

SODIMA

Social Dialogue for the Future of Manufacturing



Digitalization, skills and work organization in Italy, Slovenia and Spain

A Policy Review

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SoDiMa – Social Dialogue for the future of Manufacturing

Digitalization and automation in the manufacturing sector are among the most important challenges for the social partners representing companies and workers. Trade unions and employers' associations are facing today a difficult and rapid transition (due to Internet of Things, Big Data, Collaborative Robotics, 3D Printing, Artificial Intelligence) which must be governed so that it does not generate the loss of millions of jobs, as several studies have predicted.

The objective of the parties must be to reconcile the protection of work with that of greater competitiveness and productivity for companies. This is why new skills, training and work organization are as fundamental as urgent aspects to deal with. Yet these are elements that cannot be achieved unilaterally by any of the parties involved.

For this reason, the SoDiMa project sets out to put social dialogue at the center of the transition towards the manufacture of the future and wants to do it right at the European level, by strengthening the Sectoral Social Dialogue Committee on Metal Industry answering to the challenges of the EU document. A new start for social dialogue, its activities and its visibility with new and innovative results and activities. The reinforcement of the Committee and the involvement of countries with different maturation levels of digital manufacturing will favor the exchange of good practices and the development of guidelines that can help individual states to increase both business innovation levels and workers' skills.

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Chapter 1. Introduction

This policy review report is one of the outputs of the SoDiMa Project, aimed to explore the current landscape of Industry 4.0 and enabling skills dynamics in Italy, Slovenia and Spain.

The review is based on the results of a desk research mapping exercise. With reference to recent developments in relevant national legal, institutional and collective bargaining reference frameworks, the information gathered through the analysis of documentary sources (i.e. institutional documents, reports and repositories) has been complemented by direct inputs from Project's partners.

The report takes into account also measures introduced as a response to the Covid-19 pandemic and impacting both the industrial sector as whole and the manufacturing and metalworking branches.

In general terms, the review adopts a national-level perspective, while illustrates also regional policies, where considered particularly significant with reference to the topics covered by the Project.

The goal of this report is to identify and present all the main initiatives both already under way and about to be launched concerning the issues involved in the process of transition to Industry 4.0 in relation to work, skills and social dialogue. For each country, a brief overview of national performances in the field of human capital development and digital skills is drawn on the basis of latest available DESI index data¹ and in accordance with the main research fields investigated in the context of the Project.

The exercise of policy review and mapping conducted and presented in this report wants to be a useful tool for all stakeholders (institutional, social partners and from the private sector) of Italy, Slovenia and Spain involved in the Industry paradigm 4.0 and innovation processes with specific reference to the metalworking sector, thus, where available in open access format, resources linked to the policies investigated have been included as hypertextual web links.

¹Source of data included in the present report ("Context indicators" sections): European Commission (2020), Commission Staff Working Document, Digital Economy and Society Index (DESI) 2020, SWD(2020) 111 final.

Chapter 2. Policy Review – Italy

The Italian policy review report addresses the following key topics which have been selected and analysed by Federmeccanica:

- ITALIA 2025
- BUDGET LAW 2021
- SPECIFIC PROVISIONS FOR THE PANDEMIC EMERGENCY & COVID-19: A PROTOCOL FOR HEALTH AND SAFETY
- NATIONAL RECOVERY AND RESILIENCE PLAN (PNRR) & CONFINDUSTRIA'S PROJECTS ON THE PNRR
- COLLECTIVE BARGAINING - METALWORKING INDUSTRY
- PACT FOR WORK AND CLIMATE – EMILIA ROMAGNA REGION EXPERIENCE

Context indicators

Italy ranks 25th out of 28 EU Member States in the 2020 edition of the Digital Economy and Society Index (DESI). Data prior to the pandemic shows that the country has a good ranking in terms of 5G preparedness, as all the pioneer bands were assigned and the first commercial services were launched. However, there are significant gaps as regards Human Capital. Compared to the EU average, Italy records very low levels of basic and advanced digital skills. In 2019, Italy dropped two places and in 2020 ranked last in the EU on the Human Capital dimension. Only 42% of people aged 16-74 years have at least basic digital skills (58% in the EU) and only 22% have above basic digital skills (33% in the EU). Although the percentage of ICT specialists in Italy increased to reach 2.8% of total employment, it is still below the EU average (3.9%). Italy's share of graduates holding an ICT degree remained stable compared to DESI 2019 (on the basis of 2016 data). Only 1% of Italian graduates are ICT graduates (the lowest in the EU), while female ICT specialists are 1% of all female employees (slightly below the EU average of 1.4%).

Italia 2025

In 2019, there was a heightened focus at political level on boosting the digitisation of the Italian economy and society. The year was marked by the launch of new initiatives and notably the establishment of a new Ministry for Technological Innovation and Digitisation, acting as coordinator. In December 2019, the ministry presented the strategy "[Italia 2025](#)", a five-

year plan that puts digitisation and innovation at the centre of a 'process for the structural and radical transformation of the country'.

The strategy is based on three main challenges, identified by the [Sustainable Development Goals](#) (SDGs) of the United Nations.

The three challenges are:

- A digital society, where services put citizens and businesses at the centre, as well as being efficient, easy to use and to integrate. A goal to make digitalization an engine of development for the whole country and rethink the relationship between the State and people.
- An innovation goal that focuses on applied research and development, encourages the proliferation of ideas, which become Italian hi-tech companies and support the traditional production chains of our country.
- A sustainable and inclusive development, where innovation is at the service of people, communities, and territories, respecting environmental sustainability.

Within the strategy these three challenges have been broken down into twenty actions of innovation and digitalization on which, as the Department for Digital Transformation linked to the Minister for Technological Innovation and digital transition, we are working together with other Ministries, central and local governments, public bodies, agencies, private companies, and ordinary citizens. 'A process that involves the entire ecosystem, for a radical, structural transformation of our country'. Shortly after the launch of the initiative, over 60 stakeholders had already joined the 'Digital Republic', including businesses, municipalities and other public entities, and associations. In the context of the 'Digital Republic', Italian authorities set up a national [Digital Skills and Job Coalition](#) which aims to increase opportunities for people to find a job and to allow everyone to be ready for the digital era. With this initiative, the EU is now home to 24 National Coalitions for digital skills and jobs.

Budget Law 2021

The [Budget Law 2021](#) was approved last December 2020.

Among other, this Budget Law involves the following measures in terms of work and digitalization:

- Social Shock absorbers (Covid-19 Short time work scheme) and dismissals
With regard to the COVID short time work scheme, the extension for a further 12 weeks has been confirmed without the payment of the additional contribution; this is accompanied by the block of dismissals until June 30, 2021.

In addition, a fund of 500 million euros - aimed at the implementation of a reform of the system of social shock absorbers - has been established.

