Educators are from Mars, Entrepreneurs are from Venus: the Gap between Theory and Practice in Entrepreneurship Education

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Abstract - **This paper is part of an ongoing effort to understand and describe the dynamics of launching and successfully running an entrepreneurship center inside a university environment. Fundamental differences in values turn any effort of making educators behave as entrepreneurs into a Sisyphean task. This paper describes why that phenomenon happens and which changes should be addressed in the profile of future prospective educators in order to fashion a different, more creative and daring atmosphere in engineering schools. First, the space of academic endeavors and the space of entrepreneurship are compared. The space of academic endeavors is described using dimensions along two axes, the scientific and technological axis and the time-frame axis defined by the university organizational framework. A third axis, a social one, is hardly ever used, taking into account the possible social benefits of the endeavor. On the other hand, the space of entrepreneurship is developed according to three axes: the technological axis, the innovation (or market) axis and a time-frame axis defined by the market framework. Those different frameworks are the way they are because they are the best conformations for the respective motive and forces that drive faculty members or entrepreneurs to advance along their careers. The mental framework that organizes the advance along each of these axes is described. Some suggestions for changes in the higher education ecosystem are suggested. The goal is to make entrepreneurial behavior a recognized and valued asset for educators.**

Index Terms – Entrepreneurship Center, Helsinki model, reward systems, university missions.

INTRODUCTION

Educators in general and entrepreneurs seem to be from two different planets. Educators worry about analyzing and researching features of the general framework of the entrepreneurial process. Some, but not all, also discuss the formal learning process and the most productive way to teach students how to behave in an entrepreneurial way. Meanwhile, entrepreneurs never seem to think about what they are doing. In a way they are like boxers. They have to behave almost intuitively. If they stop before every action and think too long they are prone to get a punch on the nose.

This is the dilemma for the entrepreneurship educator. There are certain subjects like entrepreneurship that are too complex to be learned in a classroom environment, not because of the need for specific resources, but due to the inherent dichotomy between doing and teaching. If one dominates the art of entrepreneurship and excels in the virtues of the entrepreneur, why not act like one all the time, instead of dedicating one's time to teaching? Can anyone be a full-time educator and an entrepreneur at the same time? Under which reward system is it possible to combine the virtues of both educators and entrepreneurs and engender practicing theorists, or insightful practitioners?

One of the purposes of this paper is to discuss the proposition that the entrepreneurship center is the only place where the dilemma presented above can be dissolved. It is an educational resource, as well as an entrepreneurial venture, where two different worlds meet in a collaborative way and where the environment is built so that the educator and the entrepreneur can be the same person and act according to non-conflicting objectives.

DIFFERENT REWARD SYSTEMS

There are fundamental differences in values between educators and entrepreneurs. It is worth noting that the technology transfer offices inside universities are already aware of that issue. Institutions that emphasize the entrepreneurial dimension of technology transfer usually try to address the inconsistencies of reward systems that do not value enhanced entrepreneurial activity [1]. As an example of those inconsistencies one can mention the production of research material with strict emphasis on the improvement of the state of the art, with complete disregard to the state of the already patented intellectual property. In those

institutions, the effort to generate new patents, which significantly increases the amount of resources needed to produce the research, is not considered at all. Add to that the lack of training for faculty members, post-docs, and graduate students in starting new ventures or interacting with entrepreneurs and one begins to glimpse the major differences between the two reward systems.

It is part of human nature to behave according to the most beneficial reward system, within ethical boundaries. The main characteristics of the reward system for the educator and the entrepreneur will be discussed below.

I. The reward system for the educator

The space of academic endeavors is a consequence of the reward system inside the universities. One tends to develop one's work along measurable axes, so that the visibility of the results is optimized.

