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**This article sets out to examine the initiatives developed to foster the entrepreneurial spirit and the creation of enterprises by students in the specific context of vocational training in the Basque Country. The article therefore looks in depth at best practice in the centres of the Basque Autonomous Community, with the aim of disseminating first-class experiences to other training centres in Europe.**

# Enterprise creation initiatives in Basque vocational training centres

## 1. Introduction. Vocational training in Spain and the Basque Autonomous Community

The vocational training system in Spain is currently arranged in accordance with the Organic Law on the Education System (LOGSE, 1990). Under this Law, the new vocational training system is split into three levels: initial/compulsory education, job training, and continuing training. Continuing training for workers falls under the Labour Administration, and a substantial part of it is managed through the Foundation for Continuing Training (FORCEM <sup>(1)</sup>), while the national and autonomous Labour Administrations are responsible for compulsory education and job training for unemployed workers (Perez Esparrel, 2000).

LOGSE has led to the introduction of a series of highly pertinent reforms that have had a considerable effect on teaching in vocational education and training. The introduction of these subjects into the education system is reflected in figure 1:

In contrast to the situation that obtained before LOGSE, in which it was possible to enter vocational training at the age of 14 years without completing the preceding basic education, compulsory education now extends until 16 years of age, and it is necessary to have successfully completed compulsory secondary education (ESO) to proceed to intermediate vocational training. In order to pursue advanced vocational training, it is necessary to have gained the upper secondary leaving certificate, the Bachillerato. These increased educational requirements have

led to a re-evaluation of vocational training so that it is no longer regarded, as it used to be, as a form of education taken up by less well prepared students who do not wish to continue studying.

While 82 % of Spanish compulsory vocational education students had no contact with the world of work in the school year 1995/96 (CEDEFOP, 2001), the gradual adoption of LOGSE has led to the inclusion of the compulsory module 'Work Centre Training' in all intermediate and advanced courses. This module provides for placements in enterprises lasting from 8 to 15 weeks, and has brought about closer ties between training centres and employers, which helps those completing vocational training to find jobs.

In respect of growth in student numbers, the figures for completion of vocational training in Spain are far removed from the European average, where vocational training attracts more students than general upper secondary education. By contrast with such countries as Austria, Germany and Italy, where more than 70 % of students follow vocational courses, the figure is only 33 % in Spain (EURYDICE, 2000), a higher number of students going on to the Bachillerato and subsequently to university. Only Ireland and Portugal in fact have a percentage of students in vocational training lower than Spain (CEDEFOP, 2001).

The situation is similar in the Basque Country, and has led to growing concern over the match between the education system and the needs of employers. According to the Basque Employers' Federation CONFEBASK, there is a shortage of 18 000 workers in the Basque Country with basic vocational training, while the

<sup>(1)</sup> The Basque Foundation for Continuing Training (HOBETUZ) was set up in 1997 and has independent control of training for people in work in the Basque Autonomous Community.



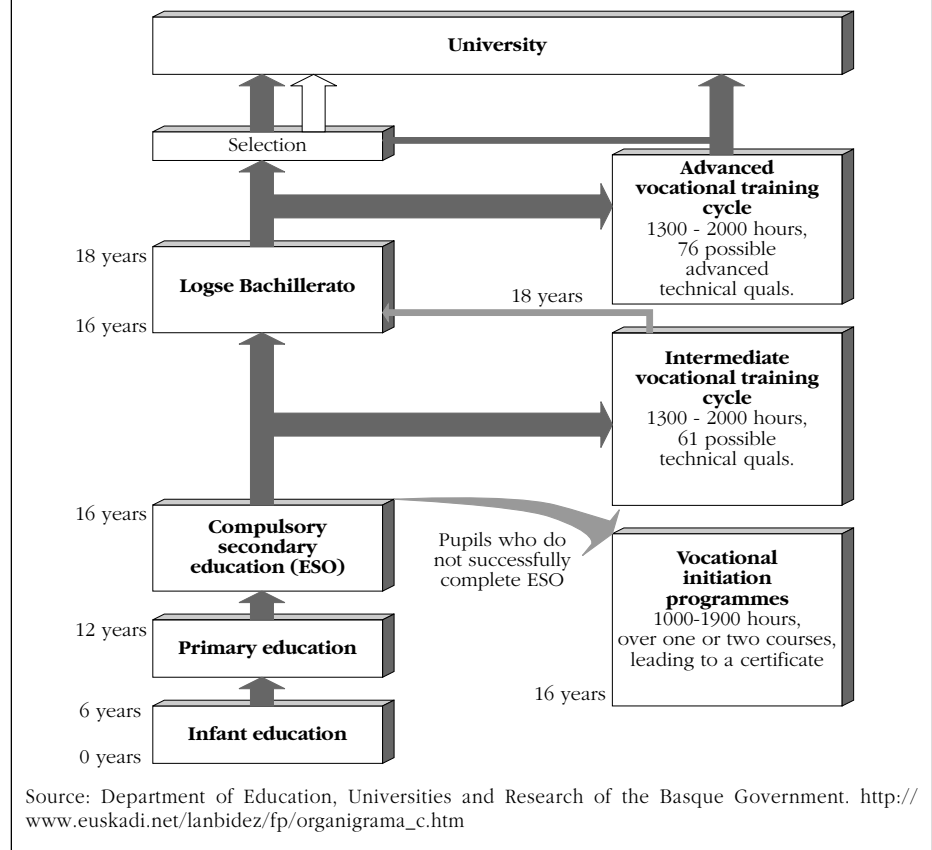
supply of university graduates has grown more rapidly than the demand, and has led to high levels of unemployment among graduates (CONFEBASK, 2000; Araujo et al., 2001). Some research studies of Spain as a whole reveal the same problem, suggesting the existence of a phenomenon of 'overeducation' which is giving rise to high rates of unemployment and to working conditions for Spanish graduates that are worse than those of European graduates (Albert et al., 2000; Dolado et al., 2000; Sáez and Rey, 2000; García Montalvo and Mora, 2000).

The scarcity of people who have completed vocational training has led to an increase in the resources devoted to this type of education by the national government, the autonomous communities and the local authorities. Both Central Government and the Basque Government, and provincial governments, are carrying out publicity campaigns to attract more students to these courses, and employers' associations have also become involved in promoting them. In the Basque Country, this joint effort has produced a rise in the quality rather than in the quantity of students. In the last three years, for example, the number of students in intermediate courses has fallen by 40 % while there has been a rise of 66 % in admissions to advanced vocational training courses, which currently account for 58 % of the 31 000 and more Basque students of vocational training (EUSTAT, Education Statistics).

The vocational courses most sought after by students at intermediate level are in engineering, electricity and electronics, hairdressing and beauty, and plumbing. In advanced vocational training, it is administration, engineering, electricity and electronics, and information technology which have the largest numbers of students. The high numbers of students in technical fields such as engineering reflect the business situation in the Basque Country, which has a relative preponderance of industry.

In terms of legal status, there are more public vocational training centres in the Autonomous Basque Community than private. The private network takes the lead in training, however, in the three provinces (2).

**Figure 1:**  
**Organisational plan of the education system.**



## 2. Aims and methodology of courses

This article forms part of a research project (3), the main aim of which has been to analyse the relationship between vocational training centres and employment in the Basque Autonomous Community. Within this research, one of the aims of the research team has been to study the initiatives implemented by various centres to foster the entrepreneurial spirit and the creation of enterprises by students, exploring in depth the best practices that exist in the centres in the Basque Country.

