SME GROWTH NEEDS REPORT

MADRID/HENARES-CORRIDOR, SPAIN

SME CLUSTER GROWTH
EMPOWERED ENGINEERING

This project has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

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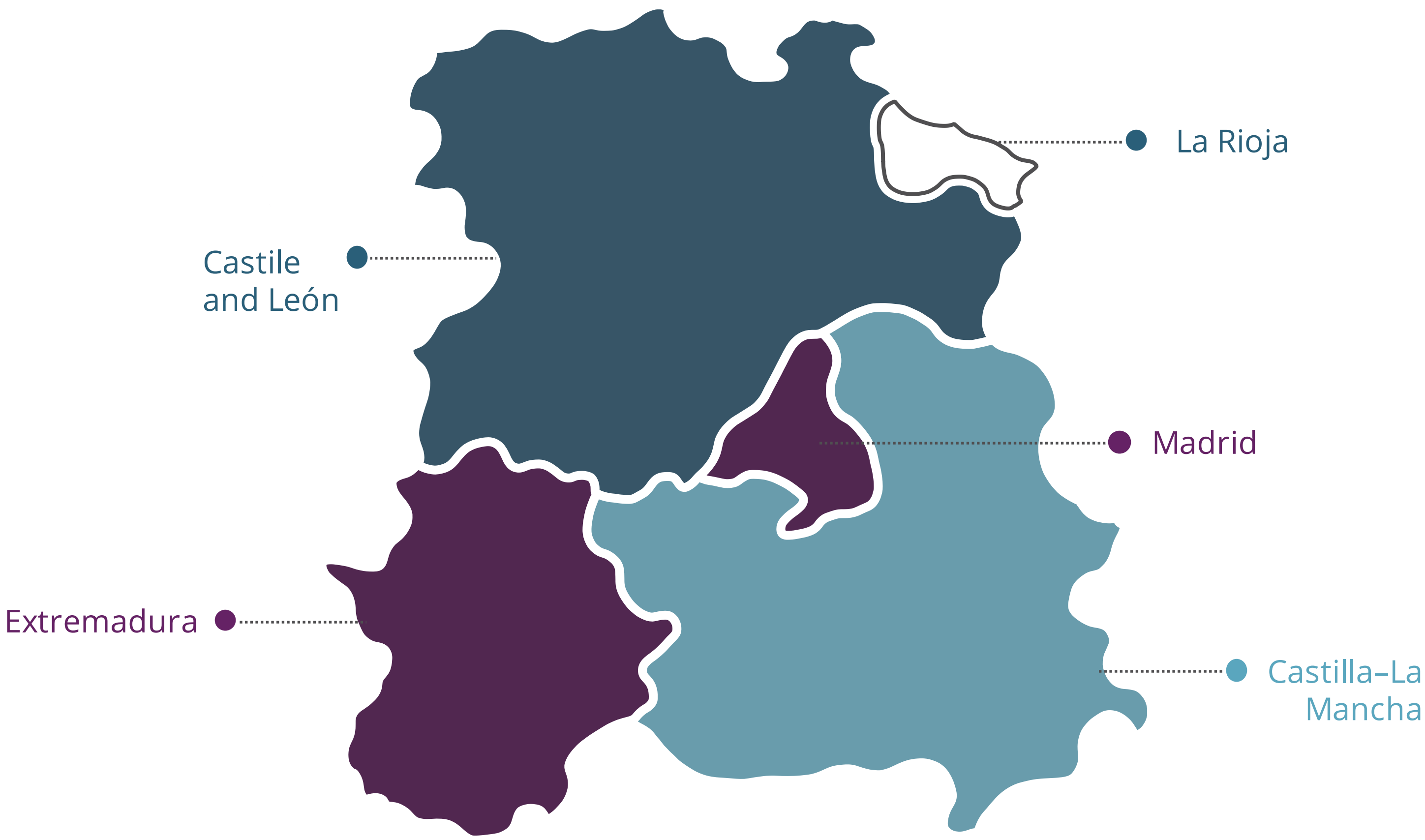
INTRODUCTION TO THE REGION

The Madrid region represents the most important economic engine in the country. This economy is strongly supported by the service (tertiary) sector, representing around 85% of activity, followed by industry (8%) and construction (6%). Before the pandemic There were 516,412 companies established in Madrid, which represent 16% of all companies located in Spain. The business tissue follows the national model with 95% of those companies having fewer than 10 employees and only 0.3% having more than 200 workers. According to Eurostat (2016), the Community of Madrid employed 15.46% (2,833,600) of the country's workforce aged 15-74: 86.66% in the tertiary sector, 13.1% in the secondary sector and 0.24% in the primary sector. García-Casals & Dominguez (2009) report that the Community could be self-sufficient in renewable energies for its electricity demand for 2050 only with solar and photovoltaic systems.