Usually the educator's work unfolds along two axes, as seen in Figure 1. In engineering schools, for example, the first axis is the scientific and technological one. The second axis is a time-frame one dependent on the university framework and overall goals. The product being created is knowledge, either already existent and being transferred to students, or new knowledge to be offered to the society, regardless of its need for it. When a third axis exists, along a social dimension and measuring the results for the society that arise from the work being done, it is to the detriment of the energy applied along the two other axes. One may say that real social benefit of the academic endeavor is an accidental by-product of the process.

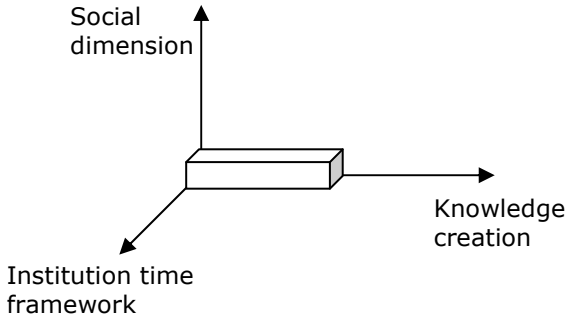

FIGURE 1
THE EDUCATOR'S SPACE OF ENDEAVORS.

The third axis is neglected because the reward system that is prevalent in most universities, with very few exceptions, does not value what cannot be easily measured. There is a need for a longitudinal study along several years to measure the effects along the social axis. Surely it is much easier to count the number of publications, rather than the usual economic metrics such as "jobs created", "number of spin-outs" or "tax revenue generated".

II. The reward system for the entrepreneur

Meanwhile, what do entrepreneurs value? The works of entrepreneurship are developed according to three axes. The first axis, the technological one, is very similar to the one used by the educator. New products and services are created along it. They are offered to the society as intellectual property. Knowledge and experience are created, but their value is considered only to the extent that they are directed to the existing market.

The second axis is the innovation axis. It is driven by the market, which ignores new products and services that do not answer to existing needs. A timely second-rate product is better than a late optimized product.

The third axis is the cash-flow axis and also the feasibility axis, where the available amount of time and money must be considered and taken into account. All the risks are taken along this axis. The entrepreneur's space is presented in Figure 2.

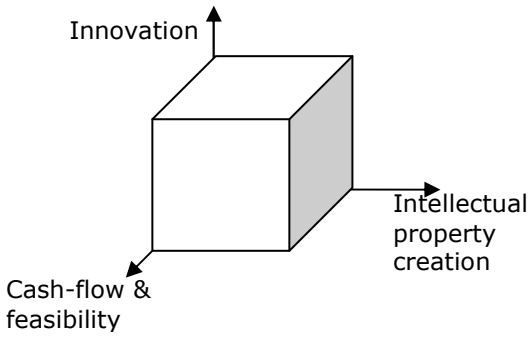

FIGURE 2
THE ENTREPRENEUR'S SPACE OF ENDEAVORS

The entrepreneurial endeavors are done along those axes because the values entrepreneurs are after can be easily measured along them. The intellectual property creation axis creates preferably patents, if not, experience. The innovation axis measures the social influence and power. The cash-flow and feasibility axis measures the financial gains.

THE TASK OF MIXING ROLES

Making an educator behave as an entrepreneur just by telling her to follow along different axes turns the enterprise into a Sisyphean task. While the technological axis is very similar in both spaces of endeavor, the metrics is totally different. The very similitude between an educator's research on a specific subject and an entrepreneur's search for a way to devise a new product or service, both manipulating the same kind of scientific and technological data, is a trap for the educator, who tends to go back to a comfort zone inside which she roams at leisure, forgetting about the constraints imposed by the innovation and cash-flow axes.

One wonders which changes should be addressed while profiling future prospective educators in order to create a different, more creative and daring atmosphere in engineering schools.

THE ENTREPRENEURSHIP CENTER – TWO ECOSYSTEMS INTO ONE

The entrepreneurship center is a laboratory for entrepreneurial experiments, within the real world, with real money, real potential profits and real potential losses. Entrepreneurship is taking a walk on the wild side. It is

something dangerous to do alone. That's why it is almost always performed by a team.

