ICT ENTREPRENEUR

"A European University-Business Alliance aiming to foster the entrepreneurial spirit of ICT students"

LIFELONG LEARNING PROGRAMME
Erasmus+ Higher Education - Strategic Partnerships
Key Action 2
Cooperation for Innovation and the exchange of good practices

June 2015

OUTPUT 9: EVALUATION REPORT WITH SURVEY FUNDINGS – PORTUGAL

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1. INTRODUCTION

The roles of the partners of the ICT project have been clearly defined in the kick-off of the project, on the 10th and 11th of November 2014. Since then, many activities have taken place in order to accomplish its aims. In the current evaluation report we aim to analyse what's been accomplished in the ICT Entrepreneur project by the end of the 8th month, in order to understand its progress.

To evaluate the national entrepreneurship ecosystem and the relevance of existing entrepreneurship courses in Portugal a *clipping* has been created. We carried out an intensive search for the courses/seminars/lessons related with entrepreneurship education from which the six local visited organisations have been chosen. Additionally, in order to gather information about the best practices of a country outside the consortium, UBI also visited two entities in France (University of EMYLON and EMYLON Incubator).

The identification and analysis of the gaps, strengths and weaknesses in the current entrepreneurship education can be found in the local/international visits Report, which also allowed us to identify specific entrepreneurial training needs of ICT.

Furthermore, in order to strengthen the scope of the project, a lot of effort has been put into disseminating the project. Whole ICT website is now available in Portuguese. Moreover, ICT successfully popped up in various media sources, some of them with national range.

2. PROJECT CONTEXT/ INTRODUTION TO THE PROJECT

ICT Entrepreneur is an innovative project, aiming to have a practical application once it is completed. Through an in-depth analysis of existing entrepreneurship programmes, accelerators and incubators in the EU and beyond, ICT Entrepreneur, will identify the existing gap in South EU countries and the best practices that already exist in North EU. At the moment, there's no similar comprehensive entrepreneurship programme at EU level.

There's a deep concern about the specific obstacles ICT students/ graduates face in transferring their project findings from university assignments into business ideas and that will been taken into account in the construction of the new program. ICT Entrepreneur's main aim is the development of atop quality pre accelerator programme for ICT students/ graduates which will be created in order to open up new possibilities through practical application of entrepreneurial skills. Many people will be involved in the co-creation of the training content, such as academics and industry people.

By fostering the entrepreneurial spirit and develop transversal skills (both hard and soft) for ICT students/ graduates across Europe, ICT Entrepreneur will enhance entrepreneurship levels of students within EU Universities.

3. NATIONAL INITIATIVES/ PROJECTS/ NEWS

In recent years, the entire Portuguese entrepreneurship context changed and the practical results of this transformation is visible. There are now in the country numerous support and training programmes, business incubators, financing systems, there are regular events attracting investment and enterprise networking linking the entrepreneurs to domestic and foreign investors and there are multiple business acceleration programmes, structured to minimise the risk of failure of new businesses. There are several areas that still require intervention at the level of entrepreneurship, and cooperation between universities and business seems a priority.

Thus, from the intensive search for the courses/seminars/lessons related with entrepreneurship education in Portugal we can clearly notice some gaps on the national entrepreneurship ecosystem, especially when it comes to ICT entrepreneurs as there are no programmes specifically directed towards them. Nevertheless, some Higher Education Institutions have been making a huge effort in this area. At this level the incubators and the technological transfer offices, connected to the institutions, have been crucial.

Regarding the initiatives aiming to foster entrepreneurship, we can say that Portugal is well served with programmes and incentives directed to this end. The government, through entities as IAPMEI and IEFP has been developing several programmes aiming to help entrepreneurs setting out their businesses, providing training, advice and mentoring, and helping in the business plan development. In this case incubators and entrepreneurship/transference knowledge offices linked to the universities have been also having a relevant role. Some private companies (e.g. EDP, Grupo Amorim, Delta) participate in this effort by promoting idea contests, giving some financial support or some conditions to star-up. Banks and venture capital organisations (e.g. CGD, Portugal Ventures) have been assuring the financing for entrepreneurship activities through the micro-credit or the venture capital.

4. LOCAL VISITS: STRENGTHS AND WEAKNESSES, BEST PRACTICES, EXSITING GAPS

The set of organisations that agreed to participate in this study is shown below (see table 1 and 2). Here we present the institutions vised in Portugal (national visits) and in France (international visits).

Table 1. Presentation of the institutions visited in Portugal (National Visits)

	1. UATEC	2. DITS	3. AUDAX	4. Ideia-Atlântico
Equity	Public	Public	Private	Private
Type	Technology/knowledge Transfer Centre of an university	Technology/knowledge Transfer Centre of an university	Formation Centre/Incubator	Incubator
Offerings	Intellectual Property; Business Development; Internationalisation; Innovation; Business Plan	Intellectual Property; Business Development; Internationalisation; Innovation; Business Plan; Motivation Sessions	Business Development; Organizational Management; Entrepreneurial mind-set; Communication; Law; Internationalisation	Business Development; Organizational Management; Marketing; Entrepreneurial mind-set; Communication; Internationalisation
	5. Tecminho	6. ANJE	7. CTC IPL	8. Star-up Pirates
Equity	Private	Private	Public	Private
Type	Technology/knowledge Transfer Centre of an university	Formation Centre/ Incubator	Technology/knowledge Transfer Centre a polytechnic institute	Accelerator
Offerings	Business Development; Organizational Management; Accounting; Marketing; Communication; Internationalisation	Business Development; Organizational Management; Marketing; Communication; Internationalisation	Business Development; Organizational Management; Marketing; Communication; Accounting; Business Plan; Human recourses	Business Development; Organizational Management; Marketing; Business Plan

The courses offered by the local organisations are very different from each other (except the course of Entrepreneurship with Technologic Basis). We notice that incubators organise a specific type of training of short duration (mainly workshops). Almost all of the organisations offer mentoring during, and even after the course. The accreditation is not an issue for the institutions inquired, and it also looks like it is not a requirement for the participants. The fees

of the courses range between a symbolic value of 75€ to 300€, or represent a more substantial cost (1000€). Some of them are free. The courses are offered to individual entrepreneurs but all of them promote and encourage the collaboration and the constitution of multidisciplinary teams whether to explore a technology, to explore an idea or to solve a problem. Regarding the professionals involved in the training delivery, there is a mix of agents – professors of the academy, entrepreneurs and professionals with experience or staff of the organisations.

The majority of the courses are attended mainly by HEI students or by graduates. Regarding the selection process, it is usually based in the analysis of the candidates profile (initially the focus is not on the business idea). Generally the courses are open to foreign participants; nevertheless their presence is not very common. All courses suffered some changes in the curriculum. However these were not structural changes, instead they were punctual adjustments related with schedules, adaptation to the public and modifications aiming to transform the course into a more practical training.

The success of the courses, in terms of businesses created, is somewhat difficult to measure for some of these organisations. However it can be said that it is relatively low. Regarding the points in which it's possible to find more differentiation between the offers, respondents refer mainly the aspects of mentoring, flexibility, proximity, expertise and, in some cases, personalised service. When asked about the characteristics that make a successful entrepreneur, respondents mentioned the persistence, the passion, the vision and the proactivity. More atypical answers, as *"Working on the boundaries of knowledge"*, *"Refuse to be sick"*, and *"Hard working - 90% work and 10% inspiration"* were also registered.