The Henares Corridor covers around 10% of the Community of Madrid population, and its economy is shared among technology, logistics, industry and agronomy, mainly due the nearby Madrid-Barajas airport.



Madrid / Henares-Corridor Region Source: (WDC, 2019)

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NATIONAL CONTEXT

According to the definition by Porter (1990), a cluster is "a group of interconnected companies and related institutions in a given field, which are geographically close, and which are linked through common elements and complementarities." In any case, the clusters are the transmission belt between the needs of the companies and the priorities of social and competitive development of the territories. A cluster activates skills, aligns strategies, and facilitates continuous innovation, providing skills, knowledge, and vision.

The economic and social development of a territory requires multilevel cooperation strategies, knowledge and dialogue with key agents and the capacity for public-private collaboration. Acquiring competitive improvements is identified as a challenge for the whole of society. Without companies there is no economic and social development for the territories and without transformation capacity, there are no competitive companies. Clusters provide SMEs with the knowledge and innovation dynamics they need to continue being a motor of well-being.

In Spain, clusters and cluster policy have their origins in the first experiences that appeared at the regional level in the early 1990s. At the beginning of the 2000s, the Ministry of Industry, Tourism and Commerce began to work on the development of a strategic framework to coordinate and articulate, but above all complement, the actions that have already been carried out in the different Autonomous Communities for some time. The Ministry also promotes and supports the creation and strengthening of clusters as part of the EU strategy to promote the competitiveness of small and medium-sized enterprises and innovation. According to this strategy, innovation clusters constitute a means to alleviate the consequences of certain market deficiencies related to problems of size and coordination. Innovation clusters also increase the possibilities of companies to interact with each other, establish knowledge flows and aspire to reach a critical mass enough to develop innovation projects that improve their competitiveness. In Spain, following the EU guidelines, the Ministry has implemented measures aimed at consolidating a map of clusters through the instruments to support "Innovative Business Clusters" (Agrupaciones empresariales innovadoras, AEIs).

The Order IET / 1444/2014 defines the Innovative Business Cluster (AEI) as the combination, in a geographic space or productive sector, of companies and public or private research and training centres, involved in a collaborative exchange process aimed at obtaining advantages and/or benefits derived from the execution of joint projects of an innovative nature. An AEI's activity must be organized around a scientific or technological branch or sector and/or a target market or market segment. The AEI must also have a critical mass that ensures the competitiveness and international visibility of its companies, especially SMEs, promoting the practice of innovation and internationalization.

In Spain and in line with these guidelines, the previous Spanish Strategy for Science and Technology and Innovation 2013-2020 raises the need to reinforce the role of "clusters" as agents capable of fostering collaboration between universities and R&D centres and the productive fabric as a measure to improve competitiveness.
Since 2006, the Ministry of Industry, Tourism and Commerce has developed a policy aimed at the creation and strengthening of clusters through the Support Program for Innovative Business Groups, which can be accessed by all those entities registered in the Register of Innovative Business Groups. After seven years of operation, it became necessary to reorient this Program in such a way as to achieve a system of competitive groups at an international level that have a high impact on national activity.

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CLUSTERS IN THE REGION

Regarding financing, the Ministry has granted aid to clusters at the national level of more than €83 million. The groups that can benefit from the aid of the program are those entities whose innovative potential and critical mass have made them worthy of the recognition of the Ministry through their registration in the Register of Innovative Business Groups of this department. In 2021, the call has a budget of €8,000,000. Given that competitiveness and innovation are elements increasingly inserted in the global plane, it is necessary to question what the role of the local-regional government in this context can be. Paradoxically, the ability to compete at the global level is determined by the assets available at the local level, and this phenomenon is what has caused the competitive advantages of each country or region to be generated as an interaction of its members. Thus, the joint action of all of them, in essence cluster operation, is what generates synergies, reducing any weaknesses that may exist and enhancing the strengths of those assets. Clusters, in addition to explaining the patterns that make regions different, are instruments that make it possible to act on most micro-competitiveness factors. The clusters promote synergies between all the agents of the system and knowledge transfer, one of the great challenges for innovation and competitiveness in today's economies.

