



Forma parte de:

TIC2020

Estrategia de
Impulso del Sector TIC
Andalucía 2020



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1 INTRODUCTION

In a context such as the current one, characterized by an interconnected society and an economy based on information processing and management, companies need to adjust to the rhythm of technological changes to be competitive, in the same way that they need to learn to innovate, to operate with new rules and to undertake changes in their business practices.

The digital transformation of companies, understood as the adaptation and modernization of their business processes through the incorporation of information and communication technologies, as well as the establishment of a culture of innovation in the company that allows them to improve their performance, it is a challenge that must be addressed to guarantee its incorporation into the Digital Economy.

The countries are aware of the importance of the Digital Economy as an engine of economic growth, being the economies that have opted the most for its development the ones that have prospered the most in recent years; to the point that a direct correlation can be observed between investment in digitization, the increase in GDP and the decrease in unemployment, according to the World Economic Forum¹.

In Europe, it is estimated that digitization will contribute 2.5 trillion euros to the economy in 2025, reduce the costs of Public Administration by 20% and increase the productivity of the industry by up to 20%¹. For this reason, the European Union advocates the more efficient use of digital technologies as a key factor to generate a more competitive economy, help economic growth and

employment generation. In this sense, both the Commission and the countries of the European Union have ratified this commitment in different agreements and initiatives to be carried out in the coming years, among which, it is worth highlighting the "Digital Agenda for Europe" that constitutes the sheet of route proposed by the European Commission to advance the Digital Economy.

At the national level, the Spanish Government approved the "Digital Agenda for Spain" in which a strategic framework is established to favor and promote the development of the Digital Economy and Society in our country. In line with the Digital Agenda for Europe, this agenda sets the roadmap in terms of ICT as well as electronic administration, establishing the specific objective of developing the Digital Economy for the growth, competitiveness and internationalization of Spanish companies through a more intensive and efficient use of ICT, the promotion of electronic commerce, the development of a digital content industry, the internationalization of the technology company and the commitment to future industries.

This commitment to digital transformation as a driver of the economy is also evident in Andalusia through the "Agenda for Employment, Andalusian Economic Plan 2014-2020. Strategy for Competitiveness", by establishing this among its priority objectives for 2020 to achieve a more competitive economy thanks to the development of the Digital Economy in our region. For this, this Strategy establishes the specific challenge of favoring the renewal of the model

1. AMETIC. Report "DIGITAL TRANSFORMATION: Vision and Proposal of AMETIC"

productive through increased productivity and competitiveness of companies and entrepreneurs, in the context of the Digital Economy, through ICT, increasing their incorporation into the digital market (electronic commerce, online presence, electronic invoicing).

Likewise, the Andalusia 2020 ICT Sector Promotion Strategy (TIC2020)^{two}, approved on May 16, 2017 by the Governing Council, it includes among its objectives to contribute to the development of the Digital Economy in Andalusia. For this, within the axis of Incorporation of ICT to other productive sectors, the Program to Stimulate the technological demand is included in which the Digital Enterprise Action Plan 2020 (PAED) is framed. This Plan constitutes the operational framework of reference for the promotion of the digital transformation of the Andalusian small and medium-sized company, of the Ministry of Employment, Business and Commerce until the year 2020.

For the preparation of the Plan, we have had the collaboration of relevant public and private agents from the Andalusian business environment and experts in digital transformation, which has allowed the adoption of consensual approaches and solutions, within the framework of a participatory and open scenario.

This process of preparing the PAED has started from a detailed analysis of the current situation of digitization in the Andalusian business fabric, from a quantitative and qualitative perspective, as well as the study of trends and similar plans at European and national level. The weaknesses, threats, strengths and opportunities of the current situation have been analyzed to identify the challenges to be addressed and define the objectives to be achieved in 2020 to promote the digital transformation of Andalusian SMEs.

To comply with these objectives, the Plan is specified in a series of specific measures grouped around different strategic axes and lines of action, which have been designed and prioritized with the aim of drawing a roadmap that contributes to the development of the Digital Economy in Andalusia.

As a result of the work carried out, the main points of the Digital Business Plan 2020 are presented in this document, as well as the key aspects and conclusions obtained throughout the study carried out.

2. <http://lajunta.es/tic2020>

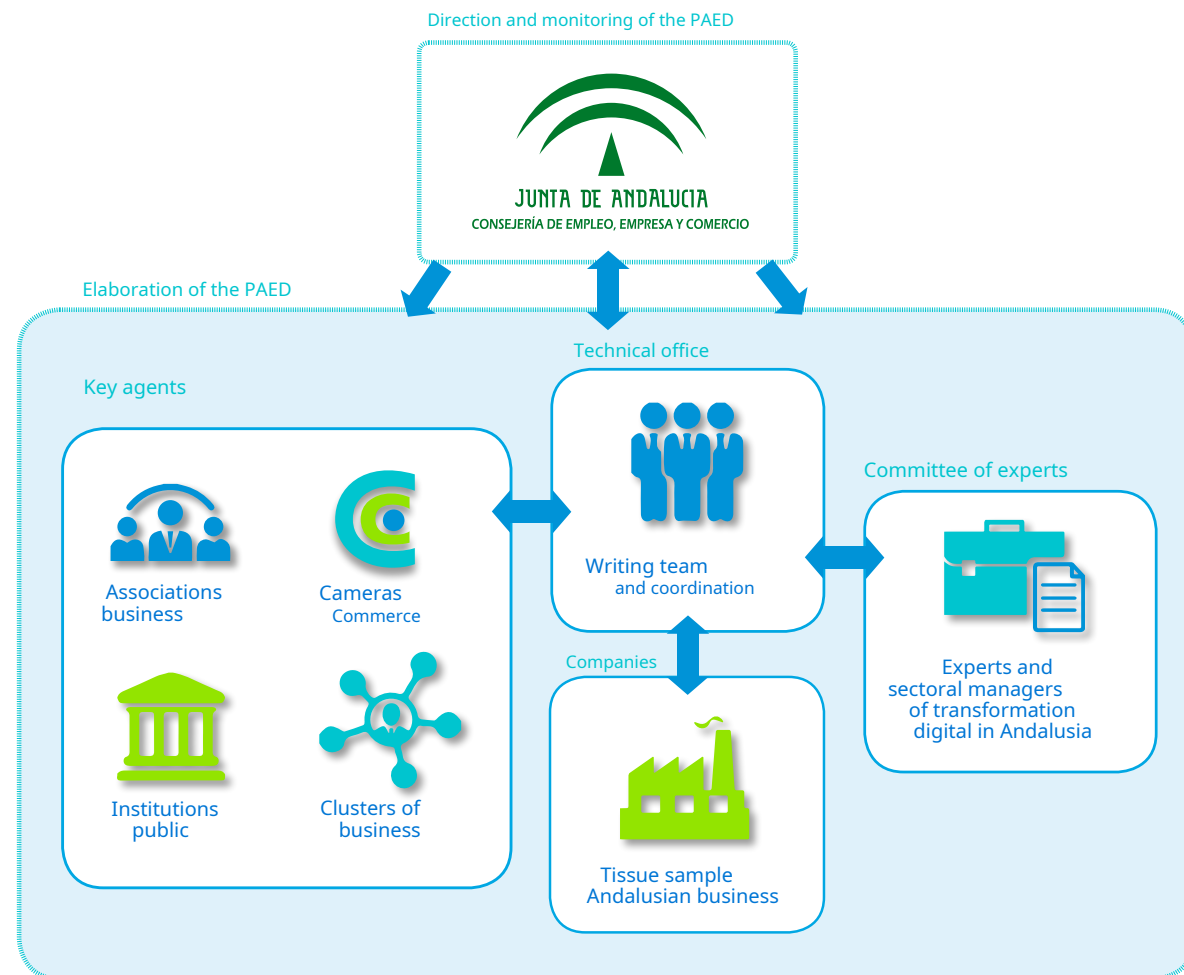


Figure 1 Governance model

two PROCESS OF PREPARATION OF THE PED

The process of preparing the 2020 Digital Enterprise Action Plan (PAED) has been developed based on a governance model specifically designed to try to promote sectoral, territorial and social participation. This model has established a collaborative work framework with relevant public and private agents in the Andalusian business environment, as well as with experts in digital transformation, which has allowed the PAED to provide criteria and suggestions that enrich its final formulation.

The following graphically shows the structure of the governance system defined for the preparation of the PAED and describes the organization and functions of each of its components:



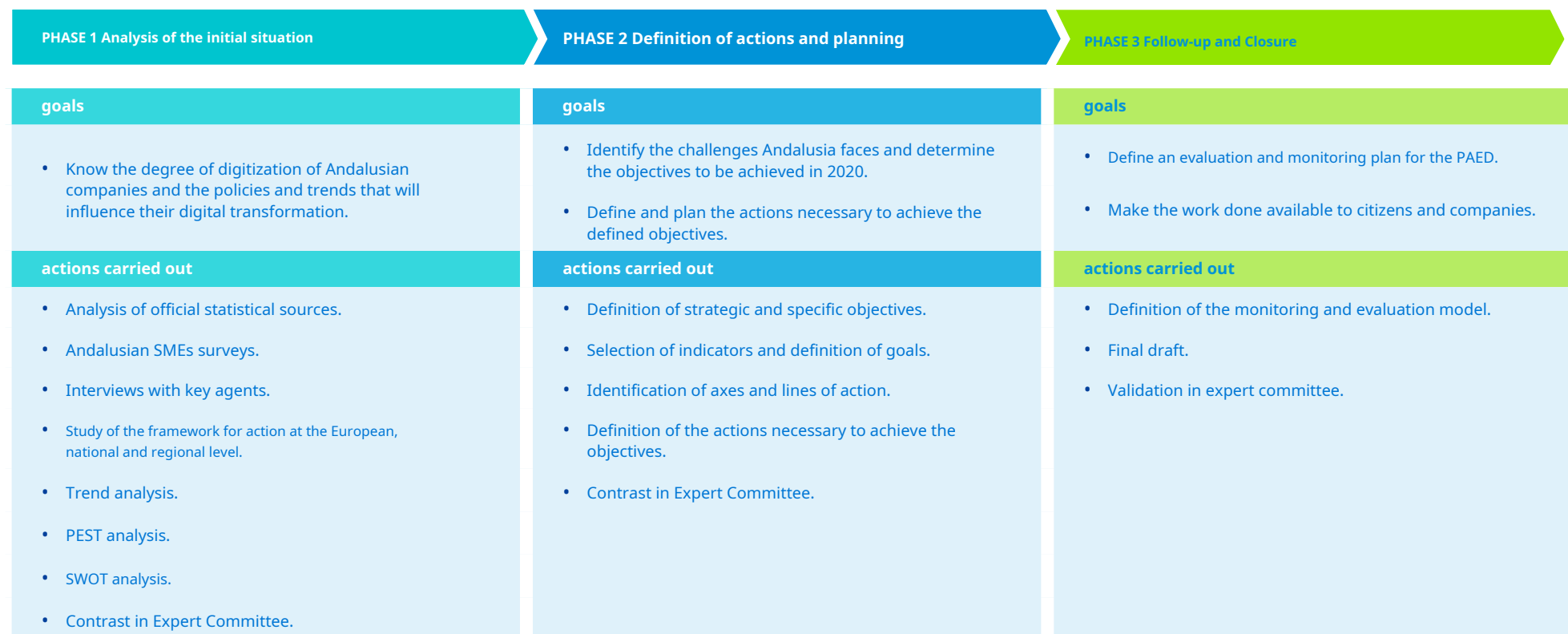
The main body responsible for the development of the PAED has been the General Directorate of Telecommunications and the Information Society of the Ministry of Employment, Business and Commerce. Under his supervision, the Technical Office made up of technical personnel from said General Directorate has been in charge of coordinating, monitoring and executing the project activities, as well as drafting the documents.

To analyze and evaluate the proposals and actions, a committee of experts has actively collaborated, contributing their own knowledge, vision and experiences. Likewise, throughout the process, interviews have been conducted with representatives of the most relevant and strategic business sectors at Andalusian level, ensuring that the Plan designed is aligned with the reality of Andalusian companies.

On the other hand, a large sample of Andalusian companies have participated actively, providing data for the diagnosis of the initial situation. It should be said that their participation would not have been possible, without the collaboration and intermediation of the main business agents of Andalusia (business associations, business clusters, business parks, technology centers, public administrations, etc.) whose contribution has been essential to collect the necessary information.

The work scheme followed for the preparation of the PAED is presented below:

Figure 2 Development phases of the PAED



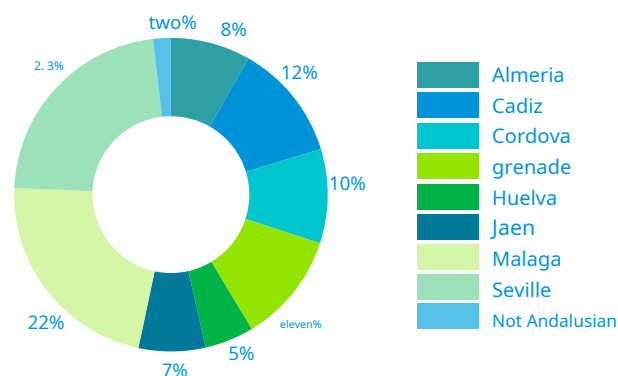
3 ANALYSIS OF THE DIGITALIZATION OF THE ANDALUZ BUSINESS FABRIC

The Digital Business Action Plan aims to promote the digital transformation of Andalusian SMEs, promoting by SMEs (0 to 249 employees) of which 96.5% the incorporation of information and communication technologies in Business processes as a medium are micro-SMEs (0 to 9 employees) mostly to improve the competitiveness and productivity of companies. To be able to design a plan adapted to your non-salaried staff. This situation is not unique in characteristics, the first step is to know what the Andalusian business sector is like and what is its degree of digitization. Andalusia, but is a reflection of the situation at the

3.1 The AnDALuz BUSINESS SECTOR

In the Autonomous Community of Andalusia, there are 479,669 companies, of which 45% are concentrated in the provinces of Seville and Malaga, as shown by the geographical distribution data.

Figure 3 Number of companies by province

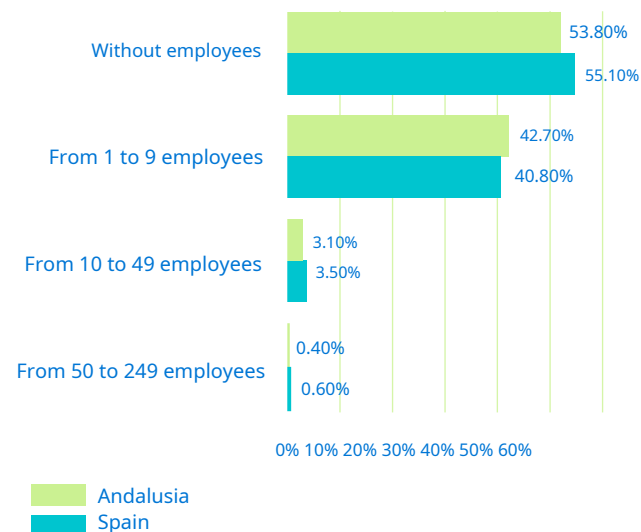


Source: Own elaboration based on data from the IECA (June 2015)

The Andalusian business fabric is characterized by high atomization, being 99.93% composed

national, as shown in the following graph.

Figure 4 SME business configuration



Source: DIRCE - Central Business Directory (2015)

From an economic perspective, the main value-generating sector in Andalusia is the services sector, with a weight of 76.77% of GDP. This is followed by the commerce sector (12% of GDP) and the Industrial sector, whose contribution of 12.03% is still far from the 20% weight stipulated by Europe for 2020³.

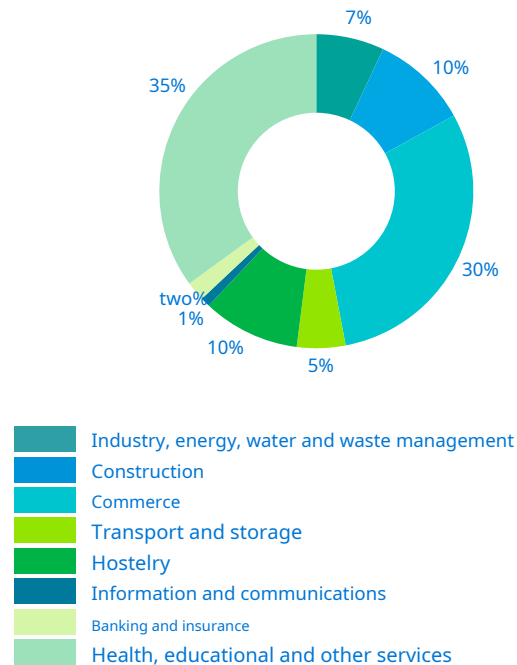
Another aspect to take into account in order to assess the competitive positioning of the business fabric of a territory is its commitment to R + D + i. In this sense, the data⁴ Those consulted reveal that the average investment in R&D made by companies nationwide doubles the investment made by Andalusian companies and that the percentage of Andalusian companies that made some innovation in the period from 2012 to 2014 was approximately 20% lower than the national average. Therefore, in terms of R & D & I, Andalusian companies must still make a leap in quality, both quantitative and qualitative, in order to position themselves at least at the level of average national investment.

Finally, as an important part of the characterization of the Andalusian business sector, its degree of internationalization must be taken into account. As can be seen in table 1, according to data from the Andalusian Agency for Foreign Promotion (EXTEnDA), the number of internationalized Andalusian companies has suffered a decrease of

0.98% between 2014 and 2015, below the Spanish average.

