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## The Direction of Restructuring the System of Preparing Entrepreneurs for the Age of Information

**Abstract:** The development of modern civilization is increasingly based on the use of information resources. However, the related innovativeness of the economy depends on the preparation for such projects. In the discussion, the assumption was made that the shaping of appropriate entrepreneurial attitudes is of key importance in this respect. The group that has a special role to play are those who are studying in the field of economic studies. The article contains a comparison of the situation occurring in this area in Poland and in Spain, showing the direction of potential improvements.

**Key words:** innovation, entrepreneurship, information society, education system

### Introduction

In today's free market economy, the entrepreneurial attitudes are the manifestation of one of the most desirable types of behaviour. In the context of the currently observed civilization challenges the individuals with higher educational background may prove to be those of particular value since they are highly competent in the specialization that they have at one time selected as the field of their studies. As a result, they potentially gain an advantage over other individuals in the society that in its development relies on multiplying the knowledge that is needed to reach optimum results in the ever more compound processes and in managing the reality characterized by the dynamically growing degree of complexity. It

is desired that the potential inherent in this category of human resources be released and exploited with the benefit to everybody. In this sense the entrepreneurial profile of the students is an important indicator of what in this field may be expected in close future. While knowing the shape of this profile, it is possible to discuss both the importance of potential and advantageous modification of this profile as well as to try to identify the opportunities and chances emerging therefrom. The study of so outlined problem makes up a valuable contribution to the process of diagnosing the strategic conditioning of social environment that is characteristic of economic units. This is so because the companies may adjust their job offer to the confirmed trends in such manner that facilitates their catching the most valuable employees. Likewise, the governmental administration should carefully observe the changes that come round in order to rationally shape the ongoing developments through taking the indispensable actions that get ahead of these developments. The authors take the position where students have not had the opportunity to participate in an entrepreneurship course, their creativity is not enough to launch their entrepreneurial initiatives. This assumption leads to the formulation of the following thesis: "in the case of the individuals who were not trained in entrepreneurship, their creativity would find some impediments in the contemporary environment to the process of disclosing by them their enterprising attitudes". This thesis, if confirmed, would indicate that it is reasonable to pay larger attention to the level of creativity as accompanied by basic knowledge about entrepreneurship also among those students who do not declare any wish to run their own economic activities.

## **Conditions that have a key impact on the implementation of entrepreneurial attitudes in the information society**

The phenomena that shape the conditions for starting a business in the information society are complicated [Zieliński et al. 2010]. The key element affecting the potential value of modern business organization is its activity in the virtual space [Kiełtyka, Kućęba 2013]. Rich possibilities in this respect are available even for the smallest start-up enterprises [Smolağ 2015]. Without the ability to use ICT, it is impossible to create a business with the potential to achieve significant success [Kiełtyka, Smolağ 2015]. Information technology allows to create strategic innovations only if people with the appropriate entrepreneurial attitude participate in the whole process [Nogalski, Machel 2010]. In such a system, the accurate recognition of the market niche often gives an immediate opportunity for global success [Oczkowska 2013].

The development of the latest ICT technologies, progressing virtualization in all spheres of life are one of the most important phenomena in the modern world. It is this element of reality that becomes a catalyst for progress and a key factor in building

the competitive position of enterprises [Perechuda, Chomiak-Orsa 2015]. The changes we observe in this area have a far-reaching and lasting character [Okoń-Horodyńska et al. 2013]. This means that entrepreneurs must acquire new competences to adapt to current challenges in the environment [Czekaj, Jabłoński 2009]. ICT systems are becoming a natural working environment for the manager [Kucęba et al. 2010]. However, just reaching for such solutions changes the conditions of running a business [Kucęba et al. 2013]. We are therefore dealing with the effect of self-development: new opportunities open the way to creating new innovations based on ICT systems. For this reason, in the era of the information society, targeting entrepreneurs on projects based on the use of the latest information technologies, generates the most potential opportunities to achieve market success. Since the beginning of the 21<sup>st</sup> century this is the basic strategy of building a competitive advantage for a growing number of industries [Jelonek 2003]. The growing amount of data and the ways of their interpretation is the driving force of the ongoing race between rival entities. Progressive virtualization expands the space of the ongoing competitive struggle [Kiełtyka, Kobis 2013]. Technology has eliminated a number of existing barriers and set new ways of integrating with the environment in unprecedented configurations [Lisowska, Rotalewska 2012].

The dynamics of the growing complexity of ventures based on ICT is very high. This is the proof that we are dealing with a space that has not yet reached the stage of maturity. Where space expands, it's easy to find a place to start a business. The risk of collision with ventures carried out by other entities drops significantly. This is an argument for looking for a place to locate new projects in this area [Grudzewski, Hajduk 2008]. Persons studying in the field of business studies should understand how great a chance is the opportunity to start a business based on ICT [Bartkiewicz et al. 2009]. This highlights the role and importance of appropriate support for future entrepreneurs by the education system [Mikuła 2009]. It is all about limiting the feeling of uncertainty and showing the optimal way to deal with the existing environment, so as to increase the chances of success [Kozuch, Sienkiewicz-Małyjurek 2013].