When asked about the improvements they would like to implement in their services, the interviewees mentioned that they would like to see other kind of methodologies implemented (having in mind the good practices of some academies) and the creation of integrative e-learning platforms, acceleration services, internationalisation and possibility to have more mentors. Concerning EU entrepreneurship policy, national organisations have a good image of what has been done. However they present several suggestions: promoting the formation of teachers, including entrepreneurs in the design of the programmes, providing financial support, promoting local and social projects and foster entrepreneurship since early ages, between other measures. Regarding the barriers to entrepreneurship, the most referred obstacle was the

culture (stigma of failure, aversion to risk, lack of confidence and optimism). Bureaucracy, little knowledge about the market and financial constraints were also mentioned.

The mentioned problems students/ entrepreneurs in the ICT field face when they decide to start-up were consensual among the local organisations – this target has a great aversion to bureaucracy and to management and financial issues; there are also problems related with the soft skills (e.g. difficulties in communication); lack of sensitivity to market (in terms of knowledge and market orientation). The inexistence of multidisciplinary teams was other constraint that these individuals face when they decide to start-up.

5. EU VISITS: STRENGTHS AND WEAKNESSES, BEST PRACTICES, EXSITING GAPS

The set of organisations that agreed to participate in this study is shown below (see table 1 and 2). Here we present the two institutions vised in France (international visits).

Table 2. Presentation of the institutions visited in France (International Visits)

	9. University of EMLYON	10. Incubator of EMLYON
Equity	Private	Private
Type	University	Incubator
Offerings	Entrepreneurship competences; Creativity; Marketing; Design.	Entrepreneurship competences; Organizational Management; Marketing; Strategy; Business Plan.

Regarding the institutions visited in France, both private, we visited a university and an incubator that we will briefly present. The slogan of EMLYON is *"Educating entrepreneurs for the world"*. All students in this university have to attend at least one entrepreneurship course. There is also complementary training provided by the Executive Programmes. The focus of its entrepreneurship programmes is on creativity and soft skills (learn by doing). Some of the programmes are very open to the society - students try to solve a social problem (for instance

for a NGO) and show the projects to other people. There are also courses more indicated to students from other areas of knowledge (e.g. engineering). Other programmes consist in going to an enterprise and stay there some time. The students should make a proposal and have a mission, a kind of compromise with the company in which they have to stay some weeks and generate reports. They have to discover the model of business, how to sustain that model and at the end to make some recommendations.

The Incubator of EMLYON was considered the best incubator in France. It is open to students and investigators as well as to entrepreneurs out of the university. The Incubator provides assistance from the outset of the entrepreneurship process, giving to innovative entrepreneurs a robust support structure featuring a wide range of different systems. It also provides multiple opportunities to meet and network with established decision-makers and entrepreneurs. This organisation allows the incubation of students (based in the action learning by developing a project), the incubation of people that have already a project and want to work their own idea and an executive programme that intends to be an accelerator for new innovative businesses.

In general the method of contact of the courses in both organisations is face to face combined with eLearning (conferences, workshops, tutoring, field work, in-company stay, coaching). Expert tutors and a collaborative platform are also used. As we are facing a private organisation attended by the upper classes, the fees are significantly higher when compared with the Portuguese institutions. The professionals involved in the training delivery are professors of the academy, entrepreneurs and professionals.

The courses are mainly attended by graduates. Similarly to the Portuguese organisations, the selection process is based in the candidates' profile. Both French institutions are open to foreign attendants and changes in the curriculum are related with the inclusion of new contents.

They are also very focused in global entrepreneurship and in excellence. When asked about the more relevant skills of successful entrepreneurs, the options were global vision, taking risks, curiosity and motivation.

The incubator of EMLYON presented a surprisingly high rate of success in terms of businesses created, what is certainly related with the regular tracking of the projects' progress. Every

three months the projects are evaluated. Participants, during the formation/training programmes, are encouraged to participate in the events organised by the incubator (table round, workshops, etc.), which constitutes also an opportunity to expand professional networks with other entrepreneurs.

In the opinion of EMLYON, development of professors training in the entrepreneurship field and the "upgrade" to a technological park were the aspects that could be improved. In France, or at least in these two organisations, curiously the barrier referred was similar to Portugal: culture, mentality of the individuals and society.

In the case of the partnerships, the differences between national and these two French organisations are more evident. At this time we just found national partnerships with Spain, UK, Brazil and Cape Verde, even though other possible partnerships may happen in future. For instance, the entities of EMLYON have several partnerships in EU and outside EU, since some of the programmes demand for stays in foreign universities. Regarding the incubator, the ambition is to constitute a European network/platform of incubators and accelerators of excellence.

6. SUGGESTIONS ON MODULES TO BE INCLUDED IN THE ICT ENTREPRENEUR PACKAGE

Taking into account the results of the interviews, there is some consensus regarding the inclusion of the following subjects in an entrepreneurship programme directed to ICT students:

- Entrepreneurial culture;
- Team building;
- Communication and negotiation techniques;
- Finances;
- Basic management tools;
- Internationalisation;
- Business models;
- Marketing and market research;
- Soft skills in general.

7. PERCEPTIONS OF VISITING ORGANISATIONS ABOUT THE POTENTIAL OF OUR ICT ENTREPRENEUR PACKAGE

ICT Entrepreneur project was presented to each organisation and, as a general view, the idea had a pretty good acceptance from all of them. There's also a widespread perception that ICT students/ researchers/ experts share certain characteristics that should be treated differently. This public usually works in the back office, they're more focused on their invention and less worried with the market. They also have great aversion to bureaucracy and financial issues. The absence of knowledge in the management field, plus lack of communication and negotiation skills are also relevant aspects. As such, the creation of an entrepreneurship program directed towards them makes a lot of sense in the opinion of the visited organisations, as long as a lot of attention is paid to teacher's formation and real entrepreneurs are involved in the conception of the program.

The visited organisations also mentioned the need to raise awareness towards the creation of multidisciplinary teams. However, the opinions differed when it comes to soft and hard skills. Some individuals said that the development of communication, leadership and negotiation skills was essential, while others highlighted financing and management tools. Probably the balance between soft and hard skills is the most desirable, especially because the future ICT entrepreneur might have difficulties in the domain of all business areas and realise the need of a multidisciplinary team with experts in various business areas (ex: financing and accounting).

8. CONCLUSIONS

Although there is no formal country-level theory of entrepreneurship, attempts to measure the entrepreneurial character of countries have been quite numerous. Broadly speaking, measures of country level entrepreneurship fall in three categories: output indicators, attitude and framework indicators.

The output indicators track new firms, new incorporations and the prevalence of self-employment within a given population. These indicators consider a country to be entrepreneurial if it has a high number of individuals trying to start new ventures, or if its

business registries report a high number of new incorporations. The strength of such measures is that they register real activity, a weakness of such measures, however, is that they tend to focus on aggregates of micro-level activity while ignoring the context in which the activity is embedded. So many aspects of the entrepreneurship process are ignored by the output indicators.

