


ENTREPRENEURSHIP CASE OF PROFESSORS

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ARTICLE INFO	ABSTRACT
<p>Article history: Received: February, 23rd 2024 Accepted: April, 24th 2024</p>	<p>Objective: The paper aims to analyse the stages and problems involved in the creation of a technology-based university spin-off by providing a real case study.</p>
<p>Keywords: Entrepreneurship; Spin-Off; Innovation; Knowledge Transference.</p>	<p>Theoretical Framework: The main concepts supporting the research are discussed, as well as the theoretical framework of reference. It addresses the stages of the process of setting up a university technology-based company, as well as the specific problems that it involves. All issues are presented in a real context.</p>
	<p>Method: The methodology adopted for this research is based on a case study for teaching application. To this end, information is gathered through observation, direct interviews with the company under study, public documentation, and theoretical review through scientific databases of impact.</p>
	<p>Results and Discussion: The results were reflected in the development of a university teaching activity with guidelines for the teachers coordinating its implementation, in terms of objectives and reference bibliographic material to be used. It was contextualised in the light of the theoretical framework, highlighting the implications, basically at the level of reinforcement and acquisition of competences.</p>
	<p>Research Implications: The paper has essentially practical implications, providing information that reinforces the existing scientific literature on how the decision-making process that leads to the setting up of a technology-based university spin-off takes place and the problems associated with it. This allows a vision that enables a more effective and efficient execution of the entrepreneurial decision.</p>
	<p>Originality/Value: This is a real case of application in the university classroom, which allows students to assimilate the issues related to the process of entrepreneurship and, specifically, to the setting up of a technology-based university spin-off, dealing with its specific problems. Students' skills are strengthened with a view to their incorporation into the world of professional life.</p>
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CASO DE EMPREENDEDORISMO DE PROFESSORES UNIVERSITÁRIOS

RESUMO

Objetivo: O artigo tem como objetivo analisar as etapas e os problemas envolvidos na criação de uma spin-off universitária de base tecnológica através de um estudo de caso real.

Referencial Teórico: São discutidos os principais conceitos que sustentam a investigação, bem como o quadro teórico de referência. São abordadas as etapas do processo de criação de uma empresa universitária de base tecnológica, bem como os problemas específicos que este envolve. Todas as questões são apresentadas num contexto real.

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Método: A metodologia adoptada para esta pesquisa baseia-se num estudo de caso para aplicação pedagógica. Para o efeito, a informação é recolhida através de observação, entrevistas directas à empresa em estudo, documentação pública e revisão teórica através de bases de dados científicas de impacto.

Resultados e Discussão: Os resultados traduziram-se na elaboração de uma atividade de ensino universitário com indicações para os professores coordenadores da aplicação da atividade, em termos de objectivos e de material bibliográfico de referência a utilizar. Foi contextualizada à luz do quadro teórico, destacando as implicações, fundamentalmente ao nível do reforço e da aquisição de competências.

Implicações da Pesquisa: O artigo tem implicações essencialmente práticas, fornecendo informações que reforçam a literatura científica existente sobre a forma como decorre o processo de decisão que leva à criação de uma spin-off universitária de base tecnológica e os problemas que lhe estão associados. Isto permite uma visão que possibilita uma execução mais eficaz e eficiente da decisão empreendedora.

Originalidade/Valor: Trata-se de um caso real de aplicação na sala de aula universitária, que permite aos alunos assimilarem as questões relacionadas com o processo de empreendedorismo e, especificamente, com a criação de uma spin-off universitária de base tecnológica, tratando dos seus problemas específicos. As competências dos alunos são reforçadas com vista à sua incorporação no mundo da vida profissional.

Palavras-chave: Empreendedorismo, Spin-Off, Inovação, Transferência de Conhecimento.

CASO DE EMPRENDIMIENTO DE PROFESORES UNIVERSITARIOS

RESUMEN

Objetivo: El trabajo pretende analizar las etapas y problemática que envuelven la creación de una spin-off universitaria de base tecnológica aportando un caso real.

Marco Teórico: Se presentan los principales conceptos que subyacen a la investigación, así como el marco teórico de referencia, que abarca las etapas de proceso de creación de una empresa de base tecnológica surgida en la universidad, así como la particular problemática que conlleva. Todo ello, se aborda en un contexto real.