On the other hand, the initiative to start the new venture belongs to one individual, who will take the greatest risk, reap the biggest rewards, or suffer the worst consequences.

The Entrepreneurship Center is the institution inside a university that urges its members to take calculated risks [2]. Some researchers even consider the possibility that the Entrepreneurship Center is the place from where a new model for the university will come forth.

According to the principles of entrepreneurship as stated in the Helsinki model [3], the three missions of the university are:

- to research new opportunities to develop wealth in the information economy;
- to teach the skills needed to explore those new opportunities;
- to outreach by exerting social influence, for instance by creating spin-outs and consequently new jobs.

As one can see, the entrepreneurship center is a combination of two ecosystems. While it is a place where educators work, it is also where new ventures are started.

The space of the entrepreneurship center is described along three axes (see Figure 3):

- the technological axis, in order to find new opportunities to explore commercially;
- the innovation axis, where the clients are developed;
- the cash-flow axis, where human resources are cultivated to get the necessary skills to explore those new opportunities.

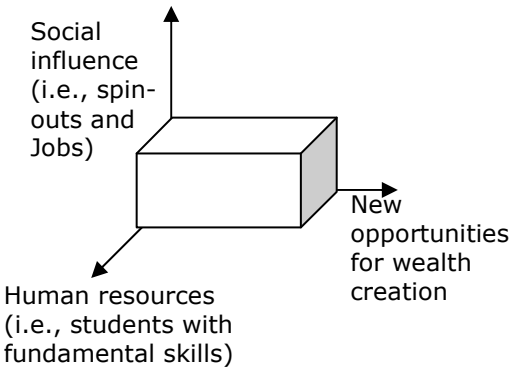

FIGURE 3
HELSINKI MODEL FOR THE UNIVERSITY MISSIONS

The Helsinki model is too bold to be applied to a traditional university in a very short time, since it might scare the university community because of its straightforwardness and speed. On the other hand, the entrepreneurship center is by definition a trespasser of limits, a challenger of what is usual and normal. It asks for new paradigms that, while not against any ethical principles of the university, are nonetheless considered with intense discomfort by the administration as a body.

THE TOOLS USED BY THE ENTREPRENEURSHIP CENTER

The entrepreneurship center uses different tools to fulfill its functions. There are instigating tools, supporting tools and visibility tools.

- Instigating tools – those are the tools used to spread the word, that is, to promote the entrepreneurial approach. The main instigating tools are competitions, marathons, entrepreneurship happenings, leadership and team-building outdoor classes, executive programs and MBA programs. They are all venues that are used to transmit the necessary skills for an entrepreneur or for someone to interface with an entrepreneur.
- Supporting tools – as a special kind of laboratory that has to be self-sustainable as a rule, the entrepreneurship center needs to have mechanisms to create its own revenue. Either it counts on the support of foundations and champions, or there is the need for the creation of angel clubs, incubators, alumni clubs.
- Visibility tools – all the activities must be accomplished with maximum visibility, by the use of public relations services, websites and newsletters.

THE DIFFERENT PROFILES FOR EDUCATORS

Evidently not all educators are able to function properly inside an entrepreneurship center. Three different profiles may be found:

- The research educator – a very good researcher, but one who prefers to build inside the space of educators, in the rhythm of educators (i. e. counting time in months and years) and within the time framework of the traditional university. This type represents the majority of the educators and any effort to turn them into entrepreneurs will be not only unsuccessful but also against their style and nature. The university needs them as they are now and they are making a very good job by being pure research educators.
- The inventive educator - this is the interface educator, who is proficient in many different languages, like the languages of science, technology and business. The inventive educator is the one who helps the research educator put a good idea to market. Perhaps the university should invest in educating potential inventive educators in the mysteries of the market.
- The entrepreneurial educator – this is a new breed of educators, who tend to be the catalyzers of the entrepreneurship center. Their action is capable of directing the work of research and inventive educators toward real market needs, in the rhythm of entrepreneurship (i. e. counting time in days and weeks).