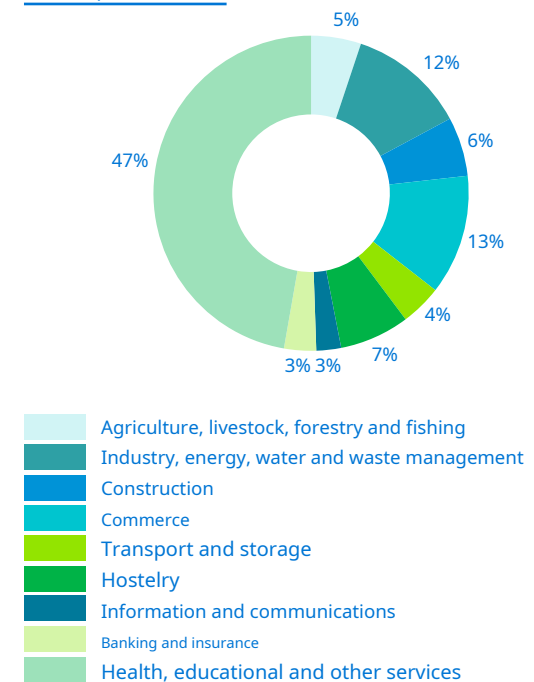
Likewise, if the global export volume in recent years is taken as a reference, the Spanish average has increased by over 4%, while in Andalusia the growth rate remains negative.

Figure 5 Distribution of the number of companies by sectors



Source: IECA - Directory of companies and establishments with activity economic in Andalusia (2015)

Figure 6 Contribution by sectors to gross domestic product at market prices



Source: IECA-Regional Accounting 2013

Table 1 Andalusian and national exports

Andalusia	2013	2014	2015 (p)	% 15/14
No. Companies	18,550	19,093	18,905	- 0.98
Total Exports	26,124,613	26,649,647	24,967,223	- 6.31
SPAIN	2013	2014	2015 (p)	% 15/14
No. Companies	151,160	147,845	147,378	- 0.32
Total Exports	235,814,069	240,581,830	250,241,332	4.02

Source: Andalusian Agency for Foreign Promotion (EXTENDA) - Statistics of the Exporting Company of Andalusia (2015)

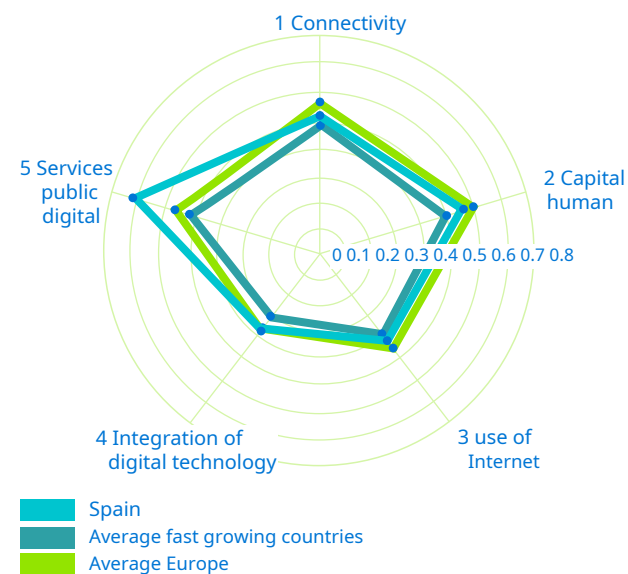
³ European Commission. *An integrated industrial policy for the era of globalization: putting competitiveness and sustainability in the spotlight*

⁴ Source: National Institute of Statistics. *Statistics on R&D activities, 2014*

3.2 EUROPEAN CONTEXT

Currently, it is estimated that the weight of the Digital Economy in the Spanish GDP is approximately 20%⁵, with a growing trend in the coming years. But to effectively evaluate the digital transformation in Spain, it is necessary to resort to the Digital Economy and Society Index DESI⁶ developed by the European Commission to monitor the evolution of digital competitiveness in EU member states. This index summarizes the indicators relevant to Europe's digital progress around five main dimensions: connectivity, human capital, Internet use, technology integration and digital public services.

Figure 7 Digital Economy and Society Index (DE YES)

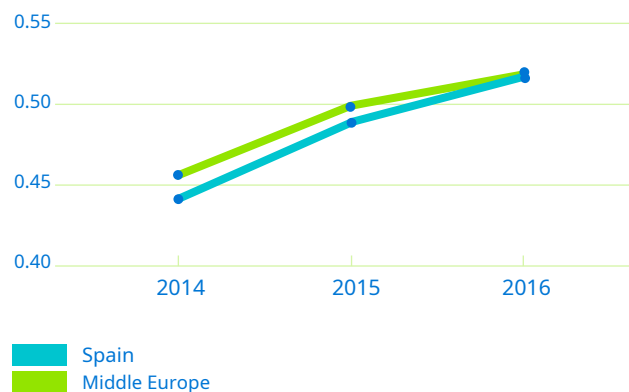


Source: European Commission - DESI (2016)

Spain would be situated around the European average, although it is below in the indicators of Internet use, human capital and connectivity, and exceeds the average in the digital public services offered.

In global terms of digital transformation, the European Union is making progress; reaching as a whole a score of 0.52 in 2016, an increase of 0.02 compared to the 0.50 points obtained in 2015. Spain is one of the group of countries whose score grew the fastest in the last year, standing at very high values, close to the European average.

Figure 8 Evolution of DESI 2014-2016

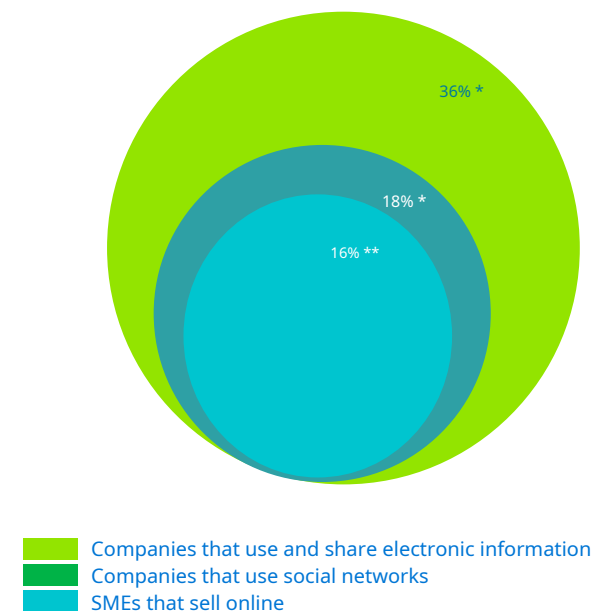


Source: European Commission - DESI (2016)

The situation of the digitization of small and medium-sized companies, within the framework of the DESI index, is included in the dimension "Integration of digital technology" that brings together indicators on the digitization of the business model (use of electronic information, RFID technology, of social networks, electronic invoices and solutions in the cloud); as well as related indicators

with the integration at European level of online commerce (eCommerce). These data help to put into context the figures reached by Andalusian SMEs that will be analyzed in later sections.

Figure 9 Main indicators of digital integration in the company



Source: self made. EDPR 2016 - Integration of Digital Technology

* Percentage of companies with more than 10 employees not counting the financial sector

** Percentage of companies with less than 250 employees / as without counting on the financial sector

5. Oxford Economics, based on the contribution of the "GVA of the information and communications sector" to the gross domestic product in advanced economies (2015)

6. <https://ec.europa.eu/digital-single-market/en/desi>

The values show little integration of digitization in European SMEs, with very modest figures in terms of online sales and use of social networks.

Spain is around the European average in its degree of progress in the digitizing process, although far from the most advanced countries. In aspects such as access to basic infrastructures such as the broadband network and the use of CRM⁷ it is above the European average. However, its position is unfavorable in areas such as access to fast or ultra-fast broadband networks, use of ERP tools⁸, of electronic invoicing and sophisticated web pages that allow the management of purchases, shipments or product customization.

It should be noted, however, that the DESI methodology reflects the situation of companies with a workforce of more than 10 people, so it does not take into account micro-SMEs or people in self-employment, which make up the main nucleus of the Spanish business fabric. and Andalusian. However, it does undoubtedly reflect a clear commitment to digitization in Spain by SMEs with more than 10 people on the staff.

3.3 SITUATION OF THE DIGITATION OF THE ANDALUZAS COMPANIES

This section presents the main conclusions obtained from the analysis of the situation of the digitization of Andalusian companies, whose objective has been to know the degree of penetration of ICT among Andalusian SMEs, both from a quantitative and qualitative perspective, which serves as a point starting point for the definition of actions to promote their digital transformation, within the framework of the 2020 Digital Company Action Plan.

The studies carried out have been based mainly on the analysis of the existing sources of statistical information.⁹, and conducting a specific survey to companies to find out their degree of digital maturity around the following aspects of digitization:

- Connectivity and Infrastructures.
- Strategies and perception of digitization.
- Business management.
- Web presence and online marketing.
- Electronic Commerce.

In addition, a series of interviews have been held with key agents of the Andalusian business environment to obtain qualitative information on the current situation, as well as work sessions with the committee of experts to contrast the results obtained.

In general, the analysis carried out shows how the size of the company is a determining factor in digitization, with small companies being the ones that have the greatest difficulties as they have fewer resources.

Another relevant factor for digital transformation is the business sector of the company. In this way, the analysis carried out at the sectoral level shows significant differences in terms of the degree of digital maturity of the different economic sectors in Andalusia. Thus, sectors such as commerce or hospitality show higher levels digitization, while the agriculture, livestock and fishing, and transport sectors present lower levels and therefore have a greater potential for the development of their digital transformation process¹⁰.

In turn, this analysis concludes that each sector needs to meet specific needs in specific aspects of digitization, such as the development of digital marketing in the hospitality industry or better positioning and interaction with the customer in the retail sector.

7. Customer Relationship Management: Software for customer relationship management

8. Enterprise Resources Planning: Enterprise Resource Planning Software

9. Sources analyzed: Eurostat: Community survey on ICT usage and eCommerce in Enterprises (2015). European Commission: The Digital Economy and Society Index (DESI) (2015). National Institute of Statistics (INE): Survey on the use of ICT and Electronic Commerce (CE) in companies 2014-2015, Central Directory of Companies (2015). Andalusian Agency for Foreign Promotion (EXTENDA): Statistics of the Exporting Company of Andalusia (2015).

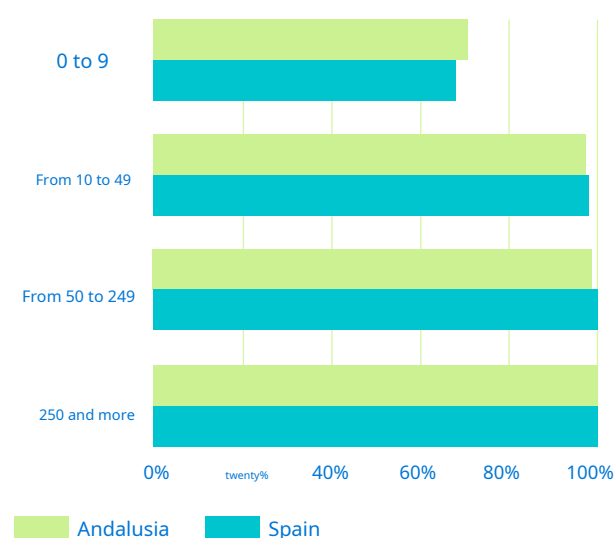
10. Analysis carried out according to the Deloitte Digital Maturity Model with the data from the survey carried out by the latter to Andalusian SMEs within the framework of this study.

3.3.1 Connectivity and infrastructures

For the development of a Digital Economy, the first premise is that companies are equipped with the necessary technological infrastructures and have access to next-generation networks that support the capacities and speeds required by new Internet applications and services demanded by digitization. Therefore, as a starting point, Andalusian SMEs must have an adequate Internet connection and the necessary technological equipment to allow their digital transformation.

The data analyzed shows that practically all Andalusian SMEs with a workforce of more than 10 people have Internet connectivity and basic technological equipment, presenting micropyme the lowest rates both in Internet penetration (70%), and in the availability of computers (75%).

Figure 10 Percentage of companies with Internet connection



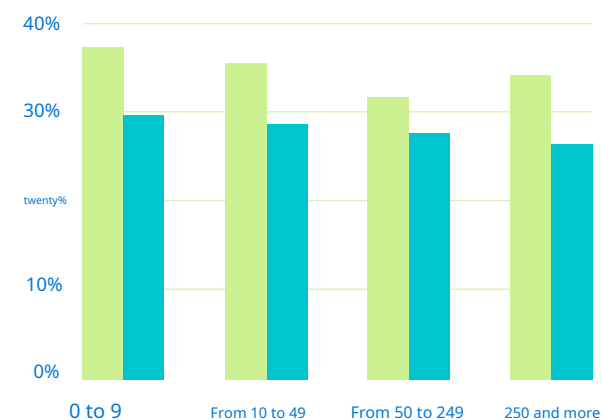
Source: INE-IECA - Survey on the Use of ICT and Commerce Electronic in Companies (2015)

Focusing on Internet access, the data show that among Andalusian companies the contracting of lines of less than 10Mbps is more frequent than in the rest of Spain, with the contracting of fast lines (greater than or equal to 30Mbps and less than 100Mbps) is somewhat less widespread in Spain and the hiring of ultra-fast networks (above 100Mbps) is a minority, especially in the case of micro-SMEs.

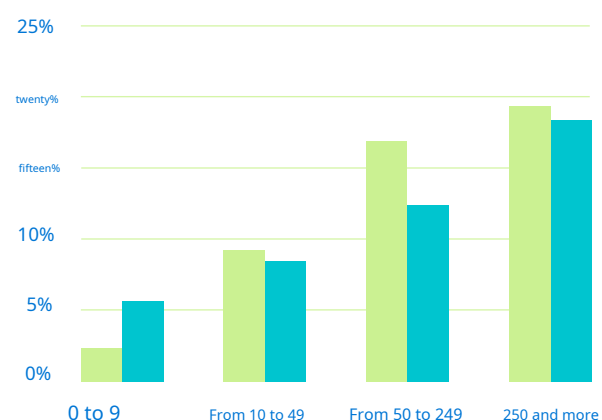
Finally, as an important aspect of ICT connectivity and infrastructures, it should be noted that mobility is still a pending issue for Andalusian micro-SMEs. the data shows that only 23% of these provide their staff with portable devices that allow mobile Internet connection.

Figure 11 Percentage of companies whose maximum download speed was ...

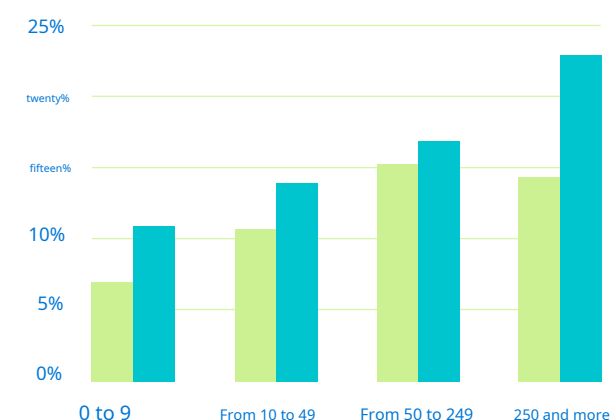
Greater than or equal to 10 Mb / sec and less than 30 Mb / sec



Greater than or equal to 30 Mb / sec and less than 100 Mb / sec



100 Mb / sec or higher



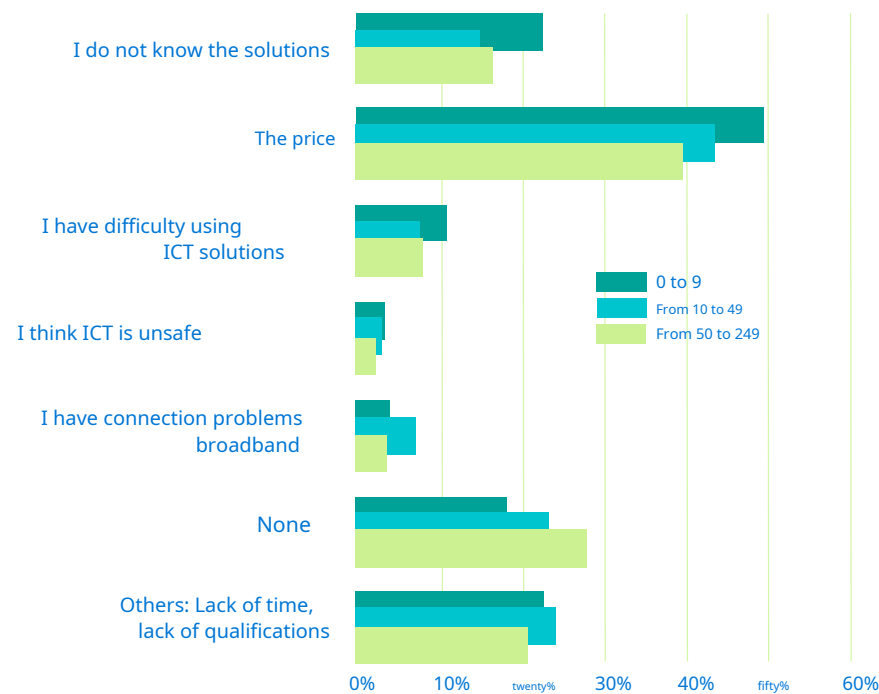
Source: INE-IECA - Survey on the Use of ICT and Electronic Commerce in Companies (2015).
Percentage calculated on the total number of companies with an Internet connection

3.3.2 Strategy and perception of the relevance of ICT

The process of digital transformation of SMEs requires a cultural and organizational change that can lead to the mobilization of important economic resources. That is why this process depends to a large extent on the strategic vision of the company's management staff and their firm commitment to the incorporation of digital solutions as a key factor of competitiveness.

The study carried out reflects the existing room for improvement in the vision and leadership of the Andalusian business community, regarding the need to promote the company's digital strategy and take advantage of the opportunities offered by the tools and the digital market.