Método: La metodología adoptada para esta investigación versa sobre un estudio de caso para su aplicación docente. Para ello, se recaba la información elaborada a través de la observación, entrevista directa a la empresa objeto de estudio, documentación pública y revisión teórica a través de bases de datos científicas de impacto.

Resultados y Discusión:

Los resultados se plasmaron en el desarrollo de una actividad docente universitaria con indicaciones para los profesores que coordinen la aplicación de la misma, en cuanto a objetivos y material bibliográfico de referencia a utilizar. Se contextualizó a la luz del marco teórico, destacando las implicaciones, básicamente a nivel de refuerzo y adquisición de competencias.

Implicaciones de la Investigación: El trabajo tiene implicaciones eminentemente prácticas proporcionando información que refuerza la teoría científica existente sobre cómo se produce el proceso de decisión que desemboca en la creación de una spin-off universitaria de base tecnológica asumiendo la problemática asociada a ello. Esto permite una visión que possibilita la ejecución más eficaz y eficiente de la decisión de emprendimiento.

Originalidad/Valor: Se trata de un caso real de aplicación en aula universitaria, que permite asimilar las cuestiones relativas al proceso de emprendimiento y, en concreto al de la creación de una spin-off universitaria de base tecnológica lidiando con su problemática específica. Se refuerzan las competencias de los alumnos cara a su incorporación al mundo laboral.

Palabras clave: Emprendimiento, Spin-Off, Innovación, Transferencia del Conocimiento.

1 INTRODUCTION

Pepe, Juan, Alfonso, and Beatriz are professors who are finishing their PhD. They share interests because they have been in the same research group, working in a knowledge area related to Chemical Technology. Nowadays they work for two different universities located in southern Spain, but they have not lost contact among them. One day, they had a meeting for

discussing the course of the research they were carrying out together. Pepe refers to the market demand from different companies, whereas Beatriz enumerates the advantages of covering it by setting up a spin-off; Juan and Alfonso are not completely convinced and, in silence, think about the difficulties. Would creating a spin-off be worth it? The paper aims to answer this question by presenting a case study based on a real event.

The case study is focused on the decision of setting up a technology-based university spin-off. It is based on a real situation. A previous version of this case was presented and published by the 14^o Workshop APDR “Enpreendedorismo e desenvolvimento Regional”, on October 2012, ESCE – Instituto Politécnico de Setúbal.

The main characters, who are finishing their PhD, were initially in the same research group, which would split in two when three of them move to another university.

Although throughout the formative period of these people different interests are forged, they share something in common, that is the possible idea of starting a business. However, they do not know if that is the best option for a professor.

They observe that different companies show a great interest toward their research, which cannot be covered through the university. The creation of a spin-off is considered as a solution.

Furthermore, the lack of job stability and the protagonists’ research interests are incentives to implement the idea. They do not have business management formation, but their specific knowledge is solid.

Moreover, there are other problems that are not easy to overcome, such as:

- the university structure and its bureaucracy;
- the fact that the university does not always generate the knowledge that the company needs;
- companies are too focused on production but not on knowledge;
- businessmen do not consider the idea of investing money with long-term usefulness.

2 THEORETICAL FRAMEWORK

The theoretical framework of this section aims to explore in depth the stages and problems involved in the setting up of a technology-based university spin-off base on a real case.

2.1 THE CASE

Pepe, Juan, Alfonso, and Beatriz are professors who are finishing their PhD. They share interests because they have been in the same research group, working in a knowledge area related to Chemical Technology. Nowadays they work for two different universities located in southern Spain, but they have not lost contact among them. One day, they had a meeting for discussing the course of the research they were carrying out together. Pepe refers to the market demand from different companies, whereas Beatriz enumerates the advantages of covering it by setting up a spin-off; Juan and Alfonso are not completely convinced and, in silence, think about the difficulties. Would creating a spin-off be worth it?

2.2 THE BEGINNINGS

Pepe, Juan, Alfonso, and Beatriz, the main characters of this story (even though the case refers to a real situation, their names, and others, are fictitious due to their explicit request so as to preserve their identities), meet each other thanks to their common work in a university research group.