Action in the region in terms of clusters is being structured through the so called “Madrid Network”, a regional network that aims to coordinate and articulate 12 clusters (Aerospace, Audiovisual, Graphic Arts, Aeronautics, Biotechnology, Health and Wellness, Security and Trust, Financial, Tourism, Renewable Energies and Logistics) with the rest of the Madrid innovation system. Madrid Network also includes 6 science and technology parks in different stages of development to make the transfer of knowledge between these clusters and universities, research centres, etc. more effective. Through the Network of Technology Parks, the Regional Government of Madrid promotes the generation of its own technology, increasing the number of innovative SMEs and collaborating with the definitive deployment of the information society. Regarding job creation, the estimations point out a creation of more than 30,000 highly qualified workers and an investment that exceeds 500 million euros.

In addition, Madrid Network has also launched the so-called Advanced Regions Network to connect the companies in the clusters with counterparts in the most innovative and developed regions of the world. Although the Advanced Regions Network is still very new, contacts have already been established and agreements have been signed in regions such as Silicon Valley and San Diego in the United States, Bavaria, Helsinki and Stockholm in Europe and other regions of Asia (Hong Kong and Shanghai) and the Middle East (Dubai). Therefore, as can be seen, the cluster policy of the Community of Madrid is inserted in a broader strategic framework unlike other Spanish regions. Furthermore, it is not just another part of industrial policy, but the main axis of economic promotion. Launched and coordinated from IMADE in a relatively short space of time, it has reached a very important critical mass both in terms of scope and impact.

IDENTIFICATION

The Ministry of Industry, Commerce and Tourism keeps a registry of clusters where those AEIs that have been declared and notified to the corresponding regional authority can be registered. In the Community of Madrid there are 6 clusters shown in Figure 1, one of them, Centro de Innovación Tecnológica para la Logistica y el Transporte de Mercancías por Carretera (Logistics and Road Transportation CITET, https://www.citet.es/), is located in the Henares Corridor.

