

ENTREPRENEURIAL MANAGEMENT - A CHALLENGE FOR UNIVERSITIES

BRUSTUREANU Bogdan¹

University "Politehnica" of Bucharest, Romania

Abstract

This essay puts into a new perspective areas of scientific literature that are all concerned with the entrepreneurial phenomenon in universities, but are seldom connected: entrepreneurship studies dedicated to academic entrepreneurship and entrepreneurship education and higher education scholarship interested in the place of the university as an organization and the higher education system as a whole, in the globalized society. From these wide areas of scientific literature the paper brings together Stevenson's conceptualization of entrepreneurial management and Clark's description of the entrepreneurial transformation of universities, showing differences between them and elements that are consistent in both of these approaches.

Keywords: entrepreneurial management, entrepreneurial university, resources, opportunities

JEL classification: L26, I23, M13

1. Introduction

In a globalized world, universities have to respond to more challenges than ever before in their long history. In order to respond to these challenges the traditional conceptual and organizational models of higher education institutions are questioned and there are proposed new ways of organizing the universities. These new models are labeled so that to characterize as appropriately as possible the new type of institution: entrepreneurial, innovative, self-reliant being only some of the appellations used by the

¹ *Ph.D. student, bogdan.brustureanu@gmail.com*

scholars and experts. In this paper the accent will be put on the term entrepreneurial and its description from two perspectives.

Figure 1 (below) presents two almost separate areas of scientific literature that are both concerned with facets of the entrepreneurial phenomenon in universities, but, interestingly, are seldom connected.

A conceptual link between these two areas of scientific literature is what is called academic entrepreneurship. Some entrepreneurship scholars are interested in academic entrepreneurship or, to be more precise in processes of university spinoff companies' creation. By university spinoff, Shane (2004, p. 4) understands a new company founded to exploit a piece of intellectual property created in an academic institution. Other authors take a wider view and consider all companies established by current or former members of a university. Shane (2004) describes the stages in the processes of university technology development taking place in the United States of America, emphasizing the involvement of the Technology Transfer Offices' (TTO) experts within each institution. There are other differences between authors that are worth mentioning in the context of this paper. Thus, Audrestch and Phillips (2009), Audrestch, Aldridge and Nadella (2013) are interested in measuring the success of new firms started by academics without the help from the university TTOs. Aldridge and Audrestsch (2010, 2011) show that there exists an important number of scientists that choose another commercialization route, which does not involve the university TTO. Moreover, these academics tend also to rely on a different commercialization mode. Unlike the examples researched by Shane (2004), they tend to establish a new company rather than license their invention to an existing one.

Higher education scholars have a somewhat different perspective on these processes; they are more interested in the role of the university as an institution. For example, Gibb and Hannon (2006) show the way in which, in Great Britain, universities, the industry and local and regional authorities cooperated in order to develop the technology transfer processes. Firstly, they developed entities as the Industrial Liaison Offices or Teaching Company Schemes for this cooperation, and later these were transformed in technology transfer units. In a similar manner, the early scientific parks developed at conceptual level and became technology parks, innovation centers, virtual and real business incubators.

Another possible conceptual link between these two areas of scientific literature is the entrepreneurship education, which is not a high subject on the

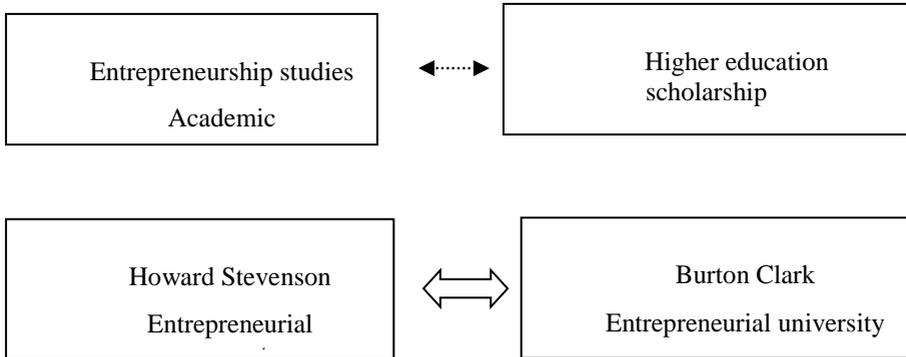
entrepreneurship scholars' agenda. Thus, Fayolle (2013, p. 697) writes that "research on EE appears largely marginalized in top-tier entrepreneurship journals and in the best entrepreneurship conferences". He shows that entrepreneurship education research is characterized by fragmentation, lack of theory, lack of critical approach, lack of legitimacy. Together with his co-workers (Fayolle and Gailly, 2008; Fayolle, 2013), he proposes a generic teaching model in entrepreneurship education addressing both philosophical issues as the meaning of entrepreneurship education or the roles of educators and participants, and more practical ones as audiences, contents knowledge, objectives, methods and assessment.