In Andalusia, the Andalusian Research Plan (PAI) promotes the research groups of the different andalusian universities. Funding of the groups was established regarding their members' *curriculum vitae*. In short, it depended on the productive activity of them: articles, publications, participation in research projects, etc.

In the seventies of the 20th century, in the University of Seville, a group of professors establish a research group in the field of chemical technology (the TQ Group). Twenty years later, that research group would result to be extremely productive and internationally renowned. In fact, they organise the Fourth European Rheology Congress.

Later, at the end of the Century, the TQ group changes its headquarters to the Chemistry Department in the University of Huelva. At the beginning of the 21st century the mentioned research group is split, establishing the so-called IFC group, which consists of five members including Pepe, Juan, Alfonso, and Beatriz. By then, they already had some years of research experience. The common wish to develop a long-term line of research, that not only would cover the required production for the funding, but also would generate results to apply to both the Public Administration and the companies.

There was a close collaboration between the University of Huelva and the University of Seville; given that Pepe, Alfonso and Beatriz worked for the University of Huelva while Juan was still in the University of Seville.

In few years, they start to accomplish certain achievements: they provide technological advice to companies, carry out research projects in collaboration with business entities, exploit patents, give formation, and establish numerous national and international relationships with entities related with the research field.

2.3 THE EMERGENCE OF THE IDEA

Four years later, when they are finishing their PhD, and as a result of the activity performed in the IFC group, they have the idea of setting up a business. This happens as follows.

Pepe, Juan, Alfonso, and Beatriz met at least once a month to discuss the issues of the research that they were carrying out. We now go back to one of those meetings, the one that took place at the beginning of the following academic year (and therefore one of the first meetings after the return from holidays). There they had scheduled the work and the objectives to achieve in, at least, the following six months. The completion of their doctoral theses was among these objectives, by finishing the last publications related to them. The work was already sketched and, before proceeding with the sharing of the first results of the academic year, they decide to exchange some ideas.

Beatriz, with a farsighted and well-organised mentality, highlights the need to think about their futures after defending their theses. She comments to her friends: “we are surrounded by doctors with excellent formation, but I do not consider that it is easy to find a job specific enough”. Her colleagues, then, realise that once they finish their theses, nobody would be able to guarantee their continuity in the university.

The perceived lack of job stability together with Pepe’s special motivation for researching, make that he reminds his colleagues the fact that in the last years, and thanks to the performed research, they have noticed an need in the market with respect to the results they have been getting.

“What do you mean by that?”, asks Alfonso. “It is obvious, is not it?”, replies Pepe. “It is”, agrees Juan, “we are all thinking that to set up a company could be the solution to our problems”. “Yes”, adds Beatriz, “and fulfilling our desire to carry on with a creative job framed within the research”.

“Well, let’s be sensible”, says Juan, “we are in the university, I do not know whether from this position it is plausible”. “It totally is”, says the enthusiastic Pepe, who had read an article about a spin-off just two days before. He had just learnt that technology-based university spin-offs are companies of new creation, that emerge from the initiative of one or more members of the university community, as a starting point the previous research works with a scientific-technological component, especially innovative regarding the market.

Besides, Alfonso, who knows all the details of the university policy –not for nothing he was in charge of the contracts that the research group signed through the Results Transfer Office of his university- start to talk about the interest of the technological transfer between the university and the company. It allows the capitalisation of the academic research transforming it into business value.

“Well, well”, says Beatriz loudly, “let’s think carefully about pros and cons considering the issue calmly”. From that moment, and for the first time in four years, the original objectives of the meeting had been clearly left aside, focusing the spotlight entrepreneurship.

2.4 THE DECISION

“Firstly”, continues Beatriz, “none of us has any business management formation or experience. Despite this fact, we have some knowledge that we acquired throughout the years that we were dipped in the research group”.

“That is true, it is a handicap”, comments Alfonso, “but if we presented our idea to one of those entrepreneurship competition and it is chosen as winner, one of the considerations we would get, would be a period of orientation training related to business issues. As far as I know that is rather detailed, applied, and practical.