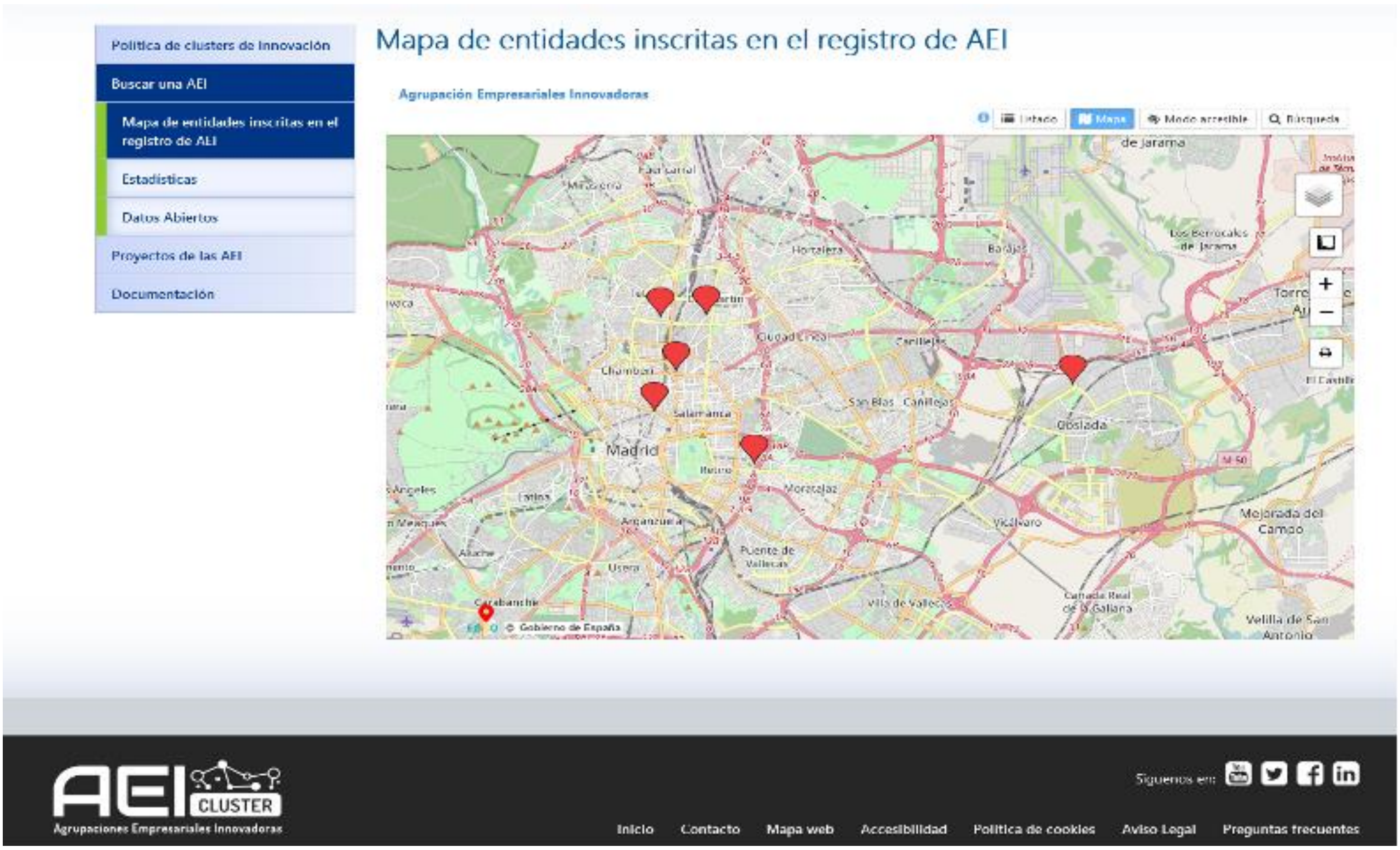

Figure 1: Registered Clusters in the Region of Madrid

Specifically, there are 6 AEIs registered with the Ministry within the Madrid region, comprising 575 companies, of which 443 are SMEs. It is noteworthy that these clusters include 41 technology centres and that they employ more than 300,000 people.

In the Metropolitan area of Madrid, according to data from the City Council of the capital, there are 3 so-called clusters which are not registered in the Ministry official registry: Big data, Cybersecurity and Construction, Engineering and Architecture. The City Council considers these clusters as a driving tool of the knowledge economy, for the promotion of innovation and to generate added value and exploit synergies that contribute to a competitive improvement of the sector. Such clusters, promoted by public initiative and with a similar work methodology, evolve following a 3-stage procedure. The objective of the first phase is to develop the initial forum, a place where current members can share experiences and receive feedback from cluster members on possible use cases. The second phase seeks to actively open the cluster to new participants to ensure its diversity in all senses, ending when a critical mass of members has been reached and is already able to face the structured generation of projects between members. The third and final phase is the construction of an environment for the co-creation and generation of projects of value between members of the cluster. Brands, institutions, universities, and start-ups will come together to develop projects on data in a regular and standardized way.

On the other hand, Madrid Network, the entity that forms the Innovation Network of the Community of Madrid, can be considered a pioneer in an organization model as it encompasses all the regional strategic sectors under the same umbrella. The Clusters and Science Technology Parks of the Madrid Network create a unique space that strengthens the necessary inter-sector relationships in a globalized market. Among its objectives are to support companies in the search for opportunities and in the generation of business through innovation. It is an entity that works in the following areas: Innovative public purchasing, Financing, Industry 4.0, Technology Transfer, European Projects, Networking and Training.

CLASSIFICATION

According to the Ministry of Industry, Commerce and Tourism, two types of clusters (or Innovative Business Groups, AEI, as they are called it in Spain) are considered:

- **Incipient:** AEIs recently constituted, in the process of consolidation, with an age of a maximum of 4 years from the date of incorporation.
- **Excellent:** AEIs that manage to demonstrate a high degree of performance in the development of projects and services relevant to the improvement of the competitiveness of the associated companies, in the organisation of their own management structure and in the achievement of a sustainable financial structure.

EVOLUTION

There is no specific engineering cluster sector, the closest being ICT, aeronautics, Machinery, and Industrial Technology clusters.

The cluster policy of the Community of Madrid is recent. The first actions date back to 2006 with the renewal of the team of the Madrid Development Institute - IMADE, the main instrument of the Regional Government for economic promotion. From 1990 to 2006, the industrial policy measures developed by the Government of the Community of Madrid through IMADE had not been very intense, highlighting to a greater extent its action in terms of launching science and technology parks and business spaces, as well as other initiatives along the same lines. Starting in 2006, the Development Agency began a proactive policy based on the cluster approach as a means of structuring a very ambitious regional strategy: to position itself as one of the ten most advanced economies in the world by 2020.

Up to now, a total of 11 cluster initiatives have been launched in the most strategic economic sectors of the Community (aerospace, audiovisual, biotechnology, graphic arts, finance, automotive, health and wellness, security, renewable energy, logistics, and tourism).

According to figures from IMADE itself, these clusters represent economic activities with an approximate weight of 35% of the regional economy. Of these 11 clusters, nine of them participated in the AEIs Program and currently belong to the Special Register of AEIs of the Ministry of Industry, Commerce and Tourism. Last September, the Community of MAdrid announced the creation of four additional clusters focused on digital transformation, artificial intelligence, blockchain and internet of things.