Attitude measures monitor country's opinion and behaviour toward entrepreneurship but do not link them to activities or policy frameworks. Entrepreneurial countries are those where the population exhibits a positive attitude toward entrepreneurship or a strong preference for self-employment. These indicators provide insights about a country´s entrepreneurial culture, but they tell us little about actual entrepreneurial activity. Attitudes do not always translate into action and we do not know whether attitudes drive or are driven by entrepreneurial action.

The framework indicators attempts to measure the conditions for entrepreneurship. For this measures, an entrepreneurial country is one where business regulations favour new business entry and operation. However, it is not certain that a favourable regulatory framework is all that is needed to promote the individual entrepreneurial activity.

So it is possible to say that entrepreneurship is a systemic phenomenon where many components interact to produce system performance. Both individuals and contexts matter in this process, and they influence one another. The process itself is very complex and comprises many facets.

Considering this complexity the ICT project, focus in the analysis of the entrepreneurship education as tool that can support young people to be more entrepreneurial. This is about how to develop a general set of competences applicable in all walks of life, not simply about learning how to run a business. It includes all forms of learning, education and training which contribute to entrepreneurial spirit, competence and behaviour - with or without a commercial objective. Particularly it aims to analyse the current entrepreneurship and accelerator programmes aiming to identify the existing gap in terms of the target groups and the content covered. We carried out an intensive search for the courses/seminars/lessons related with entrepreneurship education in Portugal and choose the more representative and with more impact on society.

This report returned on the main findings from the state of the art and needs' analysis. Special emphasis was put on the best practices, the existing gaps, the strengths and weaknesses of

existing centres/incubators/accelerators and their perceptions about the problems and what could be an entrepreneurship programme for ICT students/graduates.

It was possible to observe that the institutions visited in France are well known by their excellence in the field of entrepreneurship, aiming to "build global entrepreneurs" as their main purpose. Both university and incubator put a great effort in the implementation of a real entrepreneurship culture.

The need to change mentalities and surpass the inexistence of entrepreneurial culture in the society were negative aspects mentioned by both national and international organisations. In the field of entrepreneurship education, interviewees stated that it's crucial to promote teacher's formation, encourage risk taking among students and motivate them to engage in multidisciplinary teams.

We finish with a comment of an interviewee that deserves special reflexion: *"In the future there should be no courses OF entrepreneurship. The culture of the society and of the university itself should already be enough and catalyst of the entrepreneurial spirit. Individuals should be mentalised to 'give value for money' and value the effort of the hard work. Additionally they should have the chance to make mistakes and have experiences, even if these fail".*

ANNEX I

ICT ENTREPRENEUR

A European University-Business Alliance aiming to foster the entrepreneurial spirit of ICT students

REPORT

INTERNATIONAL VISITS

1. INTRODUCTION

In this first Report we aim to analyse the current state of the art and the national needs of the countries involved in the ICT Entrepreneur project, in order to develop a new Entrepreneurship programme, by both academics and industry people.

As it was also necessary to get information from the best practices of a country outside the consortium, we started the contacts in France in order to find the best collaborators. We found two entities that accepted to receive our Portuguese research team.

2. METHODOLOGY

Aims:

- to evaluate the existing entrepreneurship ecosystem

- to identify the gaps, strengths and weaknesses in current entrepreneurship education

- to identify/analyse the entrepreneurial training needs of ICT

Targets:

Universities, Incubators, Entrepreneurship Centres, Accelerators, Science and Technological Hubs, Business Schools, Formation Centres.

Note: each partner needed to visit or contact at least 8 organisations from the target groups – 6 from the country and 2 from other country outside of the project.

Methods:

Personal interview (Sections: presentation, delivery, demand, successes, improvements, partnerships, other information).

3. RESULTS OF THE EMPIRICAL RESEARCH

3.1. Sample presentation

The set of organisations that agreed to participate in this study is shown below (see table 1 and 2). Here we present the institutions visited in France (international visits).

Table 1. Presentation of the institutions visited in France (International Visits)

	9. University of EMLYON	**10. Incubator of EMLYON**
Equity	Private	Private
Type	University	Incubator
Topics of courses	Entrepreneurship competences; Creativity; Marketing; Design.	Entrepreneurship competences; Organizational Management; Marketing; Strategy; Business Plan.

Regarding the institutions visited in France, both private, we visited a university and an incubator that we will briefly present. The slogan of EMLYON is *"Educating entrepreneurs for the world"*. All students in this university have to attend at least one entrepreneurship course. There is also complementary training provided by the Executive Programmes. The focus of its entrepreneurship programmes is on creativity and soft skills (learn by doing). Some of the programmes are very open to the society - students try to solve a social problem (for instance for a NGO) and show the projects to other people. There are also courses more indicated to students from other areas of knowledge (e.g. engineering). Other programmes consist in going to an enterprise and stay there some time. The students should make a proposal and have a mission, a kind of compromise with the company in which they have to stay some weeks and generate reports. They have to discover the model of business, how to sustain that model and at the end to make some recommendations.

The Incubator of EMLYON was considered the best incubator in France. It is open to students and investigators as well as to entrepreneurs out of the university. The Incubator provides

assistance from the outset of the entrepreneurship process, giving to innovative entrepreneurs a robust support structure featuring a wide range of different systems. It also provides multiple opportunities to meet and network with established decision-makers and entrepreneurs. This organisation allows the incubation of students (based in the action learning by developing a project), the incubation of people that have already a project and want to work their own idea and an executive programme that intends to be an accelerator for new innovative businesses.

3.2. Delivery

In this section we aim to gather information about entrepreneurship courses/training regarding duration, accreditation, support, costs, trainers and materials (table 2).

Table 2. Delivery of Entrepreneurship Training (International Visits)

	University of EMLYON	Incubator of EMLYON
Main offer	Innovation, Design, Entrepreneurship & Arts Programme (I.D.E.A.)	Programme BOOST
Delivery	Face to face/e-learning	Face to face
Duration/editions	About 100h during 2 years, 1 per year	2-3 months, 65 h ours, 1-2 per year
Structure of delivery	Depending on the activity, the time is divided by classes, tutored projects in the lab and in-company (or NGO) periods	It alternates training sessions and coaching 2 to 5 days and field phases to compare results of training in the competitive environment
Accreditation	Yes	No
Support after the course	Access to a programme of workshops. Access to online tools	Promote the contact with a network of investors. Mentorship from external mentors with experience together with tutoring from academic experts (peer to peer).
Course Fees/ Support	Paid. 11.500€ by year.	Paid. Individual: 2.500€/ Team: 4.000€
Trainers	Academics, entrepreneurs	Academics, entrepreneurs, staff of the incubator
Aimed at individual entrepreneurs? Is collaboration encouraged?	Yes. But it encourages team work.	Yes. But the teams are privileged (teams of 5-6 entrepreneurs)
Materials	Online	No
Living and subsistence costs	No	No

In general, in this French university, the method of contact is face to face combined with eLearning (conferences, workshops, tutoring, field work, in-company stay, coaching). Expert tutors and a collaborative platform are also used. As we are facing a private organisation attended by the upper classes, the fees are significantly higher when compared with the Portuguese institutions. The professionals involved in the training delivery are professors of the academy, entrepreneurs and professionals.