- **Fixed-term employment contracts**
Save for the 24 months maximum duration limit provided by the law, it is possible to renew or ex-tend fixed-term employment contracts without mentioning specific business related reasons, once and for a maximum period of 12 months, until 31 March 2021.
- **Piano Impresa 4.0 - Plan “Impresa 4.0”**
The tax credit for investments in capital goods and 4.0 assets has been extended by 2 years, with some strengthening interventions. At the same time, the tax credit for investments in research and development, as well as for innovation and green projects, have been extended and enhanced.
- **Fondo Impresa Femminile - Women’s Enterprise Fund**
A fund of 20 million euros for the year 2021 and 2022 - aimed at supporting and promoting the start-up and strengthening of female entrepreneurship, as well as the dissemination of the values of entrepreneurship and work among the female population - has been established.

Specific provisions for the pandemic emergency

[Wage guarantee funds/short time work scheme \(“CIGO”, “FIS” and “CIGD”\)](#)

Employers who suspended or reduced their business activity can apply for 9 weeks of wage guarantee funds, which can be extended for an additional 9 weeks (for a maximum total of 18 weeks), once the first 9 weeks period has been fully used. Initially, the maximum 18 weeks have to be used between 13 July and 31 December 2020, but as the health emergency continued, the period has been extended until 31 March 2021.

[Ban on terminations](#)

Individual and collective terminations for business related reasons are prohibited when an employer has not entirely used the wage guarantee fund or the exemption from social security contributions mentioned above.

Instead, terminations are not prohibited in the following cases:

- total closure of the business activity;
- entering into a collective agreement with unions aimed at incentivizing termination of the employment relationship (terminations are

- limited to employees who formally adhere to the collective agreement).
- bankruptcy without temporary continuation of the business.

Due to the ongoing COVID-19 pandemic, the government has extended the ban on individual and collective redundancies due to organisational or economic reasons until 31st March 2021. Terminations are limited to employees who formally adhere to the collective agreement.

Further, there are no limitations in relation to the individual dismissal of executives.

[Law Decree 137/2020](#), the so-called “Ristori Decree”, came into force on October 29 2020.

The protective measures introduced by the previous decrees aimed at reducing the infection, including use of masks, physical distancing and hand washing, are confirmed. Use of remote working is also strongly recommended. In addition, the differentiation of workers' entry times is also recommended. The suspension of all conference or congress activities is also confirmed, with the exception of those carried out remotely.

Suspension of dismissals

The suspension of dismissals for organizational or economic reasons, both individual and collective, is extended until 30 June 2021 with the sole exception of the cases already provided by Law Decree 104/2020 (dismissals motivated by the definitive cessation of the company's activities or bankruptcy, agreement with Unions providing economic incentives to terminate the employment relationship, change of contractor).

In addition, there is an extension for a longer period (until 31 October 2021) for small tertiary enterprises.

CIG Covid-19 extension, social contribution suspension and deferral of related payment

Another measure extended in support of workers is the Covid-19 redundancy fund, introduced by the Cura Italia decree and then renewed, through the Rilancio, Agosto and Ristori decrees, and finally for a further 12 weeks provided for by the 2021 Budget Law and usable until 31 March 2021.

The access to CIG Covid-19 is free of charge for companies (i) affected by the restrictions provided for by the Prime Ministerial Decree of 24.10.2020, (ii) started after 1.1.2019 and (iii) that have suffered losses in turnover of more than 20% (first quarter of 2020 compared to the same period of 2019). All the other companies can apply to CIG Covid-19 by paying a contribution of 9% (in the event of a reduction in turnover of less than 20%) or 18% (in the event of no reduction in turnover) of the overall salary that would have been due to the employees for the hours not worked during the suspension or reduction of work.

Companies not using the CIG Covid-19 can apply for a 4 weeks-period of social contribution exemption, until 31 January 2021, within the limits of the hours of wage supplementation already used in June 2020, excluding INAIL premiums and contributions. The measure constitutes “state aid” and is subject to authorization by the European Commission.

As the health emergency continued, the period of possible use of the CIG Covid-19 has been extended until 31 March 2021.

Remote working and absence from work in case of school quarantine

Employees may perform their activity remotely during the period of mandatory quarantine for school contacts or suspension of teaching activities at school of their cohabiting child up to the age of 16.

The possibility of taking extraordinary parental leave for employees during the period of mandatory quarantine of the cohabiting child is extended to cases where the suspension of teaching activities at school has been provided for the cohabiting child under 14 years of age.

Employees who are parents of children between 14 and 16 years of age have the right to a parental leave without payment of salary or indemnity, nor social contributions with a protection from dismissal and the right to maintain the job for the whole duration.

New Skills Fund

One of the decree-laws adopted to address the health emergency established the New Skills Fund (“Fondo Nuove Competenze”), which is intended for training employees of companies that enter into, by 30 June 2021, a collective agreement to reshuffle working hours due to changed organisational and production needs of the company, or to favour out-placement paths for workers, whereby part of the working time is allocated to training paths.

The Fund is set up with a budget of EUR 730 million (EUR 430 million for 2020 and EUR 300 million for 2021).

The training plans can also be financed by the joint interprofessional funds, as well as by the Fund for Training and Income Support for Workers.

Covid-19: a protocol for health and safety

The Italian Government and the National Trade Unions signed a [Protocol that calls for new Covid-19 related safety measures to be adopted at the workplace](#).

Employers have to comply with all health and safety measures called for by two protocols as well as in specific protocols applicable to the industrial sector they belong to.

Failure to comply with the contents of the national or regional protocols and guidelines causes the suspension of the business until the safety conditions are restored.

The protocol established some kind of collaboration between employers and works councils/ workers' representative for health and safety aspects: in fact, a Committee for safety aspects is set up in each company between employer, internal works councils members and the workers' representative to monitor the application of the rules contained in the Protocol and to better define these measures in relation to the specific company's context.

National recovery and resilience plan (PNRR)

On September 2020, the Government published the guidelines of the [National Recovery and Resilience Plan \(PNRR\)](#) aimed at qualifying for the 209 billion euros that Italy is set to get from the European Unions' post Covid Recovery Fund.

It involves three strategic lines: a) modernizing the country; b) ecological transition; c) social inclusion.

To achieve these objectives, the Government proposes nine lines of action:

1. a completely digital country;
2. a country with secure and efficient infrastructures;
3. a greener and more sustainable country;
4. a more competitive and resilient economic fabric;
5. an integrated plan to support production chains;
6. a Public Administration at the service of citizens and businesses;
7. greater investment in education, training and research;
8. a fairer and more inclusive Italy, at social, territorial and gender level;
9. a more modern and efficient legal system.