In recent years the virtual world has become the natural space of the young generation. The obvious consequence of this fact in the case of the will to start a business activity should be the use of ICT technology as part of the projects launched. However, appropriate competences are necessary to manage this type of project [Chmielarz 2015]. The most basic level in this respect is knowledge about available opportunities and the ability to use standard tools [Kiełtyka, Kobis 2008]. However, the key to success is readiness to reach for more advanced forms of technological business support [Bratnicki et al. 2014]. It is now possible to reach even for the mechanisms of artificial intelligence [Flasiński 2014].

The wealth of available opportunities is enormous and constitutes a natural development space within the information society [Stabryła 2012].

## Method

The questionnaire-based research in which 158 respondents participated (students of the Faculty of Management and Social Communication of the Jagiellonian University) was made within the scope that thematically exceeded the frame of the present study. The questions that were the basis of the present contribution made up a selected part of the entire questionnaire and constituted a detailed module thereof. The module was composed of the following particles:

**1.** *Have you received training in entrepreneurship in your studies? [Yes/No]*

This question was focused at identifying respondents who meet the criterion that distinguishes them from all other people completing the survey. The aim was to identify a group of people who have not participated in an entrepreneurship course so far.

**2.** *Do you consider yourself a CREATIVE person? [from 1 (not creative) to 10 (very creative)]*

This question checked the self-appreciation of the level of creativity of the given individual. This self-appreciation made up the comparative basis needed to juxtapose it with the answers given and collected when the remaining detailed problems, were inquired.

**3.** *Do you consider yourself an ENTERPRISING person? [from 1 (not enterprising) to 10 (very enterprising)]*

The self-appreciation in manifesting the talents in the field of entrepreneurship was an additional point of reference needed to make comparisons that made it possible to outline the profile of respondents.

**4.** *Have you ever had a business idea? [Yes/No]*

This question served for verifying the self-appreciation of the level of the given individual's entrepreneurship by comparing it with its specific manifestations.

**5.** *Do you consider FEASIBLE the possibility to create your own company or business? [from 1 (no) to 7 (yes)]*

This question was designed to check whether the potentially declared creativity manifests itself in the shape of ideas that prove to be feasible.

**6.** *Have you ever thought about the possibility of creating your own business or had your own business? [Yes/No]*

This question allowed to estimate the attitude of the one who was questionnaire-inquired toward the possibility of running his independent business.

**7.** *It is difficult to start a business due to the lack of financial support. [from 1 (totally disagree) to 7 (totally agree)]*

8. *It is difficult to start a business because of the complexity of administrative procedures. [from 1 (totally disagree) to 7 (totally agree)]*

9. *It is difficult to obtain sufficient information about creating a company. [from 1 (totally disagree) to 7 (totally agree)]*

The above three questions allowed to verify the reality of estimations of actual facts as formulated by the one who was questionnaire-inquired (as viewed from the perspective of the objective facts that confirmed the existence of large number of companies that managed to cope with the problems listed in the questions).

10. *I want to work on innovative products or on services that alter the market. [from 1 (totally disagree) to 7 (totally agree)]*

The last question was designed to examine the respondents' attitude to the very phenomenon of being innovative, creative (to the extent to which the respondent considers this phenomenon attractive).

The collected data were analysed from the viewpoint of statistics related to answers given by the respondents and the potential correlation between them.

## Results

In the group on which the research relied there were found 51% of cases of the individuals who previously had no opportunity to participate in the courses of entrepreneurship (data relating to this group were analyzed in detail). Females made up 86% of that number while males represented 14%. Their age varied from 18 to 32 (the average age being 22,58 while 23 years was the value that was most frequent). In the question "Do you consider yourself a CREATIVE person?" the respondents estimated the creativity in the 1–10 scale respectively on the levels: 0% (1 point), 2.5% (2 points), 2.5% (3 points), 7.5% (4 points), 10% (5 points), 15% (6 points), 22.5% (7 points), 31.25% (8 points), 7.5% (9 points), 1.25% (10 points). The layout of answers given to the question "Do you consider yourself an ENTERPRISING person?" presented itself as follows: 0% (1 point), 2.5% (2 points), 5% (3 points), 10% (4 points), 17.5% (5 points), 17.5% (6 points), 25% (7 points), 13.75% (8 points), 7.5% (9 points), 1.25% (10 points). The fact that someone had at one time any ideas on business was declared by 46.25% of those inquired. While estimating the question: "Do you consider FEASIBLE the possibility to create your own company or business?", it was found on the 1–7 scale that 1.25% of respondents ticked off 1 point, 6.25% ticked off 2 points, 7.5% ticked off 3 points, 18.75% ticked off 4 points, 33.75% ticked off 5 points, 20% ticked off 6 points, 12.5% ticked off 7 points. The relation of denials and confirmations to the question: "Have you ever thought about the possibility of creating your own business or had your own business?" assumed the following shape:

13.75% (No), 86.25% (Yes). The concordance of the statement proclaiming that “It is difficult to start a business due to lack of financial support.” with the respondents’ own observations was estimated by those inquired estimated in the following way: 1.25% (1 point), 1.25% (2 points), 6.25% (3 points), 15% (4 points), 23.75% (5 points), 30% (6 points), 16.25% (7 points). The next statement that was subjected to the questionnaire-verification: “It is difficult to start a business because of the complexity of administrative procedures.” divided the respondents according to the following layout: 1.25% (1 point), 10% (2 points), 16,25% (3 points), 12.5% (4 points), 25% (5 points), 25% (6 points), 10% (7 points). The question on estimating the problem that was defined as “It is difficult to obtain sufficient information about creating a company.” resulted in the following division of those inquired: 6.25% (1 point), 18.75% (2 points), 25% (3 points), 21.25% (4 points), 17.5% (5 points), 10% (6 points), 1,25% (7 points). The last question: “I want to work on innovative products or on services that alter the market.” was answered according to the following layout: 0% (1 point), 7.5% (2 points), 12.5% (3 points), 20% (4 points), 25% (5 points), 22.5% (6 points), 12.5% (7 points).

**Table 1. Table of correlation between questions from 2 to 10**

Question	3	4	5	6	7	8	9	10
2	0.48	0.21	0.40	0.06	0.12	0.31	0.18	-0.20
3		0.06	0.44	0.06	0.19	0.22	0.04	-0.07
4			-0.02	0.30	-0.06	0.16	0.07	0.06
5				0.12	-0.03	0.14	0.01	-0.13
6					0.07	0.14	0.04	-0.18
7						0.21	0.20	-0.06
8							0.33	-0.08
9								-0.09

Source: own research.

While estimating the strength of the correlation on the basis of the Guilford’s scale, we find that most results indicate the inconspicuous or weak level of the strength of this correlation. The single values may be classified within the category of average correlation. The top level is detectable in case of the following pairs of questions: the second with the third (0,48), the third with the fifth (0,44), the second with the fifth (0,40). What seems also worth mentioning are the pairs: the eighth with the ninth (0,33), the second with the ninth (0,31), the fourth with the sixth (0,30). Generally speaking, however, the correlation between the questions remains on statistically low level.

## **Discussion and Conclusions**

Previous research has shown that the limited availability of information on the investment potential of the ICT sector, weakens its attractiveness as a potential place of starting a business [Baran 2017]. However, many determinants influence the creation of an appropriate entrepreneurial attitude of potential candidates to set up new entities. In addition to personal qualities, it is necessary to know how to navigate efficiently in a complex environment, how to minimize risks, where to get funds, how to optimally use your resources. In the literature, collective discussions of models that help to understand the phenomena occurring here can be found [Baran et al. 2018]. In this context, creativity turns out to be an important but also an independent element.

Analyzing the collected data, it can be stated that the respondents assessed their own creativity as high. One third of respondents indicated the value of at least 7 points out of 10. Most indications concerned the value of 8 points. The distribution of responses was clearly shifted towards the highest values. As regards the ability to run a business, the respondents rated it high but a bit lower than the level of their own creativity. One third of the respondents chose at least 6 points out of 10. Most respondents were in favor of choosing 7 points.

It should be noted that less than half of the respondents had an idea for running a business. At the same time, the vast majority of the respondents highly assessed the feasibility of the idea to become an entrepreneur. However, such an assessment may be superficial on the part of those who do not have a specific business idea. On the other hand, almost 9 out of 10 people take into account the possibility of becoming an entrepreneur during their professional life. This shows a high level of optimism of the respondents because we are talking about a group of people without entrepreneurial training. The next questions, however, allow us to look at the problem from a different angle.

Lack of adequate financial support was considered by respondents to be the most important obstacle to starting a business. The assessments of the difficulty of overcoming bureaucratic barriers were more moderate and ambiguous. For most of the respondents, barriers to accessing information support when starting a business were relatively insignificant. This may indicate ignorance about what it is when becoming an entrepreneur comes into play. Bringing everything down mainly to the financial issue (Who will provide me with financing?), shows a high level of ignorance of the respondents. It can be assumed that the respondents did not think about the risk of running a business and the issue of efficiency and optimal use of available resources at all. Considering the lack of a specific business idea in the majority of respondents, this is quite obvious. In order to remedy this, it is necessary to provide knowledge about the entire complexity of running a business.

Although the high level of declared creativity does not translate into concretization of business ideas, a favorable perspective is determined by data describing the answers of the respondents to the last question. The vast majority of responses indicate a high level of interest in the activity in the sphere of producing innovative products and services, which corresponds to the challenges facing the modern information society.

In conclusion, it should be stated that creativity itself is not an element sufficient to reveal real entrepreneurial attitudes. Without a systemic support leading to the transfer of relevant knowledge, it is difficult to expect a growing number of actual decisions about starting a business. In the light of the modern economy high demand for people undertaking innovative projects implemented in very complex conditions of the environment, it is necessary to postulate a change in the approach toward the system of shaping future entrepreneurs to the age of information. At the end, the authors wish to express the hope that the presented considerations and described research results will be a valuable inspiration and a starting point for further discussion of the scientific community, leading to the development of solutions beneficial for potential future entrepreneurs as well as for the entire economy.

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