In general, the admission process for the faculty is ostensibly biased in favor of the research educator and against the two other types. Most of the evaluation systems reward academic papers, with no attention to utility or applicability to real problems. As a new paradigm for the university emerges, the outreach mission will be more and more important. A good form of increasing the social influence of the university is by adopting the Helsinki model, initially in the entrepreneurship center, then in the rest of the institution.

SETTING UP AN ENTREPRENEURSHIP CENTER

Listed below are eight strategic advices to have in mind while setting up and running an entrepreneurship center (EC):

1. Keep a very thorough account of all the entrepreneurship experiences. They are your greatest asset, even when they seem to have gone wrong. The data the EC gathers about experiments, initiatives, positive and negative reactions to them, will require one half time assistant to be taken care of. The database so created will be, in the long run, a very important asset from which the EC research projects will materialize. While inside a university, the old dictum "Publish or perish" must be respected.
2. Appoint or select a strategist for the EC, who will be its architect through the first five to ten years.
3. Appoint a different person to be the institutional liaison with the powers higher up in the university. Do not alienate them. That is a fatal mistake.
4. Appoint someone to be the connection person with the industry. The industry is the EC´s main customer.
5. Appoint someone to be the public relations person. He or she will take care of all institutional communication, the web site and the newsletter when one is created.
6. These people should all be researchers and activity facilitators too.
7. Do not alienate the research educators. Though their goals are different than the EC´s, they will embrace entrepreneurship's principles sooner or later, or they will not survive. So maintain an open door attitude.
8. Create an environment that is open to mistakes. Actually, demand that people make mistakes. Making no mistakes means people are not taking risks.

8 STEPS TO CREATE AN ENTREPRENEURSHIP CENTER

Below are eight suggested steps to follow in the process of creating an entrepreneurship center:

1. Create perceived value before you create a need for a budget. Being an entrepreneur is inherently risky. The advice is to ask for funding after making the value of the EC very visible. Just for the record, an EC needs at least 300 thousand dollars to be set up and at least 100 thousand dollars a year to survive.
2. Create an MBA program for engineers and scientists that covers about everything needed to start a new venture. There are many resources available on the web that might help creating a well defined program.
3. Create a forum for alumni and other members of the community to express their entrepreneurial urges. Help them organize their efforts.
4. Foster a Student Center so that the undergraduates and graduates have a place to experience the entrepreneurial spirit. The Helsinki model tends to be student-oriented, that is, the university will try somehow to run after its students' wishes and curiosities.
5. Develop emotional intelligence.
6. Prepare a long range plan for the next, four to eight years. Present the plan to the administration and ask for resources. Be clear concerning the benefits of your plan and the needs that the EC will attend to. Conceptualize a solution to the need. Demonstrate a prototype. Develop a roll-out plan and get funding. Market the product using the correct channels and packaging. Understand the changing climate and adjust for it, and develop a strong relationship with customers.
7. Think big. The effort is the same than thinking small, but more worthwhile and as risky.
8. Believe in success.

CONCLUSIONS

As well put by the launching document of the Helsinki model, "the future vitality and prosperity of all knowledge-based economies will depend upon the capacity of society to seize upon and exploit opportunities in a timely way." The entrepreneurship center is the best way to do that.

The goal is to make entrepreneurial behavior a recognized and valued asset for educators and urge those who have the profile to be inventive and entrepreneurial ones.

REFERENCES

[1] Phan, P., H., Siegel, D., S., *The effectiveness of university technological transfer.* City, State: Now Publishers, 2006, pp. 15-16.

[2] Siqueira, J. L., "Roadmap for building an entrepreneurship center", presented at the Roundtable on Entrepreneurship Education (REE) Latin America, Guayaquil, Ecuador, 2006.

[3] Kelly, P., "Helsinki School of Creative Entrepreneurship", presented at the Roundtable on Entrepreneurship Education (REE) Europe, Stockholm, Sweden, 2006.