3.3. Demand

In this section we present the data related with the number of participants, qualifications, pre-requisites, selection and nationality of attendants (table 3).

Table 3. Demand of Entrepreneurship Training (International Visits)

	University of EMLYON	**Incubator of EMLYON**
Number of Participants	About 30	It depends.
Qualifications	Graduates	Mainly graduates
Previous preparation required	No	No
Selection Process	Yes. Based in the profile. It is also necessary to have bachelor (or higher) or diploma certified level II from certain areas	Yes. Based in the profile of the candidate and not in the idea (there is a pre-incubation period to test whether they will be good entrepreneurs)
Open to participants within/ outside EU	Yes, both (from a very diversified set of countries)	Yes, both (from a very diversified set of countries)
Changes in the curriculum.	Launching new modules/contents	Adaptation to new areas of business

In the case of these institutions, the courses selected are mainly attended by graduates. Again in this case the selection process is based in the candidates' profile. Both institutions are open to foreign attendants and changes are related with the inclusion of new contents.

3.4. Successes

Here the information collected is about creation of businesses, differentiation of the course and qualities to make a successful entrepreneur (table 4).

Table 4. Successes in Entrepreneurship Training (International Visits)

	University of EMLYON	**Incubator of EMLYON**
Of those that participate how many set up in business?	Data non available	Around 80-85%
Differentiation from other offerings	The premise of the institution is to build global entrepreneurs and to show why the things are done. They have an entrepreneurship school of excellence.	Several factors contribute to distinguish the offer: reputation, legitimacy, network, large experience
Top three qualities to make a successful entrepreneur	1. Global vision 2. Curiosity 3. Motivation	1. Take risks 2. Evolution 3. Realistic

Both organisations are very focused in global entrepreneurship and in excellence. When asked about the more relevant skills of successful entrepreneurs, the options ranged between global vision, take risks, curiosity and motivation.

The incubator of EMLYON presented a surprisingly high rate of success in terms of businesses created, what is certainly related with the regular tracking of the projects' progress. Every three months the projects are evaluated. Participants, during the formation/training programmes, are encouraged to participate in the events organised by the incubator (table round, workshops, etc.), which constitutes also an opportunity to expand professional networks with other entrepreneurs.

3.5. Improvements

In this section we present the interviewees' perception regarding the improvements they would make to the service if there were no limits, their opinion about what EU could do to foster entrepreneurship and the main obstacles to entrepreneurship (table 5).

Table 5. Improvements in Entrepreneurship Training (International Visits)

	University of EMLYON	Incubator of EMLYON
What improvements would you make to the service if there were no limits?	To improve the professors training (sometimes they don't have enough competences to teach entrepreneurship)	To move on to next phase: becoming a technological park
If the EU could do more to improve entrepreneurship what would this look like?	- The European institutions are not very open to external opinions regarding this issue - Policy makers should follow a more open and collaborative strategy	- Being a private organisation, the incubator is not very concerned with this issue - Is more critical with the public sector that is to slow and heavy
What do you feel is the main barrier to entrepreneurship?	Culture and mentality. Everyone wants to study in a great university and goes to work to a big company. To become an entrepreneur doesn´t give social status	Culture, risk aversion, lack of experience, being far from the reality, venture capital

To develop the professors training in entrepreneurship field and to "upgrade" to a technological park were the aspects that could be improved in the opinion of EMLYON. In France, or at least in these two organisations, curiously the barrier referred, as in Portugal, was the culture and the mentality of the individuals and society.

3.6. Partnerships

The existence of partners in EU and outside of the EU is shown in this section (table 6).

Table 6. Partnerships in Entrepreneurship Training (International Visits)

	University of EMLYON	Incubator of EMLYON
EU partners	Yes (e.g. The programme EEJ consists in a European network of teams of students that includes a short stay in a foreign university)	Yes (mostly from North Europe)
Partners outside of the EU?	Yes (e.g. in the Global Entrepreneurship Programme - University of Zhejiang in China and Purdue University in USA)	Yes (e.g. Canada)

The entities of EMLYON have several partnerships in EU and outside EU, since some of the programmes demand for stays in foreign universities. Regarding the incubator, the ambition is to constitute a European network/platform of incubators and accelerators of excellence.

3.7. Other information

In this section we draw two open questions in order to get the interviewees' perception about the problems faced by ICT students when they decide to star-up, as well as to collect some clues and suggestions of what a course directed to this public should be like (table 7).

Table 7. Problems and suggestions related with ICT Entrepreneurs (International Visits)

	University of EMLYON	Incubator of EMLYON
Please point the main problems students/entrepreneurs in the ICT field face when creating a start-up.	- Students don't have enough support from teachers because they usually don't know how to deal and surpass this lack of capabilities	- These students are risk averse - They don't value enough the role of the entrepreneurship.
What suggestions/contents would you recommend for an entrepreneurship course directed towards ICT students/entrepreneurs?	To insist in the topic of entrepreneurial culture	Develop an entrepreneurship mind-set and promote the formation of complimentary teams

The problems mentioned were consensual – this target has a great aversion to bureaucracy and to management and financial issues; there are also problems related with the soft skills (e.g. difficulties in communication); lack of sensitivity to market (in terms of knowledge and market orientation). The inexistence of multidisciplinary teams was other constraint that these individuals face when they decide to start-up. The University of EMLYON puts also the responsibility on teachers because sometimes they are not able to help students with this type of gaps. To overcome this situation, by one hand it is necessary to invest in courses focused in soft skills, in simple and useful management tools and in pre-accelerator programmes. By the other hand, as mentioned by French entities, it is necessary to work and to implement a culture of entrepreneurship in all society.

4. CONCLUSION

It was possible to observe that the institutions visited in France are well known by their excellence in the field of entrepreneurship, aiming to "build global entrepreneurs" as their main purpose. Both university and incubator put a great effort in the implementation of a real entrepreneurship culture.

At EMLYON University it's mandatory that all students attend at least one compulsory entrepreneurship course which can assume the format of face to face or e-learning. Students can go to workshops, seminars or in-company stays. The aim is learning by developing a project that can be done in articulation with the incubator.

Nevertheless the responsible for the entrepreneurship programmes thinks that it's always possible to get better results. For that it's necessary to surpass the inexistence of an entrepreneurial culture in the French society and change mentalities. Specifically in the field of entrepreneurship, pedagogy is crucial to enhance the formation of entrepreneurship teachers, encourage risk taking among students and motivate them to engage in multidisciplinary teams.

ANNEX II

ICT ENTREPRENEUR

A European University-Business Alliance aiming to foster the entrepreneurial spirit of ICT students

REPORT

LOCAL VISITS

1. INTRODUCTION

In this first Report we aim to analyse the current state of the art and the national needs of the countries involved in the ICT Entrepreneur project, in order to develop a new Entrepreneurship programme, by both academics and industry people.

Thus, in Portugal, we started to study the current entrepreneurship and accelerator programmes aiming to identify the existing gap in terms of the target groups and the content covered. We carried out an intensive search for the courses/seminars/lessons related with entrepreneurship education. We found eight organisations available to participate in the research.