“Well, another issue is that in our region there are no companies of this kind”, adds Juan, “so our references would be limited and difficult. Moreover, I am considering preparing myself for the Spanish public exam to become a schoolteacher, so I am not sure if I want to be with you in this adventure”.

“The truth is”, says Alfonso, “if we are lucky and we get hired in the university, we must take in account the spanish laws which stablish the irreconcilable differences between the job in the university and the salary earned in the company”.

“Uff”, exclaims Beatriz, “these are serious drawbacks, but we cannot leave aside our longings to come out on the market. We must consider all the aspects in order to be ready for any opportunity that may emerge”.

“I am going to introduce our company as if it already exists”, continues Beatriz. “Our company encompasses an offer relative to the agri-food field, which is characterised by the execution of all kinds of necessary measurements and analyses that contribute to ensure the quality of the products offered by the companies in the industry. At the same time, our firm contributes to improve the efficiency and the competitiveness levels. It is specialised in the field of science and technology of the complex fluids and their industrial applications. It offers small and medium-sized companies an opportunity to invest in R&D, assisting them with technical problems that require highly qualified personnel, and making the most advanced technology accessible for them. It sounds good, does not it? you know the market demand, we have witnessed it during these past few years because of the requests the companies have made to the IFC group”.

Reasoning, assessments, joyful emotions, and disenchantments continued all along the morning but, at the end of it, everything was much clearer regarding the question that they had asked themselves before: “Would creating a spin-off be worth it?”.

3 METHODOLOGY

The methodology adopted for this research is based on a case study for teaching application. To this end, information is gathered through observation, direct interviews with the company under study, public documentation, and theoretical review through scientific databases of impact. It is about the real evolution of the events, according to the version of the founders of the company that was eventually created (interview on November 21st 2008), as shown in the appendix.

4 RESULTS AND DISCUSSIONS

As a result of the case study, work and learning activities are presented for their development, with indications for both the students and the teachers who lead the activities. Different options for their implementation are discussed.

4.1 ACTIVITIES FOR THE STUDENTS

4.1.1 Classroom activity

The teaching objectives of this case study are focused on the factors involved in setting up a business, as well as the different problems that arise through this process. To get the aim, please, answer the following questions:

1. what factors influence the setting up of a university spin-off?
2. which are the positive and negative influences of each factor?
3. what personal characteristics do the founders have? Are those characteristics adequate to run the business?

4.1.2 Independent activity

Look for another company with similar characteristics in another region or country and find convergent and divergent points regarding the previous questions. In this way, it could be possible to complete/strengthen the influence factors and the characteristics of the entrepreneurship profile. At the same time, it could be interesting to identify differences relatives to institutional and cultural measures related to the studied entrepreneurship phenomenon.

4.1.3 Bibliographical references

For the proposed activities, the following bibliographical references are suggested:

Figure 1

Bibliographical references

- | |
|---|
| <p>Geuna, A. & Muscio, A. (2009). The Governance of university knowledge transfer: A critical review of the literature, <i>Minerva</i>, 47: 93-114.</p> <p>Morales, S.T. (2008). El emprendedor académico y la decisión de crear spin-off: un análisis de caso español, <i>tesis doctoral</i>, Universidad de Valencia.</p> <p>Shane, S. (2004). <i>Academic Entrepreneurship: university Spin-offs and Wealth Creation</i>, Edwar Elgar Publishing, Massachusetts, United States of America.</p> |
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4.1.4 Web references

It is advised to refer to the Global Entrepreneurship Monitor Consortium website, which encompasses reports on the entrepreneurship situation in the most important countries in the world: <http://www.gemconsortium.org/>.

4.2 TEACHING NOTES

4.2.1 Synopsis

The case study is related to a group of professors who just got their PhD and who belong to the same research group. They clearly perceive the market demand related to their research. They consider the possibility of setting up a spin-off.

4.2.2 Potential subjects

It should be contemplated in the course “Setting up companies” of the Degree in Business Administration and Management (B.O.E. 12/04/2010), as well as in other undergraduate and master’s degrees in the different universities and countries where similar subjects or units are taught.