Figure 12 Main barriers to the implementation of ICT



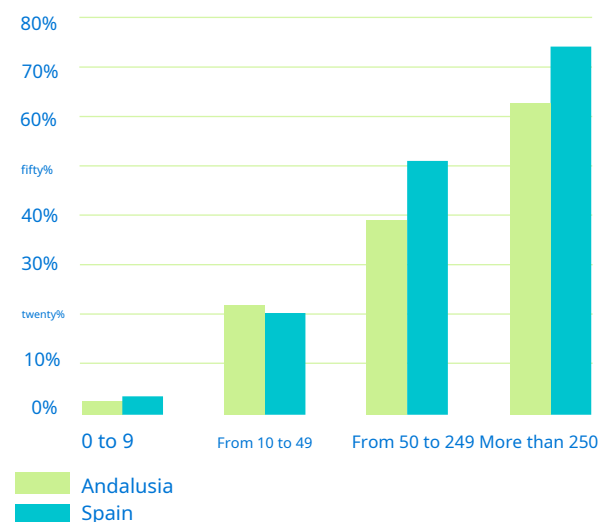
Source: Own elaboration - Survey of Andalusian SMEs

The main barriers to digitization identified by Andalusian SMEs are the following:

- The cost of the solutions. The cost associated with digital transformation is not perceived as an investment, but rather as an expense. Despite this, spending on ICT by Andalusian companies has increased notably in 2015^{eleven}, although it should be noted that the average annual expenditure per company does not reach € 12,000, far from the national average expenditure of around € 30,000.
- Ignorance of existing solutions and the benefits they bring to the organization. The study carried out shows that one out of every two companies surveyed - regardless of their size - admits that they are unaware of digital solutions for process automation. This points to the importance of awareness and dissemination of solutions and their advantages among companies to be able to advance in the process of digitizing them. On the other hand, the survey data also reveal that the fact of not having personnel trained in ICT increases ignorance of solutions by 46% as a cause of non-implementation of ICT in companies, which shows another benefit of the conducting training programs among employees.
- the lack of technical training of the personnel, and also of the profiles with decision-making capacity within the company. Various studies show that the lack of digital training is an endogenous lack of Spanish companies, although there are disparities between different sectors of the economy. It is therefore necessary to implement a policy for the development of digital skills among employees (at all levels of the organization) in accordance with the digital reality, promoting training and the use of digital tools.

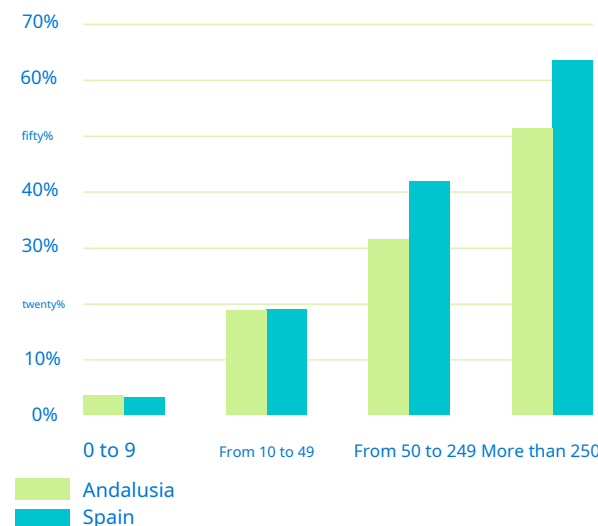
11. Source: IECA, Survey on the Use of ICT and Electronic Commerce in Companies (January 2015). Data for companies with between 10 and 249 workers

Figure13 Percentage of companies that employ ICT specialists



Source: INE-IECA - Survey on the Use of ICT and Commerce Electronic in Companies (2015)

Figure 14 Percentage of companies that provided their employees with ICT training activities

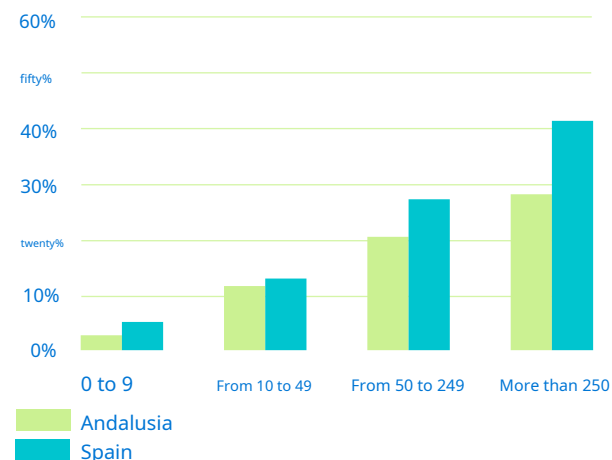


Source: INE-IECA - Survey on the Use of ICT and Commerce Electronic in Companies (2015)

To bring us closer to the strategic vision of the business Andalusian study on ICT and the digitization process, it is interesting to analyze the penetration of cloud-based technologies or cloud computing. These technologies allow payment per use and the integrated use of data management systems without the need to make large investments in hardware, which allows the investment to be adjusted to the business needs and modified according to the real demand for services, minimizing risks.

The data show how the use of software based on cloud services or use over the Internet has not yet spread among Andalusian companies.

Figure 15 Percentage of companies that contracted a cloud computing service used through the Internet



Source: INE-IECA - Survey on the Use of ICT and Commerce Electronic in Companies (2015).
Percentage of the total number of companies with an Internet connection

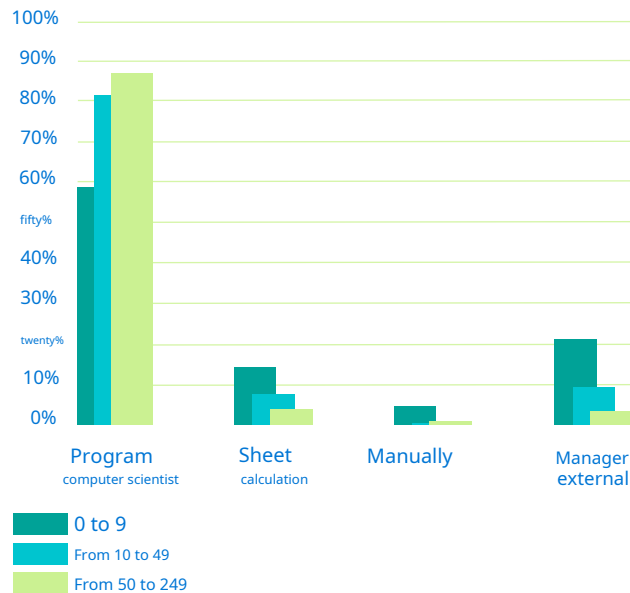
3.3.3 Business management

The key to the digital transformation of companies is to take advantage of the capabilities and opportunities that the integration of ICT tools and devices provide to daily operations at all levels of business management (financial, customers, resources, etc.) with the aim of increasing efficiency, reduce costs and improve relationships with customers and partner companies.

Thus, the levels of use of the different existing digital tools for business management will help us to analyze the state of digitization of companies in this area. For the development of this analysis, those technological solutions based on ICT that optimize the internal or external management of the company have been considered as digital tools.

The most standardized and used tool, not only by companies but by citizens in general, is email. Most Andalusian SMEs have this tool (in figures greater than 90% for all company sizes), but the situation is not the same when it comes to more specific tools, such as computer programs for billing management. .

Figure 16 Ways of billing management



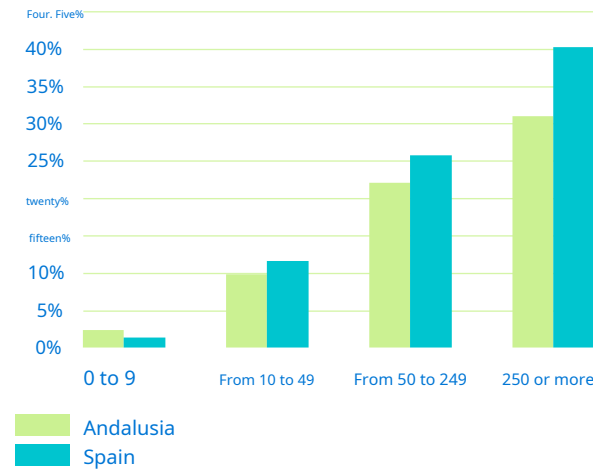
Source: Own elaboration - Survey of SMEs

The use of these tools is quite widespread in larger SMEs, but their use rate does not reach 60% in micro-enterprises.

By increasing the complexity of the tools, penetration rates are reduced, with ERP and CRM use rates lower than 50% in companies with workforces of less than 50 people.

The lack of automation in the processes of Andalusian companies is also reflected in the scant use of automatic processing invoices. no business segment exceeds 30% in this regard, revealing a significant room for improvement.

Figure 17 Percentage of companies that sent electronic invoices that allow their automatic processing to other companies or public administrations



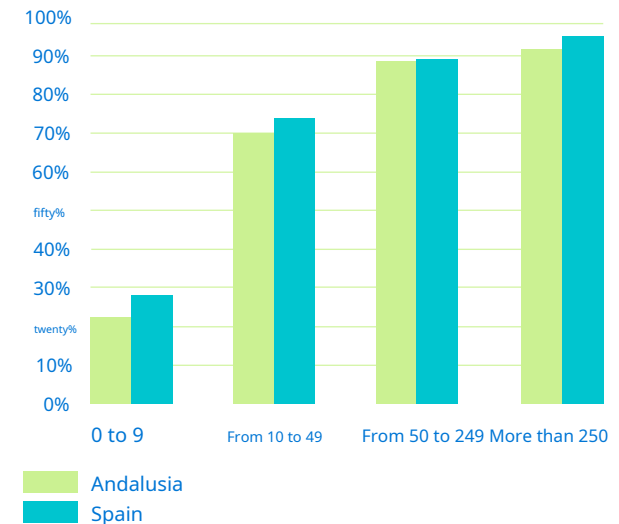
Source: INE-IECA - Survey on the Use of ICT and Commerce Electronic in Companies (2015).

Percentage calculated on the total number of companies that send invoices to other companies or public administrations

3.3.4 Web presence and online marketing

One of the aspects to take into account when analyzing the degree of digitization of Andalusian SMEs is their positioning on the Internet and their use of online marketing tools. Thus, in a globalized world in which citizens, before purchasing a product or service, carry out a process of pre-search through the Internet¹². It is essential that companies bet on a planned, permanent and selective Internet presence, which allows them both to interact with their potential customers and to obtain useful information from them.

Figure 18 Percentage of companies with Internet connection and website



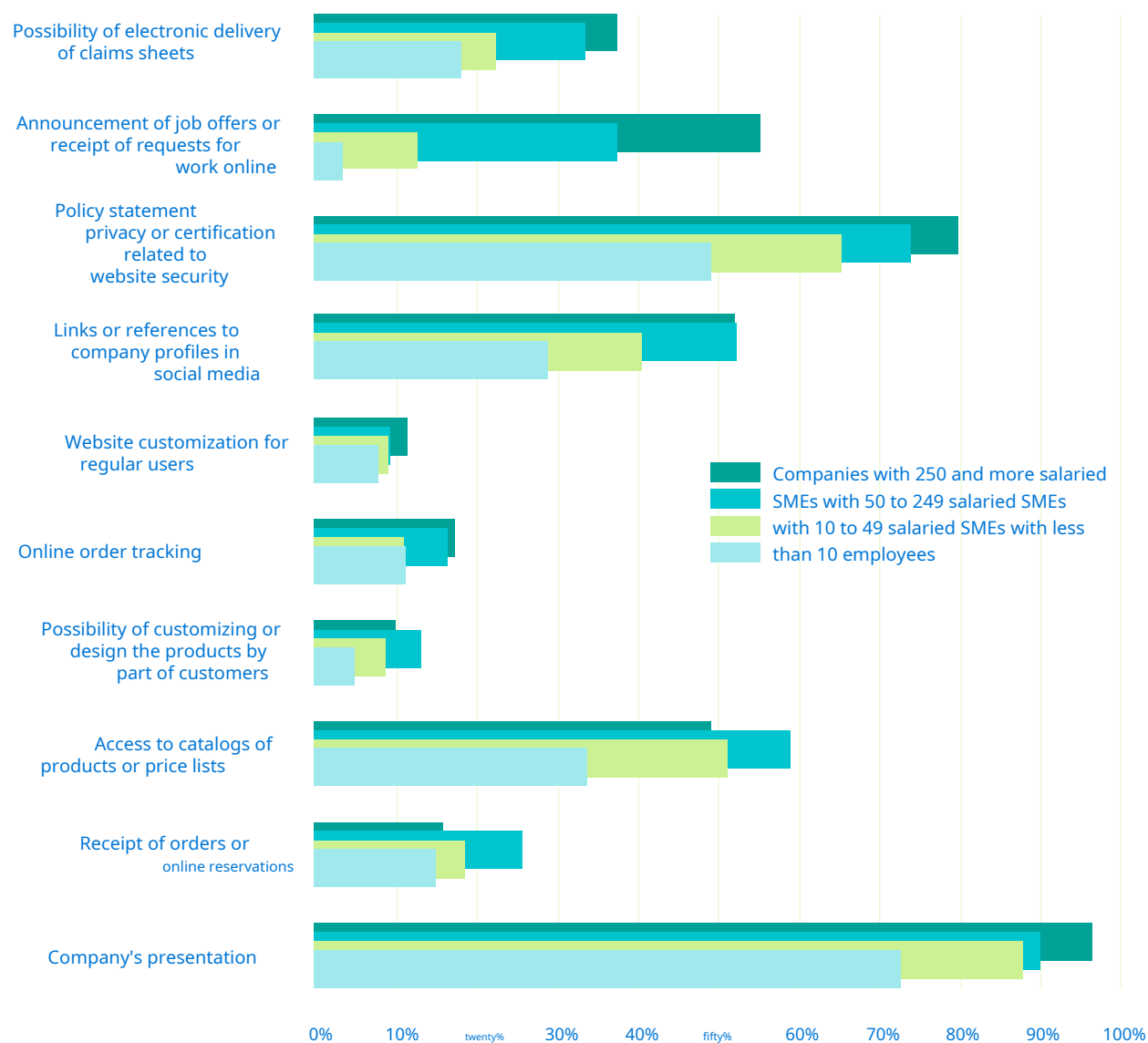
Source: INE-IECA - Survey on the Use of ICT and Commerce Electronic in Companies (2015)

In this sense, the development of a web page as a tool for company visibility is currently a basic element for the presence in a digital market.

Although practically all companies with more than 50 employees have a website, this percentage drops to 70% for small companies and drops to 22% in the case of micro-SMEs. In addition, Andalusian companies do not take advantage of the different services that can be implemented on their web pages to adapt to the needs of digital clients and allow the evolution of the business in the digital market: the personalization of the web - less than 12% -, the personalization of the product or service - less than 14% -, the receipt of orders or the follow-up of them - less than 18%.

12. According to the ONTSI, 74.1% of online buyers and 44.9% of non-online buyers carry out a prior search process before deciding to buy a product. (Study on B2C e-commerce 2015)

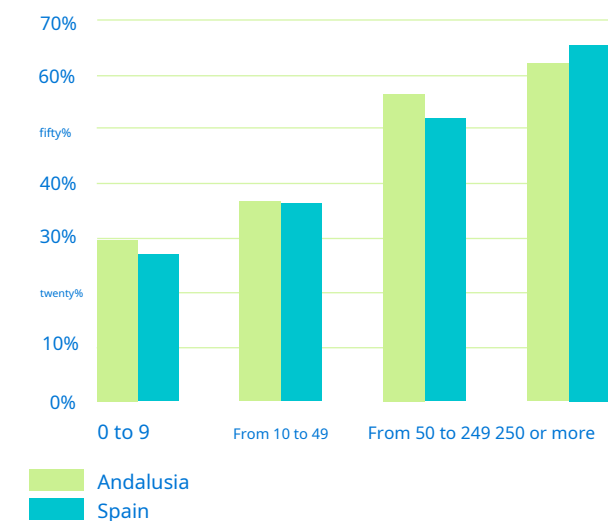
Figure 19 Services available on the website by type of company



Source: INE-IECA - Survey on the Use of ICT and Electronic Commerce in Companies (2015)

Regarding the presence in social media, although between 40% and 56% of companies depending on size, admit that social media is very useful for the development of their business, only one in three companies with a staff of less than 50 people makes use of them.

Figure 20 Percentage of companies using social media

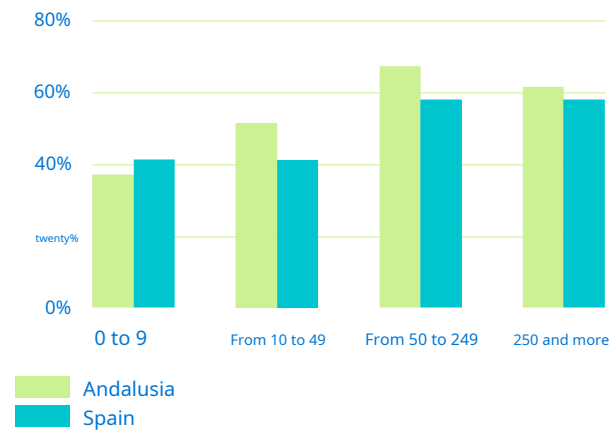


Source: INE-IECA - Survey on the Use of ICT and Commerce Electronic in Companies (2015).
Percentage of the total number of companies with an Internet connection

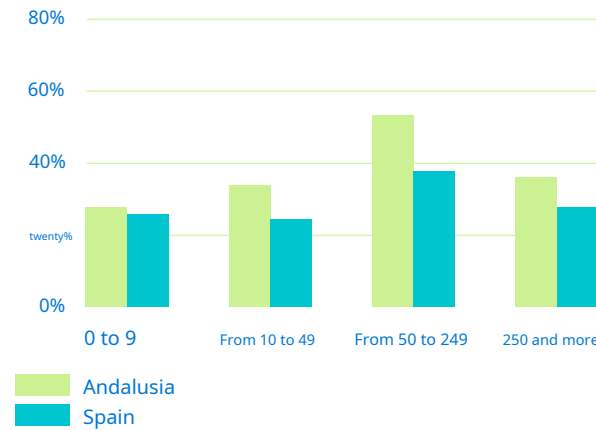
The presence in social media must be addressed in an orderly and constant way over time in order to optimize its potential. Thus, it is considered that a consistent and permanent management of social networks is almost more important than the company's own presence in them. However, most Andalusian SMEs admit to making occasional use of social networks, which makes it difficult to make this channel profitable and increase their clientele.

