

Managing University Support to Entrepreneurship and Entrepreneurs

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Abstract

For an individual to be a successful entrepreneur, an adequate combination of motivation, vocation, capabilities, knowledge and power is necessary. Some of these factors are strictly related to the personality of the individual. The power (to decide, to orientate the managers and their decisions, to coordinate them, to be the person or to belong to the body that runs the company) is mainly the result of an investiture, of the person's capabilities and knowledge, and of his experience. When the entrepreneur is also the capitalist that provides the company with the stock capital, or with part of it, his power is fed by his dual role as well. Finally, some other factors can be less spontaneously engrained in the individual, while they can be developed under the stimuli of external intervening forces, including higher education.

First of all, we believe the University can play a relevant role in stimulating the vocation of those young students that already have the seeds of entrepreneurship. Second, higher education can support future entrepreneurs in developing personal capabilities, such as reducing scenario complexity, or creatively analyzing the market, or effectively playing leadership, and so on. Third, it can educate potential entrepreneurs by transferring more codified knowledge into marketing, administrative, financial, technological and other areas. Finally, it can help develop entrepreneurship in those who already are entrepreneurs.

In this paper we propose a general framework that can be adopted to better target and plan a system of consistent initiatives universities can undertake to sustain entrepreneurship.

We present the case of the University of Florence, with a particular focus on an undergraduate program, showing some data about the achieved results and the limitations as well as those of other initiatives the University has undertaken to support entrepreneurship. We also show how the proposed framework is allowing a more aware and effective planning. We finally discuss some general implications.

Introduction

New venture creation is a fundamental process for the economic development of a region, as it is a vehicle for product and process innovation, a growth engine, and an employment source (Shane, 2005). Start-ups are instrumental for new ideas and new entrepreneurs entry into the economic system. It's not a case that the vitality of an economic system can be measured with new firms natality and success rates. Therefore, new companies creation is a priority and a programmatic goal for all of the European Union member states (European Union Commission, 1998, 2001).

Start-ups allow the creation of new employment opportunities, the support to virtuous circles of technological and organizational knowledge accumulation, as well as, of course, the possibility of generating new value and wealth, sometimes also with a substitution effect (with new more successful firms substituting older firms with less potential). It is through this accumulation process fed by the interaction between people, ideas and capital that every new firm bears innovation to the system.

Start-ups in Italy are particularly relevant and the natality rates are higher than those of many other developed countries. Within this context, Tuscany is among the regions that are more interested in entrepreneurship and start-ups (Balloni, 2000; Pagni, 2001), due to the typical characteristics of its manufacturing system, typically dominated by the small dimension, and to the specialization into light manufacturing industries, particularly the "Made-in-Italy" ones, which, besides being dominated by a de-integrated model of production that implies an accentuated presence of small firms, are characterized by dynamics that determine particularly high natality-mortality rates (Corò, Rullani, 1998; Corò, Grandinetti, 1999).

Table 1 shows the number of new companies in Tuscany, net of agriculture, in the years 2000-2005. After a couple of years of stasis, the natality rate started to grow again, beginning the last trimester of 2003, when the rate was back up to 7.6%. Another positive characteristic of entrepreneurship in Tuscany is that more than 50% of the young Tuscan entrepreneurs own a "first generation" firm, which was founded by them, which is over the 20% Italian average (Comune di Firenze, 2005). On the other hand, this also means that in many cases the new entrepreneur can't rely on the tutoring of the family.

At the same time, the complexity of the new firms is increasing, as shown by the steady reduction of the share of individual firms and of joint stock companies with unlimited liability and a corresponding increase of joint stock companies and limited liability companies that together are currently about 20% of the Tuscan companies. Over 60% of the new firms started up in 2003 were limited liability companies. This is one of the factors that makes it more and more necessary to develop entrepreneurial culture and professional competencies needed to cope with an increased complexity of new business ventures.

Over the life of a company, start-up is a very delicate phase that has to be adequately planned and implemented to minimize the economic, financial, and commercial risks that new firms typically have to cope with in the first months and years. Start-up is, in fact, the firm lifecycle phase with the highest mortality rate. According to research carried out on small and medium enterprises, 60% of the new firms in Italy go bankrupt or is liquidated within the first 5 years and one fifth of them within the first year. The major causes are insufficient capital, inadequate management, the lack of a strong leadership, and sometimes the lack of a good innovative idea (Del Monte, Scalera, 2001)

The situation is similar in other countries. In the United States, for example, 20% of the new firms are liquidated during the first 2 years while more than 60% don't reach the sixth year.

Incubators seem to enable an increase of survival expectation: the survival rate of start-up incubators is currently between 65 and 80% after five years of activity.

The success of a start-up seems to be influenced by both internal and external factors (Sorrentino, 2003). Among the first, we cite the role of motivation, the competencies, and the entrepreneurial “spirit” of the individual that starts up the firm. Among the second, we can pinpoint external influences deriving from: the “macro-context”, with an impact on all of the firms, at both a national and sometimes an international level, which include political factors, as the level and structure of the fiscal system, the general economic conditions, as inflation and unemployment rates (a higher unemployment rate is usually correlated to higher a firms natality rate, for what is sometimes referred to as the “necessity entrepreneurship”; Minniti, 2006), social and demographic variables, technological changes, and so on; the “meso-context”, including local socio-economic conditions, as the prosperity and the profile of the population living in the area where the new company is located, the local customer needs and preferences and the demand structure for the products or services offered, and so on.

From the analysis of the mentioned new firm failure causes, the need for individuals with specialized competencies in designing and managing new business ventures in Tuscany clearly emerges. Recent changes in the local and European contexts made this need even stronger. The crisis of some local systems of production, including the macroscopic cases of the Prato textile industrial district and of the Arezzo golden district, that have historically been main employment and entrepreneurship tanks, makes the need for contributing with any possible means to the start-up of new firms with good development prospects as a way to exit from the current local economic crisis evident. Local Tuscan economic systems of production have always been considered a favorable environment for start-ups thanks to the incentive and support systems that are typical of the industrial district model (Becattini, 1991a, 1991b; Bellandi, 1992). The local systems crisis makes the environment less fertile and seems to be also modifying some of its typical characteristics, as the sustaining mechanisms from the firms localized in the district become weaker (IRPET, UNIONCAMERE, 2004). There is therefore a need to fill this gap through the creation of new professionals.

From a different perspective, the increased complexity fostered by the redoubling of concessions and facilitations to entrepreneurship (Thomas, 1999), of the related European legislation and regulations (Maggioni *et al.*, 2001), of the local initiative to support venturing, by the reform of the Italian commercial law, by the proliferation of new subjects and new categories of financing to start-ups makes it very difficult to neo-entrepreneurs, as well as to existing firms and entrepreneurs that intend to create a new firm, to dominate all the competencies that are needed for a less possible risky start-up with a high success potential (De Marco, 2001).