On the other hand, higher education scholars are concerned with the place of the university in the new globalized society. They are interested in entrepreneurship education from the point of view of the challenges that universities have to meet in order to promote entrepreneurship and respond to society's needs. In this sense, Gibb, Hofer and Klofsten (2014) present a comprehensive and also concise description of the challenges facing the higher education system today. They count eight major challenges: catching up with fundamental changes in knowledge production; reorganizing education; enhancing graduate employability and educating 'enterprising' individuals; promoting business start-up through education; making research relevant and accessible; embedding internationalization into strategy; handling financial stringency; building partnerships. By acting in order to meet some of these challenges, it means that the university acquires a new major mission besides those traditional of teaching and research. In fact, Etzkowitz (2003) considers that a "second academic revolution" already took place and that this third mission - the economic and social development - is already fulfilled by a number of institutions.

A study on the scientific papers published in five leading higher education journals (Mars and Rios-Aguilar, 2010) offers a definite answer to the existence of such a weak link between these academic fields. The authors' aim was to analyze the way higher education scholars have conceptualized entrepreneurship. They found that within this research field there is little attention paid "to the conceptual and theoretical underpinnings of entrepreneurship". Thus, taking a final sample of 44 studies, they found that none of the research considered "the distinguishing features of entrepreneurship: economic (dis)equilibrium, creativity, innovation, economic

and/or social value creation, risk-taking and mitigation, and opportunity identification and utilization”.

Figure 1: The connection between entrepreneurship studies and higher education scholarship



Out of these research streams, this paper brings together Stevenson’s conceptualization of entrepreneurial management and Clark’s description of the entrepreneurial transformation of universities, showing differences between them and elements that are consistent in both of these approaches. Thus, it is proposed a link between two researches that are conceptually separate, one that is elaborated by an entrepreneurship scholar and the other by a higher education scholar. Moreover, their authors are not making any reference to each other.

The research questions are:

- Are there any differences in approach between a conceptualization concerned with keeping a growing business company entrepreneurial or making more entrepreneurial one already established and one that describes an entrepreneurial transformation in universities?
- Are the lessons learned by a higher education scholar congruent with those formulated by a scholar studying entrepreneurial management in the business environment?

At a general level, it is of interest to understand if lessons learned in the business environment can be adapted to the university setting.

Before providing a brief description of the main elements of these two conceptualizations, in what follows there are presented a few labels that are used by the higher education experts and scholars regarding the new conceptual and organizational models of higher education institutions and a reference to two entrepreneurship scholars' opinion on labelling the entrepreneurial phenomenon.

2. Labels of new conceptual and organizational models of higher education institutions

Higher education experts and scholars are concerned with the labels that are put to new conceptual and organizational models used in the higher education system. They are interested in the way these labels put to institutional models are characterizing as appropriately as possible the new type of institution.

Clark (2004, p.59) cites the University of Joensuu's former Rector Vartiainen who, speaking at the OECD Paris 2000 Conference, said that he preferred the term "innovative" to that of "entrepreneurial". The explanation resides in the fact that his university was constraint in a state led higher education system, the institution being unable to reduce the budgetary dependence on the state over a certain level. The rector felt the best way to characterize his institution was to put it in a sector of the continuum between "traditional" and entrepreneurial that could be named "innovative traditional".