Figure 21 Using social media to interact with customers

Percentage of companies that used social media to receive or send customer opinions, criticisms, reviews, questions ...



Percentage of companies that used social media to involve clients in the development or innovation of goods or services



Source: IECA - Survey on the Use of ICT and Electronic Commerce in Companies (2015)
Percentage calculated on companies that use social networks

The data from the survey carried out reveal that Facebook is by far the most used social network among companies that use social networks (77%), with the other platforms (Twitter, Youtube, LinkedIn and Google+) having values below 40% .

The data show quite homogeneity in the use of social media in order to develop company or product image, with values higher than 60% in all steps regardless of the size of the company. However, companies do not take advantage of the possibilities offered by social media to engage the customer and introduce innovations or improvements in their products or services.

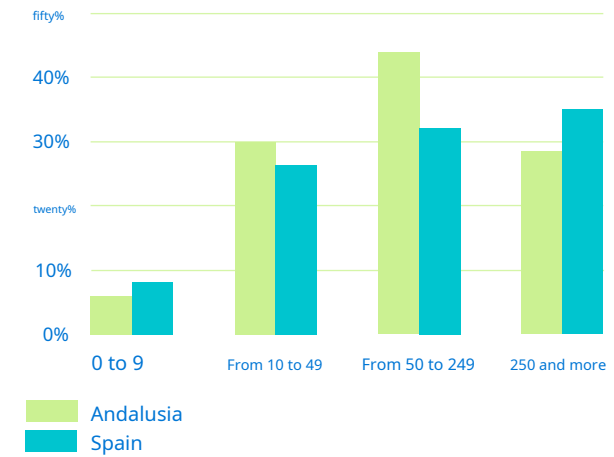
The use of other online marketing tools, such as Internet advertising, is not very widespread among Andalusian companies, especially among micro-SMEs, as shown in figure 22.

3.3.5 Electronic commerce

One of the bets, both of the European Union and of the central government through the Digital Agenda for Spain, is the promotion of electronic commerce between companies, especially SMEs.

In this sense, the Andalusian business fabric still has a wide margin for improvement in the use of electronic commerce, since only 30% of the companies surveyed indicate that they use this way to sell.

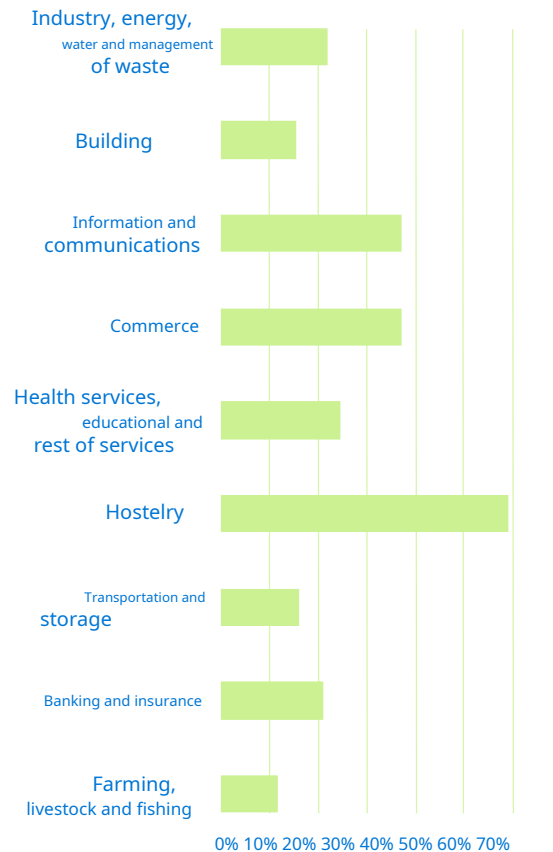
Figure 22 Percentage of companies that paid to advertise on the Internet



Source: IECA - Survey on the Use of ICT and Commerce Electronic in Companies (2015)
Percentage of the total number of companies with an Internet connection

Regarding the distribution by sectors, the hospitality industry is the sector with the greatest introduction of electronic commerce, followed by the information and communications sector and the commerce sector. In a third step are the rest of the sectors, with values between 15 and 25%, with the sole exception of the agriculture sector, which confirms its digitalization with only 11% of companies active in online sales.

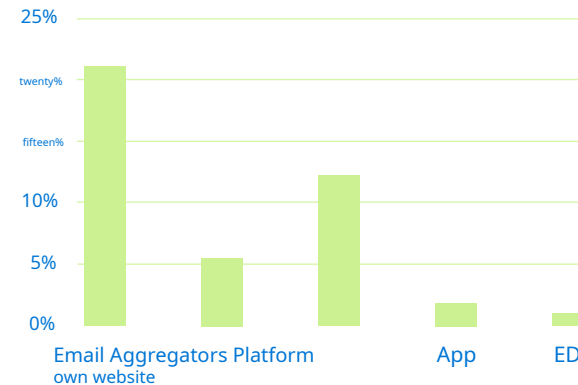
Figure 23 Percentage of companies that sell online by sector



Source: Own elaboration - Survey of SMEs

If we analyze the sales means used, the most widely used are their own web platforms and email, followed at a great distance by sales aggregators such as Amazon, eBay and the like.

Figure 24 Percentage of use of the different sales tools through the Internet



Source: Own elaboration - Survey of SMEs

3.4 PEST ANALYSIS

The PEST analysis makes it possible to identify the general environmental factors that affect the effective implementation of the PAED in Andalusian SMEs. For these purposes, this analysis provides a global vision based on four dimensions:

1. Political Factors: those normative elements or public policies that can impact the digitization process of Andalusian SMEs.
2. Economic factors: aspects related to economic order that can influence decision-making by the Andalusian SME fabric when prioritizing its digitization process.
3. Social factors: Aspects of society to take into account to be able to bet on a digital process, such as existing trends in purchasing.

4. Technological Factors: aspects related to technological development that supports the digital transformation process.

3.4.1 Political Factors

Within this element, the following aspects should be highlighted:

- Clear commitment of the different public institutions for SMEs as an engine of growth and economic development, placing special emphasis on digitization as a means to increase their competitiveness.
- Development of different strategic instruments that will serve as support and stimulus in the coming years for the digitization of companies, both at the European level (Europe 2020 Strategy, Digital Agenda for Europe 2020, European Digital Single Market Strategy, etc.) and at the level national (Digital Agenda for Spain, ICT Plan in SMEs and electronic commerce, etc.).
- Europe's commitment to consolidate a European Digital Single Market to try to solve the difficulties posed by the lack of regulatory harmonization in the business digitization process.
- Strong commitment of the Andalusian government for the improvement of competitiveness and the increase of the Andalusian productive fabric, moving towards an industry 4.0, the promotion of innovation and technological development in companies and their digital transformation.
- Implementation of numerous instruments at the Andalusian level that facilitate and support the digital transformation of companies: Innovation Strategy of

Andalusia 2014-2020- RIS3 ANDALUCIA ¹³, Agenda for Employment - Andalusian Economic Plan 2014-2020 ¹⁴, Infrastructure Strategy Telecommunications of Andalusia 2020 ^{fifteen}, Strategy 3.4.3 Social Factors Industrial of Andalusia 2020 ¹⁶, Strategy Promotion of the ICT Sector Andalusia 2020, etc.

3.4.2 Economic Factors

Within the economic sphere, the following aspects that influence the digitization process are noteworthy:

- Containment of public spending in recent years, at all Spanish administrative levels (state, regional, and local) that has influenced the budget allocation for investment development. However, the new European financing framework offers new opportunities for the development of initiatives and projects for the digital transformation of SMEs.
- Instability economical marked for the uncertainty in the international political context.
- High unemployment rate at the national and Andalusian level, with values higher than 20%, which affects consumption interior and disposable income of families.
- Restrictions on access to credit by small and medium-sized companies, which limit investment in new projects such as those linked to digital transformation. However, it should be noted that credit conditions for entrepreneurs have begun to improve.
- In a unified digital market, foreign promotion and internationalization will bring new

opportunities for companies. In such an environment, the elimination of barriers and the increase of competition they will make price a deciding factor.

As social elements to take into account, the following should be highlighted:

- Changes in consumer trends in a globalized economy are forcing companies to reconsider their business models and innovate in order not to lose competitiveness.
- the existence of a new generation of digital natives who is destined to consolidate the digital transformation of society and companies.
- Increased social awareness, with more organizations contributing to social change and citizenship with a new sense of openness, innovation and autonomy.
- The increase in entrepreneurship is reflected in an increase in the number of people working on their own, many of them with projects completely based on the digital market.
- Aging of the population, with an average age of the Andalusian and national population of 40.7 years and 42.44 years respectively. This fact causes a generation gap in the approach to new technologies, requiring literacy processes aimed at older groups.

3.4.4 Technological Factors

Within the framework of the digital transformation process it is

It is essential to take into account technological factors, among which the following stand out:

- Internet as the main driver of the changes that sustain the new Digital Economy.
- Access to high-impact technological solutions at lower cost by SMEs.
- Increase in the possibilities offered by data analytics to extract value from the information, facilitating decision-making, predicting customer behavior to adjust offer and prices or knowing their opinion about products or services.
- New generation networks that support the speeds demanded by the new demands of business digitization.
- Greater connectivity of the population to fixed and mobile broadband Internet.
- Increase in data protection and digital security, which have an impact on consumer confidence.
- Growing trend in the use of mobile devices (smartphones, tablets,...) and their possibilities of interaction with commerce.
- exponential use of social networks as the main means of communication.
- Continued increase in turnover from electronic commerce in Europe.
- Trends in the development and emergence of new automated wireless Internet access devices (Internet of Things, IoT).

13. <http://ris3andalucia.es/>

14. http://juntadeandalucia.es/export/drupaljda/AGENDA_EMPLEO_WEB_0.pdf

15. <http://lajunta.es/esita2020>

16. <http://estrategiaindustrialdeandalucia.org/>

3.5 SWOT ANALYSIS

The SWOT analysis carried out is configured as a global diagnosis, where the main weaknesses, threats, strengths and opportunities for the development of the digitization of SMEs in Andalusia are collected. In this way, the main challenges that the PAED must address for the development of digital transformation in Andalusia will be identified.

DEBILITIES

The high fragmentation of the Andalusian business fabric, size being a determining factor that hinders the digitization of Andalusian companies.

Lack of financial capacity, especially in micro-enterprises, to tackle transformation processes.

Lack of culture of innovation in Andalusian SMEs.

Low contracting of high-speed Internet connections (greater than 30Mbps), necessary for the implementation of technological solutions that require a high volume of data transfer.

Scarce endowment of basic technological equipment, especially in smaller SMEs, which hinders digitization in general and adaptation to trends such as staff mobility.

Resistance to change, especially in the more traditional sectors and with little generational change. Strong leadership is required to face the cultural and organizational change that digital transformation implies in companies.

Lack of a strategy or clear vision on the process of digitization of the company by its Management, and as a consequence, difficulty in being transmitted to the rest of the organization.

Lack of knowledge of technological solutions and the benefits that digitization can bring to the company. It is important that the cost of digital transformation is perceived as an investment and not as an expense.

Lack of technical skills to approach the process with internal resources. On the one hand, there is little presence of ICT professionals in companies with a workforce of less than 50 people, and on the other, companies do not offer ICT training to their staff.

Little use of competitive solutions that facilitate the digitization of the company, such as cloud services.

Very low levels of implementation of digital security policies within Andalusian SMEs.

Lack of process automation in Andalusian SMEs which is reflected in a low percentage of use of ERP solutions, CRM, electronic invoicing,... in all economic sectors.

Low implantation of web pages in micro-SMEs. Additionally, existing web pages have a low level of complexity and maturity.

Relevant sectors for the Andalusian economy such as commerce, transport, ... still show great margins for improvement in the implementation of electronic commerce.

Non-homogeneous digitization by sectors, with sectors that are more lagging behind or with more difficulties, such as agriculture and transport, compared to sectors with greater digital competition such as hospitality and commerce.

threats

Regulatory uncertainty due to the delay in the development of a policy to unify the European digital market.

Difficulty of access to financing by SMEs, especially for micro-SMEs, which reduces their ability to make investments in digitization.

The existence of a better job offer in other regions outside Andalusia encourages the emigration of young Andalusians with high ICT qualifications.

Inequality of access to the communications infrastructures necessary for the adequate digitization of companies based on their physical location.

Absence of a specific offer adapted to the needs of the company, lack of development and innovation applied to the needs of certain sectors and groups.

Heterogeneity in the quality of the offer of ICT services to companies.

Complexity of current regulations on digital security and electronic marketing.

Lack of a coordinated policy by Public Administrations to support the digital transformation of companies.

Rapid evolution and transformation of technology, which makes it more difficult to implement it in the most traditional business sectors.

Lack of non-technological professionals in the market with the necessary digital skills to meet the ICT needs of companies.

Strengths

Business associations with a driving force and aware of the need to face the challenge of digital transformation in small and medium-sized companies.

Andalusian SMEs present levels higher than the national average in the use of social media, an element of communication and promotion of their business, using them not only to receive criticism and opinions from their customers but also to involve them in the development or innovation of their assets and services.

Incorporation of digital natives who have greater knowledge and use of ICT tools and solutions, which facilitates cultural change within organizations.

Existence of benchmark companies as successful cases of the digital transformation process, which can act as drivers of the rest of the companies in their sector.

Increase of the innovative culture in organizations.

Agility and adaptability of companies due to their size.

TIMELY

An increasingly digitized society in which the use of ICT in the personal sphere has spread rapidly and is being transferred to the work environment. This will facilitate the digitization process of companies and allow greater flexibility and labor mobility.

Start of a new European framework of action that will allow the dedication of Community funds to promote the process of digital transformation of the economy.

Existence of a pending European market for the commercialization of products and services through digital media.

Andalusia has an innovation strategy (RIS3 AnDALuCiA), which is clearly committed to the development of initiatives based on digital transformation to improve regional competitiveness.

High degree of development of electronic administration in the public sector in Andalusia, which contributes to the digitization of Andalusian SMEs.

The existence of a powerful Andalusian ICT sector, the third at the national level, brings the offer of ICT services closer to Andalusian companies, which can count on trusted nearby supplier companies.

Important network of scientific and technological infrastructures that generate opportunities for promoting private innovation and digitization initiatives in Andalusia. Likewise, with the approval of the Andalusian Research, Development and Innovation Plan (PAIDI) 2020, the Andalusian government intends to support the knowledge and innovation model in Andalusia.

Existence in Andalusia of a large human capital, well trained in ICTs and at a competitive cost, thanks to the existence of public centers for higher education in computing and telecommunications.

Powerful ecosystem of technology startups in Andalusia, as well as the existence of support policies for entrepreneurship based on innovation by the different Administrations. This will allow technological and commercial collaborations or associations that promote the digital transformation of the different sectors.

The gradual reduction of the costs necessary to digitize makes it possible to face the gaps that occur in the technological integration of the different size sections of the Andalusian SME.

The opportunities that are detected in the industrial sector around the Industry paradigm 4.0, as well as the driving effect that it can have on the companies in its environment.

The great penetration of technology in Spanish and Andalusian consumers represents a great opportunity for SMEs to capture data and ensure a more personalized offer of products and services

Andalusia is the third largest market nationwide for online shopping destinations, which is an opportunity for companies in the region to sell their goods and services electronically.

The internationalization possibilities provided by digital media will facilitate access to markets that could not be exploited due to lack of resources in terms of distribution or investment possibilities in traditional marketing.

Possibility of collaborating in demonstration centers to start up pilots or prototypes, through joint intersectoral projects and in collaboration with the Administration, as learning and knowledge-sharing tools.

Innovative Public Procurement, as a lever for digital transformation.



4 Action plan

4.1 CHALLENGES and OBJECTIVES

With this Digital Business Action Plan, the Ministry of Employment, Business and Commerce intends to take a leading and active role in the digital transformation of the business fabric of our region, laying the foundations for the process to be carried out successfully.

In this sense, the Digital Company Action Plan aims to help Andalusian companies take advantage of the opportunity to join the new Digital Economy by improving their level of digitization through the implementation of a series of actions within a framework temporary covering until 2020.

As can be seen from the situation study carried out, Andalusian SMEs have a long way to go, especially micro-SMEs, being below the national average in practically all the indicators of development of digitization that have been analyzed.

The analysis also shows - yes, it has been corroborated by interviews with key agents - a low perception of the importance of digitization by the business community. There is a wide ignorance of the digital transformation process: both of the different digital solutions in the market, and of the benefits they can bring to companies. All of this highlights the need to carry

carry out awareness-raising actions among company managers, in order to convey to them what the digital transformation of their businesses is and why it is necessary.

To face the digital transformation successfully, it is essential that the management staff of the company lead the process, promoting change within the organization. The situation study carried out reveals the need to provide the responsible persons with specialized support and accompaniment from a strategic perspective, which ensures that the digital transformation process is carried out in an orderly manner and adapted to their reality.

Likewise, to face the process with guarantees, the cultural and organizational re-foundation of the workforce is necessary and for this, it is necessary that they acquire the necessary digital skills to work with the new processes and tools.

