Entrepreneurship and University: 
Reflections on the role 
of the University Incubators

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ABSTRACT
In France, the law on the innovation of July, 1999 as well as the decree n°2000-893 of September 13th, 2000 are strong signs of the state to favour the interactions between the technology, the universities and the companies. In this perspective, the implementation of university incubators corresponds to the translation in terms of action of the law on the innovation. The objective of this research paper is to present the device as well as the balance of this innovative device in France. Through these incubators, the French university passes of a logic of push towards a logic of pullover. Our contribution is twofold: first we propose an historic lighting on the place of the entrepreneuriat within the French university; next, we present a balance of the French incubators along with a discussion about their contributions and limits.

KEYWORDS
entrepreneuriat - university incubator - innovation - university - formation - research

INTRODUCTION
The influence of the local environment on the entrepreneuriat is not to be any more shown. It is translated, these last years, by the reproduction of the various local actors. In this context, the university, as local actor of development, does not resist to this craze. Concretely, the university develops since around ten years certain number of actions connected to the entrepreneuriat. However, these actions reveal a big disparity between the French universities. Indeed, it can go of the simple become alive to a training by way of a combination overall of the various possible actions. Beyond the actions, it is going to depend also on the potential and on the interest of the teaching staff for the theme of the entrepreneuriat. It is in this context that the law on the innovation and the research favouring the implementation of university incubators was born. These exist in France well before this law, but this last one must be analysed as a strong sign of authorities in the technological valuation and thus more generally in the process of value creation of the university. So, our comments will limit themselves exclusively to the university incubators.

However, the engaged actions reflect two different ends which are going to have different realities in the development of the entrepreneuriat within the French university (Béchard and al., 1995) and more particularly in the development of the university incubators. The first end, the most spread within the university, sends back to a restrictive vision of the entrepreneuriat connected to the new business start-up. The second end, it envisages the notion of entrepreneuriat under a more stretchable aspect and sends back to the spirit to begin consisting " - in the business as in all the human activities - to identify opportunities, to gather(reunite) resources of various natures, to create wealth which meet a reliable demand " (Albert and al., 1998). In these conditions, the entrepreneuriat corresponds above all to a process more than to a result.
These two ends are not paradoxical, but are going to allow us to understand the development of incubators within the French university according to the importance given to the one or other one of these ends. In summary, we shall wear our reflection around the question: "what is the role of the university incubators in the device of technological valuation of universities?". To answer this central question, we were brought to wear a glance criticise not only on our own experience experiment but also on various experiences led in the other universities. The originality of the comments thus bases more on the synthesis and the analysis of the actions begun within the university than on a fundamental contribution. Finally, incubators are often envisaged under the angle of the innovation, we here want to propose another angle of attack: their impact on the entrepreneuriat. So, we shall envisage two parts. The first one joins in a historic perspective and presents the context of the entrepreneuriat within the university. This lighting allows to understand better the anchoring of incubators in the landscape of the French university. In this perspective, we suggest representing the construction of the relation between university and entrepreneuriat. The second part discusses the essential points of this relation. Having pulled a first balance, we wondered about the interest, the limits and the perspectives of these university incubators. Our discussion is notably made in the light of the various acceptances of the entrepreneuriat term.

1. THE CONTEXT OF THE ENTREPRENEURIAT IN THE FRENCH UNIVERSITIES: FROM THE AWARENESS TO THE DEVELOPMENT OF INCUBATORS

1.1. The development of the entrepreneuriat around the historic missions of the university

The introduction of the entrepreneuriat within the university is a relatively recent matter. This way, the craze of the university concerning this theme these last years is the reflection of the vital aspect of the entrepreneuriat on the local and national economic development. The university, as actor of the economy, has a role to be played by loosening knowledges connected to the entrepreneuriat phenomenon (by the research), but also by diffusing these knowledges (by the training). Before envisaging the current place of the entrepreneuriat within the university, it is advisable to present elements connected to its emergence.

The university having for role to prepare the actors of the business of tomorrow, she owes take into account her evolution during these last years. This one rests on three essential points:

- The limits of the model of the big company. The crisis of the 70s revealed that on a certain number of points, the model of the big company does not answer any more the expectations of the responsible. Now, for a long time, the university centred its activity on this model. The training and the research essentially developed around the big company, that is by separating the big functions of the company. The economic development and the job creation passed essentially by the big company and its economies of scale (Julien and al., 1996). Furthermore, the models developed within the university education send dismiss to a static representation of the company. In the final, the entrepreneuriat was even almost missing, absent in the university domain because it was often perceived as something innate and thus of not to teach. The university thus had for mission to supply good administrators to the big companies (Carrier, 2000).