Although many European vocational training centres are fostering the entrepreneurial spirit and enterprise creation, these initiatives are seldom reported in scientific articles and publications. This is the reason why we are presenting this article, in the belief that experience of enterprise creation in a number of Basque vocational training centres may provide

(2) For greater detail on vocational training in Spain and the Basque Country see LOGSE, 1990; Perez Esparrel, 2000; Alonso García, 2000; Gobierno Vasco, 1998, 2001; Basterretxea et al., 2002; Ministerio de Educación, Cultura y Deporte, 2002.

(3) This project was subsidised by the Department of Employment and Training of the Bizkaia Provincial Government, the company DEMA Empresa Garapena, and the European Social Fund, and its results are published in Basterretxea et al. (2002), *Colaboración entre centros de Formación Profesional y empresas en la Comunidad Autónoma Vasca*. Bilbao: Servicio Editorial de la UPV/EHU.



Table 1:

**Vocational training centres taking part in the study**

Centres belonging to the IKASLAN public network		Centres belonging to the HETEL private network
<p><b>Questionnaire alone:</b></p> <ol style="list-style-type: none"> <li>1. IES Barrutialde (Arratzu)</li> <li>2. Iurreta GLHB Institutua</li> <li>3. Instituto EFPS Fadura</li> <li>4. Mutrikuko Institutua</li> <li>5. Instituto Politécnico Easo</li> <li>6. Martuteneko BHI</li> <li>7. Donostiako Eraikuntzako Institutua</li> <li>8. IEFPS Bidasoa GBLHA</li> <li>9. Instituto Plaiaundi</li> <li>10. Herrnani Institutua</li> <li>11. RM Zuazola-Larraña BHI</li> <li>12. Don Bosco –RENTERIA</li> <li>13. UNI. Eibar-Ermua</li> <li>14. IES Hostelería de Gamarra</li> <li>15. IES. ‘Samaniego’ La Guardia</li> </ol>	<p><b>Interview and questionnaire:</b></p> <ol style="list-style-type: none"> <li>1. Instituto FP superior Nicolás Larburu (Barakaldo)</li> <li>2. IEFPS Ategorri-Tartanga (Erandio).</li> <li>3. IMH –Elgoibar</li> <li>4. IEFPS- Usurbil</li> <li>5. IEFPS Mendizabala GLHBI</li> </ol> <p><b>Interview alone:</b></p> <ol style="list-style-type: none"> <li>1. Elorrieta</li> <li>2. San Jorge</li> <li>3. Emilio Campuzano</li> </ol>	<p><b>Questionnaire alone:</b></p> <ol style="list-style-type: none"> <li>1. San Viator</li> <li>2. Zulaibar</li> <li>3. Zabalburu</li> <li>4. San José Obrero</li> <li>5. Lasalle</li> </ol> <p><b>Interview and questionnaire:</b></p> <ol style="list-style-type: none"> <li>1. Lea –Artibai</li> <li>2. Txorierri</li> <li>3. Instituto Politécnico Jesús Obrero.</li> <li>4. Diocesanas</li> <li>5. Somorrostro</li> <li>6. Goierri</li> </ol> <p><b>Interview alone:</b></p> <ol style="list-style-type: none"> <li>1. Zumarraga.</li> <li>2. Escuela Politécnica Superior de Mondragón.</li> </ol>

Source: Compiled by authors

(\*) We used a questionnaire of our own design to gather data. The questionnaire was pre-tested with students of the intended recipients in order to assess its suitability and the relevance of the items in it. The version of the questionnaire sent to training centres is contained in Annex II to Basterretxea et al. (2002).

(\*) Seventy-two centres were selected out of a population of 170 vocational training centres in the Community of the Basque Country. The criterion for selection was inclusion in the network IKASLAN (a network which covers 82.15 % of students admitted to public vocational training centres) or HETEL (which covers the most important privately run centres, accounting for 54.45 % of students admitted to private centres). The selection of the sample followed consultation with the leaders of the Vocational Education

guidelines and practices that can be transferred to other vocational training centres in Europe.

The literature on the creation of enterprises in training centres is scarce, focuses almost exclusively on university experience, and largely consists of conference and seminar reports in which university teachers and heads of university enterprise development centres or ‘nurseries’ discuss good practice (Meneses, 2001; Rubí, 2001; Tornatzky et al., 2002; Chiesa and Pocaluga, 2000; Leiceaga, 2001; López, 2001; Ullastres, 2001; MADRI+D, 2000). Some of the results of this research can easily be transferred to vocational training centres in the Basque context, as will be seen later on in some of the cases examined in this paper. The main lines of research in these publications are the following:

- obstacles facing researchers and university teachers as entrepreneurs (Tuominen,

2000; Churchwell, 2000; De la Sota, 2000; Blanco, 2000; Meneses, 2001);

- problems of funding new enterprises, obtaining financial resources from risk capital, and financing of new enterprises by universities themselves (Sandelin, 2000; Numark, 2000; Churchwell, 2000; Cullen, 2000; López, 2001; Ullastres, 2001; Tornatzky et al., 2002);

- infrastructure, incubators, technology parks, and human, educational and financial media available to some universities to support enterprise initiatives (Sandelin, 2000; Cullen, 2000, Rubí, 2001; López, 2001; Ullastres, 2001; Tornatzky et al., 2002);

- use of contacts between universities and local businesses and institutions to establish networks bringing together researchers, entrepreneurs, suppliers and investors (Numark, 2000; Sandelin, 2000; Tornatzky et al., 2002);



- the importance of university leadership and corporate culture in the success or failure of various programmes supporting enterprise creation (De la Sota, 2000, Meneses, 2001; Rubí, 2001; Tornatzky, 2002; Leiceaga, 2001; Ullastres, 2001).

In order to carry out our research, we collected information about experiences of enterprise creation in various centres by means of a questionnaire <sup>(4)</sup> that was designed and sent to 72 Basque vocational training centres <sup>(5)</sup>, and semi-guided interviews with various centre directors <sup>(6)</sup>. In total, 36 vocational training centres took part in the study, 23 of the 53 public centres contacted, and 13 of the 19 private.

The centres shown in Table 1 are distributed throughout the three provinces which make up the Basque Autonomous Community: Bizkaia, Gipuzkoa and Araba.

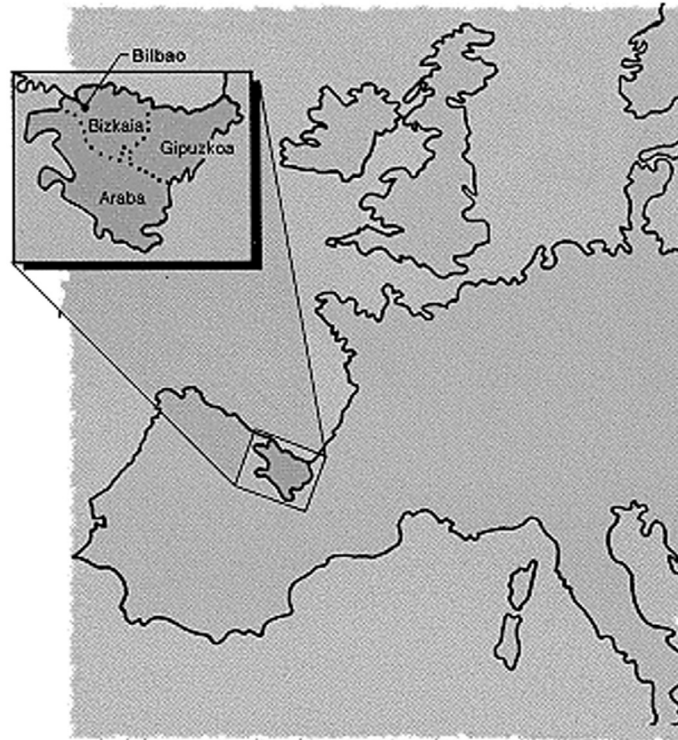
### 3. Support for the creation of enterprises by students in Basque vocational training centres

In recent years, certain vocational training centres have developed a variety of programmes to foster the entrepreneurial spirit of their students and to help them to set up new business projects. As can be seen from the following table, only three of the directors of centres interviewed stated that the creation of enterprises was not an aim of the centre. Almost half of centres restrict themselves to fostering students' entrepreneurial spirit, around a third have the support of various regional development agencies, employers' associations or institutions devoted to the creation of enterprises, and six centres have their own enterprise creation schemes.