4.2.3 Pedagogical objectives

The case study presents in depth the entrepreneurship phenomenon, particularly that of a technology-based university spin-off. Its teaching objectives are focused on the factors involved in setting up a business, as well as the different problems that arise through this process.

The proposed bibliographic references for this case study are the ones specified below. The professor will provide additional bibliography if estimated necessary and depending on the level of the students:

Figure 2

Suggested bibliographical references

- Autio, E., & Kauranen, I. (1994). Technologist-entrepreneurs versus nonentrepreneurial technologists: analysis of motivational triggering factors. *Entrepreneurship y Regional Development*, 6: 315-328.
- Diáñez-González, J. P., Camelo-Ordaz, C., & Fernández-Alles, M. (2021). Drivers and implications of entrepreneurial orientation for academic spin-offs. *International Entrepreneurship and Management Journal*, 17(2): 1007-1035.
- Doutriaux, J. & Dew, G. (1992). Motivation of academic entrepreneurs and spin-off development: analysis of regional and university effects through case studies. *Frontiers of Entrepreneurship Research*, 231-232.
- Etzkowitz, H. (1998). The norms of entrepreneurial science: cognitive effects of the new university-industry linkages, *Research Policy*, 27: 823-833.
- Fernández M., Merchán, C., Rodríguez, L. & Balmaceda O. (2011). Indicadores de transferencia de conocimiento: una propuesta de medida de la cooperación entre universidad y empresa. *Documento de trabajo*, Instituto de Estudios Sociales Avanzados (IESA), CSIC, Córdoba.
- Geuna, A. & Muscio, A. (2009). The Governance of university knowledge transfer: A critical review of the literature, *Minerva*, 47: 93-114.
- Hrivnák, M., Chreneková, M., & Jarábková, J. (2023). Evolutionary models of academic spin-offs establishment - comparison of Catalonia and South-Moravian region. *Knowledge Management Research & Practice*, 21(4): 864–875.
- Morales, S.T. (2008). El emprendedor académico y la decisión de crear spin-off: un análisis de caso español, *tesis doctoral*, Universidad de Valencia.
- Francisco Javier Miranda, F.J., Chamorro-Mera. A. & Sergio Rubio, S. (2017). Academic entrepreneurship in Spanish universities: An analysis of the determinants of entrepreneurial intention, *European Research on Management and Business Economics*, 23: 113–122.
- Sansom, K. & Gurdon, M. (1990), Entrepreneurial scientist: organizational performance in scientist-started high technology firms. *Frontiers of Entrepreneurship Research*, 437-451.
- Shane, S. (2004), *Academic Entrepreneurship: university Spin-offs and Wealth Creation*, Edwar Elgar Publishing, Massachusetts, United States of America.

Regarding web references, it is advised to refer to the Global Entrepreneurship Monitor Consortium website, which encompasses reports on the entrepreneurship situation in the most important countries in the world: <http://www.gemconsortium.org/>.

With the completion of this case study there will be a development of, among others, the following competences.

Among the generic and transversal competences, we highlight analysis and synthesis ability, critical thinking, teamwork, and capability to learn and update knowledge.

The main specific competences are analysing and assessing, from the available information, the situation and predictable evolution of a company, as well as understanding the economic and business institutions because of the application of theoretical or formal representations about business.

5 CONCLUSION

The main conclusions are presented, focusing on different aspects of the issue in detail. In this way, it highlights the practical relevance of learning about the stages and challenges involved in setting up a technology-based university spin-off.

5.1 DIMENSIONS

Regarding the approaching elements, it is considered that analytical, conceptual and presentation dimensions have a simple degree of difficulty. The problem is explained in a clear and organised way and does not require previous knowledge on the topic.

5.2 TEACHING PROCESS

The coverage of this case study in a class may take around four hours, most of it in-class time. The teaching session should take place in a conventional classroom, and for the independent study, Internet connection will be necessary. Four activities or exercises will be carried out, which will be properly organised and evaluated by the professor.

The professor should distribute the students in small groups, of no more than four people, so that everyone gets the chance to speak up and discuss about each one of the proposed questions. If the class composition is heterogeneous regarding entrepreneurship knowledge, workgroups should be organised by integrating students of different levels, avoiding that those who have previously worked together are in the same group, so as to enable the development of the components' skills.