The need for such a professional is also confirmed by the data on the number of start-ups that benefited from business innovation centers support in the last few years (table 2).

Considering the data, it is clear how important the role that the local government (through its industrial policies), trade associations and other similar associations (through the services to their members and through their lobbying activities), and the University (through its research and education services) can and should play in sustaining the development of entrepreneurship and of knowledge and competencies to sustain new business ventures creation (Carlsson, 2005). It is also clear that non-coordinated, occasional, individual initiatives don't have the possibility to fully exploit the potential support that all the mentioned organizations can produce through partnering.

The needs of an entrepreneur can be traced back to the following:

- 1) Support to eliminate possible uncertainty, which means being able to assess if the potential entrepreneur has the necessary requisites or if it can attain them;
- 2) Availability of cultural growth opportunities;
- 3) Availability of supporting operative tools.

In particular, focusing on the role of the university, we *assume* that:

- some of the entrepreneur requisites can be externally influenced, supported;
- the university can do something to support the development of entrepreneur requisites.

The “Expert in design and start-up of new firms” program is a case of an initiative aimed at educating individuals with a professional profile that correspond to the mentioned needs, with specific competencies related to many of the issues entrepreneurs have to cope with when it starts a firm. The program was designed and is run through a partnering, collaborating and integration approach between the university and many diversified partners that all share the same strategic goal.

Theoretical Framework and Assumptions

If the entrepreneur's perspective is currently widely adopted when considering the problems of firms and strategic management, the adoption of the entrepreneur as the object of analysis is far less common. This doesn't mean that in the literature we can't find contributions on the entrepreneur, but it more simply means that these contributions are not always systematic and they are mostly focused on morphologic aspects.

As the *entrepreneur* can univocally be considered as “*the protagonist of a firm*” (Fazzi, 1984), it is certainly worthy to be risen to be a fundamental object of our studies, not only for a mere theoretical exercise or for provoking a stimulating debate and inviting to further investigate involuntarily neglected topics, but to reason on the implications in terms of management and of education and industrial policies that such integration of object of analysis can implicate.

The focus of the literature on the firm constraints both the observers' ability to speculate and the kind of interventions to support the economic and social development. If we study firms, we can help to develop entrepreneurial culture in terms of understanding the problems to be coped with, but the understanding of entrepreneurship issues is often underestimated. From the firm issues we can infer the entrepreneur's functions (Fazzi, 1966), but from these we can't deduce the capabilities to effectively pursue them if we don't change perspective.

From a static perspective, useful for the analysis, an entrepreneur is characterized by a unique system of strictly related characteristics, knowledge, motivation, vocation, capabilities, and power. In figures 1 and 2 we propose a (non-exhaustive) general framework with an indication of which of these factors can be affected by universities (and with what intensity), as well as of which are affected by the University of Florence.

Some of these factors are strictly related to the personality of the individual and include, for instance: entrepreneurial motivation; intelligence; planning and implementing capabilities; creativity; intuition; capability of persuading the various stakeholders, which is a fundamental requisite to exercise the entrepreneurial political function effectively; passion for this kind of work, together with the ability of working under the pressure of high responsibility and to be undertaken in an environment naturally characterized by the risks of uncertainty; learning approach; and, to some extent, leadership.

Some other factors are related to characteristics that are difficult to be modified and that (sometimes heavily) affect some of the aforementioned capabilities, including: age, experience as an entrepreneur; gender (Minniti, 2006; Verheul and Thurik, 2001); belonging to ethnic minorities (Köllinger *et al.*, forthcoming); having “inherited” the entrepreneur role from a parent, which can influence both the capabilities and the ways of assuming that role, and so on.

The entrepreneurial power is the result of the individual personality, its motivation, knowledge, capabilities, and vocation and of the type and quality of its investiture’s source(s).

What qualifies an entrepreneur and differentiates it from all the others is the quality and the intensity of all of the mentioned factors and of their relationships.

Only for the purposes of the present analysis, we can nevertheless propose a very simplified classification of entrepreneurs according to the presence of entrepreneurial capabilities, vocation, and power. A first relevant distinction is between actual and potential entrepreneurs. In figure 3, we cross this dimension with the level of entrepreneurship.

It is clear that the support a University can provide changes according to the kind of entrepreneur it is aimed at. If the “latent” entrepreneur was the goal, for instance, the University could try to offer a series of initiatives to stimulate vocation and support a migration to a potentially successful entrepreneur. On the contrary, the University could help an entrepreneur “without entrepreneurship” to develop the knowledge and capabilities that could make it more successful.

The same kind of initiatives can be aimed at people with high vocation and low entrepreneurial capabilities that are not actual entrepreneurs (figure 4). On the other hand, potential entrepreneurs “with success potential” can be supported by the University facilitating their carrier kick-off, for instance, hosting them in university incubators, or creating the conditions for meeting actual entrepreneurs that could tutor them, and so on. In the case of “unmotivated” entrepreneurs, particularly if potential, there is a waste of entrepreneurship that calls for interventions to support vocation.

Taking into consideration the power dimension, we can introduce a distinction between micro, small, medium, and large entrepreneurs (figure 5). Micro-entrepreneurs are characterized by a low level of both entrepreneurial capabilities and power. In this case, the university should intervene along both of the aspects, though in this case the causes of a low level of power should be investigated. In fact, as knowledge and capabilities are one of the major sources of power, focusing on these might be sufficient.

Small entrepreneurs are often entrepreneurs by either “self-investiture” (sole ore majority shareholders), or external investiture, for instance by entrepreneurial succession in a family business, or by political appointment, etc.. A small entrepreneur can be “dangerous” in the sense that it can mislead the firm or limit its development, which is why universities should play a social role, as contributing to the development of entrepreneurial capabilities means sustaining an increase of possibilities of economic development and limiting the risk of failures. Finally, universities can help what we defined as “medium” entrepreneurs to develop their capability of effectively implementing their entrepreneurship.

Of course, also in this case, these simplified framework should be expanded and the effects of inconsistencies between capabilities and power taken into consideration (table 4)

In general, in terms of content, we *argue* that universities can use, among others, the following levers:

- Teaching;
- Support to spin-offs and patenting;
- Incubating;
- Promoting stable relationships and fruitful partnerships with entrepreneurs and capitalists, and more in general supporting the development of social capital.

The university can first of all stimulate entrepreneurial vocation, for instance, by:

- controlled role playing activities;
- demonstrating that starting up and governing a potentially profitable firm is not only exciting but also possible without having to overcome barriers that sometimes are mainly the result of distorted perceptions;
- organizing project works with the development of product innovations and the evaluation of market potential and a simulation of a business plan and launch strategy;
- creating opportunities to meet with entrepreneur associations and individual entrepreneurs that can tutor potential entrepreneurs, and so on.

Second, the university can play a relevant role in developing personal capabilities, including to interpret signals and data, to reduce complexity and simplify scenarios, to make decisions, to exercise leadership, etc., through case studies and role playing.

