



CREATIVE POTENTIAL OF THE COMPANY'S STAFF

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Abstract: *Most research concerning creativity refers to the scientific and technical field. Progress can be achieved in short term by applying in practice of the stock of existing information, but on long-term implementation of the same stock that has not yet been enhanced with new products, results in the termination of economic and social progress. Creativity consists in finding new in any field or activity and presupposes the availability for change. Creativity thus becomes an essential factor of technical progress, and its stimulation programs lead to improved performance. The existence of a broad range of methods and techniques aimed at developing creative capacity allows their use depending on the requirements of each activity, which increases their effectiveness. An efficient economic system involves its continuous modification to proceed in relation to market requirements. Therefore, in order to prove effective creativity must manifest itself in a natural setting formed, mainly from the activities of scientific research and technological development (C&D), through creative excellence and which constitutes a key factor of the whole social and economic system.*

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1. CREATIVITY

“Creativity represents the superior faculty of the human, the psychic process of identification of new possibilities, original and of combining some disparate elements, consisting of the knowledge gained through studies or a combination, representing the technical, scientific creation that constitutes a spiritual /material good or spiritual, helpful to the society for a certain period.” (Russu, 1997).

Creativity refers to the human capacity to establish new relationships between elements already known and to envision new solutions for problems to be resolved or



unresolved, and involves three stages: selection of information (identification of elements among which will establish new connections) connections (creativity techniques) and the development of the idea.

M. Stein defines the concept of creativity as a process in which a new result, useful or satisfying by a group in a certain period. (Stein, 1953).

B. Ghiselim shows two levels of creativity: the lower one (the development of the meanings existing fund and their application in new meanings) and a superior one (the restructuring fund, modification by introducing new meanings and the re-configuring of the existing ones). (Ghiselim, 1963).

Acad. M. Draganescu has in mind three creative processes: the based on structural heuristic (new combination of the existing structures); those based on the phenomenological heuristic (finding new meanings); the combination of the first two (leads to creation). (Draganescu, 1989).

The specific activity of human creative and of the intellectual component of it, as well as the quality of the progress process, will depend on the size of the trained human potential and of how to exploit it.

Identification of the most efficient ways to stimulate creativity involves knowing the factors that influence it:

- mental factors among whom subscribe the intellectuals (attitudinal) and non-intellectuals (motivated) - they were at first focused on intelligence, then on the analysis of the altitudinal and motivational factors, which ensured a more comprehensive explanation of the creativity and the probabilities of developing creative skills;
- social-cultural factors, educational, etc.;
- biological factors - age - they determine changes in the creative capacity, and sex - between the creative potentiate of men and women no differences were found, if we refer to the same category of age.

In respect of the creative process, there are identified four stages of its manifestation:

- preparation - complex stage, and sometimes decisive for the success of the process, which includes the following sub-phases: problem identification; analysis of the



definition; the accumulation of material information; the formulation of preliminary hypotheses, attempt to restructure the material, drawing the first solutions;

- incubation - the waiting stage where the person seems relaxed, ready for spacing out from the problem and lies in its design and in its projection from the awareness into the pre-awareness in which the combinatory activity occurs;
- illumination - the central stage in creation that can occur anywhere and anytime in combining the distance elements of projecting the resulting combinations;
- achievement - stage where he returns to reality, and the creator wants a concrete means of communicating the results of his creation.

The analysis of the stages of the creative process reveals that it can operate using appropriate methods and techniques. The identification of the modalities of action requires but knowing the personality of the personality characteristics of the creator, a conducive climate for the creative manifestation.

For the creative potential research and early diagnosis of people with creative skills to develop necessary skills through education were outlined a series of methods and research techniques and fostering creativity.

2. METHODS OF STIMULATING CREATIVITY

The managerial ability constitutes the creative potential of the manager through which it contributes to the development and functioning of the enterprise. The creative side of the managerial activity is manifested by promoting the new, through the adoption of the innovative strategies. The purpose of this communication there should be considered: the need, the desire, the will and the tendency of the creator. (Nicolescu, 1992).

Creativity requires the existence of a psychic and intellectual basis without which there cannot occur, and there can be stimulated and developed through appropriate measures. Thus many methods have been developed for the enhance of the individual and group creativity, their knowledge being indispensable for the effective leadership.