5.3 CLASSROOM ACTIVITY

It will be suggested to the students that they read carefully and individually the case study. Then, groups will be built in the way previously explained, and these will work on the following trigger questions, to which they will give an answer once they have discussed and reached a consensus on (answers can be extended by using the previous specific bibliography, as shown below):

1. what factors influence the setting up of an university spin-off? (Morales, 2008) analyses the factors that have an influence on the decision of creating a company and, particularly, the ones related to university spin-offs;
2. which are the positive and negative influences of each factor? In addition to Morales (2008), these influences are analysed from an European perspective in Geuna & Muscio (2009) and from a World perspective in Shane (2004);
3. what personal characteristics do the founders have? Are those characteristics adequate to run the business? Morales (2008) and *Informes GEM* provide data about entrepreneurs at a World level, by countries and even regionally.

The bibliographic reference related to Shane (2004) has a high academic level, so it should be provided to the students with more knowledge on the subject matter. The rest of the bibliographical references figuring in the “Professor’s note” will be used to deeply expand the matter of discussion, provided that the students are familiarised with the entrepreneurship phenomenon.

There will be a collective session between the groups and the professor. As culmination, the latter will clarify the obtained answers and will inform of the real evolution of the events – developed in the appendix, located at the end of the document-.

The final exchange of impressions and opinions with a collective debate should be approached by directing the questions to the most introverted members of each group so that they defend, in front of the rest, the collective conclusions. This way, every student will get enriched. The professor will moderate and contribute with some additional ideas, if considered convenient.

The evaluation of this first in-class part of the case study is focused on the degree of participation of the students in each of the stages and on the development reached from the competences.

5.4 INDEPENDENT ACTIVITY

The task that will be assigned to the students, once the in-class part is finished is the following: to look for other spin-offs and find differences and similarities with the one presented in this case study.

In short, if there is a need to expand the practical activity, the students may be required to look for other companies with similar characteristics in other regions or countries and find convergent and divergent points regarding the previous questions. In this way, it could be possible to complete/strengthen the influence factors and the characteristics of the entrepreneurship profile. At the same time, it could be interesting to identify differences relatives to institutional and cultural measures related to the studied entrepreneurship phenomenon.

This activity can be carried out as a group and outside the classroom. Access to Internet search tools will be required.

The previous independent assignment should be handed in the next in-class session, in a written format. It should consist of a table where the found spin-offs, the differences and the similarities are presented in a concise way. The professor will assess them, and the obtained conclusions will be exchanged among the students.

ACKNOWLEDGEMENT

We would like to thank the founders of the company under study with whom we had the opportunity to discuss the main issues of the case in detail.

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- Autio, E., & Kauranen, I. (1994). Technologist-entrepreneurs versus nonentrepreneurial technologists: analysis of motivational triggering factors. *Entrepreneurship y Regional Development*, 6, 315-328.
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- Fernández M., Merchán, C., Rodríguez, L. & Balmaceda O. (2011). *Indicadores de transferencia de conocimiento: una propuesta de medida de la cooperación entre universidad y empresa*. Documento de trabajo, Instituto de Estudios Sociales Avanzados (IESA), CSIC, Córdoba.
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APPENDIX

This is an additional note for the classroom activity. It is about the real evolution of the events, according to the version of the founders of the company that was eventually created (interview on November 21st 2008).

1. THE FOUNDING TEAM

The company is established in the year 2007 by four people, three doctorates from the university where the idea emerges and another doctor from an Andalusian university. They knew because they were all in the same research group. They started to have conversations about the idea.

None of the components has at that moment any kind of business management formation or experience. However, they have acquired knowledge throughout the six or seven years they have been in the research group.

There is no main promoter figure, since all the work is done as a team. In the same way, no external person participates in the idea.

Shortly afterwards, one of the four original founders decides to give up the project to become a schoolteacher. Another component is, at the time the interview took place, working in a private multinational company in London, although at that time he was still part of the spin-off.

Given that the founders are civil servants, in compliance with the Spanish laws, it is not allowed them to earn a salary from a private company at the same time. Therefore, the members contribute with their knowledge, with their technical abilities and even with working hours, but never get any kind of economic profit.