2. METHODOLOGY

Aims:

- to evaluate the existing entrepreneurship ecosystem

- to identify the gaps, strengths and weaknesses in current entrepreneurship education

- to identify/analyse the entrepreneurial training needs of ICT

Targets:

Universities, Incubators, Entrepreneurship Centres, Accelerators, Science and Technological Hubs, Business Schools, Formation Centres.

Note: each partner needed to visit or contact at least 8 organisations from the target groups – 6 from the country and 2 from other country outside of the project.

Methods:

Personal interview (Sections: presentation, delivery, demand, successes, improvements, partnerships, other information).

3. RESULTS OF THE EMPIRICAL RESEARCH

3.1. Sample presentation

The set of organisations that agreed to participate in this study is shown below (see table 1). Here we present the institutions visted in Portugal (national visits).

Table 1. Presentation of the institutions visited in Portugal (National Visits)

	1. UATEC	**2. DITS**	**3. AUDAX**	**4. Ideia-Atlântico**
Equity	Public	Public	Private	Private
Type	Technology/knowledge Transfer Centre of an university	Technology/knowledge Transfer Centre of an university	Formation Centre/Incubator	Incubator
Topics of courses	Intellectual Property; Business Development; Internationalisation; Innovation; Business Plan	Intellectual Property; Business Development; Internationalisation; Innovation; Business Plan; Motivation Sessions	Business Development; Organizational Management; Entrepreneurial mind-set; Communication; Law; Internationalisation	Business Development; Organizational Management; Marketing; Entrepreneurial mind-set; Communication; Internationalisation
(cont.)	**5. Tecminho**	**6. ANJE**	**7. CTC IPL**	**8. Star-up Pirates**
Equity	Private	Private	Public	Private
Type	Technology/knowledge Transfer Centre of an university	Formation Centre/ Incubator	Technology/knowledge Transfer Centre a polytechnic institute	Accelerator
Topics of courses	Business Development; Organizational Management; Accounting; Marketing; Communication; Internationalisation	Business Development; Organizational Management; Marketing; Communication; Internationalisation	Business Development; Organizational Management; Marketing; Communication; Accounting; Business Plan; Human recourses	Business Development; Organizational Management; Marketing; Business Plan

There is a mix of public and private institutions. Half of them are connected with Higher Education Institutions (HEI); the others are incubators, formation centres and we have also an accelerator. The topics of the courses are miscellaneous.

3.2. Delivery

In this section we aim to gather information about entrepreneurship courses/training regarding duration, accreditation, support, costs, trainers and materials (table 2).

Table 2. Delivery of Entrepreneurship Training (National Visits)

	1. UATEC	2. DITS	3. AUDAX	4. Ideia-Atlântico
Main offer	Entrepreneurship of Technologic Basis	Entrepreneurship of Technological Basis	Capacitation Course on Entrepreneurship	Formations according to the incubators' needs
Delivery	Face to face	Face to face	Face to face	Face to face
Duration/editions	17 weeks, 50 hours, 1 per year	17 weeks, 50 hours, 1 per year	100 hours, 1-2 per year	According to the needs
Structure of delivery	3h day - Introductory sessions + Workshops + Mentoring	3h day - Introductory sessions + Workshops + Mentoring	4h day and 8h day (Saturday) - Introductory sessions + Practical application	It depends (around 30h) - Incubation support + Workshops + Mentoring
Accreditation	No	No	No	No
Support after the course	Mentoring (expertise mentors)	Mentoring (expertise mentors)	Mentoring (expertise mentors)	Mentoring (expertise mentors). Individual consultancy.
Course Fees/ Support	Free (if there is some project to support) or between 75€-300€.	Free (if there is some project to support) or between 75€-300€.	Paid. Each module costs between 200-250€.	Free
Trainers	Academics and professionals	Academics and professionals	Academics and entrepreneurs	Incubator's management team
Aimed at individual entrepreneurs? Is collaboration encouraged?	Yes. But is encourages the collaboration among business students, ICT students, technologists (from research groups) and professionals.	Yes. But is encourages the collaboration among business students, ICT students, technologists (from research groups) and professionals.	Yes. Usually individuals that want to open up their own companies. Team work and collaboration is encouraged.	The service is offered to all members of the team of the incubating company.
Materials	Yes (there is a manual). Online	Yes (there is a manual). Online	Yes (there is a manual). Online	No
Living and subsistence costs.	No	No	No	No

(cont.)	5. Tecminho	6. ANJE	7. CTC IPL	8. Star-up Pirates
Main offer	IdeaLab – Business Laboratory of Ideas	Leadership Intensive Training Course	Poliempreende	Pre-Accelerator Intensive Programme
Delivery	Face to face	Face to face	Face to face	Face to face
Duration/editions	4 months, 30h hours, 1 per semester	1 week, 50 hours, 1 per year	30 hours, 1 per year	56 hours, 1-2 per year (depends on the affiliate)
Structure of delivery	4 h (5 workshops) + 6h (specialized consultancy) + Mentoring	8h day – Physical training + Group dynamic	3h (workshops) + Ideas contest	8hs day - 5 days of workshops + 2 days of teambuilding and networking
Accreditation	No	No	No	No
Support after the course	Support from a collaborator of the programme. On-line platform dedicated to participants doubts	No	Mentoring	Mentoring
Course Fees/ Support	Free	Paid. Around 1000€	Free	It depends on the affiliates' location. From 75-150€
Trainers	Staff, academics and professional/entrepreneur	Staff	Academics and external contractors (entrepreneurs or professionals)	Professional experts
Aimed at individual entrepreneurs? Is collaboration encouraged?	Yes. Usually individuals that want to open up their own companies. Team work and collaboration is encouraged	Yes. But it encourages team work	Yes. But it encourages team work	Yes. But it encourages team work
Materials	Online	No	No	Online
Living and subsistence costs.	No	No	No	Food allowance

The courses offered by these organisations are very different from each other (except the course of Entrepreneurship of Technologic Basis). We notice that incubators organise a type of training more specific and of short duration (mainly workshops). Almost all offer mentoring during, and even after the course. The accreditation is not an issue for the institutions inquired, and it also looks that it is not a requirement for the participants. The fees of the courses range between a symbolic value of 75€ to 300€, or represent a more substantial cost (1000€). Some

of them are free. The courses are offered to individual entrepreneurs but all of them promote and encourage the collaboration and the constitution of multidisciplinary teams whether to explore a technology, to explore an idea or to solve a problem. Regarding the professionals involved in the training delivery, there is a mix of agents – professors of the academy, entrepreneurs, professionals with experience or staff of the organisations.

3.3. Demand

In this section we present the data related with the number of participants, qualifications, pre-requisites, selection and nationality of attendants (table 3).