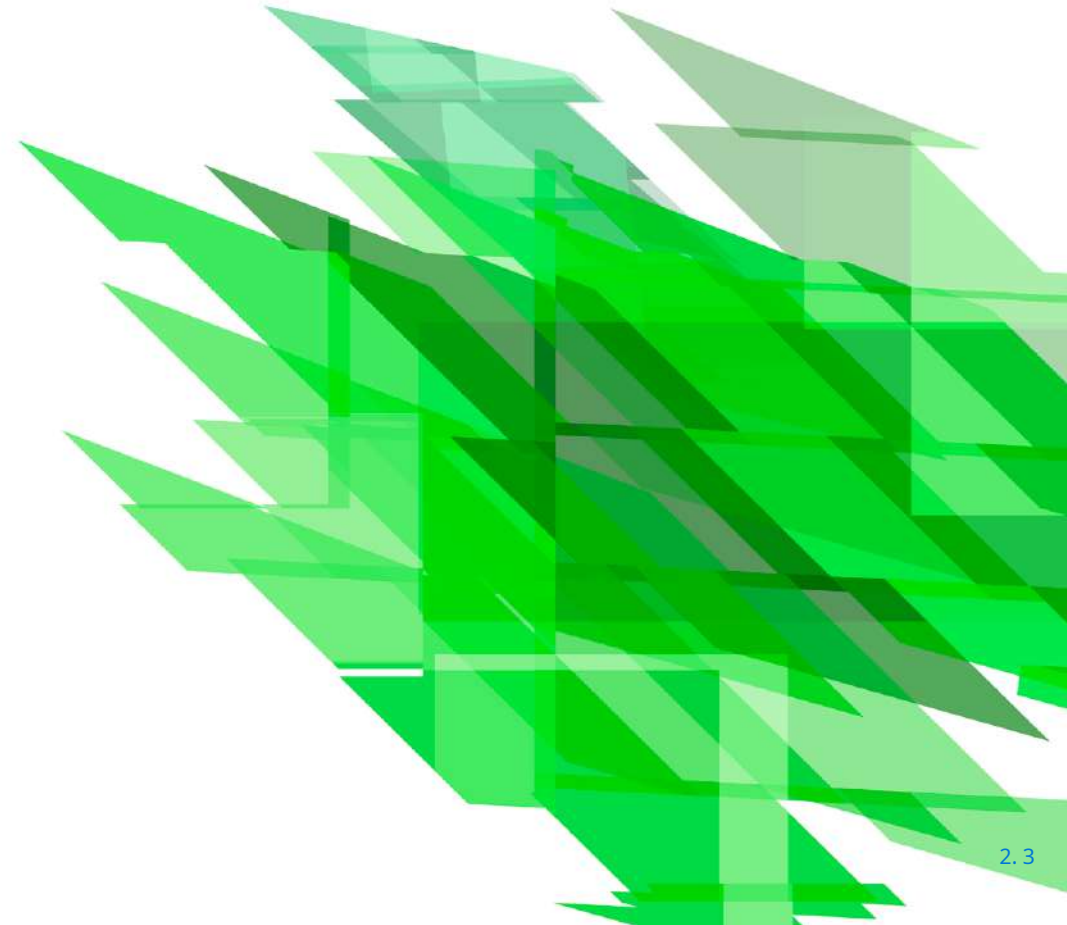
Although the digital transformation of companies goes beyond the mere digitization of operations, there is no doubt that both processes must go hand in hand and that barriers to digitization, such as the price of solutions or the lack of resources, also prevent companies from starting digital transformation processes. For this reason, it will be necessary to directly support companies by facilitating access to the necessary resources so that they can face these transformation processes and thus reach a level of digital maturity that allows them to be competitive in a global market.

Thus, to increase the level of digital maturity of Andalusian companies, the PAED must address the following objectives:

1. Make Andalusian companies aware of the importance of digital transformation and the benefits and opportunities derived from it.
2. Increase the digital skills of Andalusian companies to face the digital transformation.
3. Promote the digital transformation of companies as an engine of economic growth in Andalusia.

The selection of these objectives is given mainly by the analysis of the current situation of the Andalusian business fabric, the study of trends that will clearly affect the digitization process of companies in the coming years and the examination of the European, national and Andalusian framework. In this sense, the objectives of the PAED are aligned with the specific objectives of the Digital Agenda for Europe, the Digital Agenda for Spain, the Andalusian Innovation Strategy, RIS3 AnDALuCIA and the Agenda for Employment, Andalusian Economic Plan 2014-2020, in which one of the priority objectives for 2020 is to achieve a more competitive economy thanks to the development of the Digital Economy in Andalusia.

Finally, and with the aim of being able to evaluate the real impact of the PAED, specific objectives, indicators and goals to be achieved are associated with these general objectives that allow monitoring the execution of the Plan through the measurement of the associated indicators. .



Objectives	Objectives SPECIFIC	Indicators ¹⁷	VALUE 2016		goal 2020	
			0 to 9 employees	10 or more employees	0 to 9 employees	10 or more employees
O1. Raise awareness in Andalusian companies of the importance of transformation digital	Increase the ICT investment of Andalusian companies	Spending on ICT (thousands of euros): Total spending on Information Technology and Communication goods + Total spending on software, standard or custom + Total spending on information technology services and consultation, telecommunications services or other ICT services + Other expenses in ICT	-	€ 234,089	-	€ 304,316
	Increase the number of Andalusian companies in willingness to board digital transformation	Percentage of companies whose contracted maximum download speed was: Greater than or equal to 30Mb / sec. and less than 100Mb / sec. ¹⁸	14.60%	16.20%	30%	
		Percentage of companies with Internet connection and website / web page ¹⁸	34.60%	71.90%	41%	85%
O2. Increase competencies digital companies of Andalusia	Increase the number of companies Andalusian women who offer ICT training for your staff.	Percentage of companies that provided ICT training activities to their employees	3.00%	22.30%	fifteen%	30%
O3. Boost the transformation digital companies like growth engine economic	Increase the use of ICT solutions by part of Andalusian companies	Percentage of companies that had some computer application to manage customer information (CRM tools)	9.70%	32.33%	13%	40%
		Social Media: Percentage of companies that used social media ¹⁸	39.30%	42.40%	40%	fifty%
		Billing: Percentage of companies that sent electronic invoices that allow their automatic processing (eg EDI, UBL, XML.) To other companies or public administrations ¹⁹	7.30%	28.21%	10%	40%
		Cloud Computing: Percentage of companies that purchased a cloud computing service used through the Internet ¹⁸	6.10%	16.22%	10%	twenty%
	Increase the number of companies Andalusian women who sell on-line	Services available on the website: Reception of orders or online reservations ^{twenty}	17.80%	21.32%	35%	40%
	Boost growth economic of Andalusia	Number of people employed	2,833,400		3,200,000	
		Average annual increase in Andalusia's GDP for the 2014-2020 period	2.9% ^{twenty-one}		3.30%	

17. Source: Institute of Statistics and Cartography of Andalusia

18. Percentage of all companies with Internet connection

19. Percentage of the total number of companies that send invoices to other companies or public administrations

20. Percentage of all companies with Internet connection and website

21. Interannual variation rate of GDP corresponding to the year 2016 (1E)

4.2 AREAS OF ACTION

To structure the PAED and facilitate its development, strategic axes are established aimed at fulfilling the defined objectives, which frame the different lines of action to be implemented.

AXIS 1: Dissemination and awareness

2: Talent development

AXIS 3: Driving the digital transformation

A configuration of axes consistent with the objectives pursued has been sought, obtaining the following link between both:

axes	01	02	03
AXIS 1: Dissemination and awareness	●		●
AXIS 2: Talent development		●	●
AXIS 3: Driving the digital transformation	●		●

To guarantee the efficiency and impact of the actions established within this Plan, it is necessary to bear in mind that not all companies present the same degree of digital maturity.

The analysis of the business fabric carried out shows that factors such as size, sector, age or business culture have a significant impact on this degree of digitization. That is why the PAED contemplates a dimension that will allow it to develop actions based on the level of digital maturity of the companies to which they are directed. Specifically, three levels of digitization are contemplated:

- **Initiation:** the SME has not started the digital transformation process or is at a very early stage.
- **Growth:** the SME is aware of the importance of digitization, has some knowledge of technological solutions and has carried out a digitization initiative.

- **Optimization:** the SME considers the digital transformation process a priority, having clearly identified strategic leadership and the assumption of digital culture within the company. The SME seeks a balance between knowledge, implementation and use of technological solutions to face the digitizing process in a sustainable way.

4.2.1 AXIS 1: Dissemination and awareness

The objective of this axis is to combat one of the main barriers faced by the digital transformation of Andalusian SMEs: the lack of vision and leadership to tackle the digitization process. This weakness requires a response that promotes a business culture willing to face digitization and take advantage of the resources and tools available as a bet for the future.

That is why the Digital Company Action Plan should serve as a tool for promoting and raising awareness of the challenges and opportunities associated with digital transformation.

This first axis will aim to raise awareness among businessmen and women about the importance of digital transformation as a means to improve their competitiveness in the market.

Proposals in this area will be aimed at publicizing the benefits and opportunities of digital transformation in companies through informative conferences, and through the recognition and enhancement of good practices or success stories in Andalusia. At the same time, this axis will include more vertical actions, disseminating specific solutions and tools, raising awareness about the use of electronic invoicing and the importance of digital security aimed at companies that have already started the digitization process.

Axis 1: DIFFUSION AND SENSE

S1: Opportunities of the Digital Economy

S2: Electronic invoice

S3: Cybersecurity and Digital Trust

4.2.1.1 S1: Opportunities of the Digital Economy

The first step to promote the digital transformation of companies is to educate the personnel responsible for this need. This line of action is intended to publicize the opportunities that the Digital Economy offers in order to inspire and motivate SMEs to tackle digital transformation.

This line of action will include the development of a transversal awareness-raising program that, with a sectoral approach and based on the dissemination of success stories and good practices, will facilitate that companies can feel recognized in the experiences that are exposed and see the practical application in your business.

In turn, the dissemination of specific ICT technologies and solutions with direct application in SMEs will be supported, and recognition actions that give visibility to digital transformation initiatives launched in Andalusia will be promoted.

4.2.1.2 S2: Electronic bill

Although the legislation requires electronic invoicing in public procurement, the use of electronic invoicing is still a minority in the private sphere. This line of action will include the development of dissemination and promotion actions for the use of electronic invoicing, especially focused on highlighting the advantages that automated data processing entails in commercial relations and business management.

4.2.1.3 S3: Cybersecurity and digital trust

When addressing the digital transformation process, it is necessary to effectively manage the security of digital resources, enhancing confidence in the use of advanced services and interrelation through electronic means.

This line of action is intended to promote the culture of trust and digital security in companies, carrying out dissemination and awareness actions that help to companies to recognize the importance of security as they advance in the necessary directives process to maintain the trust of their customers.

4.2.2 AXIS 2: Talent development

Digital transformation requires an adequate strategy and a plan to implement it

throughout the company. Therefore, companies not only need to be receptive to adaptation and have enough technology to do so, but also require skills to be able to do so effectively.

This second axis will work on the objective of providing Andalusian companies with the knowledge and skills necessary to enable the cultural and organizational change that digital transformation requires.

The actions included under this heading will be aimed at improving the training of companies, covering the lack of technical skills of their staff, which acts as a barrier to their digitization and therefore, as a brake on their potential development. These actions will help not only to improve the organization, coordination and use of technological solutions and new processes, but will also involve the improvement of training and employability of workers in Andalusian SMEs.

axis 2: talent development

D4: leaders of digital transformation

D5: Digitally Competent Professionals

D6: New professionals in the Digital Economy

4.2.2.1 D4: leaders of digital transformation

The company must undertake a transformation towards the Digital Economy, but at the same time, it must maintain its solvency and not put its income at risk. For this reason, digital transformation must be conceived as a comprehensive and organized process, in which leadership and change management will be fundamental aspects.

The aim of this line of action is to provide the business community with the competencies to lead and manage digital transformation processes with a digital transformation guarantees of success.

Among the planned actions, a comprehensive and multi-format training offer will be developed, aimed especially at SME management personnel, which will enable them to face the necessary changes in business strategy and culture.

4.2.2.2 D5: Digitally Competent Professionals

Another aspect to strengthen to guarantee the success of the digital transformation process is the existing knowledge in companies about the digital tools and solutions available in the market.

This line of action will make it easier for companies to provide their staff with digital skills and training in the use of digital tools so that human capital has the necessary skills to participate in the transformation process.

With this action, a set of training actions will be made available to companies aimed at bringing SMEs closer to existing solutions on the market to address the digitization of operations and different business processes.

4.2.2.3 D6: new professionals in the Digital Economy

The needs of companies in the face of the challenges of the Digital Economy: the tools 2.0, the emergence of social networks, electronic commerce and above all, the new habits and needs of customers and consumers of both sexes, make companies demand new professional profiles with specialized training in the framework of technology and the innovation.

Asuvez, in the same way that companies need to incorporate specialized personnel to develop their digital strategies and integrate technology into their business processes to be more competitive, professionals demand quality training according to the reality of the labor market to advance in development of your professional career.

This line of action seeks to increase the supply of professionals with digital skills demanded by companies, transforming people with traditional profiles and away from new technologies into professionals with qualifications in the digital field, which will improve their performance and employability and favor the process of digital transformation of SMEs.

4.2.3 AXIS 3: Driving digital transformation

The objective of this line of action is to guide and help companies that want to take the step towards digital transformation, with specific actions that contribute to

Directly and effectively in this process, such as: the design of a comprehensive digitization strategy for the company, the implementation of an innovative culture in the company or investment support that allows them to realistically approach digitization projects identified.

Other actions proposed in this area will be aimed at boosting the business fabric, promoting cooperation through digital media, innovation in products and services adapted to the digital market or internationalization through digital solutions.

axis 3: IMPLEMENTATION OF DIGITAL TRANSFORMATION

I7: Digital Strategy

I8: Digital innovation

I9: Digital cooperation

I10: Internationalization through digital media

I11: Aid for digital transformation

4.2.3.1 I7: Digital strategy

The aim of this line of action is to facilitate companies formulating digital strategies that allow them to transform their businesses and adapt them to the Digital Economy.

One of the difficulties when analyzing the situation of the digitization of Andalusian SMEs has been the lack of a standard model that establishes the main points of relevance when determining the level of digital maturity of a company. Sometimes the statistical data available is not enough, or does not allow effective comparisons to be made in order to draw relevant conclusions regarding the degree of digitization and the process to follow.

Therefore, within the scope, normalization and accompaniment actions are included aimed at making it easier for companies to assess their level of digital maturity and define an action plan to advance their digitization process.

4.2.3.2 I8: Digital innovation

The main objective of this line of action is to increase innovative activity in Andalusian companies while responding to one of the main strategic interests for the development of Information and Communication Technologies included in RIS3 AnDALuCiA, to turn ICT into a key factor for innovation. and business development, so that Andalusia has a business fabric with advanced technology incorporated into its processes, contributing to the improvement of its competitiveness.

In this sense, this line of action will support innovation projects aimed at developing new products or services that allow SMEs to enter the digital market or develop new solutions and digital tools to improve the competitiveness of SMEs. The development of projects that aim to introduce significant improvements in the processes or organization of the SME through the application of new technologies will also be encouraged.

4.2.3.3 I9: Digital cooperation

When planning and implementing strategic actions, SMEs face an inherent problem in the nature of the Andalusian microenterprise fabric: lack of resources. In this context, business cooperation emerges as an opportunity to optimize available resources and apply economies of scale that allow cost savings.

In recent years, ICTs have proven to be an ideal support for collaborative projects, as shown by the rise of digital collaborative economics projects. **4.3 ACTIONS** that have led to a revolution in consumer habits.

This line of action is intended to promote the emergence of business collaboration projects through the use of digital platforms, the development of platforms that provide a meeting point between ICT offerings and demands, and intersectoral collaboration for the development of specific ICT solutions.

4.2.3.4 I10: Internationalization through digital media

The digitization of the economy has brought with it business scalability that was unthinkable years ago. Now, a company can sell its products or services in other countries without having to have any physical space in the destination country.

This line of action is intended to help companies that have already undertaken their digital transformation process take advantage of these digital media to internationalize their business. Advisory actions that guide companies to carry out their internationalization processes through ICT will be included here.

4.2.3.5 I11: Aid for digital transformation

One of the main barriers to the implementation of technology in companies, according to the results of the study carried out, is the high cost of these investments. This line of action will try to minimize the effect of this barrier to favor the growth, innovation and competitiveness of Andalusian companies in an increasingly globalized market.

Within this line, assistance and advice programs are included for the incorporation of the technology and resources necessary to tackle the digital transformation process. Likewise, specific actions will be included aimed at facilitating access to these programs and those made available to companies by other organizations and administrations, with the aim of maximizing their use by Andalusian companies.

Within the framework of the PAED, within each of the lines of action, if the budgetary situation allows it, the following actions will be carried out:

axles	lines of action	ID	performances	Initiation	Growth Optimization	
axis 1: Dissemination and awareness	S1: Opportunities of the Digital Economy	S1.1	Transversal awareness program Digital	x	x	
		S1.2	innovation centers	x	x	
		S1.3	Observatory of trends and digital solutions for SMEs Recognition	x	x	x
		S1.4	of the best digitalization initiatives Congress on digital		x	x
		S1.5	transformation	x	x	x
	S2: Electronic invoice	S2.1	Program to promote electronic invoicing		x	x
	S3: Cybersecurity and digital trust	S3.1	Digital Security Awareness Program		x	x
axis 2: Talent development	D4: leaders of the digital transformation	D4.1	Directive Development Program	x	x	
	D5: Professionals digitally competent	D5.1	Modular training program for the digitization of the company Agreements	x	x	x
		D5.2	with companies for specific training in digital solutions Catalog of training		x	x
		D5.3	actions for companies	x	x	x
	D6: New professionals in the Digital Economy	D6.1	Master in digital transformation	x	x	x
		D6.2	Training and employment program for professional profiles for the digital market		x	x
axis 3: Driving digital transformation	I7: Digital Strategy	I7.1	Digital Company Program	x	x	x
		I7.2	Sectoral ICT needs study and sectoral adaptation of the digital maturity model	x	x	x
		I7.3	Expert consulting in the development of digital transformation	x	x	x
		I7.4	Program to promote Industry 4.0	x	x	x
	I8: Digital innovation	I8.1	Program for the development of innovation processes through ICT Financial aid		x	x
		I8.2	for R + D + i aimed at business development through ICT		x	x
	I9: Digital cooperation	I9.1	Technological projects for business collaboration Map		x	x
		I9.2	of digital solutions	x	x	x
		I9.3	Program to promote intersectoral collaboration	x	x	x
		I9.4	Technological challenge	x	x	x
	I10: Internationalization a through digital media	I10.1	Support for internationalization through ICT			x
	I11: Aid for digital transformation	I11.1	Financial aid for the digital transformation of SMEs Initiative to	x	x	x
		I11.2	improve digital security in SMEs Virtual office of aid for digital		x	x
		I11.3	transformation	x	x	x

In the annex you can consult the descriptive sheet of each action

4.3.1 Prioritization of actions

once the actions that form to plan their execution have been identified. To do this, fast, high priority and low priority have been used.