The founders of the company, hereafter AGROTECH, agree that an entrepreneur must gather these characteristics:

- interest and motivation;
- creativity, willingness to do something different, new. Not being conformist;
- constancy and perseverance to launch the idea;
- work capacity;
- illusion;
- assumption of risks;
- capability to learn about anything;

- teamwork;
- self-knowledge.

2 PERCEPTION OF THE UNIVERSITY COMMUNITY TOWARDS THE COMPANY

The founders' research group gives them complete freedom to create the company. The rest of the group neither collaborates in its creation nor hinders it, since it is considered as something unconnected to the group.

3 INSTITUTIONAL RELATIONS

The assistance they receive from the very first moment from both the Results Transfer Office of the university and the the Innovation Agency of Andalucia is crucial.

Being the first company of this kind that was created in the town, they received plenty of help: advice, contacts, etc. Moreover, Andalusian Government was demanding the creation of that type of companies, which turned out to be helpful.

The Results Transfer Office of the university and the promoters worked very closely, as it was the Rector of the university who had the power to decide whether the company could be created or not.

In the same way, several economic aids were provided by the Innovation Agency of Andalucia.

The three aforementioned organizations were the ones that helped the promoters the most.

Apart from this, they have important relations with other spin-offs, most of them national companies of the same field. Nevertheless, there exist intense relationships with research groups and technology centres from all over the world; the latter being considered by the founders as one of their competitive advantages.

They state that the environment is extremely beneficial; mainly in times of little prosperity when the entrepreneurship willpower is enormously encouraged by public institutions.

4 FUNDING

The AGROTECH company considers that the funding they have received –the same one that companies of new creation usually receive- comes mainly from the public sector, while

more should come from the private one. The business sector should rely more on R&D. In this case, the initial budget comes basically from two prizes awarded by public institutions thanks to the idea.

5 THE ORGANISATION STRUCTURE

In AGROTECH both the research group development and the company management are of equal importance.

Referring the distribution of work, they explain that it is done as a team, by setting weekly meetings. However, in what respects to projects coordination they say: “there is one person in charge, but that person automatically informs of everything to the rest and the decisions are made as a group. Having some in charge allows agility and coordination when contacting the companies. For everything else, everyone is present. In any case, there are three positions in this company: president, R&D project manager and technical manager. They are like the giant pillars over which we want to build our company. You must project an external image that there is a structure inside the company, although in reality you work in a different way”.

6 HIGHLIGHTED PROBLEMS:

The main problems that the founders observed when they created AGROTECH were related to:

- a) their lack of entrepreneurship experience;
- b) having to explain the idea to every institution from which they required assistance;
- c) the structure of the Spanish University and its bureaucracy. Besides, researches are only related to topics that the university or research centres are interested in, regardless of businesses;
- d) the formation of professionals that have not been trained to be in a company and lacking certain capabilities that enable them to work in any kind of company. They reckon that the university needs to be closer to the society; that it has to adapt to the needs of a constantly changing society. They say that the university creates knowledge that the companies are unaware of;
- e) The fact that the companies, especially the Spanish ones, are too focused on production, without paying any attention to investment in knowledge. Investment that should be

made not only to produce more, but also to prevent any kind of technical problem that may arise;

- f) Many businessmen do not consider the idea of investing money in something that will be useful in five or six years;
- g) Most of the funding that reactivates the university is provided by the public sector. The part received from the private one is estimated to be between 10-15%. Therefore, the business sector should invest more in R&D.

7 FUTURE PERSPECTIVES:

The pioneers of AGROTECH foresee their future as described:

The main objective is to be assigned a project soon, maybe next year; that is the first objective, carrying out a couple of projects and seeing how they work. If everything goes well, we may hire someone. Evidently, we cannot work for the company, but we can be the brains behind it and have someone that executes the work. If we do that, we will see if it works smoothly and whether we have to move from our original conception.

The founders continuous working for the university. They told us that the current crisis in Spain has seriously affected the company, that they have carried out interesting projects, but the company were in a “stand-by status”. It will only be reactivated when there are interesting market opportunities. Its future highly depends highly on the economic situation.