Table 3. Demand of Entrepreneurship Training (National Visits)

	1. UATEC	2. DITS	3. AUDAX	4. Ideia-Atlântico
Number of Participants	Around 30 (6 teams of elements each)	Around 30 (6 teams of 5 elements each)	Around 18	From 10 to 15
Qualifications	Graduates or university students	Graduates or university students	Graduates or university students	Graduates (majority)
Previous preparation required	No	No	No	No
Selection Process	Yes. CV's are analysed by the director, taking into account applicants' experience	No. Selection is made by registration on a first-come-first-served basis	Interview to identify the applicant's profile	No selection process for the workshops. To the incubation there's a detailed analysis (team, model, etc.)
Open to participants within/outside EU	Yes, both (mainly from Brazil, Russia, China)	Yes, both	Yes, both (mainly from PALOPs and Brazil)	Yes, both (mainly Brazilian participants, as they have an unit there)
Changes in the curriculum.	No relevant changes, just small adjustments related to the schedule, financing entity requirements and a few motivational adjustments	Yes. In its first years, the course was too expositor. Now motivational sessions are preferred. The course is turning out to become a kind of mentoring programme	Yes. Contents adjustment and replacement of certain modules	Yes. The course is changed according to the new projects or specifications

(cont.)	5. Tecminho	6. ANJE	7. CTC IPL	8. Star-up Pirates
Number of Participants	From 20 to 30	Around 30	Variable. Usually the workshops are open to the public	From 15 to 30
Qualifications	Graduates (or up) only	Mainly graduates but the public is hybrid	Graduates or university students	Mainly graduates
Previous preparation required	No	Just physical exams	No	No
Selection Process	Selection based on the business ideas presented	Just physical exams	No	Yes. Selection is based on the candidate's profile and not on the business ideas. Selection tools: Interviews, CV and Linkedin
Open to participants within/ outside EU	Yes, both (foreign participants are not usual but they had already Brazilian and Mexicans)	No	No	Yes, both (but foreign participants are only usual in Lisbon; the programme exists in various countries - franchising)
Changes in the curriculum.	Some changes on the initial sessions and some adjustments on the workshops goals	Some small adjustments	Yes. The subjects of the workshops can vary from year to year, according to the invited experts	Yes. Adaptation to the group/city

The majority of the courses are attended mainly by HEI students or by graduates. In relation to the selection process this is usually based in the analysis of the candidates profile (initially the focus is not in the business idea). Generally courses are open to foreign participants; nevertheless their presence is not very common. All courses suffered some changes in the curriculum. However these were not structural changes, and instead were punctual adjustments related with schedules, adaptation to the public and modifications aiming to transform the course into a more practical training.

3.4. Successes

Here the information collected is about creation of businesses, differentiation of the course and qualities to make a successful entrepreneur (table 4).

Table 4. Successes in Entrepreneurship Training (National Visits)

	1. UATEC	**2. DITS**	**3. AUDAX**	**4. Ideia-Atlântico**
Of those that participate how many set up in business?	Around 20%	Around 20-25%	The great majority is creating or thinking in creating its own business	The great majority is creating or thinking in creating its own business
Differentiation from other offerings	Mentoring sessions; available technologies for the participants to work with	Mentoring sessions; available technologies for the participants to work with	Flexibility in the construction/frequency of the course; holistic approach to entrepreneurship	Personalised service, closeness, friendly attendance
Top three qualities to make a successful entrepreneur	1. Persistence 2. Flexibility 3. Working on the boundaries of knowledge	1. Refuse to "be sick" 2. Capacity to solve problems 3. Capacity to take action	1. Persistence 2. Passion for business 3. Proactivity	1. Hard working (90% work/10% inspiration) 2. Customer focus 3. Vision
(cont.)	**5. Tecminho**	**6. ANJE**	**7. CTC IPL**	**8. Star-up Pirates**
Of those that participate how many set up in business?	Around 30%	Data non available	Data non available	Data non available
Differentiation from other offerings	Methodology, balance between group and individual sessions; expert team	Military type of training	Close relations with the industry, incubation structures, local authorities and business associations	As a pre-accelerator its offer works as a funnel to other activities (e.g. incubators)
Top three qualities to make a successful entrepreneur	1. Passion 2. Determination 3. Resilience	1. Persistence 2. Leadership 3. Global vision	1. Persistence 2. Take risks 3. Communication	1. Willingness to learn 2. Dynamism 3. Compromise

The success of the courses, in terms of businesses created, is somewhat difficult to measure for some of these organisations. However it can be said that is relatively low. Regarding the points in which it's possible to find more differentiation between the offers, respondents refer mainly the aspects of mentoring, flexibility, proximity, expertise and, in some cases, personalised service. When asked about the characteristics that make a successful

entrepreneur, respondents mentioned the persistence, the passion, the vision and the proactivity. More atypical answers, as *"Working on the boundaries of knowledge"*, *"Refuse to be sick"*, and *"Hard working - 90% work and 10% inspiration"* were also registered

3.5. Improvements

In this section we present the interviewees' perception regarding the improvements they would make to the service if there were no limits, their opinion about what EU could do to foster entrepreneurship and the main obstacles to entrepreneurship (table 5).

Table 5. Improvements in Entrepreneurship Training (National Visits)

	1. UATEC	**2. DITS**	**3. AUDAX**	**4. Ideia-Atlântico**
What improvements would you make to the service if there were no limits?	Rely on interpersonal and institutional relationships. Turn the researcher into an entrepreneur	Having a course based on the Babson college's model (USA). The course is a mandatory subject on 1st year. Students form teams to pitch business ideas. The best ideas are chosen and financed	Putting an e-learning platform into practice for the PALOPs and Latin America	An acceleration service; more leisure places to improve the well-being and the networking. Extra support to international benchmarking
If the EU could do more to improve entrepreneurship what would this look like?	- Efforts have been focused on the supply and not on the demand - Programmes to motivate the inclusion of entrepreneurs on the entrepreneurship training should be created - Create and benefit programmes whose teachers have business experience	- Better investment on teachers' formation - Promoting the creation of an auto-evaluation platform of the university programmes - To promote programmes that allow the entrepreneur to have a previous business experience	- Financial support - Promote the creation of an European platform of collaboration at universities level (exchange of best practices) - Implementation of free on-line courses (taking as example the ones promoted by American universities)	- There should be a better focus on entrepreneurship as a whole - It should be easier for start-ups to access the European funds
What do you feel is the main barrier to entrepreneurship?	Not knowing what the market really wants.	Stigma of failure	Actual context and cultural barrier (aversion to risk and change)	Limited market and tax burden

(cont.)	5. Tecminho	6. ANJE	7. CTC IPL	8. Star-up Pirates
What improvements would you make to the service if there were no limits?	The improvements have been done when necessary	Increase of the amount of hours and promote the internationalisation	One mentor per project and a team of experts in each field	Extending the programme to other markets (e.g. USA)
If the EU could do more to improve entrepreneurship what would this look like?	- To financially support universities so they can have their own programme's portfolio - To finance the best ideas in those programmes	- To motivate young people to participate in a gap-year before they go to university or create their own business - Some resources like accelerators should be put on the service of entrepreneurs - The focus should be at younger ages and just not universities and in the technological entrepreneurship	- Micro, local and social projects should be paid more attention - Promote, even more, industrial property in Portugal (which is not very developed when compared with other realities)	- Programmes implemented in Portugal should be more carefully draw and adapted to the national context
What do you feel is the main barrier to entrepreneurship?	Bureaucracy and culture	Portuguese culture, the religion, the "Portuguese fado". Also, lack of trust in the consultants and lack of openness to listen to the advices of other professionals	Cultural barrier. Lack of confidence and optimism	Insecurity from entrepreneurs. Wrong partnerships and teams

When asked about the improvements they would like to implement in their services, the interviewees mentioned that they would like to see other kind of methodologies implemented (having in mind the good practices of some academies) and the creation of integrative e-learning platforms, acceleration services, internationalisation and possibility to have more mentors. Concerning EU entrepreneurship policy, national organisations have a good image of what has been done. However they present several suggestions: promote the formation of teachers, include entrepreneurs in the design of the programmes, provide financial support, promote local and social projects and foster entrepreneurship since early ages, between other measures. Regarding the barriers to entrepreneurship, the most referred obstacle was the culture (stigma of failure, aversion to risk, lack of confidence and optimism). Bureaucracy, little knowledge about the market and financial constraints were also mentioned.