Third, it can transfer, through its “core” traditional teaching activity, more codified psychological, technical, marketing, financial, technological, organizational, negotiation, and administrative knowledge.

Finally, universities can support the migration between potential and actual entrepreneurs through *laison* offices and services to students and/or researchers spin-offs (Carayannis *et al.*, 1998; Clarysse *et al.*, 2005; Franklin *et al.*, 2001; Lockett *et al.*, 2003; Steffenson, 1999) and patenting and through incubators (Aburrà *et al.*, 2003; Clarysse, 2005).

The case of the University of Florence

In order to support entrepreneurship, the University of Florence, Italy, has been implementing finalized education at both undergraduate and graduate level, services to university spin-offs, patenting and patent licensing. The University is also participating, together with the local and regional government and the Chamber of Commerce of Florence, to the creation of a 3.000 square meter incubator that will be located in the scientific campus for transferring the results of the scientific research and facilitating the high-tech start-ups. In the same area, the University of Florence is planning to build new spaces to host other scientific-technological research centers and a new *laison* office for the communication and dissemination of the scientific results. Finally, it is planning to create a University-Firm laboratory on which it will systematically convey initiatives to bring entrepreneurs closer to students.

Professionalizing under-graduate program

In the academic year 2004-2005 the Business School of the University of Florence started a program for undergraduate students, financed by the European Union and with the support of local companies and trade associations, to create “*Experts in design and start-up of new companies*”.

The “Expert in design and start-up of new firms” is a professional that, with leadership and planning capabilities, can manage the process of elaborating an entrepreneurial project, setting-up and launching a new company. It is characterized by the ability to elaborate feasibility studies and business and financial plans, to design the operations and the new product development processes, to choose the most convenient and coherent sources of financing for the new venture, to select possible facilitations for new companies creation and fill in the related forms, prepare the memorandum of association, other corporate governance pacts and the documents for registering possible patents or trade marks, to plan the launch communication strategy, to develop a basic information system to support the new-co strategic management. He also has good interpersonal communication skills and can effectively speak a second foreign language, besides English. He has a good understanding of how the main European institutions function.

The professional profile is intended to fulfil the *needs* for experts in designing and managing start-ups, which is particularly evident in Tuscany, as the region is characterized by a significant presence of local production systems and small and medium enterprises. The courses of the program are aimed at developing specialist professionals that are able to deal with most of the technical and operative issues of start-ups. For this reason, the program provides the students with *great job opportunities*, both through the stimuli to their entrepreneurial vocation and the transfer of the necessary competencies for starting a firm up themselves, and through other possible occupational prospects, including the following:

- in existing manufacturing or service firms that intend to develop and launch new products, services, and/or enterprises;
- in management consulting firms;
- in consulting firms that are specialized in concessions and facilitations to start-ups;
- in qualified accountant or lawyer’s offices that offer specialized services for new entrepreneurs or start-ups;
- in local and regional public institutions;
- in incubators, business innovation centres, scientific and technological parks, and other organizations that host and support start-ups;
- in regional finance companies;
- in finance companies that are specialized in financing to new business ventures (venture capitalists, merchant banks, and so on);
- in marketing and communication consulting companies that are specialized in new products, services and firms launches;
- in trade associations and other local and non-local organizations that are interested in supporting start-ups.

The courses and laboratories of the program also enable students to develop technical competencies they can effectively use in different contexts, more or less complementary to the design and launch of a new firm, in existing firms. The Advertising Business Game, for instance, is aimed at developing knowledge of an advertising campaign overall process, from briefing the agency, to the creativity, to the copy strategy development, to the media planning, and so on. This kind of knowledge can evidently be used within firms and ad agencies regardless of start-up. The technical competencies developed in terms of market research and marketing information systems respond to a need firms have overall their lifecycle. The technical competencies related to designing an effective and (time and cost) efficient new product development process can be applied into an existing manufacturing company or in an organization or management consulting firm in different phases than start-up as well. Similar considerations can be done about the business and financial planning skills, or about economic-financial simulation skills, which can be used in a firm every time there is a new investment opportunity.

The program has a high level of *attractiveness* as at the same time it responds to an evident and strong need for entrepreneurship and it is eclectic, as it develops technical competencies that can be used in many different areas in phases that follow start-ups as well.

The attractiveness is also testified by the interest of the *partners* that are supporting the University in this specific initiatives, which include manufacturing firms, consulting firms, trade associations and other similar institutions, the local government (table 5).

Tuscan firms are interested in the program as they are engaged in re-conversion, risk fractioning, diversification, and internationalization strategies, which often are implemented through start-ups. The current complexity is so high that very rarely the multiple and diversified competencies necessary for planning and starting a new venture are available within a firm, particularly when considering SMEs. Firms sometimes even have difficulties in finding these competencies on the market.

Consulting firms are interested in the program as it provides the job market with people with knowledge and specialist competencies that would otherwise need to be developed through company training.

Local public institutions are playing an increasingly relevant role in supporting local entrepreneurship. This is evidently shown by the more and more frequent creation of facilitators to business start-ups, such as incubators, business innovation centers, scientific and technological parks, and the like, partially to react to the afore-mentioned crisis of the local economic systems that used to be specialized in traditional industries. They are interested in individuals with technical competencies that can be used for selecting entrepreneurial innovation ideas that can be hosted within these facilities, or for supporting potential or existing entrepreneurs in business planning and in developing feasibility studies, or in designing the organizational structure of a new company, and so on.

Trade associations and similar organizations, like the Chambers of Commerce, Industrial Associations, etc., are interested in the program as it enables to create skills that are fundamental for the achievement of their institutional goals.

The partners can be distinguished in two categories: some of them sponsored the program and participate in various ways to the design and implementation of the program; some others also host students for internships where they can apply the competencies developed in class.

During the early designing phase of the program the partners contributed to the analysis of the Region job needs and to the definition of the professional profile. The partners were then involved in designing the curriculum, in terms of both content and teaching methodology for the integrative courses. A few of them were then appointed as members of a scientific and/or of a supervisory committee. All of the partners were registered into an e-mailing list that was used to keep them updated about the evolution of the program, the students, career, and the work of the committees. They are also periodically invited to participate to meetings aimed at improving the integrative courses content and at concomitantly monitoring the effectiveness of the educational intervention. Periodical meetings with the hosting partners were also held in order to better pinpoint their actual needs and to meet the possible candidates. These same partners collaborated with the program coordinator to design individual internship projects that had to be consistent with the educational and professionalizing goals of the program.

Tutoring, orienting, and continuously monitoring the activities to promptly solve possible problems and incrementally improving the program is also a fundamental success factor. The academic coordinator plays an important role to ensure that the trained tutors, the scientific and the monitoring committees do their best to provide the students with world-class education.