Biographical method - is to analyze the life and activities of famous creators, made on the basis of biographical material available and its reference to the periods in which they lived. Information processing enables outlining conclusions with regard to the authors '



personality, family environment, the way they have been created, the facilities that they have enjoyed, etc. From this method, three other were also developed: the method of the analysis of the individual and group biographic data (refers to the study of the lives of the famous creators who left an archive rich with information relating to their lives), statistical and biographical survey (highlighting common features several game developers based on the statistical processing of information from the results of their biographies) isometric method (use of the biographical data of the creative personalities of the past of their creative skills assessment).

Assessment houses - refer to the use of the appropriate tools, knowledge and evaluation techniques (tests of intelligence and creativity, and observations, questionnaires, etc.) to a few dozen people, who live together in a house, for a couple of days, along with several people from different fields of evolution and some psychologists specialized in evaluation techniques. The program of the group of people comprises a formally part (methods and techniques mentioned above apply) and an informal part (discussion group, funny games, artistic manifestations, etc.). Based on the observations of psychologists, grades are awarded when subject to a factorial analysis.

Tests of creativity - their use allows emphasizing the lack of connection between the creative capacity of individuals being investigated and their level of intelligence. These tests are grouped in: word associations tests (detection of as many associates of a stimulus word); hidden figures (identification of simple figures in some complex, emphasizing the ability of perceptual); the use of unusual objects (imagining new possibilities of using unusual household objects, tools, composite); improvement of a product (adding new elements in order to make it more attractive); productive thinking tests (imagining the possible consequences of an improbable situations) etc.

The method of the catalog - refers to consultation of lists and catalogs of products that were getting an idea able to deceive other ideas for modification of the existing products.

Brainstorming method - developed by Alexander Osborne of the University of Buffalo in the early '50s, is the most known and used to stimulate creativity. It aims at getting new ideas, in a short time, in order to find the optimal solution. The method is based on four rules: imagination is encouraged, criticism is prohibited, taking over the ideas in order to turn them



or enrich them, a boosting production of ideas is appreciated (the probability of finding solutions will be higher).

Synectics - this method allows enhancing the creative capacity and involves bringing together seemingly different items and explanations, solving a problem through awareness of a group of people with different professional experience. This method consists of an analytic phase (by transforming familiar elements into unfamiliar) and a stage of transforming the familiar elements into foreign ones (by reversing the order of substitution of the existing elements).

Combining the brainstorming and synthetic methods led to the emergence of a new approach to the concept of uniform methods of technical ingenuity - invention. The methodology of invention comprises two types of methods: the category consisting of the intuitive and the related methods with which it operates in invention, of the analytical methods.

Input-output method - this method involves the decomposition of a system into three parts (inputs, achieved processing and outputs) and the modification of one of the parties in terms of the constant keeping of the other two.

Edison method - trying a large number of experiments according to the rule - "trial - error", by analogy with the attempts of research of T.A. Edison.

Collective Card Method - involves several stages: the establishment of a group of creativity (each member gets a checkbook to note their ideas for a month, in order to solve the problem); a recorded summary after a month (it takes into account the best idea); synthesizing ideas by the leader of the group; the result of the distribution group members; organization of the final debate for choosing the best ideas.

Role games - interpretation of roles by several people (researchers, customers, competitors, etc.) and tracking them by other people (observers), which have the task of establishing the relationship between spontaneous answers and the data of the problem you need to solve. This method is intended to highlight certain aspects of the matter which could not be identified through a rational analysis.

The method of the provoked dream - the method is based on the idea that in a daydream stages the operating models of logic thinking of the brain no longer operate.



Writing ideas during sleep (sleep-writing) - is based on the same idea of using the stock information, for the purpose of formation of new connections. The method involves learning the basic data of the problem before going to bed, noting before falling asleep or upon awakening, any image in your mind and finding opportunities to use them.

Delphi method, developed by Helmer, O., and his collaborators, in 1964-1965, part of the research program of the Rand Corporation, California, supposes several stages. In the first stage of each member of the specialists is given a questionnaire to be filled in. The time frame for completion is established depending on the complexity of the problem. The answers will be processed and will determine a mean value by the experts. In the second step, this value is brought to the knowledge of the experts are asked to make a new estimate based on the results. The replies received in the second stage are processed, they can reach an average value. This procedure is repeated until a consensus of opinion is reached. It is recommended that the procedure should not overpass more than four stages. The method takes into account the communication mediated by the board of inquiry ensuring the anonymity of responses.