Shatock (2010, p.267-268) pays a close attention to the use of the terms "innovative" and "entrepreneurial" stressing that for the latter, university people are "mostly concerned with the implications of the title and its assumed endorsement of corporatism and managerialism". He, together with his co-workers, address another important issue regarding entrepreneurialism, that of reputational and financial risk.

Another term used by Clark (2004) was that of "self-reliant university". Shatock (2010) considers that he was "sensitive to the criticism" about the term "entrepreneurial" coming from university people. There was a university that would not want to enter a European consortium of universities because it contained the word "entrepreneurial" in the title.

On the other hand, Stevenson shows that the term "entrepreneurial" encompasses a wide spectrum of behaviours and actions. For example, he and his co-workers consider that making entrepreneurship synonymous with "bearing risk" or "innovation" are only attempts to "pigeon-hole" the

phenomenon that do not contribute to the understanding of the concept. Each of these terms “focuses upon some aspect of some entrepreneur”. Many entrepreneurs “bear risk grudgingly” and to express this as bluntly as possible one extremely successful entrepreneur is cited: “My idea of risk and reward is for me to get the reward and others to take the risks”. He also explains that creativity is “not a prerequisite for entrepreneurship – many successful entrepreneurs have been good at copying others and they qualify as innovators and creators only by stretching the definition beyond elastic limits” (Stevenson and Sahlman, 1989, p. 103).

Could one venture to say that accepting the term “entrepreneurial” together with that of “university” represents an important psychological step that will permit universities to go further on the transformation path?

3. Elements of Stevenson’s conceptualization and Clark’s transformation of universities

These two lines of study of entrepreneurship try through different approaches to characterize as well as possible the essence of the phenomenon. Clark (1998) analyzes in detail the experience of institutional transformation at five universities from five different systems of higher education. The history of institutional evolution of those five universities is different, one cannot talk about a process that follows a pattern of transformation established before. In his second book, Clark (2004) follows through the developments that took place in these five universities, but adds also the experiences of other entrepreneurial universities from all the continents.

Clark’s books provide a wealth of examples, only very few being presented in this paper. These examples offer possible directions of development for any university wanting to follow a path of institutional transformation. It is to be noted also that there is need for a considerable effort in each university to gain knowledge about other institutions’ experiences before choosing its path. Universities can learn from one to another or can find interesting entrepreneurial ideas from Clark’s books.

It is also of interest to mention an important idea from the Kerr-Carnegie assessment of the United States’s system of higher education that took place between 1967 and 1980: „Each campus has had its own individual recent history and is likely to have its own individual future. Institutions of higher education have been riding off in all directions and will probably continue to do so: 3,000 different institutions face 3,000 different futures”.

Clark (2004, pg. 182-183) expressed the same idea in different words: „...complex universities operating in complex environments require complex differentiated solutions. One hundred universities require 100 solutions”.

Clark (1998) described five cases of institutional transformation (Warwick University - England, Twente University - Holland, University of Strathclyde - Scotland, Chalmers University of Technology - Sweden, University of Joensuu - Finland), stating that all these processes were empirical - “step by step, learn by experimenting” (1998, p. xiv) - and that there is need for experimentation in the future in order to change the universities.

Clark (1998) identified five “entrepreneurial pathways of university transformation” that are presented in Table 1, below.

Table 1: Entrepreneurial pathways of university transformation

Pathways of transformation	Brief description
<i>The strengthened steering core</i>	“...quicker, more flexible, and especially more focused in reactions to expanding and changing demands” (1998, p. 5)
<i>The expanded developmental periphery</i>	“professionalized outreach offices that work on knowledge transfer, industrial contact, intellectual property development, continuing education, fundraising, and even alumni affairs” (1998, p. 6)
<i>The diversified funding base</i>	“increasing income from the second and third streams” of funding (1998, p. 7)
<i>The stimulated academic heartland</i>	“one department and faculty after another needs itself to become an entrepreneurial unit, reaching more strongly to the outside with new programs and relationships and promoting third-stream income” (1998, p.7)
<i>The integrated entrepreneurial culture</i>	“a relatively simple institutional idea about change that later becomes elaborated into a set of beliefs which, if diffused in the heartland, becomes a university wide culture” (1998, p. 7)