The "Expert in design and start-up of new firms" is an *integrative* program aimed at undergraduate students that are enrolled in the Management program, with the possibility of a few exceptions. The students that decide to joint this program maintain their enrolment into the Management program and can also graduate in Management.

The curriculum consists of a total of 810 hours articulated in an 18 month calendar: 560 hours of courses taught in class and 250 hours of internship (table 6). Of those 560 hours, 360 are courses that are provided by the Business School to all of the undergraduate students that have them in their regular curricula (we will refer to them as curricular courses), while the remaining 200 hours are courses that were specifically started exclusively for the students of this program (we will refer to them as integrative courses). All of the integrative courses are taught by non-academic lecturers, usually professionals with experiences in small and medium companies, entrepreneurs, qualified accountants, consultants, and managers. In terms of teaching methodology, particularly for the integrative courses, the lecturers are asked to widely use case studies and role playing activities. The students have compulsory attendance to all of the courses. Besides the theoretical learning through frontal lessons, the students participate in laboratory activities aimed at experiencing more tacit knowledge and exercising on more technical-operative scenarios. They can also practice, exercise and self-assess their competencies and progresses through a web-learning system that was specifically developed for the course.

The innovative integration of diversified teaching methods and learning models is particularly evident in the laboratory Advertising Business Game, which is a case of education through entertainment (or *edutainment*). It consists of a series of seminars with entrepreneurs, marketing managers, communication consultants that pass to the students a system of knowledge and competencies related to all of the phases of the process of planning and realizing an advertising campaign, first of all through the discussion of cases. Then, the students, with the support of communication consultants acting as tutors and the help of the personnel of the Multimedia Production Office of the University of Florence, realize commercials on the basis of a brief given by a manufacturer and distributor of large consumption products.

The further application of the competencies developed through the lessons and the laboratory activities takes place during the internships. In conclusion, the educational strategy is based on a learning process that take the students from frontal lessons to technical-operative teaching through laboratory activities, to a final experimentation of the acquired competencies into firms.

In terms of competencies, table 7 shows how the various courses of the program develop an integrated system of basic, cross, and technical-operative competencies.

Besides the major importance of the English language:

- Organization and Human Resource Management plays a relevant role in transferring to the students theoretical-practical knowledge about organizational culture, organization structure design, the main operative processes and mechanisms for a new firm, and the management of human resources;
- Commercial Law is important as it investigates issues related to social law that are fundamental for start-ups, for choosing the most appropriate social form, for preparing the articles of partnership or the memorandum of association and other agreements to effectively manage corporate governance issues, and so on;
- General Management II is extremely important to develop knowledge on how to develop and choose the strategic and the governance model and the information system for the new firm;

- Finance teaches the most important methodologies to evaluate investment and financial decisions; the course discusses issues related to the financial structure of a new firm as well as the policies for distributing the generated value, which is very important particularly when planning a start-up and in the early stages of a firm's lifecycle;
- Advertising Business Game is an edutainment initiative realized through a simulation of a TV advertising campaign aimed at developing technical-operative competencies in the area of communication; the simulation includes the interpretation of a company brief, the creative activities (both art and copy), the drawing of the storyboard, the decision about the location, the casting, the filming and editing, the media planning and budgeting;
- Women entrepreneurship and European Institutions: the first module copes with topics related to equal opportunities within firms, European legislation to the protection of women workers, and incentives and facilitations to women entrepreneurs; the second module is about the main European institutions;
- In the Interpersonal Communication Techniques course, the students practice with exercises on negotiation communication, judgment heuristics, interpersonal communication within an organization, speaking in public, leader communication techniques, and stress control techniques;
- In the Business Plan and Economic-Financial Simulations course the students learn, through exercising, how to use worksheets and the software Powersim to elaborate a business and financial plan and to simulate the effects of entrepreneurial decisions on major coherency ratios;
- The laboratory Designing of New Product Development Process is aimed at developing practical competencies to design an effective process, mainly referring to the Stage-gate model, and to adopt rapid prototyping methods and technologies
- In the Contracts for a New Firm course, the students exercise in preparing typical contracts for start-ups, including memorandum of association, patent licensing agreements, master licensing agreements, supplying contracts, exclusive distribution contracts, loan and surety contracts, and so on;
- Finance and Facilities for Start-ups is aimed at providing the students with operative skills to draw up applications for facilities and concessions, financing without security and other incentives granted by the European Union or other national and local institutions to start-ups; it also aim at developing skills to negotiate and draw up contracts with financing associates, such as venture capitalists and business angels.

Thirty-two students (half of which women) out of one hundred and thirty applicants were selected for the first year and will finish the program by the end of April 2006. The selections for the second edition are underway and promising. The success of the initiative can be partially explained by the fact that the designed profile consists of capabilities and knowledge that, as we mentioned before, can be used not only by an entrepreneur but by anybody that, for instance, would work for a firm that intends to develop its business in a new market, or for a consultation company, and so on. Nevertheless, the participants in the program seem to be more self-confident and some of them seem to have developed their entrepreneurial vocation significantly.

More in details, the students of the first year are very satisfied about the program (table 8). The data is also confirmed by a very low retirement rate. The students appreciated in particular the integration between academic education and technical-operative highly interactive courses held by professionals and entrepreneurs. They understood they developed differentiated capabilities when compared to their colleagues and that they had the unique opportunity of directly interacting with the "real world".

Of all the students that enrolled, about 30% are sons of entrepreneurs (table 9), which could explain their motivation to join the program. 60% of them declared that they will start their own firm, while 20% responded that they will work in their family business, which might anticipate a future as an entrepreneur (table 10). Nevertheless, the only students that stated that they absolutely don't want to become an entrepreneur are sons of entrepreneurs. The data is not surprising when looking at the motivation: they don't like the lifestyle. Becoming an entrepreneur means marrying a lifestyle, it's a life choice.

In terms of vocation, which was one of the main goals, almost all of the students joined the program to develop entrepreneurship (table 11), though only about 12% of them wanted to become an entrepreneur at the time they enrolled (table 12). The entrepreneurial vocation seems to be exploded among the students after the first year of the program, when almost 60% of the students responded that they want to be entrepreneurs (table 13) and 94% declared that the program stimulate their vocation (table 14).

The students' perception of the effectiveness of the program in supporting them to develop adequate entrepreneurial capabilities is less positive (table 15). Besides, of course, being an important message for reviewing the content of the courses and improving tutors and teachers selection, this could also be considered as being a signal of a not totally developed self-confidence of the students engage into this kind of life.

