfaction	Relative share of companies by degree of satisfaction
Fully satisfied	11,3%
Rather satisfied	43,4%
Neither satisfied, nor dissatisfied	30,2%
Rather dissatisfied	11,3%
Utterly dissatisfied	3,8%

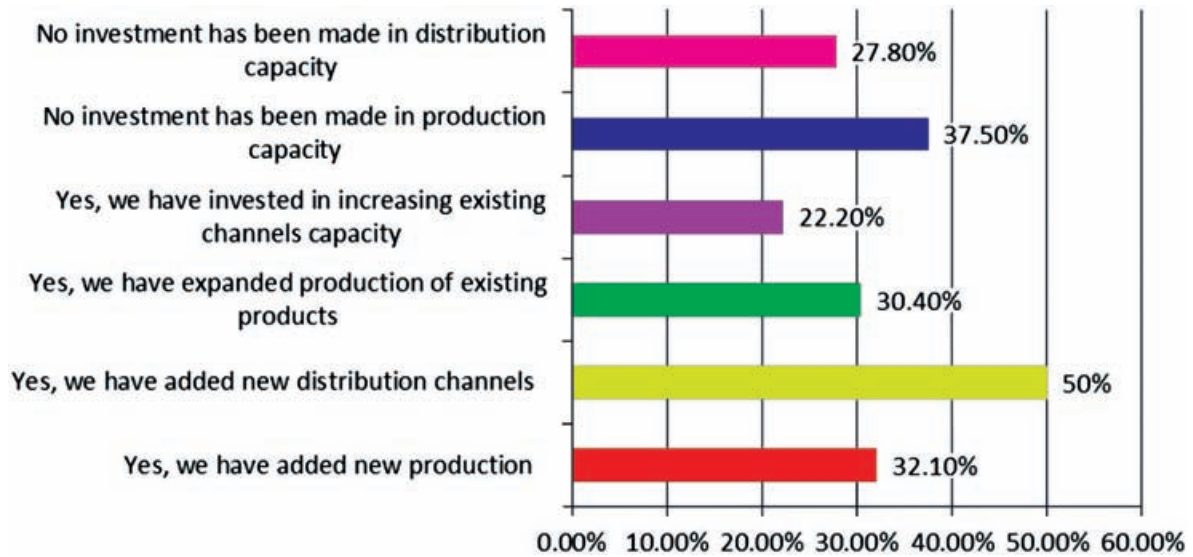
Results from the survey of company satisfaction with marketing investment in Bulgaria over the last 3 years reveal a predominance of positive evaluations. At the same time, however, we cannot fail to notice the relatively high share of respondents who chose the „neither satisfied nor dissatisfied” answer option (30,2%). More than a third of companies (Figure 1) claim their production capacity perfectly matches their

distribution capacity (38,2%). For the remaining companies, however, a mismatch is registered. It can be observed that 34,5% of producers consider their distribution channel capacity lagging behind their production capacity. The opposite correlation can also be noticed for 27,3% of companies, where channel capacity is higher than production capacity.

**Figure 1** – The state of production-to-distribution capacity

Half of companies (Figure 2) which invested in marketing added new distribution channels in the last 3 years, while relatively fewer companies invested in adding a new production (32,1%). To a large de-

gree, this distribution corresponds to the state of correlation between production/distribution capacity that has been analyzed above.



**Figure 2** – *Distribution of companies according to investment in production and distribution capacity*

Note: One figure shows presented distributed answers to two questions: „Over the last three years have you invested in increasing the firm’s production capacity?” and „Over the last three years have you invested in increasing the firm’s distribution capacity”? The most frequently encoun-

tered argument for investing in production and distribution capacity is covering new markets/market segments, followed by attracting consumers (Table 9). Arguments for investing in production capacity prevail.

**Table 9** – *Distribution of companies*

Arguments	Investment in production capacity	Investment in distribution capacity
<b>Covering new markets/ market segments</b>	<b>27,8%</b>	<b>35,3%</b>
<b>Attracting consumers</b>	<b>22,2%</b>	<b>29,4%</b>
Increasing the company’s market share	5,6%	11,8%
Achieving a favourable benefits/costs/risk ratio for the company	11,1%	0
Achieving a favourable benefits/costs/risk ratio for consumers	0	0
Providing multi-language service	0	0
Balancing demand and supply	5,6%	5,9%
Providing conditions for high- tech marketing	0	0
Adequate communication with consumers	0	11,8%
Increasing sales revenues	11,1%	0
Earning additional income	0	5,9%
Achieving higher profitability	5,6%	0
Ensuring a match between distribution capacity and production capacity	11,1%	0
Improving process speed	0	0

Although improvement of process speed has not been an argument for investment in production and distribution capacity, 6% of companies register an improvement in production speed and 32,1% report im-

provements in distribution speed. Also studied is the balance of investment/innovations in marketing and satisfaction with the funds invested (Table 10).

**Table 10** – *Satisfaction with the funds invested*

Claims	Distribution of respondents
Our investments in marketing have been balanced (by components like product, price, place and promotion) and we are satisfied with the return on investment	34%
Our investments in marketing have been balanced (by components like product, price, place and promotions) but we are not satisfied with the return on investment	24,5%
Our investments in marketing have not been balanced (by components such as product, price, place and promotions), yet we are satisfied with the return on investment	15,1%
Our investments in marketing have not been balanced (by components like product, price, place and promotions and we are not satisfied with return on investment	26,4%

Approximately a third of companies claim investment in marketing has been balanced (by product, price, place, promotion) and they are satisfied with the results of their investment (34%). For 26,4% marketing investment is not balanced (by product, price, place and promotions) and respondents are dissatisfied with return on investment. The prevailing opinion is an investment in marketing by marketing mix components is balanced. However, a considerable share of companies has not balanced their marketing investments (41,5%).