On the other hand, in a series of papers Stevenson and his co-workers proposed a model of entrepreneurial transformation of a large company, or for an organization in expansion, a way to preserve its initial entrepreneurial character (Stevenson and Jarillo, 1986, 1990). In this sense, Stevenson formulated a series of prescriptions aimed at making a large business company

more entrepreneurial. But his first step was to identify six critical dimensions that allow one to distinguish an entrepreneurial behaviour from an administrative one, presented in Table 2, below:

Table 2: Critical dimensions that distinguish an entrepreneurial behaviour from an administrative one

Critical dimensions	The entrepreneur	The administrator
<i>Strategic orientation</i>	opportunity driven	lead by resources
<i>Commitment to opportunity</i>	forceful and rapid involvement, but not lasting	slow and lasting involvement
<i>Commitment of resources</i>	multi-staged, with a minimum at each decision point	early and massive
<i>Control of resources</i>	temporary use or rent of resources from others	owner of the required resources
<i>Management structure</i>	direct contact with all involved, not capable to delegate flat structure	formal way, with specific, assigned rights and responsibilities hierarchies in accordance with resources
<i>Compensation policy</i>	rewarding performance in the creation of value	individual responsibility (assets or resources under control) and performance achieved on short term objectives

Coming back to Clark’s idea regarding the need for experimenting, it is worth mentioning that Poincaré (1948, p. 30), in his book, “La Valeur de la Science”, noted that there is no scientific conquest without generalization. By analogy, one could say it cannot exist a significant number of institutions that follow a path of entrepreneurial transformation without a guide, a general model of achieving the change. Experimentation is important, but it is better not to be the guiding line.

Thus, it is the contention to this author that by adapting a series of concepts to the university setting, Stevenson’s conceptualization can

contribute to the entrepreneurial change in universities. Reasoning by analogy the six business dimensions, together with some of prescriptions aimed at making a large business company more entrepreneurial can become elements of a common framework for the university entrepreneurial transformation. But it can be done only with the aid of the examples already existent. The way Clark told the stories of entrepreneurial endeavour in universities is very important, it teaches academics many things. The pattern of transformation cannot work by itself, the stories are just as important. The model of entrepreneurial transformation based on theoretical approach and the practical examples resulted from experimentation support each other.

In what follows there shall be analyzed some examples from Clark's books and their connection with Stevenson's conceptualization.

3.1. The search for additional resources versus the pursuit of opportunity

In Clark's examples of institutional transformation, the entrepreneurial change was undertaken under the pressure of obtaining additional resources, necessary due to lower state's budgetary allocations - University of Warwick, University of Twente. One of the five elements that characterize the entrepreneurial transformation of universities is the diversified funding base – attracting new resources, mainly those representing the third stream of funding sources. In fact, attracting new sources of income is an objective in itself. The resources that are attracted are afterwards targeted to achieve the institutional change. At University of Warwick, the “Joint Strategy Committee” was in charge with medium and long term planning. It took strategic decisions regarding the funds that were allocated and the priorities for their distribution. It was a committee that mainly based its decisions on the financial resources rather than academic aspects (1998, p. 23). Clark considers that in order to show and to strengthen the „change-oriented character” of a university there is need for “discretionary funds” (1998, p. 6).

However, the accent should not be put on financial resources. Stevenson and Gumpert (1985, p. 88) formulate the following observation: “success is unrelated to the size of the resource commitment. More important is the innovativeness with which the institution commits and deploys those resources”. Besides, as already seen, in Stevenson's conceptualization, two important dimensions that describe entrepreneurship are the *commitment of*

resources and *control of resources*. These dimensions show that the entrepreneurial way is characterized by “multi-staged, with a minimum at each decision point” and by “temporary use or rent of resources from others”

When defining the entrepreneurial approach of a university the fact that the institution funding decreases should not be looked as an essential aspect. The decrease in funding is only a strong external pressure that can act as a motivation for engagement into action. If one looks only from this perspective, a natural question arises: just in the case of a university with financial difficulties it is necessary to take entrepreneurial action?