The development of a new solution are organized in the form of a program of research and design. Using the methods of stimulating creativity techniques will seek to define the practical solution. Its definition represents the act of creation. Once the solution has been defined, conceptual design (performance are established method), defining it, and auxiliary specific functions, quality parameters of these functions, quantitative profit, costs, etc. Also, it will keep account of the needs of the market clients and of the resource restrictions.

From the point of view of creativity, an interesting step is tracking the product in exploitation, being performed a "feedback loop". (Vişan, 2012).

The loop offers necessary information for the perfection and reaching a new invention. Invention means any real intellectual creation in an idea. Its novelty is after filing with the State Office for inventions and trademarks (Romania). In compliance with the legislative framework from Romania "a patent may be granted for any invention having as object a product or process, in all fields of technology, provided that it be new, involve an inventive step and be susceptible of industrial application"¹. Therefore, the cases in which the invention is completely new inventions are rare, most having previous knowledge base from which some are novelty items.

¹ Law no 64/1991 (republished) regarding the invention brevets.



3. CORRELATION BETWEEN ENTERPRISES THAT ENSURE THE CONTINUOUS PROFESSIONAL TRAINING COURSES AND THE TOTAL EXPENSES OF THE RESEARCH AND DEVELOPMENT OF THE ENTERPRISES SECTOR.

The valuation of the creative potential can be achieved through training and professional improvement, financially sustained through appropriate techniques and methods of stimulation. Human resources, increasingly more complex acquires an increasing role in the enterprise, and getting, keeping, using, to require a new approach, outstanding efforts and a lot of creativity.

Skills are purchased and developed as employees gained experience, but there can be lost easily by their departure. It is extremely important that enterprises develop logic mechanisms for the creative management.

The study of creativity in the field of management focuses especially on the decision-making process, the solving of problems, using methods and techniques for stimulating creativity. (Androniceanu, 1998).

It must be stressed that a management that does not encourage the new can easily destroy an enterprise well situated, since braking the innovation is due to the difficulties of communication and information.

Hence the management needs to promote, stimulate and reward creative staff that contribute to achieving the objectives.

The innovative potential of the manager should be oriented towards the human resources training and advanced training to be able to develop creative activities.

Therefore, we are going to check the influence of a variable, namely the *Business enterprise R&D expenditure (BERD) by economic activity on Percentage of all enterprises providing CVT courses, by type of course and size class*, using a sample of 28 European countries, for the year 2010².

² The lack of the data did not allow a more detailed analysis.



Table 1 - Expenditure with C&D enterprises providing CVT courses in some countries of the EU, 2010

Geo/Time	Business enterprise R&D expenditure (BERD) by economic activity	Percentage of all enterprises providing CVT courses, by type of course and size class
Belgium	463,8	72
Bulgaria	14,6	21
Czech Republic	115,5	62
Denmark	859,1	76
Germany	573,7	61
Estonia	87,6	57
Greece	48	21
Spain	161,5	71
France	424,6	71
Croatia	34,3	50
Italy	178,7	47
Cyprus	18,1	48
Latvia	19	27
Lithuania	20,5	37
Luxembourg	796,7	65
Hungary	67,3	38
Malta	59,3	38
Netherlands	314,8	70
Austria	661	72
Poland	18,3	20
Portugal	119,8	44
Romania	10,8	16



Slovenia	247,1	41
Slovakia	32,5	54
Finland	907,1	67
Sweden	873,6	76
United Kingdom	299,6	60
Norway	563,4	90