These relate to six missions that the projects that will be the subject of the PNRR must make it possible to achieve:

1. digitalization, innovation and growth;
2. ecological transition;
3. transport infrastructure;
4. education, training, research and culture;
5. social cohesion and gender equality;
6. health.

In support of these missions and investments foreseen in the PNRR the Government indicates its intention to carry out structural reforms in three main areas: 1) Public administration; 2) Taxation; 3) Justice.

Also in the labour market, the Government seems willing to intervene, promoting decentralized bargaining and strengthening welfare tax incentives. The will to introduce the minimum wage is also indicated.

Confindustria's projects on the PNRR

For Confindustria, the PNRR represents an unmissable opportunity to accelerate projects and reforms that must necessarily be part of a more comprehensive, medium-long term strategy of development, coherent with the European framework, aimed at ensuring inclusive and sustainable economic and social growth.

To this end, Confindustria is working on three implementation projects in the following areas:

1. human capital and skills
2. economy of the sea
3. transition and environmental sustainability

With reference to human capital, Confindustria focused on the importance of the educational offer in bridging the qualitative and quantitative gaps in terms of training. After analysing the causes of the overall low level of human capital in Italy (among the lowest in the OECD countries), Confindustria identified a modernisation of education policies as a priority, acting with reference to three levels:

1. middle schools: new school building models and 'STEAM SPACE';
2. high schools: teachers 4.0 and the alternance-apprenticeship chain;
3. vocational education and training at tertiary level: "ITS – Istituti Tecnici Superiori" (Higher Technical Institute) and university 4.0.

The three projects refer to the three key levels of the Italian education system that need to be affected:

- first of all, middle school, where boys and girls make the decisive choices about their future educational pathways. It is necessary to accompany these choices in appropriate spaces, where students can get informations and testimonials, but also where they can have practical learning experiences. The project proposal, the investment in the creation of STEAM Spaces in all Italian secondary schools, aims to concretely guarantee the effectiveness of a national reform of school guidance and 4.0 teacher training, which Italy still lacks.
- the second level is that of high school, where the diffusion of the school-work alternance pathways methodology is still low, although it has proved to be an effective tool in combating youth unemployment and raising the overall quality of human capital. According to the Confindustria project, the "alternance" methodology can be part of a chain that ends with a first-level (or dual) apprenticeship contract, which has been identified as the main tool for integrating young people into the labour market. The project proposal aims to spread the alternance-apprenticeship chain within schools through a specific reform;

- third and last level is the post-diploma: in Italy there is no professional tertiary level, alternative (but not opposed) to university, as it is in most industrialised countries of the world. This lack is the main cause of the strong mismatch between demand and supply of skills, especially technical ones, which limits the development and dissemination of 4.0 skills in Italian companies. Confindustria's project proposal aims to develop the "ITS" (which are the embryo of this possible professionalising tertiary sector) through an increase in laboratories and infrastructure; secondly, it identifies the characteristics and actions for an overall reform of the Italian professionalising post-diploma system involving ITS and universities.

Collective Bargaining – Metalworking industry

On February 5, 2021, Federmeccanica and FIOM, FIM, and UILM reached an agreement for the renewal of the national collective agreement in the metal industry, at the end of a negotiation process that lasted more than one year.

The agreement - expired on December 31, 2019 - runs from the date of stipulation to June 30, 2024.

The main changes introduced are as follows:

REFORM OF THE JOB LEVEL CLASSIFICATION SYSTEM DATING BACK TO 1973

An innovative reform of the job level classification system, which recognizes the technological and organizational evolution of professional figures. Workers are classified in a single classification system with nine levels of classification included in four areas of "role responsibility":

1. Operational Roles
2. Specific Technical Roles
3. Specialistic and Management Roles
4. Change Management and Innovation Roles.

It marks the transition from task to role: from "What you do" to "How you do it" and "How you can do it better".

The new declarations, based on six development/professionalism criteria, will be effective from June 1, 2021. The transition to the new classification levels will take place by means of an automatic conversion table without any additional cost for companies.

WAGE GUARANTEES AND RECOGNITION OF THE VALUE OF WORK

The agreement provides for an average increase in gross pay of €112 for the new C3 level (formerly 5th category), which will be paid in four instalments distributed as follows: €25 in June 2021, €25 in June 2022, €27 in June 2023, and €35 in June 2024. These amounts include cost-of-living

reevaluation and enhancement of the job level classification system reform. There is no one-off payment for the prior period.

WELFARE

Increase in the company contribution (from the current 2% to 2.2% of the minimum wages) to the Cometa Fund for new members under 35 from 2022. As regards supplementary health care, metalworkers' pensioners will be able to join it at their full expense.

QUALITY TRAINING

The system remains substantially unchanged, with the introduction of some mechanisms to encourage the use of the hours provided as subjective right and the provision of services (e.g. online learning pills, block chain to record training) for training financed with a one-off company contribution of €1.5 per employee to be paid in July 2021.

Particular attention has been paid to “digital literacy”.

SAFETY CULTURE

Below the main objectives aimed at promoting a culture of safety in the workplace are listed:

1. Promote training breaks and share virtuous experiences;
2. Focus on near misses by spreading good practices;
3. Analyze the root causes of risks for accident prevention.

OTHER ISSUES

A working joint committee will be set up to deal with the complex issue of remote working, given the widespread use of this method of working following the pandemic. Finally, measures to protect women who are victims of violence have been introduced.

Pact for work and climate – Emilia Romagna region experience

In December 2020, the [Emilia-Romagna Region signed the “Pact for Work and Climate” together with 55 organisations, including business associations, trade unions, local authorities and universities.](#)

This Pact is a political-administrative document that contains the strategic positioning of the territory for the future and is based on the ONU Agenda 2030.

All the actors of the economic and social life of the territory have gathered around the same table, with the aim of contributing to the achievement of a common goal: a pact that keeps together Work and Climate. A shared objective to be achieved is the relaunch and the development of Emilia-Romagna based on environmental, economic and social sustainability: complete decarbonisation by 2050 and 100% of renewable energies by 2035; 3% of the regional GDP in research and Neet under 10%.

In detail, the Pact envisages 3 investment guidelines.

First and foremost, digital technology, meaning not only data transfer infrastructure, but also robotics, sensors, artificial intelligence, 5G, ICT and new technologies in general. In Bologna, for example, the Technopole of the Bigs is being set up, where the European Centre's supercomputer for medium-term weather forecasts is being assembled; another two powerful computers will be added for climate studies and data processing to support research centres, businesses and local authorities. In this context, the aim is to govern technology to avoid the risk of creating a polarised market.