The level of development of these initiatives varies greatly from centre to centre, and the result in terms of number of enterprises created, and particularly the nature of those enterprises (size, jobs, turnover, market strength) varies according to the role, scale and resources which the centres put into self-employment schemes.

## Autonomous Community of the Basque Country

Figure 2:



In order to make the range of enterprise creation support schemes clearer, we shall divide them into two groups: the first will include initiatives focusing on awareness-raising and the fostering of the entrepreneurial spirit, which in some cases give rise to the creation of small enterprises; and the second will cover those initiatives demanding greater commitment to the student entrepreneurs on the part of the centre, which has led to the creation of more enterprises of larger size.

#### 3.1. Awareness-raising activities and creation of micro-enterprises

Most of the activities to support enterprise creation carried out in the vocational training centres are limited to awareness-raising and the fostering of the culture of enterprise. This means stimulating students' entrepreneurial spirit through discussions and courses led by either teachers at the centres, members of develop-

and Lifelong Education Council of the Basque Government, who confirmed that the sample was representative for the purposes of the study. According to the Council and other sources consulted, the relations between enterprises and training centres that we wished to evaluate (continuing training, job training, training on demand, research, company participation in centre boards of management, support given to centres in the form of funding or machinery, enterprise creation, etc.), centred almost exclusively on the sample of 27 centres.

<sup>(6)</sup> Semi-guided interviews were held in eight public and eight private centres, all of them vocational training centres. Three directors of IKASLAN were also interviewed, as was the President of HETEL and his predecessor in that office.



## Support by Basque vocational training centres for the creation of enterprises by students

Table 2:

	Fre- quency	Percent- age
We have our own enterprise creation scheme	6	17.1 %
We work with a development agency or an institution specialising in the creation of enterprises	10	28.6 %
The creation of enterprises is not an aim pursued by this centre	3	8.5 %
We do not create enterprises, but we foster the entrepreneurial spirit	16	45.7 %

Source: Compiled by authors from surveys and interviews with directors of centres

small enterprises have been created, seven of which are still operating. According to data supplied by Hernani Institutoa, its students created 17 enterprises between 1995 and 2000, generating 56 jobs.

In our view, the fact that 90 % of centres opting for this awareness-raising approach have not created any enterprises should not be seen in a negative light. It does not mean that programmes to promote the entrepreneurial spirit are a failure. Their effectiveness and efficiency should not be measured by the immediate creation of enterprises but by a broader range of medium and long-term indicators. In the first place, as some of the directors interviewed stressed, fostering the culture of enterprise is not aimed exclusively at those opting for self-employment, but has a positive impact on students' entrepreneurial and innovative capacity in future jobs working for others. As is pointed out in Araujo et al. (2001), while vocational training students may not put into practice an entrepreneurial idea that they have developed in the classroom, it is likely that the positive attitudes towards enterprise creation that they acquire in the centre will translate into new businesses in the future, when they are older. This opinion was expressed by a number of the directors of vocational training centres interviewed.

Fundamentally, the centres that have chosen this approach to supporting enterprise creation put forward two reasons for not moving on to the next stage of collaborating with and helping students to set up businesses:

a) a high number of vocational training students find jobs, which suggests that few wish to set up their own businesses;

b) there is no desire to duplicate services providing support for entrepreneurs. Some centres do not see that they should do the job of development workers, duplicating the services of agencies which function well already.

In our opinion, however, the fact that there are development agencies in the environs of centres should not be an obstacle to centres' playing a more active role in supporting students' entrepreneurial initiatives.

ment agencies, public agencies working in the creation of enterprises, or employers' associations. If as a result of these awareness-raising activities, students are interested in creating an enterprise or wish to study its viability, they are directed to the agencies and institutions specialising in supporting founders of small businesses (7). It is these bodies that will provide support for those moving on to an actual enterprise creation project, since training centres do not usually give significant systematic support to nascent businesses. In some cases, students are merely given office accommodation at low rent, the temporary use of some machinery or computers, and tutorial advice from a teacher.

Of the centres surveyed, 75 % restrict themselves to a strategy of awareness-raising, either on their own or with the help of other institutions, and this seldom gives rise to the creation of enterprises. Of the 26 centres in this category, only three stated that their students had created enterprises in recent years: Jesús Obrero (Araba), San Jorge (Bizkaia) and Hernani Institutoa (Gipuzkoa). The San Jorge de Santurce centre, in association with the DEMA-Enpresa Garapena Foundation and other bodies, carries out this work of supporting enterprise creation by analysing the viability of projects. In this way, 12

(7) Mention should be made of cases in which collaboration is continual and habitual, such as the Usurbil centre, which works with the CEI Saiolan Enterprise and Innovation Centre, the Diocesanas centre, which works with the AJEBASK Association of Young Basque Entrepreneurs and the development agency of the Vitoria local authority, many Bizkaia centres which work with DEMA, the Txorierrri centre with a company called I+D, etc.



### 3.2. Enterprises created with a 'push' from a vocational training centre and local businesses

There is a smaller group of training centres that have developed enterprise creation schemes going beyond the fostering of the entrepreneurial spirit and giving rise to the birth of enterprises on a sizeable scale, which have initially provided a substantial number of jobs. These are the initiatives of the private centres Lea Artibai and Somorrostro, and the public Bidasoa centre, the geographical location of which is shown in detail on the following map:

The initiatives of these three centres are very similar to some university enterprise creation schemes. The aspects common to the three initiatives are as follows:

There is a close relationship between the training centre and local businesses, which enables it to identify unmet needs and opportunities for subcontracting. Many initial contacts with client companies, for example, including business ideas that have then prospered, have not come from the founders of the enterprises themselves, but from training centre staff <sup>(8)</sup>.

Support for the creation of enterprises is seen as an important aim and is firmly rooted in the corporate culture of the centres. Some research suggests that universities with successful enterprise creation schemes regard these schemes as important, worthy of respect and central to the purpose of a university (De la Sota, 2000; Meneses, 2001; Rubí, 2001; Tornatzky et al., 2002; Leiceaga, 2001; Ullastres, 2001), and the same can be said of the Lea Artibai, Somorrostro and Bidasoa Vocational Training Centres.

A tutorial scheme provides long-term monitoring and support from professional staff at the centres for the new entrepreneurs. The training centres have staff devoted to promoting enterprises, and they also provide help with equipment, machinery and infrastructure to student entrepreneurs.