3.6. Partnerships

The existence of partners in EU and outside of the EU is shown in this section (table 6).

Table 6. Partnerships in Entrepreneurship Training (National Visits)

	1. UATEC	2. DITS	3. AUDAX	4. Ideia-Atlântico
EU partners	Yes, with Spain	Yes, with Spain	No	Just in applications (with universities, companies, incubators and agencies)
Partners outside of the EU?	No	No	No	Yes. Brazil and Cape Verde
(cont.)	5. Tecminho	6. ANJE	7. CTC IPL	8. Star-up Pirates
EU partners	Just in applications (with universities, companies, incubators and agencies)	Yes, with CU – International Coaching University (London, UK) in the programme "StartUp Coaching"	No (but they are trying to internationalise the programme)	Yes, there is the franchising of the programme
Partners outside of the EU?	Just in applications (with universities, companies, incubators and agencies)	No	No	Yes, there is the franchising of the programme

At this time we just found national partnerships with Spain, UK, Brazil and Cape Verde. Other possible partnerships may happen in future.

3.7. Other information

In this section we draw two open questions in order to get the interviewees' perception about the problems faced by ICT students when they decide to star-up, as well as to collect some clues and suggestions of what a course directed to this public should be like (table 7).

Table 7. Problems and suggestions related with ICT Entrepreneurs (National Visits)

	1. UATEC	2. DITS	3. AUDAX	4. Ideia-Atlântico
Please point the main problems students/entrepreneurs in the ICT field face when creating a start-up.	- Great aversion to bureaucracy - They think they'll stop researching to dedicate themselves to something above their capabilities (e.g. management) - They think the market is always receptive to their technology/innovation - The importance of multidisciplinary teams is not taken into account	- Great aversion to bureaucracy and management language - Lack of management tools and skills, but also lack of individual motivation	- Lack of profile and competences - Weak skills on the financing domain - They don't know how to build a business plan - Difficulty to negotiate and look for investors	- Lack of skills in sales and commercial management - Weak competences on fiscal duties - Difficulty to communicate
What suggestions/ contents would you recommend for an entrepreneurship course directed towards ICT students/entrepreneurs?	Insisting on soft skills and entrepreneurial skills	Provide simple management tools (e.g. Business Model Canvas) Develop the soft skills in communication and negotiation fields	Provide formation in hard skills, especially in the financial field	Insisting and working hard on the Business Model. Develop soft skills (communication and conflict management) and knowledge on customers' needs
(cont.)	5. Tecminho	6. ANJE	7. CTC IPL	8. Star-up Pirates
Please point the main problems students/entrepreneurs in the ICT field face when creating a start-up.	- Gaps on the teams (most of the times they all have the same skills, thus it's necessary to build multidisciplinary teams) - Access to capital, industrial property and concept tests	- Lack of skills in sales and commercial management - Difficulties in communication - Aversion to administrative tasks (usually they prefer back office work)	- Lack of complementarity between the team/ project elements (non-multidisciplinary teams)	- Lack of knowledge on the market needs and preferences - Difficulties at communicating with potential clients/investors
What suggestions/ contents would you recommend for an entrepreneurship course directed towards ICT students/entrepreneurs?	Insisting on soft skills, entrepreneurial skills and deep analysis of the business idea	Working contents related to sales, commercial management, team management, internationalisation and networking on a more informal basis	Promotion of multidisciplinary teams. Insisting on the search for partnerships. Not forcing a formation on hard skills but instead insistence on soft skills	Creating a pre acceleration programme focused on non-complex management tools, and on presentation/pitches

The problems mentioned were consensual – this target has a great aversion to bureaucracy and to management and financial issues; there are also problems related with the soft skills (e.g. difficulties in communication); lack of sensitivity to market (in terms of knowledge and market orientation). The inexistence of multidisciplinary teams was other constraint that these individuals face when they decide to start up.

3.8. Closed Questions

Finally we draw some closed questions in order to get information about the importance of some aspects to facilitate the creation of a start-up, the problems to convert an idea into business and the importance of some aspects related with the profile of the entrepreneur (table 8, 9 and 10). Note that in this case we just present the scores of the national visits (values are aggregated in order to facilitate the interpretation).

Table 8. Factors that could facilitate the creation of start-ups

How relevant do you consider the following aspects to facilitate the creation of a start up?	Mean	Std. deviation	Minimum	Maximum
Training paths on entrepreneurship	4,13	0,599	3	5
Opportunities of public funding	3,38	0,696	2	4
Access to investment found/crowdfunding	3,75	0,433	3	4
Access to credit	3,38	1,111	2	5
Potential partners with managerial skills and motivation	**4,75**	0,433	4	5
Availability of patents	3,63	0,696	2	4
Availability of Technology Parks and Incubators in the area	3,50	0,707	2	4
Access to FabLabs and/or University laboratories on concessional terms	3,88	0,599	3	5
Networking and strategic contacts	**4,88**	0,331	4	5
Availability of mentoring/coaching programmes	4,50	0,500	4	5
Support services for the definition of the business plan	3,75	1,299	1	5
Coordination/cooperation among different local actors of innovation chain	3,88	0,599	3	5
Contests and prizes	3,50	0,500	3	4
Facilitate connections between big companies and start ups	3,88	0,781	3	5

Note: 1 = very unimportant; 2 = unimportant; 3 = neither unimportant nor important; 4 = important; 5 = very important

As observed, the most scored factors that could facilitate the creation of start-ups are the networking and contacts and the potential partners with management skills and motivation. By

the contrary, and in line with the interviewees, the aspects less relevant where the ones related with financial resources - public funding and access to credit, factor that also presents a great dispersion of answers together with support services for the definition of the business plan that has even the minimum score (1 point). During the meetings was possible to verify that the majority of the responsible by the programmes put much more importance in the motivation and hard work of the entrepreneurs, than in financial (funding) and technical aspects (business plan).

Table 9. Factors that could be a barrier to start-up

In your opinion, how much the following aspects could be a problem for you to convert an idea into business?	Mean	Std. deviation	Minimum	Maximum
Find qualified skills	**4,25**	0,433	4	5
Access to credit	3,38	0,992	2	5
Bureaucratic fulfilment	3,88	1,166	2	5
Difficulty/access costs for incubators	2,88	1,166	1	5
Business Plan drafting	3,50	1,000	2	5
High costs for patenting	3,38	0,696	2	4
Lack of managerial skills	**4,25**	0,661	3	5
Availability of facilities at concessional rates	3,63	0,484	3	4

Note: 1 = no problem; 2 = very small problem; 3 = small problem; 4 = moderate problem; 5 = big problem

Table 9 shows the obstacles to start-up, this is, the aspects that could be a barrier when an individual decides to convert an idea into business. The aspects higher punctuated where the difficulty to find qualified skills and the lacking of managerial skills. The difficulty and the access costs for incubators was the less relevant factor, because in fact, for the national reality it is not applicable (there are several incubators spread all over the country and usually the costs of incubation are accessible). When asked by other factors two organisations scored with 5 points the aspects: *"The idea do not correspond to a real need of the market"* and *"Communication and commercial capacity"*.