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ROLE OF THE ENGINEERING SMES IN THE REGION

The following paragraphs will review the characteristics of SMEs in the region in their efforts to grow, taking into consideration all points of the literature review.

MAPPING

Of the 3.2 million companies that currently exist in Spain, 99.8% are SMEs, that is, they have less than 250 employees and their business volume does not exceed €50 million. Micro-enterprises (with less than ten employees) represent 90% of the total, both in Spain and in France, Italy, and the United Kingdom, while in Germany they do not reach 80%.

In Spain, micro-enterprises support a high percentage of the country's total added value and employment. In Germany, France and the United Kingdom, the percentage of people employed in large companies is approximately double that of Spain, while that of those employed in micro-companies is half. Additionally, the Spanish economy is heavily service based (75% of activity), followed by industrial activity (16%), construction (6%) and agriculture (3.5%). These features of the Spanish economy are closely linked to known problems with growth. In particular, an endemic problem is that Spanish companies register lower productivity.

INTERACTION WITH OTHER STAKEHOLDERS/ SUPPORTING MECHANISMS

There are specific programs aimed at correcting these irregularities. Thus, CEPYME500 is a program of the association of SMEs where the 500 Spanish SMEs leaders in business growth mentor five SMEs to help them increase their size. Since 2017, the project identifies 500 medium-sized companies annually, which become part of the CEPYME500 universe, through a platform that makes services, instruments, and tools available to them, with the aim of helping to promote the growth of the Spanish companies. The CEPYME500 project has the support of big players such as Spanish stock markets, Official Credit Institute, Bankinter and Informa.Structures that support SMEs.

The fundamental structures in which SMEs are included are sectoral associations, particularly the specific association of SMEs called CEPYME. In addition, the Chambers of Commerce -corporations that collaborate with companies in promoting trade, industry, and services in the different regions of the country- play a prominent role. In the case of Madrid, specifically there is the very active and influential Chamber of Commerce of the Community of Madrid. Other structures created by public entities such as Autonomous Communities and City Councils are also an important part of the support for SMEs within the Community of Madrid.

SMES REPRESENTATION WITHIN THE MADRID REGION

We have already said that of the 3.2 million companies that currently exist in Spain, 99.8% are SMEs.

Regarding clusters, there are six clusters registered with the Ministry of Industry, Commerce and Tourism within the Madrid region. These clusters group 575 companies, of which 443 are SMEs. It is therefore a very important presence since SMEs constitute 77% of all companies within the clusters.
In Spain, if we discuss a broader scope, the role of SMEs in the business segment stands out. Just as an anecdotal example we will mention that the president of the association of entrepreneurs (called CEOE) at national level is the same person as the president of the association of SMEs (called CEPYME).

UNDERSTANDING THE POLICY AND FINANCING ENVIRONMENT

The Financial Diagnosis of the Spanish Company report is a periodical research study carried out jointly by EADA and CEPYME. The report was born due to the lack of statistical information on the reality of the Spanish company and its difficulties from a financial point of view: evolution of turnover figures, profitability, cost of liabilities, access to credit, delinquency, and payment terms, among others. The information is also completed with an analysis of the business economic outlook. The study is carried out annually by analysing a sample of approximately 400-500 Spanish companies.

Until 2018, the year of the last published report (CEPYME, 2018), for the fourth consecutive year a favourable evolution of both qualitative and quantitative main indicators has been observed, mainly highlighting the high growth in sales of Spanish companies, as well as the tendency to increase in their economic profitability.

In 2020, the structural differences between the different Spanish autonomous communities in terms of payment behaviour by companies are still considerable. The worst performance is observed in Comunidad Foral de Navarra (119 days average delay), Cantabria (108.7 days) and Comunidad de Madrid (95.6 days). The three regions have seen their average payment period significantly increase compared to the previous quarter.

The interest rates of SMEs in the euro zone continue in the downward trend. The average for the second quarter of 2020 stood at 1.54%, and interest rates for SMEs also fell in Spain during the second quarter of 2020. Specifically, the price of money fell 0.07 percentage points to stand at 1.83%.

On March 20, 2020, a public guarantee program was approved in Spain to facilitate the maintenance of employment and alleviate the economic effects of the COVID-19 crisis on the Spanish productive fabric. This program was made up of five tranches with a total of € 100 billion, to be managed by the Official Credit Institute (ICO) and financial institutions.

05

GO INTERNATIONAL

In 2018 there were 88,307 companies in the region of Madrid that carried out export activities, which means an increase of 65.7% compared to 2017. Exports in this period exceeded €30 billion; specifically, they reached over €30 billion. The main destination markets are represented by European countries, such as France, Portugal, Germany, and the United Kingdom.