The other cornerstone of the strategy is sustainability. We need to be able to manage the green change in supply chains by guiding the transition of manufacturing. If, for example, the transition from an internal combustion engine to an electric engine is not managed, we risk losing businesses and jobs, with unimaginable social tensions. The issue of sustainability is obviously linked to the issue of energy. Today we must govern the transition towards renewable sources and design new places and spaces, new mobility and new production processes accordingly. In this sense, the Pact's objectives include 100% renewable energy by 2035 and carbon neutrality by 2050. In order to achieve this, the energy fund will be strengthened and investments in production will be accompanied by investments in research. The Port of Ravenna, for example, will become a green energy and circular economy hub for investment and innovation. The intention is to explore all possible resources: photovoltaics, hydroelectricity, wind power, biomass, etc.

Finally, the key component of the Pact for Work and Climate strategy, which cuts across the stated objectives, is a major new deal in knowledge. In order to make any change, a big investment in knowledge and skills is needed. The intention is to invest in continuous training to retrain workers and direct young people towards technical and scientific culture. In order to reduce the mismatch between supply and demand, which is in danger of widening after Covid, a pact with the business system is necessary. For this reason, the pact also aims to invest in creating bridges between universities and technical schools, so that no one is lost, but each young person is guided according to his or her abilities.

Chapter 3.

Policy Review – Slovenia

For the Slovenian policy review report, the following key topics have been selected and analysed by ADAPT. In more detail this section of the report is firstly devoted to the illustration of policies and strategies in the field of digitalisation and development and to the presentation of recent measures adopted in the context of the COVID-19 health emergency and concerning both businesses and workers.

- SMART SPECIALISATION STRATEGY OF THE REPUBLIC OF SLOVENIA & STRATEGIC RESEARCH AND INNOVATION PARTNERSHIPS (SRIPS)
- SLOVENIA DIGITAL COALITION
- SLOVENIAN DEVELOPMENT STRATEGY 2030
- DIGITAL SKILLS AND CURRICULA
- SPECIFIC PROVISIONS FOR THE PANDEMIC EMERGENCY

Context indicators

In the human capital dimension, Slovenia remains in 15th among the 28 EU Member States. Basic digital skills levels remain below the EU average. Only 55% of people between the ages of 16 and 74 years have at least basic digital skills (58% in the EU as a whole). The proportion of ICT specialists is slightly above the EU average (4% compared to 3.9% in the EU). ICT graduates in Slovenia account for 3.7% of the total. However, female STEM graduates (20.5 individuals per 1000 inhabitants in 2016) in Slovenia outnumber their male peers (13.1). [The proportion of female ICT specialists as a percentage of total female employment in 2017 \(1.3%\) was below that of their male counterparts \(5.9%\).](#)

Smart specialisation strategy of the Republic of Slovenia & strategic research and innovation partnerships (SRIPS)

On a national level, Slovenia is engaging in Industry 4.0 in the framework of the [Slovenia's Smart Specialisation Strategy \(S4\)](#). S4 covers a broad range of development policies related to innovation, focusing on the promotion of research and innovation, industrial policy, entrepreneurship, education system, rural development, and international relations. The strategic objectives of S4, with innovation being ranked at the top of political priorities, are:

1. Developing and positioning Slovenia as an attractive innovative economy, with a focus on the development of medium and high-tech and comprehensive solutions for niche areas where Slovenia has key capacities and know-how to compete in the global market.
2. Establishing dynamic, strategically guided, responsive, highly advanced, globally up-to-date and connected research, innovative and entrepreneurial ecosystem.

One of the defined S4 priority areas is Industry 4.0, focusing on (distributed) production management and control, quality assurance, regulation and data processing, intralogistics, automation, smart machines and equipment, mechatronic systems, actuators and smart sensors. Technologies to be used under Industry 4.0 priority area are cross-cutting and will be applied in selected Slovenian key economic sectors: basic and fabricated metal products, electronic and electrical engineering industry, ICT, mechanical engineering, and automotive industry. During the entrepreneurial discovery process for Industry 4.0 priority area, 16 initiatives pertaining to the area of Factories of the Future were prepared with an estimated investment value of €950 million.

On the basis of the Slovenian Smart Specialisation Strategy (S4) the cooperation between Slovenian innovation stakeholders that operate in specific priority areas has significantly intensified. The Entrepreneurial Discovery Process (EDP), which included several dedicated events (e. g. workshops, conferences, consultations) and even a public call for expression of interests, was framed not only as a priority setting exercise but also as a discussion amongst a wide range of stakeholders (companies, research organisations, start-up community, social entrepreneurs, artists, innovators, scholars, students, etc.) to shape the governance structure of the S4. The inclusiveness and interconnectedness of the EDP, together with the government, acting as facilitator, conceptual leader and as a mediator amongst stakeholders, were essential elements. Through the EDP, the stakeholders operating in a specific S4 priority area have thus recognised the need for comprehensive and systematic cooperation amongst themselves and with the government.

Consequently, in 2016, the government launched a public call for the establishment of nine [Strategic Research and Innovation Partnerships \(SRIPs\)](#). SRIPs are designed as long-term quadruple helix bottom-up partnerships, which bring together (1) dynamic companies (especially SMEs), (2) knowledge institutions (e. g. research institutes and universities), (3) facilitators, innovation users and NGOs and (4) the State and municipalities that operate in a specific S4 priority domain. Their main purpose is to pool the investment and intellectual potential of Slovenian stakeholders, and help stakeholders set up a comprehensive innovation ecosystem with the aim of entering global markets and improving the position in S4 priority domains. The cooperation between stakeholders in a certain SRIP is based on the coordination of their R&D activities, capacity sharing, especially

when it comes to market foresight exercises. It is also based on joint development of human resources, exchange of knowledge and experiences, on networking and collective interest abroad, as well as in relation to the policymaking authorities. Between 2016 and 2019 more than 780 stakeholders (83 % of which are enterprises, SMEs accounting for 79 % of these) joined the SRIPs and their activities have already resulted in the implementation of new demo/pilot projects as well as in the development of joint innovative products, services and solutions/processes, among which it is worth mentioning the “SRIP Factories of the Future”. The SRIP Factories of the Future has been the driving force behind the GOSTOP (Building Blocks, Tools and Systems for the Factories of Future) demo project, which includes the development of new products and technologies with the leading role of agile SMEs and on the other hand the development of common concept of Smart Factory, which will lead to the set up uniform integrated systems to be used by the big production companies in order to optimise their production processes and to develop new high value-added products. With the establishment of SRIPs as a cornerstone of the S4 implementation, Slovenia has managed to significantly intensify cooperation among innovation stakeholders, with tangible results. Additionally, as the SRIPs represent the government’s partner and counterpart in the discussion of matters relating to development policy, we’ve also managed to develop a comprehensive and inclusive S4 governance structure, which enables us to systematically include a wide range of stakeholders also in the implementation of the S4 in the sense of an on-going Entrepreneurial Discovery Process.