Post-graduate program

On the academic year 2003-2004 the Business College of the University of Florence launched the post-graduate program "Governare l'impresa" (Business Management) consisting of courses that adopt the entrepreneur's perspective to the management of a firm and focus on entrepreneurial management issues. The courses include:

- Corporate Governance, focusing on the relationships between entrepreneur and shareholders and on the related technical "tools";
- Strategic Management and Value, which focuses on the management of firm development processes;
- Start-up, which takes into consideration the early-stage entrepreneurship and through simulations and exercises transfers planning capabilities and teaches the students how to design the strategic, the governance, and the economic-financial management models;
- Management of Innovation and Market Analysis, which plays a relevant role in stimulating entrepreneurial vocation through project working;

- Management Consulting that, besides providing the students with actual consulting tools, is aimed at making future entrepreneurs aware of when an entrepreneur needs to hire consultants and for what kind of services;
- Turnaround Management, whose goal is to transfer capabilities for managing recovering and turnaround strategy and process management;
- Industries Analysis that presents methodologies for analyzing sectors that can be useful for an entrepreneur in all of a firm lifecycle;
- Operations Management, which discusses strategic decisions including manufacturing capacity strategies, multi-plan systems management, manufacturing plans localization, and the like.

Governo d'impresa turned out to be a unique case in Italy for its original perspective and the most successful post-graduate program of the University of Florence in terms of number of students (tables 16-17).

Tutoring and periodic informal interviews with the students reveal how students develop confidence towards the possible option of becoming entrepreneurs, being able to analyzing the market potential of a new product, to audit a technology, to preparing a business plan, to assess the profitability of a business opportunity, and so on. Some of the students also tried to practice some of the developed capabilities with their dissertation.

A program board, or Strategic Orientation Committee, was also formed in 2005 with the major goal of a more direct involvement of leading firms (Centrale del Latte di Firenze Pistoia Livorno S.p.A., Patrizia Pepe, KPMG, Conad del Tirreno, Findomestic, Targetti) in designing the curriculum to better adopt it to the needs of existing companies and discussing the content of the single courses. Much more has to been done in this direction.

Spin-offs

The University of Florence has an office for patenting and spin-offs with the goal of facilitating the technological transfer and the commercial use of the results of researches conducted by its researchers. Most of the times, spin-offs use University-owned patents and are participated by the researcher(s), the University and one or more partners. Spin-off proposals are elaborated by the researcher(s) according to a standardized scheme, are integrated by a business plan for the first three years and a related scientific project, and submitted to a committee presided by the research pro-rector.

The academic spin-offs up to now are only four:

- Espikem (pharmaceutical, biomedical)
- Protera (molecular science)
- Fotosintetica e microbiologica (microbiology, photosynthesis)
- Degene (pharmaceutical)

At the end of 2002, the University of Florence signed an agreement with other Italian universities (*NetVal: Network per la valorizzazione della ricerca universitaria – Network for the valorization of the academic research*), with the following goals: homogenizing the criteria that lead the decisions on patenting, spin-off creation, technology transferring; and making information available to reinforce research cooperation opportunities on patenting also in order to identify conditions that could increase the economic impact of the research results, through licensing, spinning-off and incubating. From 2004, the Network collaborates with the European network ProTon Europe – Innovation from Public Research (Piccaluga, 2005).

University-Firms Laboratory

The Academic Senate of the University of Florence is in the process of regulating the institution of university-firm laboratory as a fundamental tool for co-innovating and for innovation transferring. The laboratories will host PhD candidates, associate researchers and professors together with firm's technicians involved in shared research projects. The project goals include: increasing innovation performances through collaboration, facilitating research results transferring, more effectively orienting applied research to commercial purposes, increasing learning opportunities for firms, providing the university with new and concrete research opportunities and new resources.

Limitations

Even though the University of Florence has been able to design and implement a few initiatives to support entrepreneurship, some of them relatively successful, much more needs to be done and limitations can be pinpointed for each of the mentioned projects.

One of the problems regards the inconsistency between entrepreneurship needs and available resources to fulfill those needs. This problem is evident at both a national and a local scale and in our opinion is partially related to the ancient tradition of Italian universities and with a general "romantic" bias towards classic studies and literature that are a fundamental value for our culture and knowledge base, but sometimes are not very consistent with the needs and the rhythms of a modern economy. So, for example, the number of full professors of Latin language and literature in Italy is more than four times that of full professors of Finance, and six vs. zero at the University of Florence. Table 18 shows a few examples of this imbalance, with data on sociology, geometry and others to find out that at least finance has more full professors than Byzantine civilization. In conclusion, many of the initiatives and their success depends on the commitment of a bunch of "unhappy few".

In general, there still is an evident detachment between the university and entrepreneurs and the relationships are not systematic enough, but rather individualistic, based upon single professor/single entrepreneur connections.

When considering the single projects, we can stress the following limitations:

1. The Experts in design and start-up of new companies program is very volatile as it was financed with European Union funds received from the Tuscan government to the project submitted in the ambit of the 2000-2006 POR (Operative Regional Program) approved by the European Commission; the financing is subordinated to the renovation of the educational measure in the next regional program, as well as to the evaluation of the related committee; the “unhappy few” that put their energies in designing and managing the program wouldn’t be able to guarantee its continuity without the financing.
2. The overall structure of the Business Management post-graduate program is undermined by a national reform; much more can be done in terms of connection with the entrepreneurs, first of all the ones involved in the board; the students of the Management of Innovation and Market Analysis course, for instance, developed potentially successful new product prototypes and launch plans that will probably be forgotten in a drawer without having even been seen by any entrepreneurs that could have tutored the students.
3. The spin-offs and patents office doesn’t have a strong pull approach with the students and, more in general, its activity is not effectively communicated. The decision about the composition of the evaluation committee seems to have been driven more by university politics logics than by an attempt of mixing people that could make consistent complementary technical competencies available for the purpose.
4. The university-firm laboratory is only at an early stage and needs to find and finalize the consensus and the interest of firms.

Another limitation is related to the localism that characterizes all of these projects. In today’s world thinking local is not a modern way of doing business in general and education in particular. The major motivations of the lack of an international perspective include: the excess of red tape, which makes it very difficult to interact with other universities/partners; the constraints of the regulations within which Italian public universities operate; the incoherency between the internationalization of these projects and the available resources, in terms of both quantity and quality (for instance, the absence in our department of English speaking administrative staff).

Finally, there are other measures a university could adopt to support entrepreneurship that the University of Florence has not adopted at all yet (fig. 6).

We stress, in particular:

- the absolute lack of educational programs for actual entrepreneurs (and also for managers with a potential of becoming entrepreneurs) and of support to succession in family firms;
- the persistent bias towards theoretical education with a very limited room for teaching more technical-operative tools;
- the scarce support to develop non strictly managerial capabilities, such as team working, leadership, interpersonal communication and negotiation attitudes and capabilities;
- the absence of potential entrepreneurs scouting and tutoring;
- once again, the not sufficient and too individual-based relationship with entrepreneurs.

The University of Florence is nowadays working in two directions: increasing the number of initiatives to support entrepreneurship; and improving the existing measures, of course trying to overcome the aforementioned limits.