For the development of this prioritization matrix, factors and factors were:

n including face is areas: results

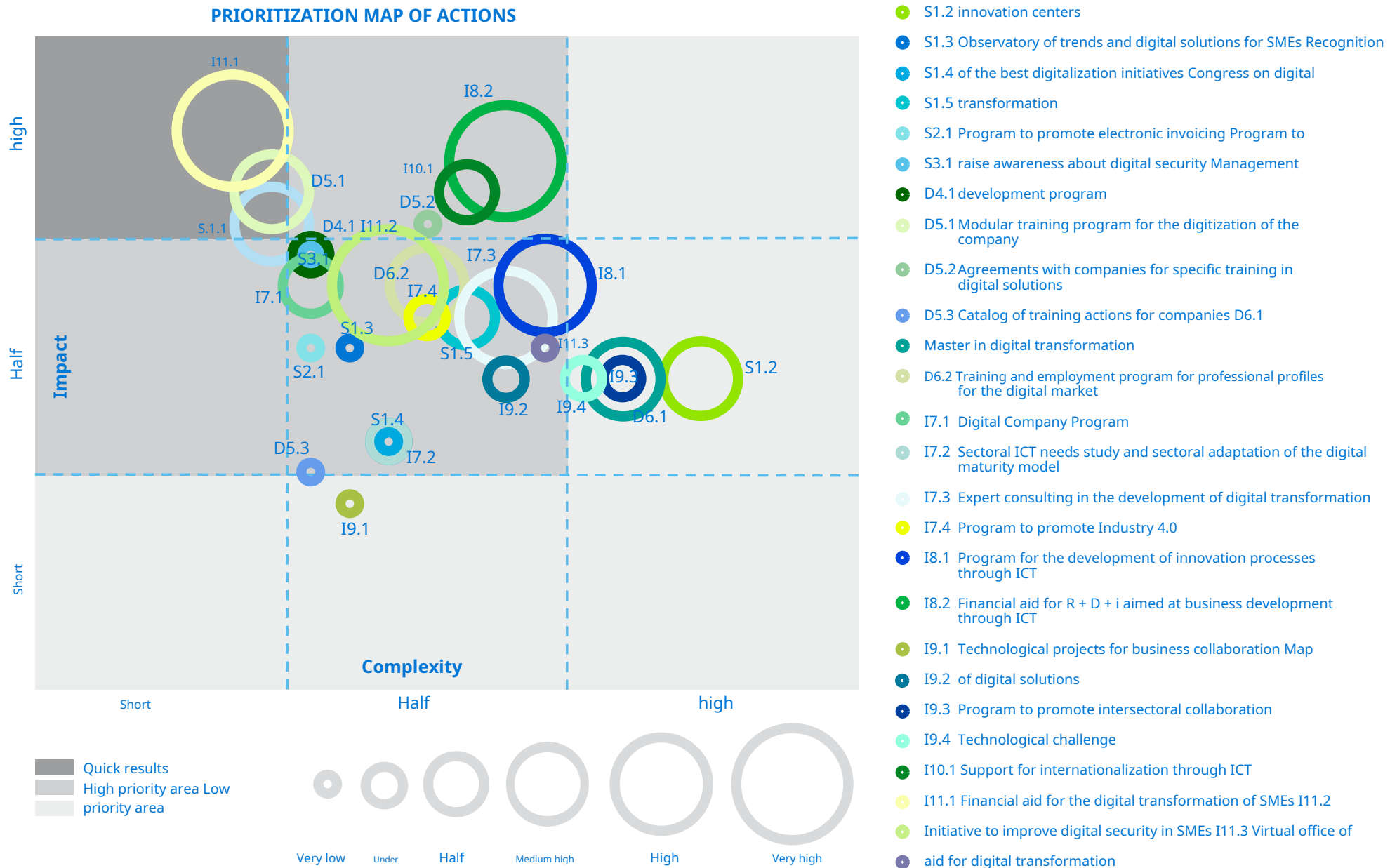
s following criteria

Complexity	ImPaC	
Previous experience in similar initiatives	Empre	or the performance
Coordination effort required	Relieves	
Time required for start-up	Reperc	

Below is the prioritization of the a

to the.

Figure 25 Prioritization map of PAED actions



Source: self made

4.4 PLANNING

Based on the prioritization carried out, the schedule of the 11 lines of action that make up the PAED is shown below.²²

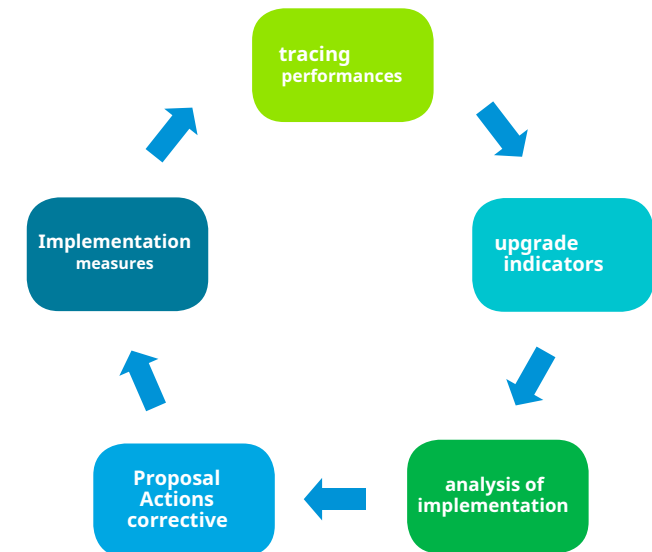
axes	lines of action	2017		2018		2019		2020	
		1st semester	2nd semester	1st semester	2nd semester	1st semester	2nd semester	1st semester	2nd semester
axis 1: Dissemination and awareness	S1: Opportunities of the Digital Economy								
	S2: Electronic invoice								
	S3: Cybersecurity and digital trust								
axis 2: Talent development	D4: leaders of the digital transformation								
	D5: Professionals digitally competent								
	D6: New professionals in the Digital Economy								
axis 3: Driving digital transformation	I7: Digital Strategy								
	I8: Digital innovation								
	I9: Digital cooperation								
	I10: Internationalization a through digital media								
	I11: Aid for digital transformation								

²² The proposed schedule will be subject to the budget availability of each annuity.

- The coverage of the actions: if the actions are achieving the expected results.

This analysis will be carried out annually throughout the term of the PAED, in order to detect deviations in the development of the actions and to be able to apply corrective measures before its completion.

Figure 26 Continuous evaluation of the execution of the PAED



Source: self made

5 MONITORING AND EVALUATION METHODOLOGY

To evaluate compliance with the 2020 Digital Company Action Plan, it is necessary to define a monitoring and evaluation plan that allows knowing the degree of development of each of the lines of action and evaluating whether the set objectives are being met.

The incorporation of this monitoring and evaluation process in the deployment of the Action Plan constitutes an important source of value insofar as:

- Provides information that facilitates decision-making to redefine the objectives set based on the deviations detected and carry out strategic planning of future actions.
- It is an important dissemination tool about the results obtained.
- It grants transparency to public actions, reinforcing the link between the Public Administration, citizens and companies.
- legitimizes the actions generating a greater perception of the value contributed to society.

Thus, it is essential to define a methodological model for monitoring and evaluation that can be consolidated as the basis of the control and quality assurance procedures in the execution, which facilitates decision-making and allows optimizing the impact of the PAED through a continuous improvement process.

5.1 MONITORING AND EVALUATION MODEL

The monitoring and evaluation model proposed for the PAED is based on two fundamental analyzes:

5.1.1 Implementation analysis

The implementation analysis consists of a continuous monitoring of the actions and a systematic and periodic assessment of two fundamental questions:

- The deployment of the PAED: if the planned planning, budget execution, execution objectives are being met ...

5.1.2 Impact analysis

The impact analysis is the evaluation of the effectiveness of the Digital Company Action Plan to achieve the objectives for which it has been designed. It will consist of the evaluation of compliance with the specific objectives that were defined for each of the planned lines of action.

It is considered an ex post evaluation that will allow to propose other initiatives in the future and to know the result of the Action Plan as a whole.

This analysis will allow obtaining a value judgment on the adequacy of the designed plan, its degree of flexibility and its ability to adapt to the reality of the Andalusian business fabric in the face of the digital transformation process.

The analysis of the results of the PAED will be carried out at the end of the execution period, once the necessary official data is available. However, midway through this period, an internal mid-term evaluation will be carried out that will allow for modifications to be made to correct any deviations that have occurred.

This mid-term evaluation will provide data on the validity of the ongoing interventions, the relevance of the objectives considered and the quality of the management and monitoring system established.

Therefore, the midterm evaluation in 2018 will allow to know how the objectives set are evolving, and assess whether it is necessary to make changes in the scope of the PAED to achieve them, while the analysis of results in 2020 will determine whether the objectives have been achieved and will allow the impact of the actions carried out to be evaluated. .

5.2 MONITORING AND EVALUATION COMMITTEE

In order to articulate the PAED monitoring and evaluation plan, beyond the data and indicators collection carried out by the work teams in charge of executing the different actions, a monitoring and evaluation committee will be created.

This committee will meet once a year and will be the body responsible for evaluating the development and impact of the Plan.

It will be made up of those responsible for the teams assigned to each line of action, the Technical Directorate in charge of the management, control and coordination of the PAED, and representatives of the Ministry of Employment, Business and Commerce, the body responsible for executing the PAED.

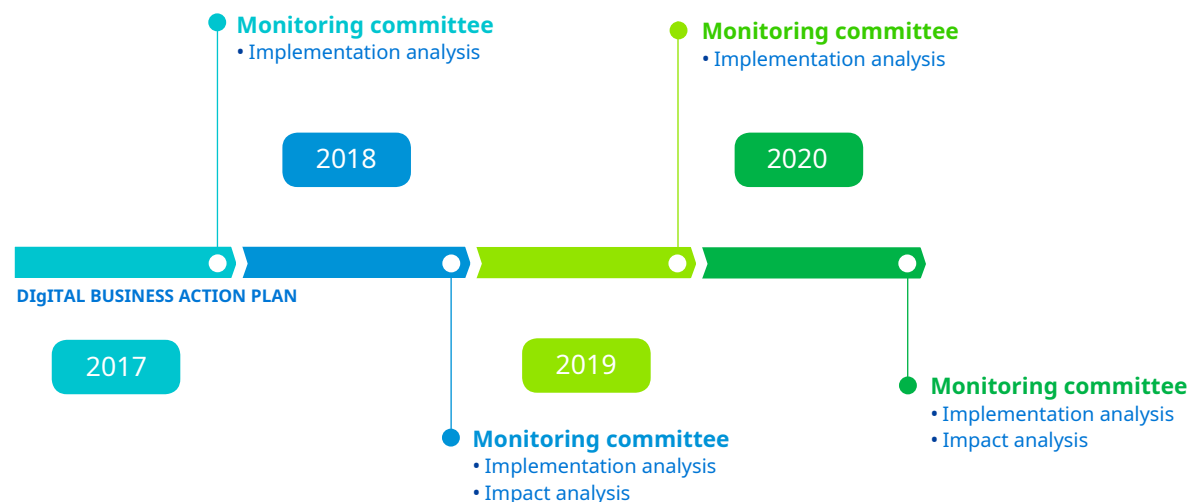
Its functions will be:

- Supervise and monitor the actions and lines of action.
- Evaluate the risks in the execution of the PAED and establish the necessary preventive measures.
- Perform the implementation analysis.
- Carry out the impact analysis (every two years).
- Establish the necessary corrective measures to ensure compliance with the objectives of the PAED.
- Ensure compliance with the monitoring and evaluation plan.
- Modify the scope, the objectives pursued and / or the content of the PAED, if necessary.

5.3 FOLLOW-UP AND EVALUATION PLAN

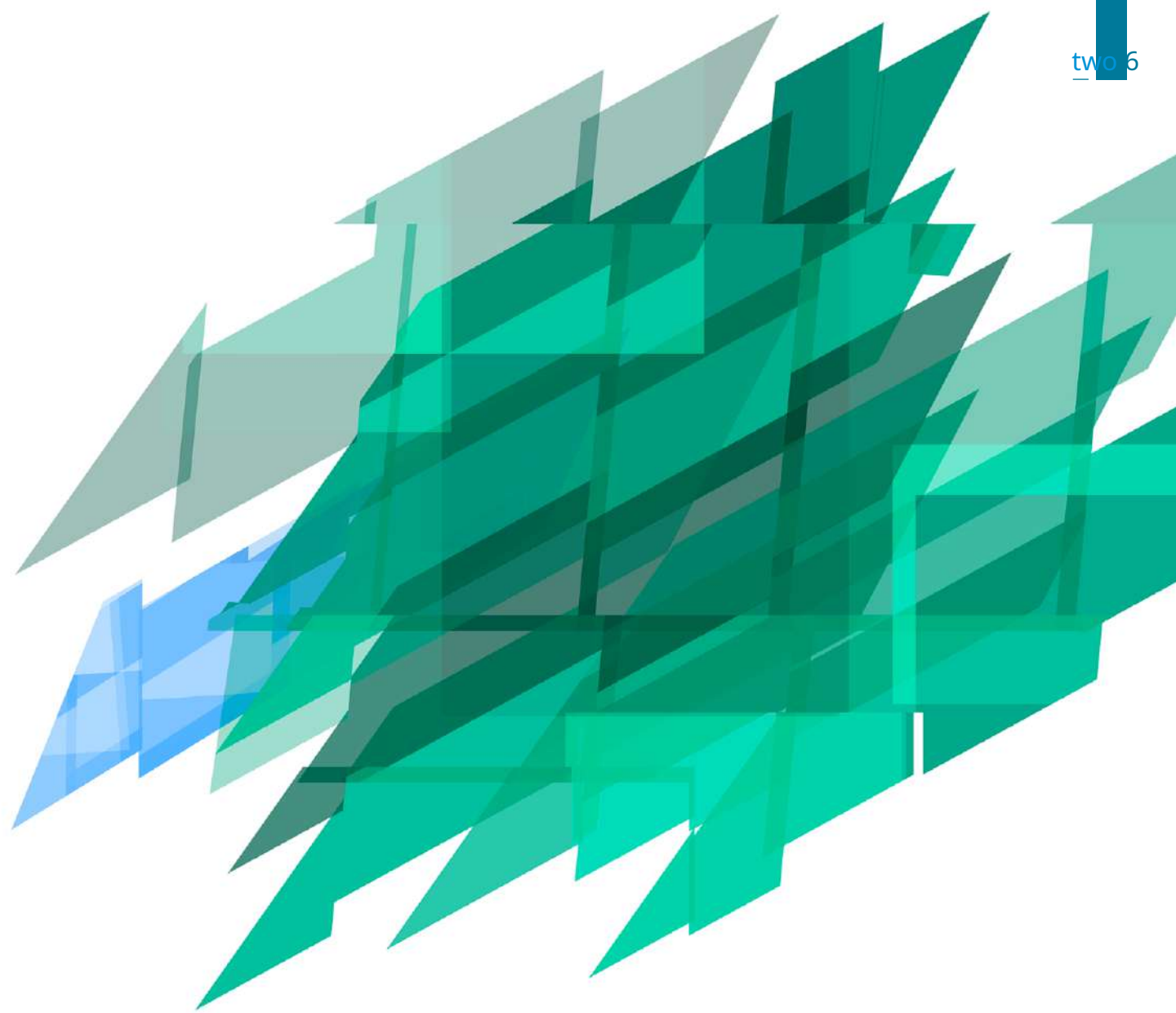
The following figure shows the schedule of actions envisaged in the PAED monitoring and evaluation model.

Figure 27 Scheduling of the monitoring and evaluation plan



Source: self made

6 APPENDIX: ACTIONS



axis 1: Dissemination and awareness			
line of action	Opportunities of the Digital economy	Code	s1
performance	Transversal awareness program	Code	s1..1
goals			

O1: Make Andalusian companies aware of the importance of digital transformation

O3: Promote the digital transformation of companies as an engine of economic growth

objective group					
Digitization level	Initiation and growth	Typology	SMEs	Sectors	Everyone (*)
Description					

The first step to promote the digital transformation of companies is to make them aware of this need. For this, it is proposed to carry out an awareness program through which the opportunities that digitization offers are made known, with the aim of inspiring and motivating companies to tackle digital transformation.

Within this program, a cycle of conferences will be organized aimed both at companies that have not yet started in the transformation process, as well as those that are still immersed in this process to promote the development of a business culture that is committed to digitization .

These conferences will feature presentations by professionals in the field of digital transformation in which the advantages offered by digitization, the

opportunities that this represents for SMEs, as well as the new business models that ICTs are enabling. In addition, success stories and good practices reported in the first person by entrepreneurs who have already addressed the transformation process will be included. Mainly the conferences will focus on a sectorial nature, with the aim that companies can feel recognized in the experiences that are exposed and facilitate that attendees see the practical application in their businesses.

To increase the scope of these actions, promotional videos, infographics, information pills, and other digital resources that allow dissemination and awareness through digital media will be produced. Additionally, this program will include the completion of a MOOC on digital transformation for SMEs.