Source: Eurostat database

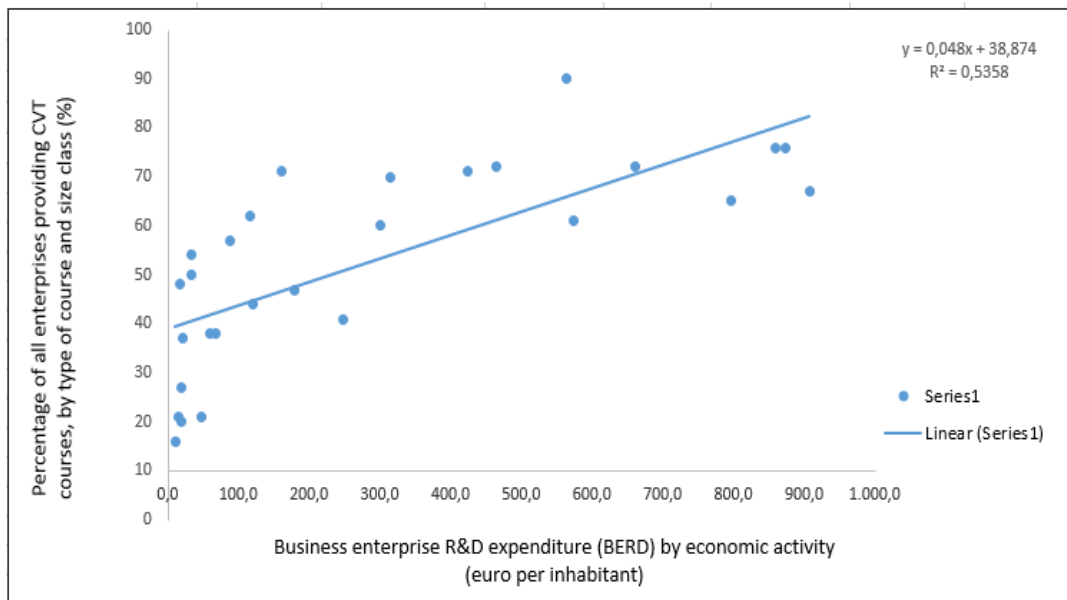


Fig. 1 - The correlation between the expenditure on C&D and which provides enterprises with CVT courses (2010).



Regression Statistics								
Multiple R	0,73							
R Square	0,54							
Adjusted R Square	0,52							
Standard Error	13,90							
Observations	28							
ANOVA								
	df	SS	MS	F	Significance F			
Regression	1	5794,93	5794,93	30,01	0,00			
Residual	26	5019,93	193,07					
Total	27	10814,86						
	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95,0%	Upper 95,0%
Intercept	38,87	3,63	10,72	0,00	31,42	46,33	31,42	46,33
X Variable 1	0,05	0,01	5,48	0,00	0,03	0,07	0,03	0,07

Fig. 2 – Summary output

In order to demonstrate this correlation we analyzed: homoscedasticity (White Test), normal distribution (Jarque - Bera Test) and assumptions relating to the stationary (Augmented Dickey-Fuller Test).

Null Hypothesis: Y has a unit root				
Exogenous: Constant				
Lag Length: 0 (Automatic - based on SIC, maxlag=6)				
		t-Statistic	Prob.*	
Augmented Dickey-Fuller test statistic		-4.375058	0.0020	
Test critical values:	1% level	-3.699871		
	5% level	-2.976263		
	10% level	-2.627420		
*MacKinnon (1996) one-sided p-values.				
Augmented Dickey-Fuller Test Equation				
Dependent Variable: D(Y)				
Method: Least Squares				
Date: 02/08/17 Time: 21:31				
Sample (adjusted): 2 28				
Included observations: 27 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
Y(-1)	-0.920665	0.210435	-4.375058	0.0002
C	47.79107	11.46178	4.169602	0.0003
R-squared	0.433635	Mean dependent var	0.666667	
Adjusted R-squared	0.410980	S.D. dependent var	26.53010	
S.E. of regression	20.36122	Akaike info criterion	8.936328	
Sum squared resid	10364.48	Schwarz criterion	9.032316	
Log likelihood	-118.6404	Hannan-Quinn criter.	8.964871	
F-statistic	19.14113	Durbin-Watson stat	1.628122	
Prob(F-statistic)	0.000188			

Fig.3 - Augmented Dickey-Fuller Test (ADF)



Heteroskedasticity Test: White				
F-statistic	0.462709	Prob. F(2,25)	0.6349	
Obs*R-squared	0.999471	Prob. Chi-Square(2)	0.6067	
Scaled explained SS	0.441563	Prob. Chi-Square(2)	0.8019	
Test Equation:				
Dependent Variable: RESID^2				
Method: Least Squares				
Date: 02/08/17 Time: 23:11				
Sample: 1 28				
Included observations: 28				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	213.3236	60.86045	3.505128	0.0017
X^2	2.10E-05	0.000530	0.039666	0.9687
X	-0.131900	0.459109	-0.287295	0.7763
R-squared	0.035695	Mean dependent var	179.2831	
Adjusted R-squared	-0.041449	S.D. dependent var	184.8194	
S.E. of regression	188.6108	Akaike info criterion	13.41821	
Sum squared resid	889351.0	Schwarz criterion	13.56094	
Log likelihood	-184.8549	Hannan-Quinn criter.	13.46184	
F-statistic	0.462709	Durbin-Watson stat	1.928642	
Prob(F-statistic)	0.634860			