Finally, an ideal look to the future: the creation of a company, owned by entrepreneurs and with a minor participation of the University of Florence, where selected teams of students, under the guidance of professors and the tutoring of entrepreneurs, would work as consultants on contracts assigned by entrepreneurs. Jobs could include, for instance, market analysis, the design of management information systems, technology auditing, business planning, turnaround and recovery strategy design, scientific assessments, and so on.

Discussion and Implications

Entrepreneurship is a vital resource for an economic system. It is important for both new ventures creation and the success of existing firms. The increasing complexity and competitive pressure of a global economy are contributing to the creation of a steady stream of business opportunities but at the same time are also responsible for an increased entrepreneurial risk, which is reflected in generally high failure rates of both established companies and start-ups. In this scenario, universities can play a relevant role in sustaining the development of entrepreneurship and new venture creation as well as of entrepreneurship-facilitating social capital (Simoni, Labory, forthcoming). They can support entrepreneurial motivation, and consequently the tension towards innovation and the start up of new firms. They can create the conditions to improve knowledge and capabilities, and therefore power and behavior of entrepreneurs, thus increasing start-ups survival rate and the success of established firms.

Our paper shows that a lot can be done and, at the same time, that in order to avoid waste of resource and maximize effectiveness, some conditions are nevertheless to be present, including:

1. *Awareness*, not just of a general possibility to influence entrepreneurship, which is rather intuitive, but also of the actual available options, of the individual requisites of an entrepreneur that can be influenced, of the necessary resources, and so forth.
2. *Will and commitment*: the involvement and commitment of the top management of the University is of paramount importance in order to establish a clear strategic orientation towards supporting entrepreneurship and to ensure that adequate energies will be focused onto the necessary initiatives.
3. *Planning*: as we discussed in the paper, different types of entrepreneurs can be targeted, different needs fulfilled, different levers implemented; a University needs to analyze its context, fully understand the needs, segment the market, choose its target segments, set the goals it intends to pursue, define priorities, select and time the initiatives to achieve the selected goals, budget the necessary resources and choose the appropriate sources, control the results and implement corrective mechanisms. These are capabilities that might be difficult to exploit in the governing bodies of some universities, particularly in Italy, but it is unrealistic to think that such a challenging goal as effectively support entrepreneurship could be reached without the ability to manage the related complexity.

4. *Planning tools*: universities need to have a clear framework and specific tools to be effective at planning and implementing a complex system for entrepreneurship support. In our paper we provide a possible general theoretical framework that can be used to both analyze needs, current situation, potential and actual possibilities, decide the goals to be achieved and plan the initiatives to be undertaken. We also propose possible segmentation criteria that are consistent with the discussed framework.
5. *Adequate resources*: of course, when selecting goals and related levers universities have to be realistic, considering the possible, in Italy very stringent, resources constraints;
6. *Consistency*: the planned interventions need to be first of all (*externally*) consistent with the needs expressed by the community, the selected goals and the available, or acquirable resources; second, the various initiatives need to be internally consistent so to reinforce each other and avoid dispersion of resources.
7. *Continuity*: the University's action to support entrepreneurship can't be "intermittent". Its interventions and its commitment should be as structural and permanent as possible. This also means continuity of resources, particularly in terms of human and social capital available and dedicated to this specific purpose; the initiatives that are to be implemented to pursue such an important goal can't rely on resources that are only temporary available.

The framework we discussed is leading the University of Florence to a better targeting strategy and to a more effective plan of initiatives to sustain entrepreneurship. We believe that it could be adopted with success also by other universities. We are also aware that more can be done, particularly in terms of developing specific initiatives. For this purpose, an international comparison aimed at analyzing best practices and world-class cases will be undertaken.

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Table 1: Number of new companies in Tuscany

Year	N. start-ups	N. cancellations	Δ
2000	29,775	23,484	6,291
2001	29,715	22,832	6,883
2002	29,840	24,917	4,923
2003	28,276	23,092	5,184
2004	30,253	23,648	6,605
2005	30,937	26,987	3,950

(Source: Unioncamere, Movimpresa, 2006)

Table 2: Start-up creation and incubation support

(Cumulative 2003 data of 155 BICs)	
N. of contacts with potential entrepreneurs	64.000
N. of projects selected by BICs and feasibility studies undertaken	14.000
N. of business plans completed	6.000
N. of start-ups created	3.800
N. of jobs created at start-up phase	10.500
N. of enterprises in premises rented by BICs	3.200
N. of jobs created by enterprises hosted in BIC incubators (after start-up)	17.400
N. of attendees to training seminars for potential entrepreneurs	26.000

(EBN, Osservatorio BIC, 2004)

Table 3 – Vocation/capabilities coherences

Functions	Vocation	Capabilities	Practices	Non-coherence effects on enterprise
Basic & Transversal	Autonomy Self-Confidence Responsibility	Understanding & Logic Judgement & Will (Decision) Culture & Knowledge	<i>All</i>	Misleading
Strategic	Interpretation Creativity Initiative Bravery Perseverance Results orientation	Analysis Imagination Concentration Balance Reactivity Risk	<i>Auditing Planning Mission Innovation Forecasting Implementation Control</i>	Strategy failure
Organizational	Interpretation Creativity Initiative Perseverance Order Command	Analysis Imagination Concentration To overcome organizational constraints Leadership Power delegation	<i>Organization designing and development Operative mechanisms Coordination Control</i>	Internal disorganization
Political	Interpretation Consensus Persuading Solidarity Interpersonal relationships	Analysis Reliability Correctness Negotiation Communication	<i>Stakeholders satisfaction analysis Value distribution Influencing perceptions Agreements Information management</i>	Stakeholders de-motivation

Table 4: Capabilities/power coherences

Functions	Capabilities	Power (sources)	Practices	Non-coherence effects on enterprise
Transversal	Understanding & Logic Judgement & Will (Decision) Culture & Knowledge	Leading role (position) Firm size	<i>All</i>	Approximate leading
Strategic	Analysis Imagination Concentration Balance Reactivity Risk	Competitors weakness Human resources Partnership Delegation from partners Market growth Capitalization	<i>Investments Development Performances</i>	Strategy failure
Organizational	Analysis Imagination Concentration To overcome organizational constraints Leadership Power delegation	Formal powers Laws & Judiciary	<i>Operative continuity Operative mechanisms</i>	Internal disorganization
Political	Analysis Reliability Reliability Negotiation Communication	Strength relationships Stakeholders interests Memorandum of association and other pacts Value produced	<i>Governance</i>	Stakeholders motivation