## Conclusions

The research results provide the foundation for several major conclusions. The companies included in the survey are facing various problems, the most frequent being the following: the competitive environment, declining sales and deterioration of financial results. Marketing oriented investment activity is high, with the largest share of companies investing in new

products, new production technologies and communications. Results concerning satisfaction with invested funds reveal a majority of positive evaluations, while we cannot fail to observe the large share of respondents who claim they are „neither satisfied, nor dissatisfied” (30,2%) A third of the companies surveyed shares the opinion that there is a perfect match between production and distribution capacity, yet for the remaining two-thirds a mismatch is registered, which can be of critical importance for the future of their business. Only a third of the companies declare that their investments in marketing are balanced (by components: product, price, place, promotions) and are satisfied with the return on their investment. A considerable number of companies have unbalanced marketing investments in innovations.

The problems outlined within the framework of the survey will be playing a key role in the development of companies over the next decade. Lack of coordination in investments in marketing innovations by



components of the marketing mix will expose companies to additional risk. Undoubtedly practices from previous decades for priority investment in new products and product lines will be revised and increasingly companies will be investing in distribution, communication and pricing. With-

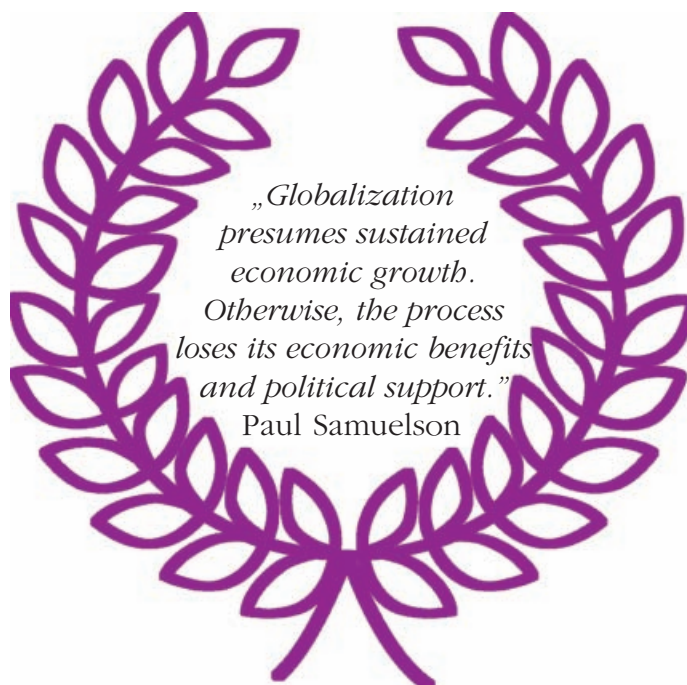
out a shadow of a doubt, the drivers for these changes are going to be the new technologies in the marketing sphere, which will result in partial or complete automation of part of processes and solutions and will increase consumer and company interest in real-time marketing.



## REFERENCES

1. Chen, Y. (2006) *Marketing Innovation*. Journal of Economics & Management Strategy. Vol. 15, No.1. pp. 101-123.
2. CIM (2015) *7PcA brief summary of marketing and how it works* [Online] Available from: <https://www.cim.co.uk/media/4772/7ps.pdf>. CIM. pp.11. [Accessed: 19<sup>th</sup> February 2019].
3. Crittenden, V., Gardiner, L., Stam, A. (1993) *Reducing conflict between marketing and manufacturing*, Industrial Marketing Management. Volume 22. Issue 4. pp.299-309.
4. Hanssens, D., Pauwels, K. (2016). *Demonstrating the Value of Marketing*, Journal of Marketing: AMA/MSI Special Issue. pp. 173-190.
5. Hollinden, C. (2017) *Measuring marketing the right way*, Accounting today. pp.61.
6. Huang, T., Liu, Q. (2015) *Strategic Capacity Management When Customers Have Boundedly Rational Expectations*. Production and Operations Management. Vol. 24. No. 12. pp. 1852-1869.
7. Johanson, J., Mattsson, L. (1985) *Marketing investments and market investments in industrial networks*. International Journal of Research in Marketing. Volume 2. Issue 3. pp. 185-195.

8. Marketo (2011) *Marketing Metrics & Analytics*. [Online] Available from: <http://harriscmo-partners.com/wp-content/uploads/Marketing-Metrics-and-Analytics-by-Marketo.pdf>, pp.1-70. [Accessed: 19<sup>th</sup> February 2019].
9. Olhager, J., Rudberg, M., Wikner, J. (2001) *Long-term capacity management: Linking the perspectives from manufacturing strategy and sales and operations planning*. Int. J. Production Economics. 69. pp. 215-225.
10. Peppers, D. Rogers, M. (1995) „A new marketing paradigm: Share of customer, not market share”. Planning Review. Vol. 23. Issue: 2. pp. 14-18.
11. Shankar, V. Inman, J., Mantrala, M. (2011) *Innovations in Shopper Marketing: Current Insights and Future Research Issues*, Journal of Retailing 87S. 1. pp. 29-42.
12. Suárez, M., Estevez, M. (2016) *Calculation of marketing ROI in marketing mix models, from ROMI, to marketing-created value for shareholders*, EVAM, Universia business review. pp. 18-45.



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