In order to respond to this question one shall come to an example furnished by Clark (2002). The example does not refer to a university as a whole, but to a faculty, a renowned one and with no financial problems: Harvard Business School. And possibly because Stevenson was an important member of the academic community at Harvard Business School, the faculty decided to use a definition of the entrepreneurial dimension they promoted: seeking for other opportunities than those presently available. On the other hand, in this study Clark also reiterated that only a rich university can perform an experiment of entrepreneurial change at institutional level. Moreover, the entrepreneurial approach of Harvard Business School meant an initiative highly resource consuming – the opening of a branch, a research center in Silicon Valley, California (Clark, 2002, p. 34-35).

This example furnished by Harvard Business School leads to a single response to the above question and this is „no” – there is no need for an institution to have financial difficulties in order to choose an entrepreneurial approach to its management.

The accent in the entrepreneurial transformation of the university should be put on the pursuit of opportunity and not on attracting financial resources. *The strategic orientation* of the university should be focused on pursuing scientific opportunities that ultimately will lead to financial gain.

This statement needs a few remarks that clarify it. Firstly, by design, a university is not an organization suited for the pursuit of business opportunities (Brustureanu and Scarlat, 2014). But, by following on Stevenson’s definition of opportunity one could link the traditional activities of teaching and research to the entrepreneurial actions. And this could be expressed at a figurative level, instead of having to make a large leap; one can have a stepping stone somewhere in the middle so he/she can cross in two smaller steps (Brustureanu and Scarlat, 2014). Stevenson’s definition of

opportunity is: a prospect becomes an entrepreneurial opportunity if it meets two conditions: (i) it must represent a desirable future state, which involves growth or at least change; and (ii) the individual must believe it is possible to reach that state (Stevenson and Gumpert, 1985, 86). This definition can be usefully linked to the university setting. Thus, following on a certain scientific idea with the prospect of producing a scientific paper can be viewed as pursuing an opportunity in the sense defined by Stevenson; it represents a step further in the academic carrier i.e. it “involves growth”. The researcher (author of the paper) has to believe in reaching a higher status. Thus, the publication of a scientific paper in a highly ranked scientific journal can be viewed as an “entrepreneurial action” with a positive impact on the author’s academic career (Brustureanu and Scarlat, 2014; Scarlat and Brustureanu, 2009).

By putting the accent on the entrepreneurial opportunity one remains connected to the traditional activities in universities.

In fact, it is easy to grasp that academics and administrative staff in universities will rally to an entrepreneurial trend centered on the pursuit of scientific, teaching or research-based opportunities that lead to entrepreneurial action, rather than on a trend centered on the diversification of funding sources. How would an academic respond if he/she would be urged to engage in entrepreneurial action with a message resumed: „you must pursue scientific opportunities fit for you and your institution”? What about the message: „you must look for additional resources for the institution”? The first question needs a further comment, higher education literature recognizes as a known fact that “the personal motivations of academia members are detached from the goals and functions of the organization” (Gibb, Hofer and Klofsten, 2014, p. 4).

3.2. About the commitment and control of resources

Several times in this paper there have been made reference to the role of resources in Clark’s and Stevenson’s conceptualization of entrepreneurship.

About the *control of resources* the two visions are completely opposed: Clark states that there is need for a diversified funding base to sustain the institutional change, while Stevenson considers opportunity to be in the leading spot, an entrepreneur does not need to control the necessary resources in order to pursue it.

If one analyzes from the *commitment of resources* perspective, there exist conceptual connections between the two approaches. Thus, Clark (1998, p. 71) presents a successful entrepreneurial action unfolded at University of

Strathclyde. This university has developed an administrative unit under the title of „Research and Development Services” that greatly helped to the extension of the institution’s ties to outside groups. The first active step took by the university steering core was to gather information regarding the activity at the European Commission headquarters in Brussels. In this direction, they employed a consultant that presented them with over 60 funding opportunities open to the university. The next step was to hire full-time a person for this type of activity – the result was that over 900,000 pounds were raised in the first year. Then, they decided to extend the contract over the initial one year. Afterwards, a second person was hired, whose activity was focused on finding new sources of funding and on translating the bureaucratic language for the academics and administrators at Strathclyde. When describing this process Clark does not state that it is a commitment of resources in stages, but the steps followed by the university leadership are corresponding to the elements presented by Stevenson at his business dimension „commitment of resources”.