Centres foster the entrepreneurial spirit by establishing ways in which their students can see, learn from, appreciate and

### Location of the Somorrostro, Lea Artibai and Bidasoa Vocational Training Centres in the Basque Autonomous Community

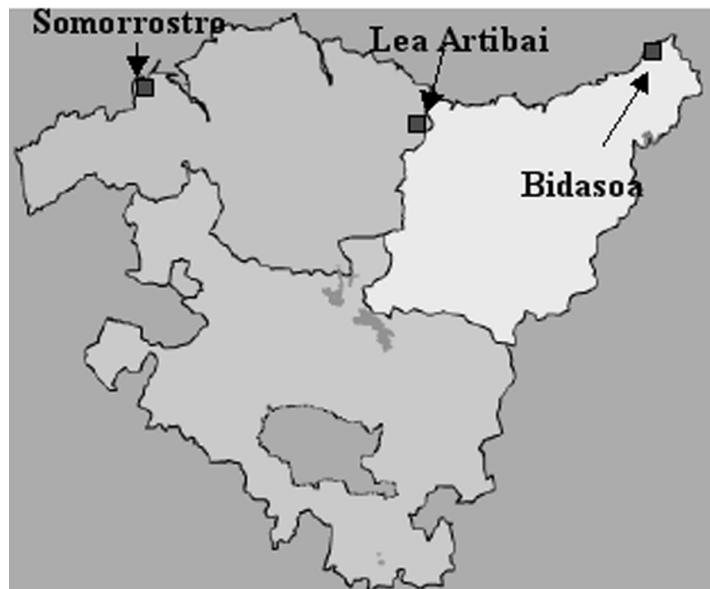


Figure 3:

imitate former students who are setting up businesses or have already done so successfully.

While the predominant economic sectors that surround and influence the centres differ considerably, the economic environment of all three is weak, so that they are required to pursue a more active policy of support for new enterprises <sup>(9)</sup>. According to Tornatzky et al. (2000), something similar happens at universities in the United States <sup>(10)</sup>.

#### 3.2.1. The experience of the Lea Artibai Vocational Training Centre

The Lea-Artibai Technical College (Bizkaia) is a non-profit-making cooperative. Besides compulsory vocational education, continuing training and job training, it also teaches the Bachillerato and has for the last few years been offering university courses. Since the centre was structured as a cooperative in 1976, it has belonged to the Mondragón Corporación Cooperativa Group (MCC). This Group incorporates over 150 enterprises and has grown into the largest industrial corporation in the Basque Country, and the sev-

<sup>(8)</sup> The establishment of networks linking researchers, entrepreneurs, suppliers and investors is also regarded as a key factor in research on the creation of enterprises in universities. It is easier to establish networks if the university plays a very active part in various voluntary bodies with local businesses and institutions (Numark, 2000; Sandelin, 2000; Tornatzky et al., 2002). The main difference in respect of the vocational training centres studied here is that these use such networks to find ideas and clients, while universities use them principally to look for funding to refine and check business ideas before launching them on the market.

<sup>(9)</sup> The economic environment of the Somorrostro centre has been affected by a succession of crises in major industries in the engineering and ship-building sectors to the west of Bilbao. In the case of the Bidasoa centre, besides the crisis in some traditional local industries, the disappearance of European borders also led to the disappearance of many jobs associated with Customs activities in the 1990s. And finally, in the case of Lea Artibai, fostering new enterprises is seen as a form of economic development in a weakly industrialised area.

<sup>(10)</sup> Except for Stanford, the universities which stand out for their contribution to regional economic development are stimulated by weak regional or state economies.



### Table 3. Creation of enterprises at the Lea Artibai Vocational Training Centre <sup>(14)</sup>

	1998	1999	2000
No of enterprises created	1	2	2
No of jobs generated	9	7	9

Source: Compiled by authors

local businesses, and the use of the training centre's infrastructure and machinery for these new enterprise activities, mean that it is possible to set up and consolidate enterprises that could not be created by a conventional development agency because of the nature of the technology used and the market in question.

'It's not like going through an agency because if the new entrepreneurs have a technical project, we have the necessary materials and machinery at the centre. Above all, the most valuable thing we have is the connections with the local businesses that are their potential customers. This is the greatest advantage over a development agency.' (Arizmendi, M. <sup>(12)</sup>)

To date, five enterprises have been set up, and nine are currently in the nursery stage, involving a variety of projects such as furniture manufacture, catamarans, plastic injection, rapid prototype casting, aluminium and fish-based foodstuffs <sup>(13)</sup>.

Support from the training centre for the development of new enterprise projects follows a process summarised in the following table:

As can be seen in Table 4, the process starts and ends with ways of fostering the entrepreneurial spirit and of attracting new entrepreneurs. Besides motivation and awareness-raising courses <sup>(15)</sup>, which are also taught in most other centres, a competition is held for business ideas, and students are given information about enterprise projects that are running <sup>(16)</sup>. In the last stage of the process, the entrepreneurs who have created or are creating enterprises at the centre give an undertaking to foster the local enterprise culture.

Many directors of vocational training centres stated that it was difficult to motivate students to create enterprises where there was no shortage of jobs, but it is believed at the Lea Artibai centre that the key to successful motivation is to select students who are highly creative <sup>(17)</sup>, to direct their potential towards the creation of enterprises, and to arrange for entrepreneurs present at the training centre to stimulate students to emulate them:

'Over time, we identify a percentage of people who are creative, have a need to

<sup>(11)</sup> The first enterprise in this commercial group was in fact set up in 1956 by five former students of the Vocational School, currently the Mondragón Higher Polytechnic School, with the support of its director José María Arizmendiarreta. Other enterprises in the group were set up later in collaboration with various training centres in the group.

<sup>(12)</sup> Interview on 16/07/2001 with Markel Arizmendi, Director of HETEL (the network of privately established centres), who is responsible for enterprise development and polymer engineering at Lea Artibai.

<sup>(13)</sup> This is the only case among those examined in which the person heading the new enterprise is a (female) teacher at the centre. This would appear to be more usual in the university environment from the experiences related in various publications and the emphasis that these place on the obstacles facing researchers and teachers as entrepreneurs (Tuominen, 2000; Churchwell, 2000; De la Sota, 2000; Blanco, 2000; Meneses, 2001)

<sup>(14)</sup> There are currently nine enterprises in the nursery of the Lea Artibai VT Centre.

<sup>(15)</sup> The centre gives its students a 16-hour course in self-employment, devoting two hours to motivation and awareness-raising, and the rest to defining the steps to be taken in drawing up an enterprise project. The centre offers a similar course lasting 28 hours to new entrepreneurs outside the centre.

<sup>(16)</sup> This information is spread via the centre's internal news bulletin, in classrooms, in motivation and awareness-raising seminars, and informally through daily contact in the centre between students and entrepreneurs.

<sup>(17)</sup> It should be pointed out in this context that some vocational training centres in the HETEL private network have developed and are using a programme called 'Sormen-Crea' to encourage students' creativity. See Basterretxea et al. (2002).

ent largest in Spain (Mondragón Corporación Cooperativa, 2002). Relations between Lea Artibai and local businesses are not limited to the enterprises in the Corporation, and comprise the provision of a large number of hours of continuing training, technological services, participation by various enterprises in its management bodies, and considerable ongoing financial support from the enterprises.

Support for the creation of new enterprises with the assistance of training centres is a key part of the corporate culture of Mondragón Corporación Cooperativa <sup>(11)</sup> and of the Lea Artibai centre. The importance given to the development of new business activities in Lea Artibai is reflected partly in the mission statement of the centre itself, which gives equal status to this aim and other educational aims (Lea Artibai Ikastetxea, 2002).

In the mid-1990s there was a proposal to set up a local development agency in Lea Artibai. When this initiative failed, the Vocational Training Centre set about establishing a foundation involving the local authority of Markina and other local authorities in the area, with the aim of supporting the creation of local enterprises.