The Community of Madrid promotes the internationalisation of Madrid SMEs with the aim of improving their competitiveness and positioning. Regional companies now have the Internationalization gateway (Ventanilla única de internacionalización: https://www.vuimadrid.org/) a free service that offers advice and guidance in a single point for all aspects that involve the opening of new markets, from the search for financing to the particularities of the different territorial regulations, as well as the detection of different international support in the destination markets. Thanks to this initiative launched in collaboration with the Official Chamber of Commerce, Industry and Services of Madrid, a team of experts in foreign trade offers interested companies all the necessary information on tax, legal and commercial matters, as well as the procedures to be carried out, to internationalise their businesses. In addition to carrying out a personalised diagnosis to detect the level of knowledge and preparation of companies to face the internationalisation process, an international itinerary is also elaborated, planning the different steps to be carried out, depending on the characteristics and needs of each company.

In addition to this, the Chamber of Commerce of the Community of Madrid specifically formulates internationalisation strategies through specific training programs such as the current free webinars and online events that are scheduled periodically (see Figure 2).

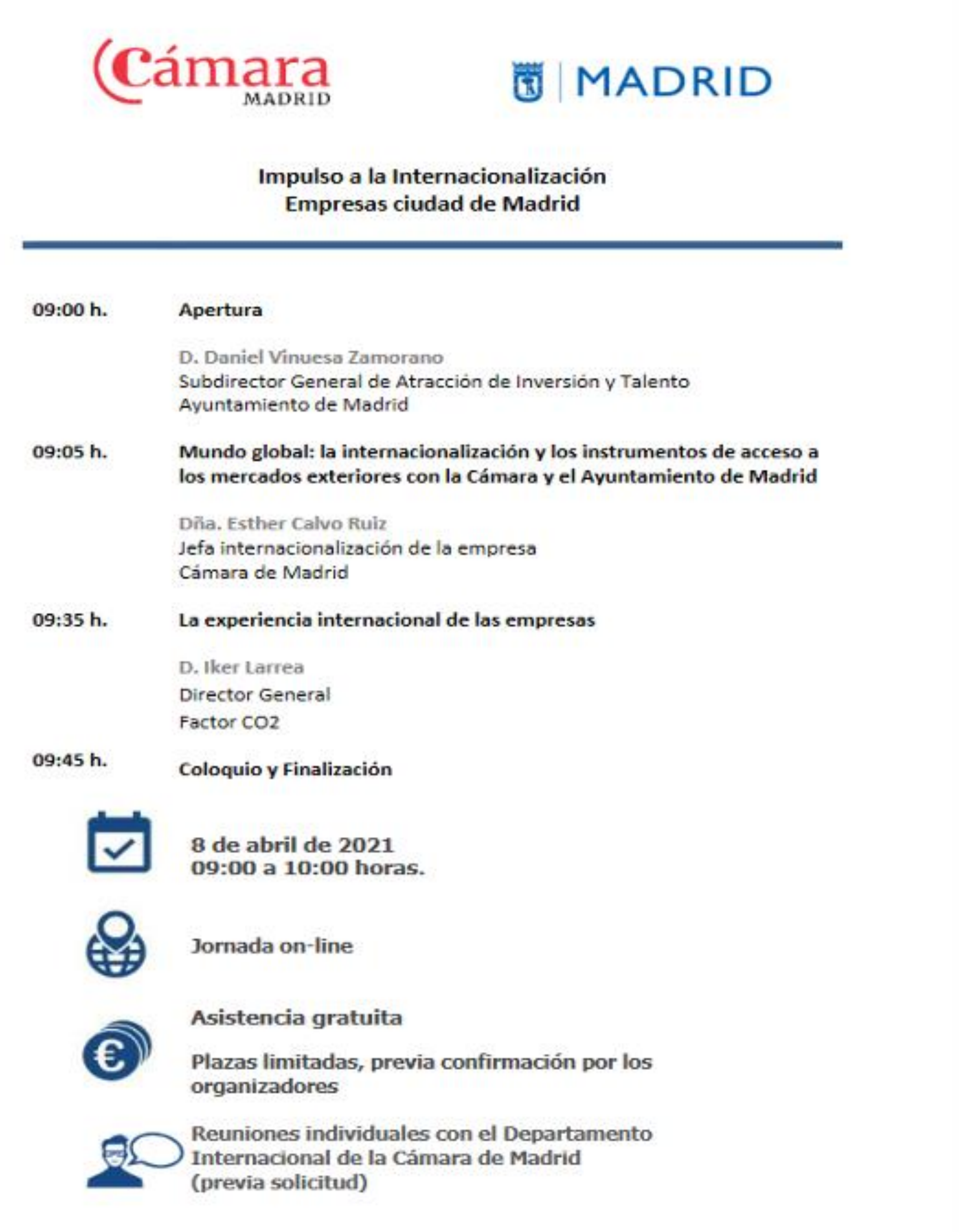

Figure 2: Online event on internationalization organized by the Madrid Chamber of Commerce