Table 10. Relevant characteristics of entrepreneurs

Which importance do you attribute to the following aspects related to entrepreneur, when evaluating business ideas?	Mean	Std. deviation	Minimum	Maximum
Motivation	**5,00**	0,000	5	5
Education	3,88	0,781	2	5
Industry experience	3,00	0,707	2	4
Start-up experience	3,63	0,857	2	5
Experience in leading teams	4,25	0,661	3	5
Investing own money	3,38	0,696	2	4
Inter team acquaintance	3,50	0,707	3	5

Note: 1 = very unimportant; 2 = unimportant; 3 = neither unimportant nor important; 4 = important; 5 = very important

For interviewees the most relevant attributes of entrepreneurs when they are in the process of evaluating the ideas, is clearly the motivation, followed by the experience in teams leadership. By the contrary the aspect less valuated is the experience in industry. When asked by other factors one organisation scored with 5 points the characteristic: *"Involvement and compromise with the project"*.

4. CONCLUSION

In Portugal there's a great diversity of entities promoting entrepreneurship courses: universities, incubators, formation centres and technology/knowledge transfer centres. In some institutions the courses are continuously and systematically offered, but in other institutions the entrepreneurship initiatives are more punctual and disperse. A characteristic that all courses of this study have in common is that, despite the fact that courses are offered to individual entrepreneurs, all of them stimulate the collaboration and engagement in multidisciplinary teams.

In the last years the evolution in terms of business creation is been notorious, mainly in businesses related with ICT; however it is difficult to say if that fact is directly related with entrepreneurship education and attendance in entrepreneurship courses. Some institutions rate the success between 20-30% and relate that achievement with the mentoring, flexibility, proximity and expertise of the organisation.

Regarding EU entrepreneurship policy there is the general perception that it is in the right way, but it is possible to improve the panorama by promoting the formation of teachers, including entrepreneurs in the design of the entrepreneurship programmes, promoting local and social projects and fostering entrepreneurship since early ages. All these measures would help to overcome some of the barriers to entrepreneurship (culture, shame to fail, aversion to risk, lack of confidence, bureaucracy, etc.).

To facilitate the creation of start-ups, some factors as the networking, relevant contacts in the market, management skills and motivation were mentioned by the interviewees. As such, the focus of the formation should be in the soft skills but also in the entrepreneurial culture.

ANNEX III

ICT ENTREPRENEUR
A European University-Business Alliance aiming to foster the entrepreneurial spirit of ICT students

NATIONAL INITIATIVES TEMPLATE

	COUNTRY	INITIATIVE/PROJECT/NEWS	RESPONSIBLE ORGANISATION	SHORT DESCRIPTION OF INITIATIVE/PROJECT/NEWS	RELEVANT WEBSITE
1	Portugal	FINICIA	IAPMEI	To facilitate the access to funding solutions and technical assistance in the creation of new enterprises with diferenciating projects with potential economic value.	LINK
2	Portugal	Empreender +	IAPMEI	To raise business ideas and means of investment. Aimed at young adults and potential investors.	LINK
3	Portugal	Programas de Apoio ao Empreendedorismo e à Criação do Próprio Emprego	IEFP/MTSS	Support for projects to start businesses that generate job creation and contribute to development of local economies through investment credit, guaranteed and interest-rate (Lines Microinvest and Invest +).	LINK
4	Portugal	Programa Investe Jovem	IEFP	Financial and technical support are provided to young candidates with investment projects and self-employment, contributing also to foster development and regional growth and local.	LINK
5	Portugal	RPGN - Rede de Percepção e Gestão de Negócios	IPDJ	Provides a wide support model to help young enterpreuners to turn their innovative ideas into sustainable initiatives at associative or business level.	LINK
6	Portugal	INOVA	ANQEP, DGE, DGEsTe, IAPMEI, IPDJ, SCML	Contest of innovative ideas which aims at stimulating enterpreunership and entrepreneurial culture among young people.	LINK
7	Portugal	EDP University Challenge 2015	EDP	Annual contest promoted by the Group EDP aiming at creating a close relationship between enterprises, general society and universities. The goal is to capitalize students innovation and criativity spirit.	LINK
8	Portugal	Prémios EDP Inovação - EDP Starter	EDP	The EDP Starter undertakes various initiatives including sponsorship of innovation competitions, technical support to start up businesses, support prototyping through Fablab EDP, incubation, support for demonstration projects, direct connection to the venture capital activities, etc.	LINK
9	Portugal	criAtividade - Concurso de Ideas Sines Tecnopolo	Sinestecnopolo	The challenge aims at indentifying socially responsible ideas and projects, focused on sustainability, social development and smart usage of natural resources.	LINK
10	Portugal	UBI Managment Challenge 2015	UBI, SDG	Contest to teach students how to get competitive advantage through the development of their managment skills.	LINK
11	Portugal	Caixa Jovem Empreendededor	CGD - Caixa Geral de Depósitos	Financing to equipment acquisition in order to support the development of small businesses.	LINK
12	Portugal	Arrisca C	Coimbra University, IPL, IDNIncubadora, IDDnet, Iparque, Biocant, CEC,…	Ideas and Business Plans Contest	LINK

13	Portugal	Inovação Portugal	ANJE - Associação Nacional de Jovens Empreendedores	Enterpreuneurship Programme aiming on the development of skills in the business initiatives field. The goal is to stimulate enterpreuneurship and promote the sustainable development of SMEs	[LINK](#)
14	Portugal	Call for Entrepreneurship - programa de Ignição	Portugal Ventures	This programme aims at giving access to high risk investment of innovative technology based projects in the *Seed* phase. The goal is to promote a more competitive and opened to the world economy through knowledge and innovation.	[LINK](#)
15	Portugal	Passaporte para o Empreendedorismo	IAPMEI	Access to grants, to the development of the business project. Prosecutors may have access to a national network of mentors that will provide business advice; it can also include technical assistance.	[LINK](#)
16	Portugal	Bolsa do Empreendedorismo - UEmpreende	European Commission Representation in Portugal	Workshops and an area of exposure and interaction with representatives of more than thirty partner organizations. A competition "Business Model Canvas - A New Page" on will be launched in the occasion of the event.	[LINK](#)
17	Portugal	Amorim Cork Ventures	Corticeira Amorim	The startup incubator of Corticeira Amorim challenges entrepreneurs with ideas, applications and innovative business proposals for the cork sector. Amorim Cork Ventures invests in and supports the launch of the idea in the market.	[LINK](#)
18	Portugal	Instalação de Jovens Agricultores	ProDer/MADRP	Facilitate the implementation of new initiatives of young farmers and the appropriate training and professional qualifications, and promote the development and adaptation of farms of young farmers	[LINK](#)