Slovenia digital coalition

Policy background: in March 2016, the Slovenian government adopted Digital Slovenia 2020 – the country’s Development Strategy for information society until 2020. The strategy aimed at speeding up the country’s transformation towards a digital society and making Slovenia a reference for innovative digital solutions. This strategy laid down Slovenia’s key strategic development goals in this area and merges the Next-Generation Broadband Network Development Plan until 2020 and the Cyber Security Strategy into a unified strategic framework. Along with the Research and Innovation Strategy of Slovenia and “Slovenian Industrial Policy” the initiative supports the creation of an innovative, knowledge-based society. These strategies are at the core of economic development projects which are aligned with the priority areas of the Strategy of Smart Specialisation. The Slovenian Digital Coalition was formed to ensure the successful implementation of the Digital Slovenia 2020 strategic framework and to speed up the digital transformation of Slovenia. No dedicated public funds have been allocated to finance the activities of the Digital Coalition. While the platform is free of charge operating on a voluntary basis, the members

provide their expertise, participate in the Management Board and provide their resources (e.g. workspace) for free.

The [Digital Coalition](#) was established in November 2016 at the 11th Slovenian Business Summit as a coordinating body with a view to effectively implement the strategy Digital Slovenia 2020 – A Strategy for the Development of Information Society by 2020 and other sector specific economic development strategies. The Slovenian Digital Coalition aimed at bringing together key stakeholders from trade, industry, research and development, civil society and the public sector. The Coalition served as a coordinated and consultative non-discriminatory open forum with the objective to foster the development of the digital economy, the creation of digital jobs as well as the exploitation of opportunities closely linked to the development of ICT and the internet. The Coalition was expected to be operative until 2020. The Slovenian Digital Coalition (digitalna.si) is focused on attaining cross-sector multiplier impact that accelerates the development of the digital society and exploits opportunities for development of ICT and the internet. This, to entail a carefully coordinated digital transformation of Slovenia with the objectives to:

- accelerate the digital transformation of Slovenia;
- coordinate development policies and measures for capacity building among stakeholders in the digitalisation of Slovenia;
- increase economic performance and employment opportunities;
- achieve synergistic and cross-sector multiplier development impact;
- greater uptake of ICT solutions, services and infrastructure, which will be based on open, secure, private, non-discriminatory access and will contribute to reducing environmental impacts;
- improve digital literacy and digital competence across target populations according to identified gaps;
- improve e-skills, e-inclusion and the overall quality of life for the population;
- better integrate ICT in education and lifelong learning for inclusion in the digital society;
- develop digital content and services in Slovenian, and for language technologies and resources in Slovenian;
- increased uptake of e-services (e-government, e-banking, e-health ...) and accelerated deployment of ICT within the public sector.

The main partners of the Coalition are: the Ministry of Public Administration Association of Municipalities of Slovenia, the Jožef Stefan Institute and the OZS (Chamber of Crafts and Small Business of Slovenia).

One of the main goals of the Coalition is the development of a career platform forecasting long-term digital skill requirements, identifying gaps in digital skills and the bridging with prompt drafting of tailor-made programmes that ensure the development of specific digital skills.

Slovenian development strategy 2030

Adopted by the Government of the Republic of Slovenia on 7 December 2017 and following the previous 2020 version, represents Slovenia's core development framework as set out in the Vision of Slovenia 2050 (an ambitious scale of inclusive and adaptive approach to humancentric futures design), and a review of the current situation and global trends and challenges. The decision to draft a new long-term national development strategy was influenced not only by the changed conditions, but also by the fact that Slovenia's existing strategic development framework, which was set out in the Slovenian Development Strategy 2005–2013, was already expired.

The [Slovenian Development Strategy 2030](#), therefore, also includes sustainable development goals in order to implement the global development plan set out in the UN's 2030 Sustainable Development Agenda. The first section of the development strategy presents an overview of global changes, trends and forecasts, and an analysis of Slovenia's development baselines. The second section sets out the primary objective of the development of Slovenia, with strategic orientations for achieving it. The five strategic orientations for achieving the primary objective are foreseen to be implemented through operations in various interconnected and interdependent areas, which are reflected in the Strategy's 12 development goals. The third section focuses on Slovenia's development goals: key areas of operation and performance indicators are defined for each objective to monitor the achieving of the strategic orientations. The following goals are set up in the strategy:

1. Healthy and active life;
2. Knowledge and skills for a high quality of life for all;
3. Decent life for all;
4. Culture and language as main factors of national identity;
5. Economic stability;
6. Competitive and socially responsible entrepreneurial and research sector;
7. Inclusive labour market and high-quality jobs;
8. Low-carbon circular economy;
9. Sustainable natural resource management;
10. Trustworthy legal system;
11. Safe and globally responsible Slovenia;
12. Effective governance and high quality public service.

The implementation of the Strategy is based on medium-term planning, tied to the medium-term fiscal framework and the establishment of a system of implementing documents which have to be codified in and linked to the Public Finance Act. In order to implement Slovenia's development goals, a four-year national development policy programme (NDPP) and

a medium-term fiscal strategy have been drawn up, and is scheduled to be extended annually. The NDPP includes measures and activities based on the goals set out in this Strategy and the corresponding horizontal and sectoral strategic documents. Later, using the OECD's framework for assessing the impacts of the individual scenarios or agreed measures, the strategy foresees to monitor the achieving of the Strategy's goals and the orientations of development policy up to 2030 or 2050. The framework is composed of four equal and interconnected modules: a basic macroeconomic model, an environmental/energy model, a module for assessing the effects of healthcare measures and a module for assessing the effects of income inequality.

Digital skills and curricula

As for the DESI index, in 2019, there was no significant progress in broadening the scope digital skills in the school curricula of primary and secondary schools. The Ministry for Education, Research and Sport acknowledges the need to increase the teaching of digital content in schools, but points out that reforming curricula is a complex and lengthy process. According to the Slovenian authorities a new Digital Education Action Plan 2021–2027 is expected to be prepared at the beginning of 2021.

At tertiary level, the scope of digital skills teaching has improved. The engineering and informatics programmes at the Universities of Ljubljana and Maribor now provide digital skills training. The offer has recently been complemented with informatics programmes at Primorska and Novo Mesto Universities. The Faculty of Engineering and Computing at Maribor and the Faculty for Informatics at Novo Mesto cooperate closely with business and provide students with expertise that can be used on the labour market. As the labour market tightens, labour shortages are also worsening because of skills mismatches and insufficient digital literacy, indicating a clear need for up-skilling and reskilling. While vocational training in digital skills as an active labour market measure remains marginal, [the competence centres for human resource development run successful upskilling programmes](#). 132 training projects, though not exclusively in the area of digital skills, were finalised in 2019 bringing together students and mentors from the educational and business sectors.