Some of the services provided by the foundation to those setting up enterprises are similar to those offered by other bodies: premises, free light and telephone, a bursary of EUR 360 a month for new entrepreneurs, advice and tutorial support, and so on. The differences from other institutions devoted to promoting enterprises derive from the synergies that exist between the foundation and the Lea Artibai Vocational Training Centre. The close relationship between the centre and



create. This may be either in a cultural, a social or an entrepreneurial field, but there are people who have these qualities. If we can identify creative people working in these fields and channel them into creating enterprises, so that they see that the centre gives them opportunities to be creative and create an enterprise, we shall succeed in our aim. If the training centre acts as a beacon and its most creative students see that other young people are developing enterprise projects in the centre itself, we are helping those students along the way.’ (Arizmendi, M. <sup>(18)</sup>)

The second stage of the enterprise creation process shown in Table 4 has one peculiarity. Lea Artibai maintains collaboration agreements with a variety of local enterprises in order to generate business ideas. On some occasions the business idea does not occur to the potential entrepreneurs themselves but arises out of the centre thanks to its contacts with business:

‘The vocational training centre is in almost daily touch with businesses through training at the work place, continuing training, the provision of business services, etc. This makes it possible for each party constantly to learn about the other, as a result of which sectors and fields can be identified for possible subcontracted work. We start from the idea that if the centre is dynamic and has a good knowledge of business, new areas of employment and production can be identified.’ (Arizmendi, M. <sup>(19)</sup>)

One clear example of enterprise creation as a result of needs identified by the centre among local companies is a business producing plastic injection moulds that is at the nursery stage:

‘From our contacts with enterprises such as Maier, Cicaucho and Alzola, we calculated that they were subcontracting more than EUR 12 million each year for moulds made in Portugal. We saw the potential for creating an enterprise, but a study indicated that the weakest point would be the absence of people trained in mould-making. The centre took up this challenge and we taught a special course in mould-making, but the next obstacle was that there was no enterprise development

## Basic process of developing enterprise projects at Lea Artibai

Table 4.

- 1. Attracting potential entrepreneurs**
  - 1.1. Within the centre itself
    - 1.1.1. Motivation and awareness-raising course
    - 1.1.2. Regular information about enterprise projects
    - 1.1.3. Business ideas competition
  - 1.2. Outside the centre
    - 1.2.1. Enterprise initiatives competition
    - 1.2.2. Training conference for employers
- 2. Identifying business ideas**
  - 2.1. Training in steps to be taken to set up an enterprise
  - 2.2. Collaboration agreements with businesses
- 3. Defining the idea**
  - 3.1. Potential entrepreneur collates data
  - 3.2. General description of the idea
- 4. Deciding whether to take the idea further**
  - 4.1. Checking against basic criteria to validate business idea
- 5. Developing the idea**
  - 5.1. Organisation of the project
  - 5.2. Appropriate assessment of the requirements of the idea
- 6. Enterprise plan**
  - 6.1. Developing the basic content
  - 6.2. Assessment of each specific case
  - 6.3. Collaboration agreements with BBK Gazte Lanbidean, BEAZ...
- 7. Long-term commitments**
  - 7.1. Staff recruitment
  - 7.2. Commitment to enhancing local enterprise culture

Source: Lea Artibai Vocational Training Centre

group. We took a number of management steps, and three years ago an enterprise group was set up, composed of young people working in other companies who were enthusiastic about this new business idea. The group is currently made up of nine or ten people, and within a year they will leave the enterprise nursery with an annual turnover of approximately EUR 180 000.’ (Arizmendi, M. <sup>(20)</sup>)

It should be pointed out that in order to develop this new enterprise, the Lea Artibai centre did not call on current or

<sup>(18)</sup> Op.cit.

<sup>(19)</sup> Íbid.

<sup>(20)</sup> Íbid.





recently qualified students of the centre, but on former students already in work, who gave up their jobs and became entrepreneurs. This profile of entrepreneurs coincides with that proposed by representatives of the Basque employers' organisation CONFEBASK and its Bizkaia counterpart CEBEK for the award of assistance with enterprise creation (see Araujo et al., 2001, p. 322). A number of research reports on the profile of entrepreneurs confirm that new businesses are more likely to succeed if the entrepreneurs have experience of work. Previous work experience enables entrepreneurs to acquire technical knowledge and commercial and organisational skills, and to establish contacts within the company where they have worked, and with its clients and suppliers. Such knowledge, skills and contacts help the entrepreneurs in taking business decisions (CODEX, 1998; De la Sota, 2000)

Contacts with local businesses needing subcontractors enable new enterprises to spring up to meet the real needs of major initial clients. When a business has an urgent need for a local subcontractor or supplier, it may collaborate with the vocational training centre and the new entrepreneurs in launching the enterprise project. For example, the Maier, S. Coop company made machinery available to new entrepreneurs at the Lea Artibai centre, who then became its suppliers. The young entrepreneurs also carried out six-month work placements at Maier S. Coop, thereby gaining a thorough insight into the needs of their first business customer<sup>(21)</sup>.

This kind of enterprise fits the classic notion of spin-off, meeting the fundamental requirements laid down by the European Union in the EBN (European BIC Network):

- creation of a new unit of economic activity arising out of one or more existing units;
- generation of a new activity, either creating a new autonomous business or activating a new product or service;
- support from the parent organisation.

In the light of other experiences in which one enterprise collaborates in the crea-

tion of another, subcontracting some function or activity, the spin-off activities promoted at the Lea Artibai centre in collaboration with local businesses set out to provide new products or services locally, thereby contributing to significant local development and to the generation of far more jobs than in simple cases of subcontracting.

Until such time as the young entrepreneurs have decided to form a company, it is the centre which issues invoices through a company called 'Insertec'. The money generated by the activity is held in trust by the centre until the entrepreneurs have formed their own company.

The enterprises created at the Lea Artibai centre have the added advantage that they can use the machinery of the centre itself for their productive activities. Given the high levels of investment required by some enterprise initiatives, this possibility of using the infrastructure of the training centre is a crucial help to the entrepreneurs. Thanks to the protection and assistance of the centre, they can postpone investment for a time, can work for companies using the centre machinery, and can examine in depth the real viability of the business, making products for customers without incurring excessive risks<sup>(22)</sup>. According to the managers of the training centre and the enterprise nursery, this use of the centre machinery by the entrepreneurs can also be of advantage in training terms. It makes a positive contribution in that it offers opportunities for practice and enables some of the technical and management problems encountered by the young entrepreneurs to be discussed in the classroom, thereby developing students' creativity and permitting practical application of various teaching subjects.

At Lea Artibai this support for enterprise creation is seen as a way of developing the local economy, which still has around 20 % of its population working in agriculture and fishing. The aim of the centre is to set up 15 enterprises by 2006, thereby helping to strengthen the economic fabric of the area in the medium and long term. This strengthening will also benefit the centre since, as can be seen in the final stage of the process summarised in Table 4, the new enterprises make a long-

<sup>(21)</sup> This should be compared with university experiences of enterprise creation, such as that of Stanford University. In that case, Numark (2000) points out the importance of a number of businesses in Silicon Valley such as HP, which he calls 'anchor' or support companies and have trained new entrepreneurs and fostered the entrepreneurial spirit.

<sup>(22)</sup> In the literature examined, we only encountered one explicit reference to a similar policy. That is at Stanford University, where equipment is loaned when the University is not using it, although entrepreneurs pay the operation costs of the equipment (Sandelin, 2000).



term commitment to providing placements for students and to recruiting staff from the centre.

It is the aim of HETEL, the association of private vocational training centres, to extend this experience and others, such as that of the Somorrostro training centre, to other centres, not only within the association but also to public centres belonging to the Integral Network of Vocational Training Centres of Euskadi<sup>(23)</sup>. Many of the directors whom we interviewed, both in public and in private centres, had visited the Lea Artibai centre to learn at first hand about its experience, and benchmarking activities are encouraging dialogue, imitation and adaptation of experiences between centres.

### 3.2.2. The enterprise creation initiative at the Somorrostro Vocational Training Centre

The Somorrostro Vocational Training Centre (Bizkaia), a private initiative, is a large centre attended by over 5 000 students split between compulsory vocational education, continuing training and job training. It has many strong links with local businesses. Besides providing a large number of hours of continuing training, it has in consequence also set up two companies (Gehilan and Laboradomo) to provide a range of services to businesses, and is establishing a foundation to make it possible for business to play a part in the centre's management bodies.