- As explains it P.A. Julien (2000), the main reason of the interest carried these last years to the companies of small size and to the entrepreneuriat lies in the awareness of their role in the local and national economic development through the new business start-up and through their contribution in term of job creation, notably in the field of the services and in the sector of the new technologies. The university owed answer these needs. We find in this development one of the reasons for which the entrepreneuriat is often likened to the new business start-up.

1 Marketing, control, strategy, production, human resources
2 Currently, the creation of company represents in France over the thirteen last years an average of almost 285000 companies with an average of two employment (or not paid employee) per company. As A. Fayolle (2000) indicates it, "the first lesson of entrepreneuriat was created, in France, at the end of the Seventies". These initiatives were born in commercial schools (HEC, EM Lyon) and schools of engineers (Ecole des Mine d’Alès, Ecole Central de Lyon).
The consideration within the university of this economic reality was recently made. The accreditation of the entrepreneuriat in the French universities dates hardly more than around ten years. Certainly, certain initiatives were earlier born, but anybody recovers from the university. As regards universities, those who were pioneers in the domain him(it) stayed very for a long time so much that Mortar [spoke] about a big space (Fayolle, 2000) while they have students' biggest potential. The craze for the new business start-up these last years becomes a reality within the university from the 90s. At present, this craze shows itself in various ways. Concretely, it corresponds not only to the reproduction of the number of articles, works, Internet sites or still colloquia in this theme, but also in the development of actions of training in the domain. At the moment, the institutional gratitude of the entrepreneuriat is there only in France in its beginning. For its survival, it is necessary to pérenniser its situation with the various scientific institutions of the country.

But as shows Fayolle (2000), only 37 % of universities have at least an education it entrepreneuriat (against 46 % in engineering schools and 71 % in business schools). The university accuses another certain delay, with regard to the other types of establishment of the superior, in the field of the education of the entrepreneuriat. In front of the weakness of the university device, it is often very difficult for strong persons of project to reconcile their project and their studies. This situation is frequently lived as a dilemma for these persons. The entrepreneuriat at the university is often relegated to a level post-award a diploma. So, the actions led within the French university are characterised by their link with the historic missions of this one: the training and the research. In that case of figure, there is a ditch between the university and the market of labour force. There is no structural link between both.

![VARIOUS MISSIONS OF UNIVERSITY](image)

Represent 1.-University and entrepreneuriat : A relation centred on the historic professions by the university

1.2. The enrichment of the missions of the university: the valuation of the research

The university knew thus how to take into account economic and social evolutions by answering it through its missions: the training and the research. The frame proposed by the university with regard to the entrepreneuriat remains however limited. Indeed, various cases do not find answer in the organization of the moment of the university. The consequence is the reproduction of actions localized to face needs. Furthermore, given that the growth of industrial nations, these last years, is strongly conditioned(packaged) in the innovation, notably in the key sectors with strong added value (Report Majoie, 1999), the university, through the search(research) notably, in a driving role has to play in the regional, national and international economic development. Concretely, it is characterized within the university by the necessity of developing the favourable conditions allowing to pass of the scientific aspect in the industrial aspect (Aurelle, on 1998). These various elements participate strongly in the structuralization of the university as regards the valuation of the research.

In this perspective, universities begin from the end of the 90s to develop systematically services of valuation³. In other words, we can say that the university becomes aware of the material and especially immaterial capital which it knew how to develop. Before the implementation of this type of service,

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³ This lesson is distributed in the following way: a teaching graduate for 16 % of the cases, a teaching of specialisation for 21 % of the cases, a teaching of sensitising for 63 % of the cases.

⁴ Service which is composed in general of people of the administrative service and teacher-researchers. These services were often associated the installation university incubators.
the valuation not only was marginal in certain universities but in more recovered above all from very localized initiatives. This will of valuation takes two orientations:

- The technological transfer towards existing companies
- The new business start-up from the results of the research

For a long time, in France, we limited ourselves to the first orientation. It notably explains by the will of the university to centre on these traditional and historic professions: the training and the research. To allow these various scenarios, local initiatives are born. Carefree of exhaustiveness, these actions could take the following forms: implementations of internal incubators in the constituents of universities (such as the INT, the ESSEC, the EPITA, the Polytechnicum, etc.) Partnership with nurseries of companies, development of technological halls (with mixed capital: public, notably university, and private) … Force is to notice that these various experiences focus exclusively on the technological aspect and neglect the manager aspects connected to the project. The project often develops in a mono disciplinary perspective. In other words, the link between training and valuation is not made yet. The university is thus enriched by an additional mission, the valuation, to those initials, the training and the research. This mission was strengthened by the French law on the innovation