Coming back to the dimension „*control of resources*”, the role played by the diversified funding base as support for the institutional change through investment of resources from the central level of the university is identified by Clark at all five institutions presented, although it does not have the same importance in all cases. A clear example in this sense is the Earned Income Group from Warwick University, where the funds are gathered and used as instruments of entrepreneurial change. The group was formed by chiefs of important administrative services of the university that worked together with experienced academics. They monitored the results of many units in the campus, tracing if they fulfilled the objectives. The accent in their evaluations was put on resources. The earned incomes came at the disposal of some central committees that established the strategy of development for the university and the allocation of resources in accordance (1998, p. 22-23). At University of Twente a central committee „applied a tax” that could reach at over 30% of the faculty or department incomes , the sums obtained this way being used to cover „the central services, non-normative allocations and projects” (1998, p. 47). At University of Joensuu funds that reached as much as 7% from the total budget were kept at central level being used as “strategic fund” (1998, p. 111). As a conclusion, all these institutions consider that in order to develop entrepreneurial actions they should have important resources under control.

On the other hand, in his conceptualization of entrepreneurship, Stevenson considers that an entrepreneur should not own a resource in order to be able to use it. More important is the innovative way in which an institution commits these resources.

What would mean the “control of resources” in a university? Let us suppose that in a university a professor proposes to develop a new study program. In an administrative approach he/she will think at the competences his/her team members have and at the available financial resources. He/she will take the decision to act only if the resources are sufficient, and, if this condition is met, the engagement for the achieving of objectives will be a determined one. In an entrepreneurial approach, if a perspective meets two conditions in order to be considered an opportunity (it represents a desirable future state, which implies growth or at least change, and the individual believes it is possible to reach that state), then the academic entrepreneur will act with determination. In this case if he/she believes that the new study program will be successful and it will attract students. It is possible, for example, in his/her department or faculty the existent human resources do not have the necessary competences for sustaining the new study program. But, through entrepreneurial action, these missing competences could be supplied by employing people from outside the department. In this case, decisive are the entrepreneurial abilities of the person who initiated the action.

3.3. On the compensation policy

Stevenson and his co-workers show the difference between an entrepreneurial organization and an administrative one in terms of compensation policy. Thus, in an entrepreneurial organization “value creation and team performance” (Stevenson and Sahlman, 1989, p. 107) are sought and rewarded. On the other hand, in an administrative organization the reward for the employees’ performance is based on “responsibility levels (for example, assets or resources under control)” (Stevenson and Sahlman, 1989, p.107).

In what follows here are a few examples from Clark’s books where the accent in the compensation policy is put on value, i.e. salary and not on *responsibility level*, i.e. better positions in the university hierarchy.

The compensation policy is briefly and eloquently described by Sir Brian Follet, Warwick’s Vice-Chancellor between 1992 and 2000: „The surpluses generated are spent in a host of ways. More faculty than would otherwise be possible and importantly better paid...” (Clark, 2004, p. 13)

An interesting example of incentives system was that put in place by the Catholic University of Chile and described in brief by Clark in the chapter dedicated to this institution (Clark, 2004, p. 117-118). Through this system, “productive professor were likely to more than double their guaranteed salary”.

University of Warwick and MIT provide models of action in the direction of attracting valuable academics. The first has launched in 1994 an international selection process for research fellowships (Clark, 1998, p. 31) and a year later thirty-five young people were already „firmly established themselves” (Clark, 2004, p. 15). MIT is “an extreme case of the willingness of US universities to be top heavy in rank”, by its distinctive “way to recruit and hold senior talent” (Clark, 2004, p.142). The increase in research income that was constant at MIT starting with the period of the Second World War conducted to a strong raise in „faculty salaries to a competitive level” in comparison to other important American universities. It also „allowed the university to cross-subsidize” in order to help the „new departments in the humanities and social sciences” (Clark, 2004, p. 139-140).