The origins of the policy of supporting enterprise creation at the Somorrostro Vocational Training Centre are to be found in a visit to micro-enterprise creation initiative in Turin, organised by Bizkaia Provincial Government in 1992. As a result of that visit, the centre decided to foster the entrepreneurial spirit and to support the creation of enterprises by students:

'The entrepreneurial spirit is an asset to any society. If we foster this spirit, we can help students successfully to create new enterprises, or can help those taking jobs with other businesses to become entrepreneurs themselves. Besides fostering this spirit, we want to aim at the actual creation of enterprises. We see this as a minority interest because most people are looking to be employed by a company,

and it is also a qualitative jump.' (Ruiz, M. (24))

The programme of support for entrepreneurs pursued at Somorrostro works with a number of bodies devoted to enterprise promotion in Bizkaia (DEMA, the Chamber of Commerce, CEDEMI and BBK Gaztelanbidean), and according to the data supplied by the management of the centre, it contributed in the period 1995 to 2000 to the creation of twenty or so enterprises and the generation of 120 jobs.

The methodology used at the Somorrostro centre to support enterprise creation consists of three stages: motivation, training and launch.

1. Motivation: In this stage, the aim is to foster the entrepreneurial spirit, for which purpose students take courses and hold discussions with business people and professional staff from the centre or from institutions with which the centre has links. In addition to these discussions, the centre holds competitions for entrepreneurial ideas and invites students and former students who have chosen self-employment to recount their experiences as well, since these experiences have a great motivational impact. At the end of this motivation stage, approximately 10 % of students are disposed to go on to the next stage of training.

The Somorrostro centre is currently completely revising the motivation stage, in order to introduce a transverse course element called an 'Entrepreneurial Workshop' from the academic year 2002/03 to foster the entrepreneurial spirit from an early age:

'We do not believe that the entrepreneurial spirit should only be fostered in the final years of vocational training or during a university course. We believe that people's entrepreneurial dimension has to be brought out during ESO (compulsory secondary education). From our knowledge of other interesting experiences we have designed a syllabus in which there is a methodology to educate people's spirit of enterprise from the age of 12-13 years. Gradually, the teaching is intensified so that when they are 20 years old they are entrepreneurs who have the training and

(23) The Integral Network of Vocational Training Centres covers those centres offering more than basic continuing and job training.

(24) Interview of 23/07/2001 with Mikel Ruiz, Director of the Somorrostro Vocational Training Centre.



resources necessary to put a business idea into practice if they wish.' (Ruiz, M. <sup>(25)</sup>)

This 'Entrepreneurial Workshop' consists of 18 hours of teaching, designing and sharing of entrepreneurial projects and development of ideas which may be implemented in later stages of training.

2. Training: Students who wish to pursue the programme after completing the motivation stage receive theoretical and practical training, carry out feasibility studies, explore the market, draw up financial plans, and so on.

'Last year we trained around 50 people and carried out 12 or 13 feasibility studies. In total we must have conducted between 80 and 100 feasibility studies, and around 14 of the enterprises that have been created are still operating.' (Ruiz, M. <sup>(26)</sup>)

3. Launch: As in other centres, the youth and lack of experience of the entrepreneurs means that the protection offered them is greater than in other institutions. Moreover, links between the training centre and local businesses facilitate commercial activities and access to an enterprise's first customers:

'We support the enterprises that are set up for between three and five years, which is something that other institutions normally do not do. By support we mean finding customers, whom they should be able to retain subsequently for themselves. Through the centre itself we try to find a client list from among the five hundred or so companies with which we have regular contact.' (Ruiz, M. <sup>(27)</sup>)

Many of the ideas that have given rise to the enterprises created in Somorrostro have not come from the entrepreneurs but have been suggestions made by the training centre itself. Some of these ideas have been the fruit of the centre's contacts with local companies and public agencies:

'Through our formal and informal links we observed that the large companies, the go-ahead companies, preferred to subcontract activities rather than recruiting staff. Locally, the three major go-ahead companies are Petronor, the Port of Bilbao and the gas plant IGCC. These projects,

together with the socio-cultural 'Bilbao Tourism' business that we still need to develop and make more effective, are the four driving forces of the future.' (Ruiz, M. <sup>(28)</sup>).

According to the director of the centre, the main difficulty is not generating ideas but finding students who are ready to take on the risk of setting up a business:

'We need to change students' outlook, and this is difficult. This is the task of the work team responsible, but it is hard to make students understand that if three or four of them join together and form a small enterprise they will have many more opportunities, if they are good professionals, of being subcontracted, and greater stability of employment than if they go looking for work individually.' (Ruiz, M. <sup>(29)</sup>)

### 3.2.3. The experience of the Bidasoa Vocational Training Centre using the URRATSBAT programme

The Bidasoa Vocational Training Centre, situated in Irun (Gipuzkoa), is a public institution offering compulsory vocational education as well as continuing training and job training. This establishment teaches upper intermediate and advanced courses in the following fields: manufacture of machinery, timber and furniture, electricity-electronics, and construction and civil engineering. It maintains close ties with local companies, particularly in the context of continuing training.

The culture of the centre also supports the creation of enterprises by its students, although this support encounters some additional difficulties because of the public status of this vocational training centre. The first problem is less flexibility of labour, which makes it difficult to recruit staff specifically to foster new enterprise initiatives, a problem which arises also when a public centre wants to conduct research or to provide services for businesses.

Furthermore, public centres may encounter more obstacles than private centres in carrying out certain activities. Initiatives such as that of the private centre Lea Artibai, where entrepreneurs can work using the centre's equipment, and where

<sup>(25)</sup> Ibid.

<sup>(26)</sup> Ibid.

<sup>(27)</sup> Ibid.

<sup>(28)</sup> Ibid.

<sup>(29)</sup> Ibid.



it is the centre which issues invoices until the entrepreneurs have formed a company, would be more difficult to arrange in a public centre.

In view of the special difficulties facing these centres, the Department of Education of the Basque Government set up the URRATSBAT programme with the aim of encouraging the creation of enterprises in public vocational training centres with students who have completed their training. A number of different centres belonging to the public network IKASLAN take part in this programme: Bidasoa, Tolosa, Bergara and Usurbil in Gipuzkoa, Barakaldo and Erandio in Bizkaia, and Mendizabala in Araba. In order to help entrepreneurs in these centres, there is a standard methodology laid down, and a person appointed with this responsibility. Each centre sets out to form two groups of three or four students every year. These students go through a final three-month stage of motivation and generation of business ideas, and the URRATSBAT programme and the centres support the prospective entrepreneurs by providing premises and technical assistance while they are investigating whether their project is viable. The intention is that they should formally establish consolidated micro-enterprises after a period of one year.

Of all the initiatives for the creation of enterprises by students that have come out of URRATSBAT, that of the Bidasoa centre stands out, not because it has created a large number of enterprises but because it has generated a large number of jobs in the three enterprises which it has launched.

As at the Somorrostro and Lea Artibai centres which have already been discussed, the Bidasoa Vocational Training Centre and local companies are the driving force behind these enterprises. A good example is the enterprise created in 2000 to work for the kitchen furniture manufacturer XEY:

'The aim of the seven carpenters was to set up a business to assemble kitchen furniture. The college talked to Muebles XEY in order to create this enterprise. XEY took in the students and trained them over several months, teaching them about the

### Creation of enterprises at the Bidasoa centre

Table 5.