1.3. Presentation of the law on the innovation and the research

The difficulties to create companies from the university potential can also explain by a little convenient legislative frame. Indeed, before the law on the innovation and the research, we counted in France, 1 new business start-up for 1000 researchers a year (Jacquemin, 1999). Even if we consider that the technological and scientific potential is very present, the new business start-up by researchers is very weak. " Strongly creative of employments, these companies have nevertheless a rate of success brought up (5 cases on 6) and their average strength is 11 employees some years after their creation " (Jacquemin, on 1999). This gap can understand through two legislative texts which forbid the civil servants creating their company to continue to have links with their body of origin, bringing a risk-taking too important for the researchers.

The law on the innovation and the research for July, 1999\textsuperscript{5} as well as the decree n°2000-893 of September 13th, 2000 concerning the conditions in which the public establishments of higher education can supply means of functioning to companies or to physical persons are strong signs of the State to favour the interactions between universities and companies. These interactions exist for a long time in domains so varied as the farm-produce industry, the aeronautics or still the chemical industries. The law on the innovation and the search(research) is only strengthening the actions already organised previously. In this sense, this law pulling the educations of the report Guillaume " has for objective to facilitate the link between the public research and the companies " (Marion and al ., 2000). According to the comments of the Minister of time, Claude Allègre, her aims at making more productive the science with the aim of developing employments. So, the university contributes directly to the dynamism of regions and nation.

In texts, the law notably gets organised around following both points:

- Decrease the obstacles relative to the collaboration between the academics and the companies.
  In this perspective, the university staff (teacher-researcher, research engineer) can help,
advise, even participate with a capital of company while having an activity at the university. It is possible for these persons to have a renewable period of three years to create a company. During this period the person can return at any time to its post at the university.

- Favour the creation of structures of support for companies stemming from activities of the university in particular from the high technology. The objective thus is to favor the transformation of the search(research) in technological activities. In this perspective, the implementation of university incubators corresponds to a type of actions with regard to this sector of the law.

1.4. The university incubators: additional device of the law

Incubators are set up by the decree 2000-843 of September 13th, 2000. According to the definition given in the report Cuby (2001) the organization of the incubator has to allow to mobilize a network of competence, to accompany concretely the bearers of projects selected with average human beings, material and financial. It has for objective to assure the transfer towards the socio-economic world of three fundamental missions of the university (training, valuation and research) through the creation of activities and innovative companies. In other words, it is advisable to call this practice the academic spin-offs) (Pirnay, 2001). It is about a voluntarist practice consisting for a university to be encouraged and to be helped on the financial, technical and manager plans, his employees and his students to create their own companies, thanks to any shape of support and accompanying "with the aim of the business concern of an idea or a university invention " (Doutriaux, 1992).

However, the incubation is limited to certain conditions, it is necessary that the project:

- Concern an innovative technology
- And the public research arises.

These incubators group together not only the university staff holder (civil servants finding teachers-researchers' various bodies), but also the not holders (students of Ph. D, research beneficiaries, hospitable practitioners, ...). At present, the State selected this day 31 incubators to which it brings a global support of more than 24,6 M for 3 years with a global objective of 865 new business start-ups. The France incubation association, created in October, 2001, groups together 30 incubators on 31 selected players and financed by the Ministry of the Research. These incubators are built on different legal models (association, GIP). Furthermore, they have a freedom of management and action connected to the local context in which they became established. Very often, these incubators have a political reality (financing of the region, the department) and contextual (collaboration with nurseries of companies, young economic chambers, structures of accompanying, competitions for the new business start-up) which exceeds the simple frame of the university. In a general way, incubators have for functions:

- To accommodate projects stemming from the university on a more or less long lapse of time;
- To favour the accompanying;
- To allow to find outlets;
- To participate in the construction of business plan with the aim of finding financing.