3.4. The role of the individual within the entrepreneurial university

Before conclusions, it is interesting to put in comparison ideas expressed by higher education scholars and a prescription formulated by Stevenson and his co-workers regarding the role of the individuals within an entrepreneurial organization.

Gibb, Hofer and Klofsten (2014, p. 10) show that the aim of the entrepreneurial higher education institutions is “to empower individuals throughout the organization to own their own initiatives, engage in innovation and build personal trust-based stakeholder relationships across external and internal boundaries”.

On the same line of reasoning, earlier, Clark (1998, p. 7) emphasized that departments and faculties need to become entrepreneurial units, but for that to take place he explains that “their members need to participate in central steering groups...individuals as well as collegial groups will have stronger authority in a managerial line”.

On the other hand, discussing entrepreneurship in a corporate context, Stevenson and Jarillo (1990, p. 24) formulate the following propositions:

- “The level of entrepreneurship within the firm (i.e. the pursuit of opportunities) is critically dependent on the attitude of individual within the firm, below the ranks of top management.”
- “The entrepreneurial behavior exhibited by a firm will be positively correlated with its efforts to put individuals in a position to detect opportunities; to train them to be able to do so and to reward them for doing so”.

Even though there some slight differences regarding the terms used by these scholars, essentially they express the same idea, emphasizing the role of the individual in an entrepreneurial organization.

4. Conclusions

The paper shows that, at a general level, there is a weak conceptual link between entrepreneurship studies and higher education scholarship interested in the concept of entrepreneurial university. Academic entrepreneurship and entrepreneurship education could be two research streams that would bring together scholars from these two separate scientific fields.

Then, throughout the paper there is constructed a stronger conceptual link between Stevenson’s conceptualization of entrepreneurial management and Clark’s description of the entrepreneurial transformation of universities. There are brought forth a series of conceptual arguments showing differences between them and elements that are consistent in both of these approaches.

One interesting difference in approach between higher education scholars and entrepreneurship scholars refers to the general way of understanding the term “entrepreneurial” itself. Thus, higher education scholars are concerned about using it because of its potentially damaging reputational effect on the university and refrain from it, trying to find other terms - “innovative”, “self-reliant” or even mixed terms as “innovative traditional”. For entrepreneurship scholars the term “entrepreneurial” encompasses a broad range of behaviours and they are open to many interpretations in an effort to better understand it as a social and economic phenomenon.

Clark’s examples show that the universities that went on the pathway of entrepreneurial transformation had a resource-lead strategic orientation. They needed also to control the resources so that they pursued on their change processes.

On the other hand, the lessons learned by Clark for the higher education system were congruent with those formulated by Stevenson who was studying entrepreneurial management in the business environment regarding the commitment of resources and the compensation policy.

There is need for a deeper integration of these rather separate research fields. Thus, a new entrepreneurial approach centred on the pursuit of opportunity could be taken into consideration as an alternative to that claiming the necessity of discretionary funds required for obtaining the entrepreneurial transformation of the university.

Acknowledgment

The work has been funded by the Sectoral Operational Programme Human Resources Development 2007-2013 of the Ministry of European Funds through the Financial Agreement POSDRU/159/1.5/S/134398.

5. References

- Aldridge, T.T.; Audretsch, D.B. (2010) Does Policy Influence the Commercialization Route? Evidence from the National Institutes of Health Funded Scientists, *Research Policy*, 39 (5), p. 583-588. doi:10.1016/j.respol.2010.02.005
- Aldridge, T.T.; Audretsch, D.B. (2011) The Bayh-Dole Act and Scientist Entrepreneurship, *Research Policy*, 40 (8), p. 1058-1067. doi:10.1016/j.respol. 2011.04.006.
- Audretsch, D.B.; Phillips, R. J. (2009) Scientist Entrepreneurship: The Role of Policy, *International Review of Entrepreneurship*, 7 (2), p. 113-130.
- Audretsch, D.B., Taylor Aldridge, T.T. and Nadella V.K. (2013) *University Science Faculty Ventures into Entrepreneurship*. Downloaded from <http://www.sba.gov/sites/default/files/files/rs409tot.pdf> on October 26, 2014.
- Brustureanu, B.; Scarlat, C. (2014) Elements of a conceptual framework aimed at analyzing the entrepreneurial attitudes and behavior within universities, paper presented at the Sixth International Conference “Entrepreneurial/Managerial Innovative Strategies and Behaviour in Global Multicultural Environment”, Nessebar, Bulgaria.