	1997	2000	2001
No of enterprises created	1	1	1
No of jobs generated	22	7	4

Source: Compiled by authors

quality standards which it demanded, the output expected, etc. They then set themselves up as a partnership and started working for XEY, assembling kitchens in numerous blocks of flats in various cities throughout Spain.' (Mujika, I. <sup>(30)</sup>)

The management of the Bidasoa centre realise that it is difficult to motivate students to create enterprises in occupations with full employment, and trusts like the other two centres examined in the power of emulation exercised by successful entrepreneurs over the other students. The success of earlier enterprises can provide arguments that will convince new entrepreneurs:

'Practically 100 % of students find jobs when they finish their placements in companies. This makes it difficult for students who want to set up a business, and as in the case referred to above of assembling XEY furniture, they have to be prepared to spend several months being trained without pay in the client company. The success that they are achieving, and the fact that each of these workers has been earning between EUR 3 000 and EUR 3 600 a month in recent months, which is appreciably more than they would be paid working for others, is an argument that we can use with other students.' (Iruretagoiena, J.I. <sup>(31)</sup>)

The use of spin-off and collaboration with existing companies to create new enterprises has great advantages, as has been seen in the various experiences discussed, but depending on a single client also poses a serious risk for a new enterprise. In the case of the enterprise created in Bidasoa, the problem was aggravated by the exclusive agreement demanded by XEY:

<sup>(30)</sup> Interview of 26/07/2001 with Iñaki Mujika, Director of the Usurbil Vocational Training Centre and of the IKASLAN GIPUZKOA association of public centres.

<sup>(31)</sup> Telephone interview of 10/02/2002 with Jose Ignacio Iruretagoiena, Director of Bidasoa Vocational Training Centre.



'To start with, XEY demanded loyalty to that company. XEY said that it had invested heavily in the training of these seven entrepreneurs, that it had appointed its best professionals to train them, and that it would not allow them to fit other manufacturers' kitchens. This demand has been relaxed over time.' (Iruetagoiena, J.I. <sup>(32)</sup>)

In another of the enterprise initiatives launched by the Bidasoa centre, before URRATSBAT came into existence, the centre itself identified a business opportunity, generated the business idea and organised a course of job training to provide self-employment for the unemployed in the locality:

'We observed that many of the sofas sold in major stores were manufactured in Andalucía, and we thought that they could be manufactured here as well. We organised a course for the unemployed in the locality. Six of the students, some of them older and with little chance of finding a job, established a cooperative, Tapicerías Txingudi, set out to manufacture made-to-measure sofas, particularly for yachts and other boats, and have been successful. They have expanded, and two other businesses have grown out of this first enterprise, now employing 22 people.' (Iruetagoiena, J.I. <sup>(33)</sup>)

A third enterprise should be added to these two. Geotop was set up in late 2001 by four students to offer geodesic and topographic services, and recently received the three-star 'Basque Country Young Enterprise Award' from the Association of Young Basque Entrepreneurs, AJEBASK. The Bidasoa centre is supporting this project and others that are under consideration by offering advice from its professional staff and placing the equipment and materials of the centre at the disposal of the entrepreneurs for one year.

#### 4. Conclusions

The level of development of enterprise creation support programmes varies widely in the centres studied, and the result in terms of number of enterprises created and above all the nature of those enterprises (size, number of jobs, turno-

ver, market strength) varies according to the role, scale and resources which the centres put into self-employment schemes.

Although fostering the entrepreneurial spirit does not lead to the creation of enterprises in the majority of the vocational training centres studied, it can have other benefits. On the one hand, fostering an entrepreneurial culture will have a positive impact on students' entrepreneurial and innovative capacity in future jobs working for others, and on the other, while vocational training students may not put into practice a business idea that they have developed in the classroom, it is likely that the positive attitudes towards enterprise creation that they have acquired will translate into new businesses in the future, when they are older.

The most important factor in fostering an entrepreneurial spirit is the establishment of means whereby students can see, learn from, appreciate and imitate former students who are setting up businesses or have already done so successfully. The motivational effect of these local experiences is greater than that of the method used by most of the centres studied to foster an entrepreneurial culture: classes and lectures given by teachers, members of development agencies, public institutions associated with enterprise creation, and employers' associations.

The infrastructure used to nurture enterprises and training programmes for entrepreneurs can be and are easily copied by other training centres. However, some of the factors which in our opinion most probably explain the success of the initiatives studied, are far more difficult to reproduce. These factors are the establishment of networks with companies and institutions that will provide new initiatives with support, and the creation of a culture supportive of enterprise among teachers, administrators and students in the training centre.

The experiences of centres such as Lea Artibai, Somorrostro and Bidasoa demonstrate that it is possible to launch enterprise projects that generate numerous jobs and wealth, if these projects are supported with the equipment and infrastructure of the vocational training centre in close

<sup>(32)</sup> Íbid.

<sup>(33)</sup> Íbid.



collaboration with local businesses. The use of the centre equipment allows the new entrepreneurs to explore the viability of industrial projects without initially incurring high investment costs and risks. Contacts between centres and businesses make it possible to identify unmet business needs and opportunities for subcontracting, so that new enterprises spring up to meet the real needs of major initial clients. We believe that these experiences can serve as the model for other vocational training centres and universities interested in fostering enterprise creation.

Compulsory vocational education students are not best suited to the creation of new enterprises because of their youth and lack of experience. Moreover, if most of those who successfully complete courses find jobs easily, it makes it difficult to motivate them to opt for self-employment. Although some experiences show that it is possible to achieve this motivation so that young students set up businesses, a number of the centres surveyed successfully open their offer of support to older entrepreneurs, especially former students of the centre who have experience of working, and to students on job-training courses. Opening up to older prospective entrepreneurs is to be recommended also in university enterprise support schemes.

Where there is a group of students ill-equipped to manage an enterprise but with a viable business idea, vocational training centres may launch a new enterprise and employ those students, copying the example of universities such as Glasgow, Stanford, Chicago and Barcelona. Where a member of one of these universities has a good business idea but

lacks management skills, the university supports the creation of the enterprise and engages a management team.

We believe that it would be particularly appropriate to export the spin-off initiatives developed in some of the centres studied. Although these experiences have been carried out in collaboration with expanding businesses to create new products and services, the literature on spin-off indicates that initiatives of this type, but with a more defensive profile, can be suited to businesses in difficulties. Rather than allowing numerous highly trained staff with wide experience of sectors currently facing difficulties simply to be laid off, public institutions could support enterprise creation, together with training centres and the businesses affected, by launching schemes to encourage and motivate these skilled workers to set up their own enterprises.

Some enterprise support programmes in vocational training centres, such as the URRATSBAT programme of the Basque Government, give priority to entrepreneurs working in fields in which it is harder to find employment. We believe that this focus is not the most appropriate and that the criteria for fostering and supporting new enterprise initiatives should be the potential of the market and the capacity to create strong competitive businesses, rather than whether potential entrepreneurs are likely to find jobs working for others. If centres genuinely want to encourage self-employment and to make students see the creation of enterprises as prestigious, we do not think it right to give the impression that this route is an option primarily for students who are unlikely to find jobs.

### Bibliography

**Albert, C. et al.** La transición de la escuela al mercado de trabajo en España: años noventa. *Papeles de Economía Española*, 2000, No 86, p. 42-58.

**Alonso García, M.A.** Tipos de Formación Profesional: percepción de la utilidad. *European Journal Vocational Training*, 2000, No 19, p. 54-63.

**Araujo, A.** et al. *Situación del empleo en Bizkaia: estrategias para afrontar el paro*. Universidad del País Vasco, 2001.

**Ayerbe, M.; Buenechea, E.** La cultura del trabajo y la actitud emprendedora en el ámbito profesional de la CAV. *Cuadernos Sociológicos Vascos*, No 3. Vitoria Gasteiz: Central de Publicaciones del Gobierno Vasco, 2000.