Indicators			
Indicator name	Kind	Unit	Fountain
Companies impacted by the transversal awareness program	Execution	Number	Own
Percentage of participating companies aware of the importance of digital transformation	Outcome	Percentage	Own

(*) With intensification in the following: Industry, Commerce, Agriculture, Livestock and Fishing and Transportation

axis 1: Dissemination and awareness			
line of action	Opportunities of the Digital economy	Code	s1
performance	Digital innovation centers	Code	s1.2
goals			

O1: Make Andalusian companies aware of the importance of digital transformation

O3: Promote the digital transformation of companies as an engine of economic growth

objective group					
Digitization level	Initiation and growth	Typology	SMEs	Sectors	Everyone (*)
Description					

To reduce the barrier of ignorance in terms of digital solutions among companies, this action seeks to bring digital solutions closer to SMEs through demonstration sessions and practical workshops that allow first-hand knowledge of the tools and solutions available for digitization. For this, the different solution provider companies will be invited to participate in these events, making a presentation and practical demonstration of their products. In addition, the events will include talks and presentations related to digital transformation (aids for digital transformation, awareness about the importance of digitization ...) and there will be an exhibition area where supplier companies can attend to the attending companies to inform them individually.

To increase the number of companies participating in these events, the project will be approached in two different ways:

- 1) Through the creation of demonstration centers through agreements with organizations with a presence in the territory (city councils, county councils, etc.), in which one of the lines of action is to publicize the tools and solutions available for SMEs can address the digital transformation of the business.
- 2) Through the organization of an itinerant demonstration center that will visit the most important business centers in Andalusia. With this format we will be able to reach SMEs that are not in the area of influence of the physical centers that are created.

Indicators			
Indicator name	Kind	Unit	Fountain
Companies impacted by the demonstration sessions of digital solutions	Execution	Number	Own
Percentage of participating companies that have increased their knowledge of digital solutions presented	Outcome	Percentage	Own

(*) With intensification in the following: Industry, Commerce, Agriculture, Livestock and Fishing and Transportation

axis 1: Dissemination and awareness			
line of action	Opportunities of the Digital economy	Code	s1
performance	Observatory of trends and digital solutions for SMEs	Code	s1.3
goals			

O1: Make Andalusian companies aware of the importance of digital transformation

O3: Promote the digital transformation of companies as an engine of economic growth

objective group					
Digitization level	Everyone	Typology	SMEs	Sectors	Everyone
Description					

Given the limited resources available to SMEs, and especially micro-enterprises, the concentration of information in an observatory of trends and digital solutions is a very useful tool that can significantly facilitate access to the information collected and classified in terms of digital transformation, and therefore, increase the degree of knowledge of businessmen and women, thereby favoring the adoption of technology and improving the competitiveness of companies.

In this sense, an observatory of digital solutions will be created that will use multiple sources of information such as news, studies, events, publications, etc. as well as analysis of sources at a regional, national or international level related to digital transformation. This is how it is intended to make up for the lack of personnel dedicated to carrying out technological surveillance in

SMEs, collecting and organizing information related to developments in the field of digital solutions, trends, modification of regulations that affect digitization ... This information will be classified and its dissemination will be segmented according to the activity sector.

To implement the observatory, a platform will be developed that allows the information that is collected to be published. For greater efficiency in the dissemination of information, newsletters and agendas of interest will be sent to people registered on the platform.

In a complementary way, this observatory will be in charge of preparing an annual report on the status of digital transformation in Andalusian companies.

Indicators			
Indicator name	Kind	Unit	Fountain
Number of technology watch content generated	Execution	Number	Own
Number of visits to the Observatory website	Outcome	Number	Own

axis 1: Dissemination and awareness			
line of action	Opportunities of the Digital economy	Code	s1
performance	Recognition of the best digitization initiatives	Code	s1.4
goals			

O1: Make Andalusian companies aware of the importance of digital transformation

objective group					
Digitization level	Growth and optimization	Typology	SMEs with digital-based projects	Sectors	Everyone
Description					

Another way to address entrepreneurs' awareness of the need for digitization is to value those companies that are betting on digital transformation as an engine of growth and that are transforming their business model through ICT.

It is proposed to recognize the work of these companies by organizing a contest in which the best transformation initiatives carried out in Andalusia are awarded, thus giving them visibility in the media.

The organization of the delivery of awards to digital companies will be an event that will be held biannually. The communication plan must include broad media coverage in order to offer publicity for the winning companies and make society known.

digitization projects developed in Andalusia. The main advantage offered to the winning companies, more than the award itself, is the reputation they can enjoy and the visibility they can benefit from thanks to the dissemination of the event in the media. .

The first competitions will begin with a generalist and multisectoral approach, with categories that are characterized by their scope and breadth in the admission of projects, so that it is possible to learn from the typology of the participating companies and based on said data, introduce more specific awards in future editions, such as, for example, differentiation by sectors or geographic location.

Indicators			
Indicator name	Kind	Unit	Fountain
Number of companies that receive recognition for their digitization	Execution	Number	Own
Number of impacts on social networks of recognition of digitization	Outcome	Number	Own

axis 1: Dissemination and awareness						
line of action		Opportunities of the Digital economy			Code	s1
performance		Congress on digital transformation			Code	s1.5
goals						
O1: Make Andalusian companies aware of the importance of digital transformation						
O3: Promote the digital transformation of companies as an engine of economic growth						
objective group						
Digitization level:		Everyone	Typology	SMEs	Sectors	Everyone
Description						
Currently there is no renowned event related to the digital transformation of companies in Andalusia, so the organization of a congress on digital transformation will be promoted to serve as a meeting point between supplier companies and companies interested in digitizing, where they will know the existing solutions, the latest market trends in terms of digitization, success stories, etc.				The event will be composed of conferences and round tables in which the competitive advantages that digital transformation entails, the opportunities it offers will be addressed, and how to approach the process will be deepened. Workshops will be given to publicize existing digital solutions and networking meetings will be organized between supplier companies and SMEs in general. In addition, an exhibition area will be set up for supplier companies.		
Indicators						
Indicator name				Kind	Unit	Fountain
Number of people attending the digital transformation congress				Execution	Number	Own
Global satisfaction of people attending the digital transformation congress				Outcome	Number	Own

axis 1: Dissemination and awareness			
line of action	Electronic bill	Code	s2
performance	Program to promote electronic invoicing	Code	s2.1
goals			
O1: Make Andalusian companies aware of the importance of digital transformation			
O3: Promote the digital transformation of companies as an engine of economic growth			
objective group			
Digitization level:	Growth and optimization	Typology	SMEs
		Sectors	Everyone
Description			
<p>The electronic invoice is a document that has full legal validity and its growing importance derives from the advantages it offers compared to the paper document: it is an agile and flexible way of managing sales processes, also offering greater optimization in the processes of management of charges for services, supplies or contracted works, allowing cost savings and reducing the impact of human error on information storage and procedures. With this action, a plan to raise awareness and disseminate the benefits of this tool, which will use collaboration agreements with</p> <p>external agents to increase the scope of the dissemination plan and encourage the acquisition of electronic invoicing software, administrative.</p> <p>It will be based on three pillars:</p> <ol style="list-style-type: none"> 1. Study of the applications that allow electronic invoicing between companies. 2. Creation, design and development of the communication and advertising campaign. 3. Collaboration agreements for promotion with companies that provide electronic invoicing solutions. 			
Indicators			
Indicator name	Kind	Unit	Fountain
Companies impacted by the electronic invoice promotion program	Execution	Number	Own
Percentage of participating companies aware of the advantages of electronic invoicing	Outcome	Percentage	Own

axis 1: Dissemination and awareness

line of action Cybersecurity and digital trust

Code s3

performance Digital Security Awareness Program

Code s3.1

goals

O1: Make Andalusian companies aware of the importance of digital transformation

objective group

Digitization level: Growth and optimization Typology SMEs Sectors Everyone

Description

When approaching the digital transformation process, it is necessary to effectively manage the security of digital technologies. The study carried out shows how Andalusian SMEs approach security in a reactive way, attending to specific incidents and not from a strategic plan. Only 10% of micro-SMEs have a defined digital security policy.

This action is intended to promote the culture of trust and digital security in companies.

It is proposed to carry out, first of all, a cycle of awareness talks on digital security aimed at companies in the first stages of digital transformation where the importance of security as a key factor for business and its evolution on the Internet will be highlighted.

From a practical point of view, the most frequent risks and security measures available to companies will be addressed in order to improve the security of services and businesses through the adoption of good practices and habits.

The holding of these conferences will be used to learn about the training needs of the attending companies in terms of security, so that a specific training plan in this matter can be carried out.

Second, and with the aim of reaching the maximum number of companies possible, it is proposed to carry out a MOOC on digital security for SMEs.

Indicators

Indicator name	Kind	Unit	Fountain
Companies impacted by actions of the digital security awareness program	Execution	Number	Own
Percentage of participating companies aware of the importance of digital security	Outcome	Percentage	Own

axis 2: Talent development						
line of action	leaders of digital transformation				Code	D4
performance	Directive Development Program				Code	D4.1
goals						
O2: Increase the digital skills of Andalusian companies						
O3: Promote the digital transformation of companies as an engine of economic growth						
objective group						
Digitization level	Initiation and growth	Typology	SME executives	Sectors	Everyone	
Description						
The company must undertake a transformation towards the Digital Economy, but at the same time, it must maintain its solvency and not put its income at risk. This requires leadership from top management and from other positions aligned with change.			fundamentally to directive personnel and middle managers of the SME, in which the assistants will be trained to lead and efficiently manage the digital transformation process.			
Only if digital transformation is conceived as a comprehensive and organized process can results be obtained, and for this reason it is proposed to create a targeted training program			A complete and multi-format training offer will be developed, which will consist of several face-to-face sessions with the management staff and complementary digital training resources.			
Indicators						
Indicator name				Kind	Unit	Fountain
Companies impacted by the executive development program				Execution	Number	Own
Percentage of participating companies aware of the importance of digitization				Outcome	Percentage	Own

axis 2: Talent development

line of action	Digitally competent professionals	Code	D5
performance	modular training for the digitization of the company	Code	D5.1

goals

O2: Increase the digital skills of Andalusian companies

objective group

Digitization level	Everyone	Typology	SMEs	Sectors	Everyone (*)
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Description

According to the survey of Andalusian SMEs, ignorance of solutions is one of the main obstacles to the implementation of technology in companies.

With this action, a set of training actions will be launched aimed at bringing companies closer to the existing solutions on the market to address the digitization of operations and different business processes. It will be approached first from a point

from a general perspective to end up presenting the specific solutions most used in demonstration workshops in which companies can learn to handle these solutions. This action will involve the contracting of different training actions (face-to-face sessions, demonstration workshops on specific solutions, training pills, videos and presentations ...).

Indicators

Indicator name	Kind	Unit	Fountain
Companies impacted by digital training actions	Execution	Number	Own
Percentage of participating companies that have improved their digital training	Outcome	Percentage	Own

(*) With intensification in the following: Industry, Commerce, Agriculture, Livestock and Fishing and Transportation

axis 2: Talent development

line of action	Digitally competent professionals	Code	D5
performance	Agreements with companies for specific training in digital solutions	Code	D5.2

goals

O2: Increase the digital skills of Andalusian companies

O3: Promote the digital transformation of companies as an engine of economic growth

objective group

Digitization level	Growth and optimization	Typology	SMEs	Sectors	Everyone
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Description

According to the survey carried out among Andalusian SMEs, ignorance of the different existing solutions is one of the main obstacles when facing the digital transformation. To break this barrier, it is interesting to offer specific training associated with specific solutions, being the companies that provide these solutions the

more interested in the dissemination of their products and in training companies for their use.

Therefore, through this action, agreements will be signed with companies that provide digital solutions aimed at SMEs to offer open training that allows them to increase their knowledge of these tools and train workers in their handling.

Indicators

Indicator name	Kind	Unit	Fountain
number of agreements signed with companies for training in digital solutions	Execution	Number	Own self
Companies impacted by training actions in digital solutions	Execution	Number	Own self
Percentage of participating companies that have improved their knowledge of digital solutions	Outcome	Percentage	Own self

axis 2: Talent development

line of action	Digitally competent professionals	Code	D5
performance	Catalog of training actions for companies	Code	D5.3

goals

O2: Increase the digital skills of Andalusian companies

objective group					
Digitization level	Everyone	Typology	SMEs	Sectors	Everyone
Description					

For the transformation process of companies to be successful, it must be done in an inclusive way, involving all staff in it. In the analysis carried out, it is observed how only 3.5% of micro-SMEs and 18% of small companies with workforces of more than 10 people, offer training activities to their staff to improve their digital skills.

A classification will be made of all the training offer and free resources of the Ministry that may be of interest to increase the digital skills of the workers of Andalusian SMEs. With this tool, and depending on the level of maturity

digital technology of each company, it will be able to configure a specific plan for its personnel to acquire the digital skills they need to successfully face the digital transformation process.

The information on this training offer will be offered from a single access point, filtered according to the level of digital maturity of the company, allowing the entrepreneur to select those courses that best suit the needs of their staff.

In this way, it will be possible to organize the training offer and optimize its use by companies while collecting information on their demands and needs.

Indicators			
Indicator name	Kind	Unit	Fountain
Number of training actions for digital transformation available on the platform	Execution	Number	Own
Companies that have used the catalog to search for training actions	Outcome	Number	Own

axis 2: Talent development

line of action	New professionals in the Digital economy	Code	D6
performance	master in digital transformation	Code	D6.1

goals

O2: Increase the digital skills of Andalusian companies

O3: Promote the digital transformation of companies as an engine of economic growth

objective group

Digitization level	Everyone	Typology	Students and SMEs	Sectors	Everyone
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Description

In the same way that companies need to incorporate qualified personnel to develop their digital strategies and integrate technology into their business processes, professionals demand quality training according to the reality of the labor market in order to meet the demand for the former.

This action is intended, on the one hand, to generate an offer of higher education in digital transformation in our community with the collaboration of entities

of training, while facilitating access to these studies by developing a scholarship program aimed at defraying the enrollment costs of students taking such specialized studies.

These studies will be accompanied by an internship program in companies and an entrepreneurship module, since the objective is to inject into the labor market a sufficient supply of professionals with the necessary skills to guide companies in their digital transformation process.

Indicators

Indicator name	Kind	Unit	Fountain
Number of scholarship students for the digital transformation master's degree	Execution	Number	Own
Students who have completed the master's degree in digital transformation	Outcome	Number	Own

axis 2: Talent development

line of action	New professionals in the Digital economy	Code	D6
performance	Training and employment program for professional profiles for the digital market	Code	D6.2

goals

O2: Increase the digital skills of Andalusian companies

O3: Promote the digital transformation of companies as an engine of economic growth

objective group

Digitization level	Growth and optimization	Typology	SMEs	Sectors	Everyone
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Description

In their digital transformation process, companies, beyond technological profiles, also need mixed profiles (people who are experts in their professional areas but with specific training in new technologies) to help them implement their digital strategy and integrate technology in your business processes.

With this action, a training program will be launched for the development of professionals in the acquisition of digital skills specific to areas

specific professionals who are being demanded by companies in their digital transformation process.

This training program will end with an internship in partner companies.

The objective is to meet the demand for specific profiles while increasing the digital knowledge of both employed and unemployed people, promoting their professional reconversion and improving their employability.

Indicators

Indicator name	Kind	Unit	Fountain
Number of attendees to face-to-face workshops	Execution	Number	Own self
Percentage of participants who believe they have acquired the necessary knowledge for their professional development	Outcome	Percentage	Own self

axis 3: Driving digital transformation

line of action	digital strategy	Code	I7
performance	Digital company program	Code	I7.1

goals

O1: Make Andalusian companies aware of the importance of digital transformation

O3: Promote the digital transformation of companies as an engine of economic growth

objective group

Digitization level:	Everyone	Typology	SMEs	Sectors	Everyone (*)
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Description

One of the difficulties when analyzing the situation of the digitization of Andalusian SMEs has been the lack of a standard model that establishes the main points of relevance. In this line, the objective of this program is to establish a model that allows identifying the degree of digital maturity of Andalusian companies, establishing the necessary requirements to obtain such consideration in the different areas or business practices, and offering companies a plan of action to advance its digital transformation process. This model of digital maturity will constitute the objective to be achieved by the Andalusian SME in the new Digital Economy. To define it, a complete study of the different business areas that affect digital transformation will be necessary,

Once the model has been defined, a self-diagnosis system will be established that allows evaluating the situation of companies in relation to said digitized company model.

To do this, it must provide a scale of assessment of the indicators of the mature company model, so that different levels of achievement of the digital transformation process of a company are established.

With a clear diagnosis, it is necessary to guide and guide companies to tackle the necessary digital transformation process. Depending on the different levels of maturity established in the model, guides will be developed that incorporate the itinerary to be followed by companies covering the different areas included in the model, to advance from one level of digital maturity to the next.

In addition, within the framework of the Digital Company program, the definition of a personalized consulting service is also contemplated that allows the elaboration of an in-depth diagnosis of the level of digitization of the company and that will be the basis for the elaboration of an Action Plan that defines the specific itinerary that the company must follow to improve its level of digital maturity.

Indicators

Indicator name	Kind	Unit	Fountain
Availability of the model and digital maturity itineraries	Execution	Percentage	Own
Number of companies that know their level of digital maturity through self-diagnosis	Outcome	Number	Own

(*) With intensification in the following: Industry, Commerce, Agriculture, Livestock and Fishing and Transportation

axis 3: Driving digital transformation

line of action	digital strategy	Code	I7
performance	sectoral ICT needs study and sectoral adaptation of the digital maturity model	Code	I7.2

goals

O3: Promote the digital transformation of companies as an engine of economic growth

objective group

Digitization level	Everyone	Typology	SMEs	Sectors	<ul style="list-style-type: none"> - Industry - Commerce - Agriculture, Livestock and fishing - Transport
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Description

When implementing actions to promote the integration of companies in the digital environment, it is convenient to differentiate needs not only according to the size and resources of the company, but also according to the particularities of its sector. There are sectors in which the adoption of a digital tool may have more implications than in others, due to the nature of their activities. For these reasons, in order to develop optimal digitization promotion actions, it is necessary to have segmented information on technological uses for each activity sector.

This action corresponds mainly to a work to identify the digitization of the value chain of companies in the different sectors of activity,

as well as digital tools that can be implemented more easily in the value chain of companies. Likewise, the digital maturity model and the self-diagnosis tool will be adapted to the reality of each of the sectors, depending on the particularities of the same, in order to serve as a reference to determine the level of digital maturity. to be achieved by companies belonging to this sector.