The Chamber of Commerce has been running a [Digital Academy](#) since 2017. The Academy is targeting SMEs in the electrical engineering sector. Industry associations assess the measure as useful in training digital transformation managers, and by 2019, it had achieved a high uptake. This is complemented by the efforts of the Digital Coalition (see above): several Strategic Research and Innovation Partnerships (SRIPs) and the [Digital Innovation Hubs](#) (DIH) offer on the job training and awareness - raising activities for the management of member companies.

Specific provisions for the pandemic emergency

Income support and job saving measures

Already on 20 March 2020, the first intervention measures were enacted and, at the time of writing (March 2021) eight COVID-19 laws have already entered into effect. With reference to the first three measures, the [Act on the Intervention Measuresas regards Wages and Contributions \(*Zakon o interventnih ukrepih na področju plač in prispevkov*\)](#) introduced one of the most important measures for the workers during the coronavirus epidemic, i.e. a partial reimbursement of wage compensation by the State for those workers who are unable to work due to the coronavirus measures, laid-off workers etc., with an estimated value of the State intervention of around 1 billion EUR (approx. 2.1% of the GDP). In addition, the so-called [First Anti-Coronavirus Package Act \(Act on the Intervention Measures to Mitigate the Consequences of the Communicable Disease SARS-CoV-2 \(COVID-19\) for Citizens and the Economy -*Zakon o interventnih ukrepih za zajezitev epidemije COVID-19 in omilitv njenih posledic za državljane in gospodarstvo*\)](#) entered into force on 11 April 2020 also with the retrospective effect of certain provisions granting the entitlement to different financial compensations as of 13 March 2020. The first package of measures mainly focused on the provision of rapid financial assistance to citizens and businesses to mitigate the negative consequences of the nearly total closing-down of the society due to the epidemic. The package has been estimated to around 3 billion Euros. The second comprehensive package of measures was announced already during the preparation of the first package. While the first one was focused on the immediate emergency support and rapid response to the most urgent needs, the second package is focused on the measures providing liquidity for the businesses and comprehensive financial support measures for the entire economy aimed at avoiding redundancies as much as possible and enabling closed-down companies to restart their activities. The so-called Second Anti-Coronavirus Act entered into force on 1 May 2020. Certain amendments to the First Anti-Coronavirus Act were enacted at the same time, as a correction of and response to the most criticised deficiencies of the first package. The second and third COVID-19 laws addressed specifically the tourist and hospitality sectors with tourist vouchers. Tourist agencies and organisers of sports events may issue vouchers instead of reimbursement for unrealised travels or events. Payment moratorium expires in 24 months. In order to revitalise the tourist sector, each permanent resident of Slovenia gets tourist vouchers (adults €200, minors €50), valid until 31 December 2020, to be spent on accommodation. The government estimates the cost of tourist vouchers at €345 million, while the multiplier effects are estimated to be €172 million.

Social partners' role in designing the measure and form of involvement

Up to 15 May 2020, social partners communicated with the government mostly by the written proposals. Negotiations between social partners were blocked because the new government, which came to power on 13 March 2020, had not appointed its members in the Economic and Social Council. On 20 April, trade unions protested against the exclusion of social partners in the preparation of emergency laws. They demanded the reactivation of the Economic and Social Council. The first meeting of the Economic and Social Council was held not before 15 May 2020. Since 15 May, the Council is involved in negotiations about next emergency laws. Both laws adopted many proposals of employer organisations. However, in their written comments on the third emergency law, four employers' organisations mention some solutions which were not adopted: a restriction on the raise of the minimum wage in January 2021, less complicated obtaining of permits for work at home after the epidemics, state compensation of rents etc.

Health and safety at work

National Institute of Public Health issued detailed sector-specific guidelines and recommendations for the employers during the coronavirus outbreak. Risk assessment has to take into account these new risks and adequate measures must be introduced by the employers. The Labour Inspectorate has been supervising whether health and safety measures were respected by the employers also as regards these new coronavirus related risks at work. Workers in hospitals, in health care sector, care workers in homes for the elderly, shop-assistants, cleaners etc., who have to work at their regular workplaces also during the coronavirus epidemic and are exposed to a higher risk of infection, were entitled to the wage supplement according to the existing labour legislation and collective agreements in force, up to a 100%, depending on the sector of activity. An allowance for performing hazardous work and for higher workloads during the coronavirus epidemic has also been introduced by the temporary intervention measures—this allowance being publicly funded (employers are exempt from paying the pension insurance contributions during the epidemic and this new allowance will be funded from the funds based on the contributions exemptions): workers in the private sector with their wage below the triple Slovenian gross minimum wage who are exposed to higher health risks or have higher workloads due to the coronavirus epidemic are entitled to an allowance in the amount of 200 Euros.

Experts for occupational medicine participated in drafting instructions for companies, issued on 19 March 2020 by the Minister of Health. They recommended work at a slower pace; rearrangement of workplaces which would guarantee a safe distance between persons; organization of coming to work and leaving in a way that would avoid large gatherings; ban on smoking pauses and breaks which would lead to the creation of groups

(Ministry of Health, Measures for health and safety at work during the epidemic). The Association of occupational, transport, and sports medicine also published their own more detailed instructions for companies at its website and offered consultancies on how practically implement safety measures in particular environments. It advised the temporary shutdown of the production process if appropriate safety measures could not be adopted.

The seventh COVID-19 law (ZIUPOPĐVE), adopted by the Parliament on 29 December 2020, provides all companies, self-employed and cooperatives with financial support for purchasing COVID-19 rapid tests. It is hoped that regular testing of employees will prevent the spread of infections at the workplace. Companies may receive €40 per employee that is supposedly sufficient for five tests.

Working from home

The COVID-19 pandemic has increased the number of workers working at home. According to the Labour Inspectorate, about 2,000 companies reported on workers who worked at home in the past. Since the outbreak of the epidemic, the number has increased to 10,000 companies (involving about 100,000 employees) (Chamber of Commerce and Industry of Slovenia - GZS, 11 June 2020). Teleworking will become a more frequent form of work in the future. During the epidemic, when employers had to send workers to work from home, they experienced the rigidity and ambiguities of the current regulation in this respect (MDDSZ, Instructions, 22 June 2020). Employers' organisations addressed the initiative for simplifying the regulation concerning the work at home to social partners and the government in particular (for instance, the Association of Employers Slovenia – ZDS, 15 May 2020). On 11 June, Chamber of Commerce and Industry of Slovenia (GZS) organised an informative webinar in which speakers (representatives of the employer organisation, ministry of labour, labour inspectorate, and private business) presented the state of the art and proposals of how to adapt regulations to new needs and necessities. The proposal presented at the webinar entails that the law would differentiate between the situation when the worker habitually works at home, and when the worker only occasionally works at home. In the first case, the current legislation would still apply; in the second situation, the employer would only have an obligation to set up rules on health and safety at work, but the worker would be responsible for taking them in the account. During the second wave of the epidemic, a new digital service was created to simplify the reporting of telework to the Labour Inspectorate via the website SPOT (eVem). Act on Additional Measures for Mitigation of Consequences COVID-19 (ZDUOP), adopted on 3 February 2021, extends the simplified reporting until 31 December 2021.