Fig. 4 - White Test

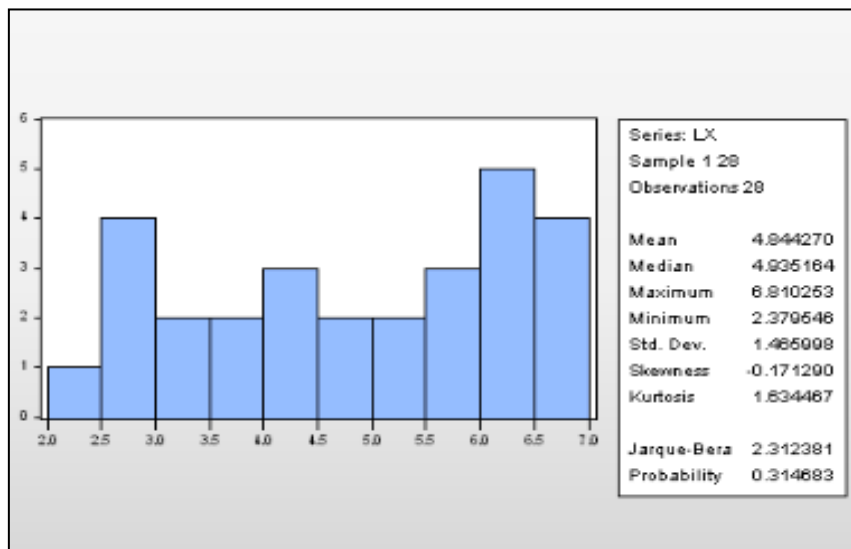


Fig.5 - Jarque –Bera Test

RESULTS

The logarithmic form correlation equation corresponds to $y = 11,4421n(x) - 2.8587$. This form reveals the way in which enterprises that ensure the continuous professional



training (CVT) depend directly of the C&D correlation coefficient value (0.54) indicate a strong link between the two variables.

A possible explanation refers to the economic growth based largely on the support of the knowledge-based society, the objectives of the policy of C&D including the creation of optimal conditions for the development of the knowledge. In conclusion, we can speak of a significant correlation between the two variables.

CONCLUSIONS

The new, no matter the form, presents a degree absolute originality in relation to what has been, until that time, human culture, science and technique.

Creativity involves finding new human faculty which represents advancement on all the levels of society is the essential factor of economic and social progress. This can be considered the ability of the intellect to work out ideas, models, etc. By educating the intellect, educating and stimulating creativity is achieved.

The essential condition for the existence of any enterprise is the creative process, which is why most companies focus on finding new ideas to materialize in products and services. Management practice shows us how these new ideas can be the result of individual or group on the basis of methods for stimulating the creativity of the staff.

The new economic context claims a technological level of competitiveness at which the company are often not able to proceed. One of the fundamental objectives of the companies is the efficiency growth, the realization being possible if the managers understand the necessity of adapting to change. Therefore, in this context, declamation is necessary to continue the process of change, in which the mission managers implement change. The central role has the capacity for creativity but for managers, employees to implement change by emphasizing the creative edge management.

The purpose of the activities developed within an enterprise should not be a squaring case, but one that would allow the creative potential of the staff to fully express.

In an enterprise there should be concerns regarding the improvement of the management, in particular, of a management plan creatively to have in mind the increased attention paid to the profession of manager creative, the raise of number of employees who



believe that its role should be as efficient as concerns for the shift from traditional methods of driving to some with a high degree of creativity.

Please specify that we do not support the use of strict methods of creativity. After our opinion, the Manager's position must be a creative one to consider the advantages and disadvantages, to choose that suitable resolution for their organization.

The company will have to include in the action plan the following:

- continuing professional training (CVT) of the staff - measures to educate/training totally funded or at least partially to the enterprise (directly or indirectly);
- implementation of a creative, innovative management that has its management process to have a strong determination by using innovation methods for stimulating creativity.
- elaboration of strategies with creative, innovative, pronounced character; greater flexibility of the organizational structure

CONFLICTS OF INTEREST AND PLAGIARISM: The authors declare no conflict of interest and plagiarism

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