Table 5: Program Partners

Partner	Industry
<i>Manufacturing Firms</i>	
Centrale del Latte di Firenze Pistoia Livorno	Food
DGA Fibre Ottiche	Optical Fibers
EL.EN.	Laser
Lanificio Faliero Sarti e Figli	Textile
Lanificio Nova Fides	Textile
Manifattura Rosati	Textile
Marchesi De' Frescobaldi	Wine
Miniconf	Childrenswear
Monnalisa	Childrenswear
Sammontana	Food
Targetti Sankey	Architectural Lighting
Tessilform - Patrizia Pepe	Womenswear
Tintoria del Sole	Textile
Toscodata	Electronics
Universo Sport	Sportswear
Welt Electronic	Electronics
<i>Agricultural Firms</i>	
Societa' cooperativa agricola di Legnaia	Agricultural Cooperative
<i>Service Firms</i>	
Albini e Pitigliani	International Courier
C.I.I. Pistoia	Business Innovation Centre
Findomestic Banca	Finance
Matura Impresa	Consulting
MPS Merchant	Finance
Project Engineering	Information Systems
Studi Strategici di Impresa	Consulting
<i>Associations and other institutions</i>	
Camera di Commercio Industria Artigianato e Agricoltura Firenze	Chamber of Commerce
C.N.A. Pistoia	SMEs and Craftsmen Trade Association
Confesercenti Toscana	Trade Association
Gruppo Giovani Imprenditori Assindustria Firenze	Young Entrepreneurs Association
Unione Industriali Pratese	Entrepreneurs Association

Table 6: Curriculum

Activity	N. Hours		%	
<i>Integrative professionalizing courses</i>		200	24,7%	
Business Plan and Economic-Financial Simulations	25			
Finance and Facilitations for Start-ups	25			
Contracts for a new company	25			
Advertising Business Game	50			
New Product Development Process	25			
Interpersonal Communication Techniques	25			
Women Entrepreneurship and European Institutions	25			
<i>Undergraduate courses</i>		360	44,4%	
General Management II	72			
Organization and Human Resource Management	72			
Finance	72			
Commercial Law	96			
Intermediate and Advanced English	48			
<i>Total courses</i>		560	69,1%	
Internship		250	30,9%	
<i>Total</i>		810	100,00%	

Table 7: Competencies

Basic competencies	Course	Hours
Writes and fluently speaks English	Intermediate and advanced English	48
Knows the entrepreneur, the memorandum of association and the most important corporate governance pacts, the laws and regulation of different association forms, the legislation of transformations, mergers and acquisitions and that of company corporate gro	Commercial Law	96
Knows the entrepreneur models and its relationships with the shareholders, the methods of strategic analysis and planning and the main functional management issues	General Management II	72
Knows the main European Union Institutions, their functions, the way they work, their main policies	European Institutions	12
Cross competencies	Courses	
Can effectively communicate within an organization, in public and in negotiation meetings, controlling stress and exercising leadership	Interpersonal communication techniques	25
Technical-professional competencies	Courses	
Is able to design the organizational structure of a new company and its fundamental processes, and particularly the new product development process	Organization and Human Resource Management; Designing of New Product Development Process	72 + 25
Can evaluate and select the various financing sources for a new company, assess the profitability of an investment, select grants for start-ups and for women entrepreneurs	Finance; Finance and facilitations for start-ups; Women entrepreneurship	72 + 25 + 13
Knows how to develop and interpret a brief for a new product launch, plan the media, develop an adequate communication strategy, realize a commercial	Advertising Business Game	50
Knows the main contracts typically drawn up and signed by a new company, including association pacts, patent licensing agreement, loan and surety agreements, company branch leasing, and so on	Contracts for a new company	25
Can use worksheets to design an economic-finance information system, prepare a financial plan for the new company, run simulations to evaluate the effects of entrepreneurial decisions onto some of the most important profitability and finance indexes	Business Plan and Economic-Financial simulations	25

Table 8: Overall students' satisfaction

	Very High	High	Medium	Low	Very Low
Student overall satisfaction	23.5%	76.5%	0%	0%	0%

Table 9: Family firms

	Yes	No
Son of entrepreneurs	29.4%	70.6%

Table 10: Family firms (2)

After the program, I will:	
Work in my parents' firm	20%
Start my own firm	60%
Don't want to be an entrepreneur	20%

Table 11: Entrepreneurial vocation (before)

	Yes	No
Did you enroll in the program to develop entrepreneurship?	94.1%	5.9%

Table 12: Entrepreneurial vocation (before – 2)

	Yes	No	Maybe
When you enrolled in the program, did you want to be an entrepreneur?	11.8%	17.6%	70.6%

Table 13: Entrepreneurial vocation (after)

	Yes	No	Maybe
Would you want to be an entrepreneur?	58.8%	5.9%	35.3%

Table 14: Entrepreneurial vocation (after – 2)

	Very High	High	Medium	Low	Very Low
Did this program stimulate your entrepreneurial vocation?	11.8%	82.4%	5.9%	0%	0%

Table 15: Entrepreneurial capabilities

	Very High	High	Medium	Low	Very Low
Do you think you developed entrepreneurial capabilities, and in particular those necessary to start-up a new firm?	5.9%	58.8%	35.3%	0%	0%

Table 16: Number of students post-graduate program

	2003-2004	2004-2005	2005-2006
N. students	34	64	103

Table 17: Number of students – Governo d'impresa vs. other post-graduate programs

Post-graduate programs	N. Programs	N. students
<i>Economics and Business School</i>	14	446
Governo d'impresa (Business Management)		103
Marketing		67
Advanced accounting		51
Management consulting		50
Advanced development economics		34
Economic and social sciences		32
Finance		29
Business Legislation		18
Advanced tourism management		16
Population and society		12
Statistics for firms		10
Human resources management		9
Actuarial sciences		8
Political economics		7
<i>Agriculture School</i>	10	1 = x = 29 105
<i>Architecture School</i>	3	0 = x = 40 64
<i>Pharmacy School</i>	1	5
<i>Law School</i>	1	249
<i>Engineering School</i>	12	15 = x = 60 458
<i>Literature and Philosophy School</i>	24	1 = x = 39 380
<i>Medical School</i>	1	33
<i>Education School</i>	3	11 = x = 43 80
<i>Mathematics, Physics, and Natural Sciences</i>	17	0 = x = 25 201
<i>Political Sciences School</i>	5	8 = x = 77 181
Joint programs		
<i>Literature and Philosophy School & Mathematics, Physics, and Natural Sciences</i>	1	9
<i>Education School & Literature and Philosophy School</i>	1	15
<i>Education School & Political Science School</i>	1	19

Figure 2: Entrepreneur and University (II)