Employers' recommendations for the economic upturn for "Slovenia 5.0"

The [Chamber of Commerce and Industry of Slovenia \(GZS\)](#) issued recommendations for the economic upturn in the 'post-corona' period. In the introduction, the employer organisation assesses the four emergency laws for mitigation of the COVID-19 effects. Emergency measures have provided efficient support to people and protection of employment. Not so efficient, according to GZS, has been the financial help provided to companies: as they have problems to fulfil the conditions in order to obtain guarantees and deferred debt instalments, financial instruments are underused.

In more detail, the Chamber of Commerce and Industry of Slovenia (GZS) positively assessed the government's plans for investments which may foster economic growth in many activities, particularly in the construction. There are investments needs in the development (knowledge, innovation, digitalisation), the improvement of infrastructure, the transition to a low-carbon society, and housing. GZS identified six domains which should be prioritized:

- growth of domestic consumption (energy renovation of buildings, new investments in public buildings);
- investments in infrastructure (road, rail, and IT infrastructure system, renewable-energy power plants, 5G investments);
- Support to the digitalisation of business enterprises as well as public administration, tax exemptions for investments in digitalisation;
- more investments in research, particularly for the joint projects between research institutions and businesses;
- environmental investments (improved waste collection and recycling, the transition to climate-neutral and circular economy, new resources of water);
- investments in agriculture, food processing, and food self-sufficiency.

GZS estimates that between three and four billion euro could be spent annually for the above-mentioned projects.

The Chamber of Commerce has estimated costs for each priority area. Among financial sources, included in GZS' calculations are the European Rescue Fund, the European Cohesion Fund and other European and national funds. Sources for investments may also come from the private sector as well as households. GZS highlighted that the investment potential of companies is high, since they achieved the record profits in 2019, while their indebtedness is considerably low.

Chapter 4. Policy Review – Spain

The following section, drafted by ADAPT, provides an overview of the governmental strategies concerning digitization and innovation (both at national and regional level) and of recent developments in the legal framework with specific reference to the provisions entered into force in response to the Covid-19 emergency. The desk research has been complemented with relevant information as pointed out by Fundae - Fundación Estatal para la Formación en el Empleo researchers.

Context indicators

In 2020 Spain ranks 16th in the EU on human capital, rising in the ranking since the previous year. Basic digital skill levels remain slightly below the EU average. 43% of people between 16 and 74 years of age lack basic digital skills (against the EU average of 42%). The share of ICT specialists in total employment increased and it is now close to the EU average (3.2% against EU average of 3.9%). The share of ICT graduates in Spain also increased and now accounts for 4% of all graduates. The share of female ICT specialists remains stagnant at a mere 1.1% of total female employment. In 2019, Spain signed the European Declaration on boosting the [participation of women in digital](#).

National level:

- DIGITAL SPAIN PLAN 2025 (*España Digital 2025*) & HADA TOOL
- CONNECTED INDUSTRY 4.0 (*Industria Conectada 4.0*)
- ACTIVE INDUSTRY 4.0 (*ACTIVA Industria 4.0*).
- ACTIVE FINANCING (*ACTIVA Financiación*)
- STRATEGIC PLAN FOR VOCATIONAL AND EDUCATIONAL TRAINING
- RECOMMENDATIONS ON THE IMPACT OF TECHNOLOGY ON PRODUCTION WORK CENTERS (*Recomendaciones sobre el Impacto de la Tecnología en los Centros Productivos de Trabajo*)
- NATIONAL COALITION FOR DIGITAL SKILLS AND JOBS
- RECOVERY, TRANSFORMATION AND RESILIENCE PLAN FOR THE SPANISH ECONOMY
- ROYAL DECREE 28/2020 REGULATING REMOTE WORK
- ROYAL DECREE 30/2020 and III SOCIAL AGREEMENT IN DEFENSE OF EMPLOYMENT (*III Acuerdo Social en Defensa del Empleo*)
- RELAXATION OF PROCESSES FOR OBTAINING CREDITS FROM THE GENERAL SECRETARIAT FOR INDUSTRY AND SMES, AND THE PAYMENT

OF INTEREST (*Flexibilización de procesos para la obtención de créditos de la Secretaría General de Industria y de la Pequeña y Mediana Empresa, y el pago de intereses*)

Regional level:

- INDUSTRIAL PLAN 2017-2020 (Basque Government)
- INDUSTRIAL STRATEGY OF ANDALUCÍA 2020
- DIRECTIVE PLAN OF INDUSTRIAL PROMOTION 2017-2020 (Castilla y León regional administration)

National level

Digital Spain Plan 2025 (*España Digital 2025*)

Operational since July 2020, it is devoted to the implementation during 2020-2022 of a set of structural reforms that would mobilise a significant volume of public and private investments. [Spain Digital 2025](#) focuses its objectives on promoting the country's digital transformation as one of the fundamental levers to relaunch economic growth, reduce inequality, increase productivity and take advantage of all the opportunities offered by new technologies, with respect to constitutional and European values, and the protection of individual and collective rights. Likewise, it aims to contribute to closing the different digital gaps that have widened in recent years, whether for socioeconomic, gender, generational, territorial, or environmental reasons, and that have become apparent during the pandemic. It is one of the actions that is aligned with the Sustainable Development Goals (ODS) and the United Nations 2030 Agenda. In more detail, it consists of about 50 measures that are articulated around ten strategic axes:

1. Digital connectivity. Guarantee adequate digital connectivity for the entire population, promoting the disappearance of the digital divide between rural and urban areas, with the goal that 100% of the population has 100 Mbps coverage by 2025.
2. Continue to lead the deployment of 5G technology in Europe and encourage its contribution to increasing economic productivity, social progress and territorial structuring. A goal is set for 100% of the radio spectrum to be ready for 5G by 2025.
3. Strengthen the digital skills of workers and the general public. Special emphasis will be placed on the needs of the labor market and on closing the digital divide in education. The goal is that by 2025 80% of people have basic digital skills and that half of them are women.
4. Strengthen the Spanish capacity in cybersecurity. It seeks to have 20,000 specialists in cybersecurity, Artificial Intelligence and data in

- 2025 thanks, among other things, to the business activity pole that is the environment of the National Institute of Cybersecurity (INCIBE).
5. Promote the digitization of Public Administrations, particularly in key areas such as Employment, Justice, or Social Policies by updating technological infrastructures. In 2025, 50% of public services will be available through a mobile app and the relationship between citizens and companies with the Administrations will be simplified and personalized.
 6. Accelerate the digitization of companies, with special attention to micro-SMEs and start-ups. The goal is set for at least 25% of the business volume of SMEs to come from electronic commerce by 2025.
 7. Accelerate the digitization of the production model through digital transformation driving projects in strategic economic sectors such as Agri-food, Mobility, Health, Tourism, Commerce or Energy, among others. These projects aim to reduce CO2 emissions by 10% as a result of the digitization of the economy in 2025
 8. Improve the attractiveness of Spain as a European audiovisual platform to generate business and jobs, with a goal of increasing the audiovisual production in our country by 30% by 2025
 9. Move towards a data economy, guaranteeing security and privacy and taking advantage of the opportunities offered by Artificial Intelligence with the aim that at least 25% of companies use Artificial Intelligence and Big Data within five years.
 10. Guarantee rights in the new digital environment, and in particular, labor, consumer, citizen and business rights. In this area, the objective is to draw up a charter of digital rights.