In other words, incubators have for vocation to favor the development of convenient conditions (technical, financial, human) in the new business start-up from projects stemming from the public research.

\[\text{That is to say an average support of State per "incubated" project of 28 K}\]
2. REFLECTIONS AROUND THE DEVICE OF UNIVERSITY INCUBATORS

2.1. Incubators in figure

The first report in March, 2002, of 440 brooded projects, that is 52% of the objectives of incubators over three years (850 projects). We count in this date 161 created companies (37% of the brooded projects) employing approximately 600 persons. Concretely, the brooded projects have an average duration of activity of 15 months. The synergy between the national competition of new business start-up of innovative technologies and the incubators becomes a reality by the fact that 199 bearers of projects welcomed in incubators are also prize-winners of the national competition and that their projects represent 42% of the brooded projects. Towards all the examined projects (1084), the rate of selection is thus on average 3 on 10. We note finally that the average of the employments created in this frame and during this period represents 3,41 employments by company, going of 0,4 employment(use) to 10,5. No conclusion can be again fired by these last elements. Towards the concerned technological sectors, the first inventory (aforesaid inquiry) lists respectively 38% of brooded projects which concern life sciences and biotechnologies, 27% on the sciences of information - communication - telecommunications, 24% on the sciences and the technologies of the engineer and 11% on the social and human sciences. The domain of life sciences and biotechnologies also comes at the head of new business start-ups stemming from the device: 51,5%. The recession with regard to this device is not very big, it will thus be necessary to appreciate these data and these ratios towards more numerous series and over a longer period. Indeed, at the moment, it is difficult to augur the future of companies and even less that of the employments.

Concerning the profile of the bearers of project, they mainly arise from establishments of superior education (41%) and of research bodies (23%). But the part of the projects carried(worn) by employees of companies (24%) and unemployed persons (7%) is important. They are almost every graduates of the higher education (94%), of which more half holders of a doctorate. Among the research staffs who raise capacities of the law on the innovation and the research, that is 11% of the persons involved in the brooded projects, 58% made it in conformance with the article 25.2 (contribution scientific competition), 34% in conformance with the article 25.1 (putting at disposition for new business start-up) and 8% in conformance with the article 25.3 (acquisition of holdings).

2.2. Interests, limits and perspectives of the device university entrepreneurial

Globally, it is still too much early to pronounce on the efficiency of the legislative device defined by the law on the innovation and the research in a general way and in a more particular way on the efficiency of incubators recently set up. Some years will be needed to judge the aptness of these

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6 Source: Ministry for research/Direction of technology, Assessment activity of the incubators undertaken innovating at April 30, 2002.
various actions. But experiences in the other countries show that the various actions introduced by the university and connected to the entrepreneuriat seem to justify themselves: the rate of survival after three years of the new companies having followed a training is more raised than that of the average of the new companies (Julien, 2000). In this perspective, he can be interesting to strengthen the device in particular upstream with regard to the training by developing two axes (Bayad and al., 2002):

- The entrepreneuriat project as additional educational route with regard to the existing domains
- The training as the space of expression of the will entrepreneurial must be considered as an element of separate training.

Incubators thus appear as a very weak device with regard to the not covered domains. Indeed, based mainly on the technology and/or the innovation, we forget that the entrepreneuriat can dress the other forms as for example the entrepreneuriat of reproduction or the entrepreneuriat of imitation (Julien and al., 1996). In this perspective, we deny completely the other possibilities and we forget too often that the entrepreneuriat about is its forms can be considered as a possible way of professionalization. Beyond the new business start-up, it is a question very here of "developing [the entrepreneuriat behaviour of the future employees] to answer the requirements of the market and the others of the customers" (Saporta and al., 2000). Furthermore, the orientation taken of the "creation ex--nihilum" neglect not only the other possibilities of actions but in more underestimate the other important phases in the entrepreneuriat that are the recovery and the resumption of company. The entrepreneuriat cannot limit itself to the only phase of new business start-up. This last case in France risks, in the sight of the pyramid of the ages of the working population, to weigh strongly in the balance of the employment in particular some destruction of employments. In the same register, the scientific employment situation, given the demographic perspectives and the needs of recruitment to come in the higher education and the public or private research bodies, can incite the responsibles to privilege their immediate needs bound to the replacement rather than to let leave or to encourage their executives "to make the jump" (Report Cuby, on 2001).

On these various points, we see that the objectives of incubators and all the more ministry lead to an impasse: create creators. The focalisation of the actions on the new business start-up has for consequence to limit the interest within the university of the entrepreneuriat phenomenon. So, the actions led in the domain end in a restrictive vision of the entrepreneuriat (Schmitt, 20001). Certainly in certain cases, it will not raise problem and everybody will be delighted at the success, but that will become the 30% of the projects which will be stopped or reoriented (Direction of small and medium-sized firms and innovation, 2002).

The entrepreneurship also goes away by the disconnection which is made with the university, not on the technological aspects, but on the more manager aspects. In the facts, it is translated of several manners:

- Indeed, in the projects, force is to notice that very quickly the bearers of projects" are dispossessed of the subject". The steady idea here is that the bearers of project, if they want to make their project live in a perspective of business plan have to work on domains such as the organisational, legal, financial, marketing and other aspects. They are rarely ready with regard to these new domains which they have to investigate and they are not necessarily ready to get free of their technological expertise.