- Clark, B. (1998) *Creating Entrepreneurial Universities: Organizational Pathways of Transformation*, Paris and Oxford: International Association of Universities and Elsevier Science.
- Clark, B. (2002) *Entrepreneurial University: New Fundaments for Collegiality, Autonomy and Performance*, p.25-44, in the volume *Manifest for an Entrepreneurial University*, edited by: Valentin Mureșan, Punct Publishing House,. (in Romanian).
- Clark, B. (2004) *Sustaining Change in Universities – Continuities in case studies and concepts*, Open University Press, McGraw – Hill Education.
- Etzkowitz, H. (2003) “Research groups as ‘quasi-firms’: the invention of the entrepreneurial university”, in *Research Policy*, 32 (1), p. 109-121.
- Fayolle, A. (2013) Personal views on the future of entrepreneurship education, *Entrepreneurship & Regional Development*, 25 (7–8), p. 692–701, <http://dx.doi.org/10.1080/08985626.2013.821318>.
- Fayolle, A.; Gailly, B. (2008) From Craft to Science: Teaching Models and Learning Processes in Entrepreneurship Education, *Journal of European Industrial Training*, 32 (7), p. 569–593.
- Gibb A.; Hannon P. (2006) Towards the Entrepreneurial University?, *International Journal of Entrepreneurship Education*, vol. 4, p. 73-110. Downloaded on March 11, 2013 from https://webpace.utexas.edu/cherwitz/www/articles/gibb_hannon.pdf.
- Gibb, A.; Hofer, A.R.; Klofsten, M. (2014) *The Entrepreneurial Higher Education Institution. A Review of The Concept and Its Relevance Today*. Downloaded from https://heinnovate.eu/intranet/tef/downloads/HEInnovate_Analytical%20paper.pdf on January 15, 2015.
- Mars, M.; Rios-Aguilar, C. (2010), Academic entrepreneurship (re)defined: significance and implications for the scholarship of higher education, *Higher Education*, 59 (4), p. 441–460.
- Poincaré, H. (1948) *La valeur de la science*, Paris : Flammarion (republished, in Romanian).

- Scarlat, C.; Brustureanu, B. (2009) Opportunity-oriented university strategy, In: 11th international conference of the Society for Global Business & Economic Development (eds C Jayachandran, R Subramanian, J Rudy), Bratislava, Slovakia, 27 – 30 May 2009, p. 2050-2061.
- Shane, S. (2004), *Academic Entrepreneurship - University Spinoffs and Wealth Creation*, Cheltenham, UK and Northampton, MA, USA: Edward Elgar.
- Shattock, M. (2010) The entrepreneurial university: an idea of its time, *London Review of Education*, 8 (3), p. 263-271.
- Stevenson H.H.; Gumpert, D.E. (1985) *The heart of entrepreneurship*, Harvard Business Review, Vol.63, , p. 85-94.
- Stevenson H.H.; Jarillo, J.C. (1986) Preserving entrepreneurship as companies grow, *The Journal of Business Strategy*, 7 (1), p.10-23.
- Stevenson H.H.; Sahlman, W.A. (1989) *The Entrepreneurial Process*, p.94-157, Chap.5 in *Small Business and Entrepreneurship*, edited by Paul Burns and Jim Dewhurst, London: MacMillan Education LTD.
- Stevenson H.H.; Jarillo, J.C. (1990) A paradigm of entrepreneurship: entrepreneurial management, *Strategic Management Journal*, Summer Special Issue, Vol.11, p. 17-27.