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KNOWLEDGE MANAGEMENT ACROSS THE MADRID REGION

If we understand knowledge management as the set of actions that allow tacit and personal knowledge to become explicit, public and, if possible, usable by individuals and organisations (Nonaka and Takeuchi, 1995), then in both companies and clusters, value creation is based on developing their intangible assets. These assets are patents, brands, customer relationships, motivative and creative human resources, quality processes, innovation capacity and knowledge generation.

According to Alvarez & Caballero (2013), clusters have a strong regional impact, especially if they are in the early stages of development where most clusters are family clusters. As a result, there is a strong labour mobility, mainly horizontal, which indirectly accelerates the transfer of R&D&I between the companies in the cluster.

In the Region of Madrid, the Universities are structured into 65 faculties with a total of 417 departments. In addition, the Public Research Bodies are structured in 104 Centres or Institutes, which leads to a total of 521 units (departments, research centres or institutes) in which knowledge management can be analysed. In such a variety of centres, the research activity is characterised by being very heterogeneous, which implies that if a better understanding of it is desired, it would be interesting to analyse the behaviour of research work and the Knowledge Management Model according to the type of centre or area of knowledge.

INNOVATION MANAGEMENT

A first analysis of the Spanish Science, Technology and Innovation System shows that the percentage of business spending on Research and Development is lower than that of other neighbouring countries. Likewise, it is evident that the persistence of this difference translates into a low innovative capacity of the country and shows a clear contrast with the scientific capacities developed. Spain, and the Community of Madrid by inclusion, has a relatively small number of innovative companies, especially SMEs, and a reduced weight of the medium and high technology sectors. Finally, it should be noted that companies that systematically carry out R&D activities do so in a lower number than it should be desirable.

In 2011, the percentage of companies with fewer than 250 employees that carried out some innovative activity stood at 11.8%. A percentage that is significantly different from that of large companies, which was 42.2% in the same period (CEPYME 2013). In 2019, innovative activities occurred in 20.8% of Spanish companies, with 2,536 of these labelled as innovative SMEs.

One of the great concerns and problems of SMEs in the region is the transfer of innovation and the lack of incentives for it by public administrations. The Spanish Strategy for Science and Technology and Innovation and the new State plans incorporate a series of measures and initiatives to strengthen the link between these two areas, as well as to effectively facilitate public-private collaboration projects.

The efforts of the Chamber of Commerce of the Community of Madrid to promote innovation strategies, training in the culture of research, development and innovation, is especially remarkable and has been reflected in specific training programs such as the current free webinars that the Chamber schedules periodically.

BUSINESS OWNERS

The community of Madrid maintains and manages a specific portal to support entrepreneurship whose title is Madrid Emprende (https://www.madridemprende.es).
Madrid Emprende is a public service of the Madrid City Council that forms a unique space to promote business initiatives, where information is provided on entrepreneurship, steps, and administrative procedures for the creation of companies and on aid, subsidies, bank lines of credit and other resources available to support entrepreneurs. They also offer technical advice on the adequacy of commercial premises for the start of economic activities.

HEI ROLE

In 1973 the Fundación Universidad-Empresa (University-Business Foundation, FUE) was born with the aim of bringing the world of the university and the world of business closer together. Since its creation, the Fundación Universidad-Empresa has developed innovative programs and initiatives to achieve this, always offering adequate responses to the changing needs of companies, universities, and students.

The promotion of entrepreneurship is one of the identifying signs of the Universities of the Madrid region. The different public universities in the region manage several incubators in the Community of Madrid in which all provide the advice and guidance that new business projects need. In addition to promoting entrepreneurship, the business incubators managed by Madrid universities have an important training activity on business-related topics such as financing, taxation, coaching, and web design, among others.

In the case of the University of Alcalá, the university, which is the reference for the Henares corridor, the School of Entrepreneurship (https://empredamientos.uah.es/) promotes a set of activities designed to respond to the needs of students with entrepreneurial concerns, from design and validation of their business models until the assignment of business mentors. This school's main mission is to act as a dynamising element of entrepreneurship to create an entrepreneurial university, accompany students who venture down the path of entrepreneurship by offering them advice and tutoring on projects and develop personally and professionally the university community to achieve all their potential to lead their own projects. The school gives special priority to promoting mentoring, developing practices, and facilitating the creation and management of start-ups. It also carries out related training programs.