- This point harmonises easily with the entrepreneuriat lack of wittiness met in this type of project. Of more the urgency of the research, the running to patents, is not always compatible with a necessary training with the additional entrepreneuriat in this genre of device. In that case of figure, all the interest of the training is to allow continuous there and back between the elements of trainings (models, techniques, tools, methods) and the practice of moment.

- It is advisable here to ask also the question of the return of experience for the bearers of projects and for the very university. In the first case, the bearer of project lives a relatively strong and heavy professional and personal experience in his implication, the question relative to this experience is how to favour the return of experience. Knowing that the focalisation on the result can blind the bearer of project. Now, in the behaviour of daily actions, this process will be much more interesting than these results. The absence of device in particular training increases considerably this risk of dominion of the results on the process. In the second case, the university participates locally in the experiences of incubators, notably by means of the services of valuation which notably play a role of identification of the projects upstream. We
can also ask the question of the return of experience for this one. Indeed, her potential is can used within the framework of incubators. It is translated for example in the facts by the absence or the subcontracting towards the outside of the contents of training. Furthermore, incubators lean only weakly on expert's fishpond whom are the researchers (set apart the technological aspects, when it's there) and on the resources which represent the students. We find here cases of application which would be of a big wealth for our students.

In the final, if we resume the graph 3, we notice that the begun method is linear, far from the entrepreneurié reality described since indeed for a long time by the researchers of the domain. So, the actions led by the university are more similar to a research for legitimacy rather than to a real membership in the spirit to begin. What also stands out from these experiences, it is a confrontation between the historic professions by the university with regard to the new role which she has to build. Towards the theories of organizations, this confrontation indeed reminds us that the university joins in a dynamic process which it is advisable to manage.

At the same time as all this, it is advisable to clarify that there are already today various bodies (public and private) which have for mission the detection, the sensitization, the advice or still the accompanying. The borders enter incubator, technopole or still nursery are more and more vague. The university does not have to join overhang with regard to the various local actors of the new business start-up. She owes her place among these actors. In front of the accumulation of the actions and the interlocutors, it seems necessary, even indispensable to manage and to coordinate this various information. It can pass as proposes it Verstraete (2000) by the construction of "Centres of Entrepreneuriat" at the local level. They would have mission not only the coordination of the various actions connected to the entrepreneuriat within the university, but they would also guarantee these various actions. The teachers and the researchers who would wish it could be connected with these various centres, so favouring a local cartography of the human resources. These centres would allow to develop activities of council and accompanying entrepreneuriat, supplying a not unimportant potential of research grounds. Beyond the activities of advice and accompanying, it would be possible to work on the educational aspect and on the methods bound to the entrepreneuriat and to develop a research not only for observation but also for research - intervention. These centres are certainly of a new genre at the level of the French university, but they can lean on international experiences, as notably the experience(experiment) of the Pulpit Bomber in management of the technological change in small and medium-sized firms, at the Université du Québec in Trois-Rivières.

CONCLUSION

Towards the various actions of the university in the field of the entrepreneuriat, force is to notice the domination of the end based on the new business start-up with regard to that making reference to the spirit begin. Certainly, the actions connected to the new business start-up seem easier to set up. Today, the university cannot limit itself to this dimension. Indeed, in a perspective of economic development, it is vital for the years to come to develop a "Entrepreneurship" at the university.

Although the relation enters entrepreneuriat and university already leans on a certain number of elements (legislation, training, research), it is vital for years to come, to favour the future competitiveness of the French companies, to develop an entrepreneurial spirit to the university. It is thus a question of developing a general politics allowing to connect the various actions connected to the entrepreneuriat. In defect, the entrepreneuriat risks to be considered as a phenomenon of fashion and to remain it. In other words, the entrepreneuriat has to exceed the current craze for the new business start-up to position on dimensions which send back to the complexity of the entrepreneurial phenomenon⁹. Finally, the university finds through the problem of the entrepreneuriat, an interesting opportunity of reflection on its own professions by the education and by the research. If the university meets this challenge, it will have a beautiful playing card these next years. By choosing, the objective will be to rehabilitate within the university the imagination, the invention and the creation often put aside for the benefit of the application, of the execution and of the imitation.

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⁹ Admittedly, certain initiatives already exist, but they are still too very few beside those bearing on the creation of company


Majoie B. (1999), Recherche et innovation : la France dans la compétition. Paris : La Documentation Française, p. 31