**Basterretxea, I. et al.** *Colaboración entre centros de Formación Profesional y empresas en la Comunidad Autónoma Vasca*. Universidad del País Vasco, 2002.

**Blanco, A.** El investigador como emprendedor. Obstáculos comunes y cómo resolverlos. In: MADRI+D (2000), *Creación de empresas de base tecnológica: la experiencia internacional*, Dirección General de Investigación de la Comunidad de Madrid, 2000, p. 110-118.

**Chiesa, V.; Piccaluga, A.** Exploitation and diffusion of public research: the case of academic spin-off companies in Italy. *R & D Management*, 2000, Vol 30 No 4, p.329-339.

**Churchwell, T. L.** Cruzando el abismo del laboratorio al mercado. In: MADRI+D, *Creación de empresas de base tecnológica: la experiencia internacional*, Dirección General de Investigación de la Comunidad de Madrid, 2000, p. 94-99.

**CODEX.** *Looking into SPIN-OFF. Company reorganisation, business creation, new entrepreneurs*. Turin: 1998.

*Commission Communication: The challenges of enterprise policy in the knowledge economy. Draft Council Decision on a multi-year enterprise programme and the entrepreneurial spirit (2001-2005)* / European Commission. COM(2000) 0107 (CNS), 26 April 2000. Brussels.

**CONFEBASK.** *La falta de profesionales en el mercado laboral vasco*, 2000.

**Cullen, K.** La incubación sin incubadoras. In: MADRI+D, *Creación de empresas de base tecnológica: la experiencia internacional*, Dirección General de Investigación de la Comunidad de Madrid, 2000, p. 120-123.

**De La Sota, D.** Obstáculos de investigadores académicos y empresariales para la creación de nuevas empresas de base tecnológica. Algunas posibles alternativas. In: MADRI+D, *Creación de empresas de base tecnológica: la experiencia internacional*, Dirección General de Investigación de la Comunidad de Madrid, 2000, p 104-109.

**Dolado, J.J.; Felgueroso, F.; Jimeno, J.F.** La inserción laboral de los titulados universitarios en España. *Papeles de Economía Española*, 2000, No 86, p. 78-99.

**Educational Statistics**, 1987-2001 /EUSTAT (Basque Statistical Institute).

**García-Montalvo, J.; Mora, J.G.** (2000): El mercado laboral de los titulados superiores en Europa y en España. *Papeles de Economía Española*, 2000, No 86, p. 111-127.

*Plan Vasco de Formación Profesional. LANBIDEZ / Gobierno Vasco*. Vitoria: Central de Publicaciones del Gobierno Vasco, 1998.

*Alumnos y grupos por ciclo y curso Formación Profesional Grado Medio y Superior / Gobierno Vasco*. Consejería de Educación. Vitoria: Central de Publicaciones del Gobierno Vasco, 2001.

*Helping businesses start up. A 'good practice guide' for business support organisations* / European Commission. Luxembourg: Office for Official Publications of the European Communities, 2000.

*Key Figures on Education in Europe* / EURYDICE. Luxembourg: Office for Official Publications of the European Communities, 2000.

**Lea Artibai Ikastetxea.** 2002. [www.learatik.com](http://www.learatik.com)

**Leiceaga, X.** Universidad Clásica e Iniciativas Empresariales de Base Tecnológica. Paper given at *Foro sobre mejores prácticas de apoyo a emprendedores y a la creación de empresas en Galicia*, Santiago de Compostela, 21-22 June 2001.

**López, J.** La financiación y otros aspectos de la política de apoyo al emprendedor. Paper given at *Foro sobre mejores prácticas de apoyo a emprendedores y a la creación de empresas en Galicia*, Santiago de Compostela, 21-22 June 2001.

**MADRI+D.** *Creación de empresas de base tecnológica: la experiencia internacional*. Dirección General de Investigación de la Comunidad de Madrid, 2000.

**Maqueda Lafuente, F.J.** *Cómo crear y desarrollar una empresa: planificación y control de actividades*. Ediciones Deusto, 1989.

**Maqueda Lafuente, F.J.** *Creación y dirección de empresas*. BEAZ, Centro de Empresas e Innovación. Diputación Foral de Bizkaia, Departamento de Promoción y Desarrollo Económico, 1991.

**Meneses, Juan.** La creación de empresas: La visión del entorno universitario. In *COTEC, Creación de Empresas Innovadoras de Base Tecnológica*, 2001.

**Ministerio de Educación y Ciencia.** *Estadística de las Enseñanzas no Universitarias*. Series e indicadores 1991-92 a 2000-01. Enseñanzas de Régimen General. Madrid: Oficina de Publicaciones del Ministerio de Educación y Ciencia, 2000.

**Ministerio de Educación, Cultura y Deporte.** Centro Nacional de Recursos para la Orientación Profesional, 2002. [www.mec.es/fp/cnrop/fp.htm](http://www.mec.es/fp/cnrop/fp.htm)

**Moncada, P.; Howells, J.; Carbone, M.** El efecto de spin-offs empresariales sobre la competitividad y el empleo en la UE. In: MADRI+D, *Creación de empresas de base tecnológica: la experiencia internacional*, Dirección General de Investigación de la Comunidad de Madrid, 2000, p. 62-68.

**Mondragón Corporación Cooperativa (MCC):** <http://www.mcc.es>.

**Numark, C. I.** De Armas a Wireless. Acelerando la creación de empresas innovadoras de base tecnológica. In: MADRI+D, *Creación de empresas de base tecnológica: la experiencia internacional*, Dirección General de Investigación de la Comunidad de Madrid, 2000, p. 23-31.

**Pérez Esparrel, C.** La Formación Profesional y el Sistema Nacional de Cualificaciones: una clave de futuro. *Revista del Ministerio de Trabajo y Asuntos Sociales. Economía y Sociedad*, 2000, No 31.

**Rubí, M.** Una experiencia puente universidad-empresa: el programa cuasiempresas. In: *COTEC, Creación de Empresas Innovadoras de Base Tecnológica*, 2001.

**Sáez, F.; Rey, R.** La inserción laboral de los universitarios. *Papeles de Economía Española*, 2000, No 86, p. 99-110.



**Sandelin, J.** Sistemas de apoyo para emprendedores. Ejemplos de la Universidad de Stanford y Silicon Valley. In: MADRI+D, *Creación de empresas de base tecnológica: la experiencia internacional*, Dirección General de Investigación de la Comunidad de Madrid, 2000, p. 44-49.

**Tornatzky, L. G.; Waugaman, P. G.; Gray, D. O.** *Innovation U.: New University Roles in a Knowledge Economy*. Southern Growth Policies Board, 2002.

**Tuominen, M.** Desde el laboratorio al mercado global. In: MADRI+D, *Creación de empresas de base tecnológica: la experiencia internacional*, Dirección General de Investigación de la Comunidad de Madrid, 2000, p. 56-61.

*The transition from education to working life. Key data on vocational training in the European Union*

/ Cedefop. Luxembourg: Office for Official Publications of the European Communities, 2001.

**Ullastres, C.** Vivero Virtual de Empresas. Servicio Público de la Comunidad de Madrid de apoyo a la Creación de Empresas Innovadoras de Base Tecnológica. Paper given at *Foro sobre mejores prácticas de apoyo a emprendedores y a la creación de empresas en Galicia*, Santiago de Compostela, 21-22 June 2001.

**Veciana, J.M.** Creación de Empresas como Programa de Investigación Científica. *Revista Europea de Dirección y Economía de la Empresa*, 1999, Vol 8 No 3, p. 11-36.

**Velasco, R.** *La creación de empresas en España*. Circulo de Empresarios Vascos, 1998.