CHALLENGES/BARRIERS AND DRIVERS TO GROW

According to a study carried out by the Escuela de Organización Industrial de Madrid (Madrid Industrial Organization School, EOI) (EOI 2005), which used macroeconomic data from Spanish SMEs and a quantitative study of SMEs in the Madrid region, the main internal barriers that prevent companies from growing are: lack of marketing skills and lack of a strategy or strategic planning. Within the barrier of lack of marketing skills, the most important factors are knowledge of the customer, sales efforts, and market orientation. In relation to the strategic area, the factor that they value as the most important is the performance of adequate strategic planning.

The study corroborates that the internal barriers that seem to be most important in both the sample of growing and non-growing organizations are those related to marketing skills, while the barriers that are of less importance for both samples seem to be those related to marketing skills related to the financial area.

CLUSTER COUNCIL MEETING

UAH,
13TH OCTOBER 2021
VIRTUAL EVENT

PARTICIPANTS

Firstname	Surname	Entity	Type of Entity
Ignacio	Vilela	AEDHE	Association
Alberto	Lorenzo	AEDHE	Association
Carlos	Ballesteros	ANESE (Asociación Nacional de Empresas de Servicios Energéticos)	Association
Daniel	Navarrete	ANESE (Asociación Nacional de Empresas de Servicios Energéticos)	Association
Nuria	Martínez	SOLARO	Private Company
Javier	Bernard	SOLARO	Private Company
Salvador	Sánchez	UAH	HEI
Elena	Garía-Barriocanal	UAH	HEI
Fernando	Perales	UAH	HEI

AGENDA

1. Presentation of the European project Growth of SMEs Erasmus +
2. Presentation of the various members present at this first meeting
3. CERTEc cluster presentation
4. Organization and initial actions
5. Other business

CONTENT OF THE DISCUSSIONS

General Vision of the Project:

1. Description of the main partners of the consortium as well as high level objectives of the project
   - Clustering: Each HEI will coordinate the generation of a cluster based on the main engineering capacities of the region
2. Growth: Generation of cluster network supporting the growth of the participating entities. Organization of events to increase the contacts and promotion of collaborative projects.
3. Learning: Mobility and training programs in those areas identified with lack of knowledge and skills depending on the region
4. Consultancy: Network between students and companies to define business relevant challenges and projects and promote public-private relations
5. Facilities sharing: Access to point supporting growth initiatives at international level
6. Cluster CERTec
7. Presentation of the main goals, motivation and mission of the cluster

INITIAL RECOMMENDATIONS AT SCG PROJECT LEVEL:

- The initial recommendations collected in WP2 were presented to the participants to evaluate their relevance in this sector. The following areas were commented:
- Training needs: Entrepreneurs, knowledge management, internationalization, finances, ecosystem and clustering, innovation
- Collaboration with HEIs: Discussing which are the main demanded task for each role to increase alignment and increase the collaboration activities and success
- Coaching: Present the main ideas and proposals for coaching, target audience, sessions approach and activities

NEXT ACTIONS:

- Work as an observatory to evaluate innovation activities
- Synergies generation through collaborative projects
- Identification of innovation programs with public funding to explore and develop new services
- Generation of a training program to promote growing activities in the companies, including mobility actions and networking
- Collaboration in the generation of the growth strategy
- Creation of a help desk in the UAH
- Development of best practices supporting growing actions

FIRST THEMES RAISED IN THE STUDY:

- Collaboration with participating associations to identify other relevant actors in the industry
- Dissemination of open initiatives for public funding
- Promotion of project proposals
- (AEDHE) Define in detail the collaboration with innovation offices.
- (AEDHE) How will the SME be benefied ? Could it be posible a collaboration with the DIH?
  - (UAH) SCG promoted by Erasmus+, not a H2020 initiative. Main goal is to work on the training program enabling networking and promotion of innovative projects.
- (AEDHE) Suggest a bilateral meeting to collaborate to define following actions
- After the meeting, it was asked if there was any previous experience about the impact on SMEs and project results. From the UAH side, there is no project specific past experience and that was the main reason to launch this action. The EC framework and project implementation ensures that all the proposed activities will be carried out, so the SMEs and clusters can benefit from this.

NEXT STEPS

1. Next council meeting in 2 months to update about the coming actions
2. Keep on promoting the council to engage further stakeholders
3. Share the meeting slides with all interested entities, although not participated in the kick-off

07

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