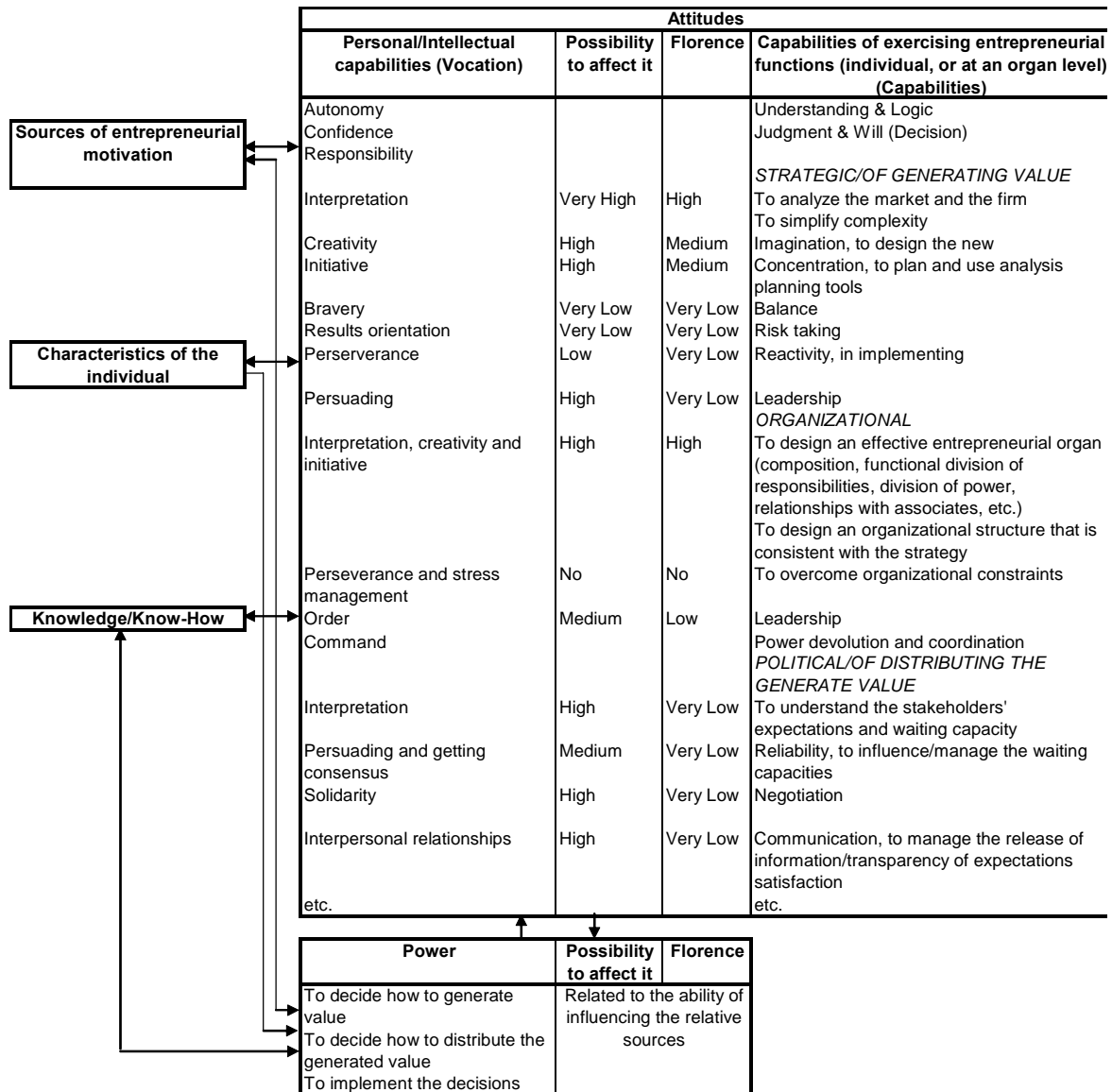


Figure 3: State of entrepreneurial action

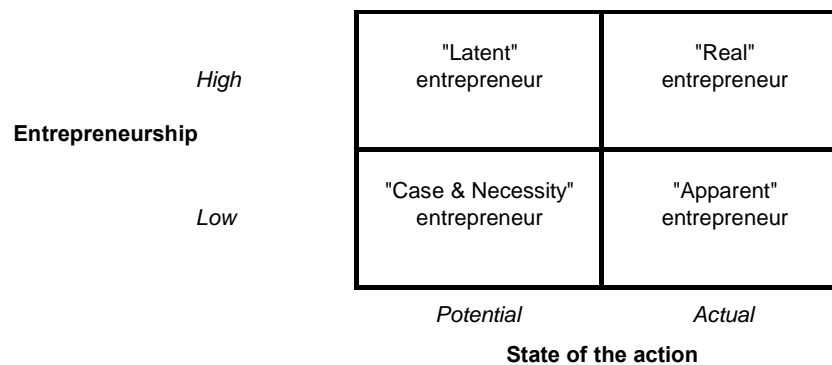


Figure 4: Entrepreneurial attitude

Vocation	<i>High</i>	Wish of entrepreneurship	Entrepreneur "with success potential"
	<i>Low</i>	"Un-trepreneur"	"Unmotivated" or "de-motivated" entrepreneur
		<i>Low</i>	<i>High</i>
Entrepreneurial capabilities			

Of course, for the purpose of our analysis, figure 4 only depicts a general framework that should then be expanded (as in figure 2). The relationship between vocation and capabilities should be investigated in more detail in order to better address educational initiatives. What is more difficult for universities is to affect the coherences between vocation and capabilities (table 3).

Figure 5: Entrepreneurial implementation

Entrepreneurial attitude	<i>High</i>	"Non-expressed" or "frustrated" entrepreneur [or "medium-"]	"Leading" entrepreneur [or "large-"]
	<i>Low</i>	Marionette Entrepreneur [or "micro-"]	"Dangerous" entrepreneur [or "small"]
		<i>Low</i>	<i>High</i>
Power			

Figure 6: Needs vs. Initiatives

	Vocation	Florence	Entrepreneurial Culture	Florence	Tools	Florence
Potential entrepreneurs	Promoting relationships with entrepreneur associations	Low/individual	International studying experiences	High	Technical-operative courses on:	Low
	Promoting relationships with the local socio-economic community	Low	International internships	Very Low	- Market research	
	Incubating	Setting-up	Team role playing and team decision simulations	No	- Finance	
	Project working on product innovations	Just started	Courses in management	High	- Business planning	
	Case studies and decision making simulations	Low	Market analysis	Medium	- Commercial law	
	Exploratory market analysis exercises	Very Low	Ideative-creative focus groups	No	- Fiscal legislation	
	Creativity development exercises	Low	Case studies and decision making simulations	Very Low	- etc.	
	Ideative-creative focus groups	Very Low	Leadership courses and exercises	Very Low	Planning exercises	Low
	Business games	No	Negotiation courses	No	Innovation auditing exercises	Very Low
	University-firm laboratory	Low (A.B.G.; Philips Morris Award)	Interpersonal communication courses	Very Low		
	Firm for the students	Planning				
	Entrepreneur scouting	No				
	Spin-off evaluation and support	Medium				
Entrepreneurs	Patenting support	Medium				
	Patent licensing support	Medium				
Entrepreneurs	Incubating	Setting-up	Courses for entrepreneurs in:	No	Technical-operative courses for entrepreneurs	No
	Support to entrepreneurial succession in family businesses	No	- leadership - team working - management and marketing - etc. University-firm laboratory	Planning	University-firm laboratory	Planning