For the execution of this action, it will be necessary to have the collaboration of representative entities of each sector.

Indicators

Indicator name	Kind	Unit	Fountain
Number of sectoral adaptations of the digital maturity model available	Execution	Number	Own
Number of companies that know their level of digital maturity through sectoral self-diagnostics	Outcome	Number	Own

axis 3: Driving digital transformation

line of action	digital strategy	Code	I7
performance	Expert consulting in the development of digital transformation	Code	I7.3

goals

O1: Make Andalusian companies aware of the importance of digital transformation

O3: Promote the digital transformation of companies as an engine of economic growth

objective group

Digitization level:	Everyone	Typology	SMEs	Sectors	Everyone
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Description

It is necessary for companies to have a digital strategy that identifies the actions to be undertaken so that the digital transformation process is approached in an orderly manner, sustainable over time and consistent with their business model. This type of digital transformation planning can hardly be done solely with internal resources, but requires collaboration or expert advice.

To cover this gap, this action will offer individualized consulting services to SMEs aimed at promoting their digital transformation, using as a basis the digital business model implemented in action I7.1. The final objective is the realization of a Plan

of Individualized Digital Transformation to each of the beneficiary companies according to their needs, characteristics of the sector, business model and level of digital maturity.

This Plan will serve as a roadmap for the digital transformation of the company, being a balanced and coherent plan in the necessary investments and the sustainability of the changes to be made. It will be adapted to the type of company and its digitization status, and will include both advice on the implementation of digital tools, as well as on the adaptation of the business model itself, its business culture and its operations.

Indicators

Indicator name	Kind	Unit	Fountain
Number of companies that receive an expert consulting service in the development of digital transformation	Execution	Number	Own
Beneficiary companies that will address their digital transformation plan	Outcome	Percentage	Own

axis 3: Driving digital transformation

line of action	digital strategy	Code	I7
performance	Industry 4.0 promotion program	Code	I7.4

goals

O1: Make Andalusian companies aware of the importance of digital transformation

O3: Promote the digital transformation of companies as an engine of economic growth

objective group

Digitization level:	Everyone	Typology	SMEs	Sectors	Industrial
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Description

With the aim of promoting digital transformation in the industry as a means to improve the competitiveness and innovation capacity of Andalusian companies, especially SMEs, and within the framework of the Connected Industry 4.0 initiative, a program will be launched to promote adoption of solutions and digital enablers of Industry 4.0.

The program consists of making a personalized advisory service available to industrial SMEs for the preparation of digital transformation plans that

help companies to improve their competitiveness through the adoption of solutions in the field of Industry 4.0 and the identification of new technological and sustainable business opportunities.

These personalized advisory services will allow the industrial SME to know, individually, its degree of technological maturity and define a roadmap with the prioritized measures that the company must undertake to achieve its objectives.

Indicators

Indicator name	Kind	Unit	Fountain
Number of companies that receive an expert consulting service in the development of digital transformation	Execution	Number	Own
Beneficiary companies that will address their digital transformation plan	Outcome	Percentage	Own

axis 3: Driving digital transformation

line of action	Digital innovation	Code	I8
performance	Program for the development of innovation processes through ICT	Code	I8.1

goals

O3: Promote the digital transformation of companies as an engine of economic growth

objective group

Digitization level:	Growth and optimization	Typology	SMEs	Sectors	Everyone
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Description

The implementation of innovation processes in companies allows them to increase their competitive capacity. Likewise, they facilitate the adoption of this type of process and enable the creation and adoption of new digital business models and the development of new products and services.

The objective of this action will be to offer consulting services aimed at promoting innovation in the products and services of the participating companies so that they can be sold over the Internet and thus take advantage of the potential of the digital market. This will allow companies to develop and consolidate their business models and take advantage of the advantages and opportunities offered by digital transformation.

A line of products or services of the company will be selected in which the

innovation to be able to take it to the digital market, helping the company to elaborate its detailed business plan, combining training sessions and training with mentoring and group activities. Likewise, as a result of the work carried out, the company's digital business idea will be improved.

Each SME will have an individualized consulting plan that combines individual, group and remote monitoring sessions. This work structure allows interaction between beneficiary companies and other companies through open group sessions that promote innovation and the search for business synergies. At the same time, the remote monitoring and control will allow evaluating the evolution of the transformation plan, and thus knowing the impact of the proposed tools and solutions.

Indicators

Indicator name	Kind	Unit	Fountain
Companies that receive consulting services for the development of innovation processes through ICT	Execution	Number	Own
Participating companies that are going to tackle the digitization of their products / services	Outcome	Percentage	Own

axis 3: Driving digital transformation

line of action	Digital innovation	Code	I8
performance	Financial aid for R + D + i aimed at business development through ICT	Code	I8.2

goals

O3: Promote the digital transformation of companies as an engine of economic growth

objective group					
Digitization level:	Growth and optimization	Typology	SMEs	Sectors	Everyone
Description					

In general, companies in Andalusia carry out little activity in R&D, being below the national average both in the number of companies that dedicate resources to R&D and in the average investment allocated to this end. The main objective of this action is to increase R + D + i activity by reducing economic barriers so that companies can face R + D + i projects aimed at business development through ICT that contribute to the digital transformation in Andalusian companies.

But in addition, this action is intended to respond to one of the main strategic interests included in the Andalusian Innovation Strategy - RIS3 AnDALuCiA: to turn ICT into a key factor for innovation and business development, so that Andalusia has a business fabric with advanced technology incorporated into its processes, contributing to the improvement of its competitiveness. In this sense, they have special

relevance of the development of ICT R & D & I projects aimed at micro-enterprises that offer ad hoc software solutions and the development of ICT tools adapted to the needs of each sector that are integrated into the business logic and offered with a service support and resolution of incidents.

This action essentially consists of a subsidy program aimed at promoting research, development and innovation in the business sector, within the framework of the priorities established in the Andalusia Innovation Strategy - RIS3 AnDALuCiA. In particular, those projects framed in specialization priority 8: ICT and Digital Economy aimed at developing new solutions to improve the competitiveness of Andalusian SMEs through ICT and those projects that aim to introduce improvements will be the object of incentives. significant in the processes or organization of an SME through the application of new technologies.

Indicators			
Indicator name	Kind	Unit	Fountain
number of companies benefiting from financial aid for R + D + i aimed at business development through ICT	Execution	Number	Own
Expenditure on R + D + i in ICT and Induced Digital Economy	Outcome	Number	Own

axis 3: Driving digital transformation

line of action	Digital cooperation	Code	I9
performance	Technological projects for business collaboration	Code	I9.1

goals

O3: Promote the digital transformation of companies as an engine of economic growth

objective group

Digitization level:	Growth and optimization	Typology	SMEs	Sectors	Everyone
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Description

When planning and implementing strategic actions, SMEs face a problem inherent to the nature of the Andalusian micro-business fabric: the lack of resources. In this context, the optimization of available resources takes on special importance. For this reason, being able to count on technological platforms that facilitate business cooperation can be a determining factor in successfully meeting the needs of companies, achieving effective collaboration, and thus boosting the Andalusian economy.

With this action they want to spread the benefits of using digital platforms for cooperation between SMEs (crowdsourcing). To do this, the first step will be to carry out a benchmarking study of the main digital platforms for cooperation.

existing at regional, national and international level. The objective will be to identify those that are more successful, with a view to their subsequent dissemination among Andalusian companies, seeking to increase their use and thus increase business competitiveness. To support the dissemination of these platforms, international success stories will be identified and made known to serve as an example to companies and have a driving effect on them.

These actions will be supported by a communication plan that makes known the results obtained. Special focus will be on dissemination through business and professional associations, in order to maximize the scope of the actions.

Indicators

Indicator name	Kind	Unit	Fountain
Availability of benchmarking of digital platforms for business cooperation	Execution	Percentage	Own
Number of companies that are aware of the report on digital platforms for business cooperation	Outcome	Number	Own

axis 3: Driving digital transformation

line of action	Digital cooperation	Code	I9
performance	digital solutions map	Code	I9.2

goals

O3: Promote the digital transformation of companies as an engine of economic growth

objective group

Digitization level:	Everyone	Typology	SMEs	Sectors	Everyone
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Description

To cover the deficiencies in knowledge of technological solutions by the Andalusian business fabric, it is proposed to create a digital map that, automatically, suggests to SMEs the digital tools that could be interesting for their business according to the sector in the field. that they are and the degree of digital maturity that the SME presents at the time of the consultation. This action goes beyond establishing a meeting point between the supply and demand of solutions, since it is proposed to add a greater functionality to the map of digital ICT solutions that makes it an essential tool for any company that wants to develop a digital transformation of its processes:

- First, an automated system of suggestions for ICT tools will be created that will translate into a way forward for the SME to carry out a digital transformation process.

for some sectors, to evaluate the adequacy of the digital tools that are proposed. In this way, once the SME fills in the required information about its situation, sector and degree of digital maturity and other data deemed necessary, it would be shown the different digital tools that it would be advisable to implement in its particular situation, along with a description. of the uses and functionalities of the tool.

- Secondly, attached to the description of each digital tool, the estimated cost for the implementation of the tool will be shown, so that the company can immediately evaluate the viability of the operation, as well as a map of suppliers of these ICT solutions. in the Andalusia region to facilitate the acquisition of the solution that the company wants.

Indicators

Indicator name	Kind	Unit	Fountain
number of ICT solutions included in the map	Execution	Number	Own
Number of companies looking for digital tools through the map	Outcome	Number	Own

axis 3: Driving digital transformation

line of action	Digital cooperation	Code	I9
performance	Intersectoral collaboration promotion program	Code	I9.3
goals			

O3: Promote the digital transformation of companies as an engine of economic growth

objective group

Digitization level:	Everyone	Typology	SMEs	Sectors	Everyone (*)
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Description

In some cases, companies have technological needs that are not covered completely or in an adjusted way by the solutions offered by companies in the ICT sector, or they are not aware of them. Therefore, a rapprochement between the offer of digital solutions (companies in the ICT sector) and demand (companies in the rest of the productive sectors) is necessary to align the interests of both.

In this sense, this program is proposed, the object of which is the design and implementation of a set of actions whose purpose is to bring the technological solutions developed by companies in the Andalusian ICT sector to other productive sectors of our economy. Likewise, it is intended to promote networking and the exchange of experiences between associations and companies in the ICT sector with their counterparts in other sectors of economic activity to detect possible technological demands not covered and that could be developed by Andalusian ICT companies, as well as establish a framework of joint work in order to identify

possible synergies. In addition to this "approach effect", it is key to achieve the "demonstration effect" so that the demand understands that the "professional implementation" of ICT is a lever that favors innovation, increases productivity and sources of competitive advantages.

Within the framework of this program, the following actions are contemplated:

- Prospective for the incorporation of disruptive technologies in the strategic sectors of the Andalusian economy.
- Organization of intersectoral forums.
- Promotion of collaboration agreements between associations of the ICT sector and business associations representing other sectors of activity to favor the rapprochement between technological supply and demand.

Indicators

Indicator name	Kind	Unit	Fountain
Number of actions to promote intersectoral collaboration carried out	Execution	Number	Own
Number of intersectoral collaborations achieved	Outcome	Number	Own

(*) With intensification in the following: Industry, Commerce, Agriculture, Livestock and Fishing and Transportation

axis 3: Driving digital transformation

line of action	Digital cooperation	Code	I9
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performance	Technological challenge	Code	I9.4
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goals

O3: Promote the digital transformation of companies as an engine of economic growth

objective group

Digitization level:	Everyone	Typology	SMEs	Sectors	Everyone (*)
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Description

Another way to stimulate the development of technological solutions that respond to the unmet needs of companies is the launching of open innovation challenges or processes. With this action, a pilot experience will be carried out that will try to solve a specific problem relevant to a group of Andalusian companies. This action pursues a double objective: on the one hand, it will try to solve an existing need among Andalusian companies that is not satisfied by the market; and on the other hand, it will allow the ICT sector to take advantage of the knowledge generated to develop its offer.

As a first step, a study will be carried out to identify the sectoral needs not covered by the market and that are likely to be addressed through open innovation challenges.

From the result, a technological challenge will be raised so that both companies, universities, and the general public, can propose ideas to solve the problem posed. To encourage participation in the challenge, a prize will be offered for the best solutions.

Indicators

Indicator name	Kind	Unit	Fountain
number of problems identified	Execution	Number	Own
number of new ICT solutions participating in the challenge	Outcome	Number	Own

(*) With intensification in the following: Industry, Commerce, Agriculture, Livestock and Fishing and Transportation

axis 3: Driving digital transformation

line of action	Internationalization through digital media	Code	I10
performance	support for internationalization through ICT	Code	I10.1

goals

O3: Promote the digital transformation of companies as an engine of economic growth

objective group

Digitization level:	Optimization	Typology	SMEs	Sectors	Everyone
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Description

The digitization of the economy has brought with it business scalability unthinkable years ago. Currently, a company can sell its products or services in other countries without having to have any physical space in the destination country. The aim of this program is to help companies that have already embarked on their digital transformation process to take advantage of these digital media to internationalize their business.

Within the framework of this program, the following actions will be carried out:

- Conferences to raise awareness of the key role played by ICT solutions in the internationalization process.

- Preparation of International Digital Plans, with which Andalusian companies will be provided with the necessary tools to prepare their own International Digital Plan and quantify it economically for later use in online promotion and marketing activities both nationally and internationally. For this, personalized advisory services will be offered, provided by consultants specialized in ICT, for the acquisition of a technological vision of the company and the market, and develop a strategic plan for promotion and international communication through ICT.

Indicators

Indicator name	Kind	Unit	Fountain
number of companies impacted by the internationalization program through ICT	Execution	Number	Own
Participating companies that are going to undertake an internationalization process	Outcome	Percentage	Own

axis 3: Driving digital transformation

line of action	aid for digital transformation	Code	I11
performance	Financial aid for the digital transformation of SMEs	Code	I11.1

goals

O1: Make Andalusian companies aware of the importance of digital transformation

O3: Promote the digital transformation of companies as an engine of economic growth

objective group

Digitization level:	Everyone	Typology	SMEs	Sectors	Everyone
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Description

The aim of this program is to facilitate the introduction of ICT solutions in Andalusian companies, breaking down price barriers and the lack of resources. To do this, they will be provided with a prior consulting service for the analysis, diagnosis and definition of a strategy for the implementation of ICT solutions, with the aim of making known the best solutions for the identified needs, as well as the best way to incorporate them. Likewise, financial support will be offered for the purchase of the recommended tools. Projects in the following ICT areas would be financed, among others:

- Electronic commerce services: to develop the capacity of companies to boost their business through new online sales channels. Personalized advisory services are financed, as well as the implementation of solutions and services

e-commerce technology.

- Digital marketing services: to define and implement communication, advertising and marketing strategies on the Internet. It includes personalized advice for the definition of a digital marketing plan, as well as the implementation of ICT services and solutions.
- Business process digitization services: for the incorporation of ICT solutions that affect the improvement of the different areas and processes of the company, such as production organization, relationships with supplier companies, marketing and sales, logistics, distribution, human resources management.

Indicators

Indicator name	Kind	Unit	Fountain
number of companies benefiting from financial aid for digital transformation	Execution	Number	Own
Investment in ICT induced through financial aid for digital transformation	Outcome	Number	Own

axis 3: Driving digital transformation

line of action	aid for digital transformation	Code	I11
performance	Initiative to improve digital security in SMEs	Code	I11.2

goals

O3: Promote the digital transformation of companies as an engine of economic growth

objective group

Digitization level:	Growth and optimization	Typology	SMEs	Sectors	Everyone
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Description

The analysis carried out for the preparation of this Plan shows that only 10% of Andalusian micro-SMEs have a defined digital security policy. In general, the Andalusian company does not approach security from a strategic point of view but in a reactive way, attending to specific incidents. However, when approaching the digital transformation process, it is essential to establish a digital security policy that allows protecting the data of the company and its customers, and that contributes to reinforcing trust in digital media for conducting business transactions.

The aim of this program is to promote the improvement of digital security management in SMEs. To do this, through a program of aid, they will be provided access to consulting services for the definition of the company's digital security policy, the legal adaptation and regulatory framework, risk analysis and technical security reviews, as well such as the implementation of preventive and corrective measures and the associated training. Likewise, the implementation and certification of ISO 27001 information security management systems will be encouraged.

Indicators

Indicator name	Kind	Unit	Fountain
number of companies benefiting from aid	Execution	Number	Own
Induced digital security investment	Outcome	Number	Own

axis 3: Driving digital transformation

line of action	aid for digital transformation	Code	I11
performance	Virtual office of aid for digital transformation	Code	I11.3

goals

O3: Promote the digital transformation of companies as an engine of economic growth

objective group

Digitization level	Everyone	Typology	SMEs	Sectors	Everyone
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Description

One of the main barriers to the implementation of technology in companies, according to the results of the study carried out, is the high cost of these investments. To overcome this barrier, different administrations make available to companies different programs to support digital transformation, innovation and incorporation of technology.

However, there is no full use by companies of these resources. For this reason, the creation of an advisory office is proposed to help companies find financing for their digital transformation projects. In order to make it easier for companies to access these grants, this office will be in charge of gathering information from existing programs and offering it clearly and directly through a single access point.

It will be necessary to study the different programs from the point of view of the business community to be able to offer classified information according to the scope of the projects to be tackled, the business sector, the amounts of aid, etc. and analyze the processing processes to be able to explain in a simple way how and where to submit applications for participation in these programs.

In a complementary way, training and advice will be offered to other intermediate bodies (CADEs, SAE intermediation agents, IAM technicians, mentors of incubation programs, municipal technical staff ...) so that they can adequately channel business projects for digital transformation. that may reach them in the development of their functions.

Indicators

Indicator name	Kind	Unit	Fountain
Number of companies seeking help through the portal	Execution	Number	Own
Number of accesses to aid processors through the portal	Outcome	Number	Own