Spain Digital 2025 contemplates the development of sectoral plans (e.g., Plan for Connectivity, Plan for Attracting CrossBorder Digital Infrastructures, Strategy for the Promotion of 5G Technology, National Plan for Digital Competences, Plan for the Promotion of the Digitisation of SMEs, Tractor Project Development Plans, etc.). In these sectoral plans, the initiative and co-leadership will correspond to the Ministry of Economic Affairs and Digital Transformation, in cooperation with the different co-responsible agents: competent ministries, different levels of the Administration, business associations, unions, and other economic and social agents. The Government will create the Consultative Council for Digital Transformation, which will have a public-private nature and will facilitate dialogue and participation of the different economic and social agents for the digital transformation of the country. The National Telecommunications and Information Society Observatory (ONTSI) will contribute by providing public information on digital transformation and supporting the preparation of reports for the evaluation and updating of the actions carried out within the framework of this agenda. Additionally, a website dedicated to Digital Spain 2025 will be created, with updated information on measures and

indicators, and an Annual Monitoring Report will be prepared, which will be presented to the Advisory Council for Digital Transformation.

Connected Industry 4.0 (*Industria Conectada 4.0*)

The initiative was launched in 2015 and its objective is to promote and implement digital technologies in industry in order to increase the competitiveness of Spanish industry in a global market with the development of an Industry 4.0 model. It revolves around four main lines of action:

- Line 1. Guarantee the knowledge and competences of industry 4.0:
 - Awareness and communication: guarantee knowledge about industry 4.0 and its enablers and benefits.
 - Academic and work training: ensure the availability of competences for industry 4.0.
- Line 2. Foster multidisciplinary collaboration:
 - Foster collaboration by promoting environments and platforms adapted to industry with a focus on 4.0 technology.
- Line 3. Promote the development of available enablers:
 - Boost the development of digital enablers: promote R&D&I in I4.0 technologies.
 - Provide support to technological companies: boost company development among technological suppliers.
- Line 4. Promote adequate measures to implement industry 4.0:
 - Support the adoption of I4.0 by industry: foster and facilitate the implementation of industry 4.0.
 - Standardised regulatory framework: guarantee adequate conditions for its implementation and stimulate investment.
 - I4.0 projects: promote solutions and specific projects.

With specific reference to the skills development issue, it is worth highlighting that Industria Conectada 4.0 promotes the incorporation of related Industry 4.0 and digital enablers on job training in order to ensure that the needs of industrial companies with regard to Industry 4.0. are met and supports the inclusion of content and specific courses of Industry 4.0 in the academic curricular training.

Moreover, the General Secretariat for Industry and SMEs (SGIPYME), under the Ministry of Economy, Industry and Competitiveness, in 2017 launched the Advanced Self-Diagnosis Tool (HADA), within the Connected Industry 4.0 strategy. HADA aims to serve as a starting point for any Spanish industrial companies, regardless of their size and sector of activity, that wish to start the process of digital transformation. With this tool, which is free of charges and accessible through the Internet, companies could obtain a report in which their current degree of digital maturity will be determined based on 6 defined levels: static, conscious, competent, dynamic, reference and leader. Companies could also be offered various comparisons

of their degree of maturity depending on their size, sector and geographic area. With this information, the implementation of an Industry 4.0 Barometer is foreseen: the Ministry of Industry, Commerce and Tourism, with the collaboration of the School of Industrial Organization, developed the Barometer of Industry 4.0 in Spain, which will analyze and study the economic perspectives and strategies of the Spanish factories regarding Industry 4.0 and its adaptation. This tool consists this is an online questionnaire whose objectives are the analysis and the assessment of the economic perspectives and the strategies of the Spanish enterprises on Industry 4.0 and its adoption. The study is divided in five blocks:

- General information about the company;
- Economic and sectoral perspectives;
- Current strategy and organisational model and future perspectives;
- Impact of Industry 4.0 and the digital transformation in the companies;
- Programmes and support lines of Industry 4.0 in Spain.

It is targeted to industrial enterprises and stakeholders related to the digital transformation of the industry and the industrial policy in general.

Active Industry 4.0 (*ACTIVA Industria 4.0*)

The programme [Active Industry 4.0 \(Activa Industria 4.0\)](#) is embedded in the initiative Connected Industry 4.0 with the aim to push the digital transformation of the Spanish industry through industrial enterprises. This initiative has a threefold objective: increase the industrial value added and the qualified employment in the sector; develop competitive levers to support the Spanish industry and support its exports; and support an own model for the industry of the future and develop the local offer of digital solutions. To meet the objectives, the State foundation for employment training (Fundación EOI) has developed a project for specialised advice to industrial enterprises to support their transformation towards the Industry 4.0, which contributes to advance the digitalisation of the Spanish industry and to equip the enterprises with strategies, initiatives and actions that help them in this transformation. In 2016, a pilot project with 25 companies and a reasonable success was run, through which a methodology of advice was developed, as well as a basis for expand the reach of the programme in 2017. In 2017, the programme was run for companies in the whole country with 187 enterprises benefiting. The programme is targeted at companies that are developing a productive industrial activity and allows them to have a diagnostic tool for their situation and a transformation plan that identifies their necessary digital enablers in the transformation process and that establishes a road map for their implementation. Through collaboration agreements the participation of all Autonomous Communities was ensured, which cooperated with the follow-up of the

diffusion of the programme within the industrial enterprises within their regions, the selection of the companies and the financing of parts of the costs.

This program, together with the HADA tool ([Herramienta de Autodiagnóstico Avanzado - Advanced Self-Diagnosis Tool](#)), are actions aimed at companies that develop or are going to develop a productive industrial activity, if their corporate purpose refers to activities framed in Section C - Divisions 10 to 32 of the NACE codes, and they have the collaboration and co-financing of the Autonomous Communities.

Given the difficult economic situation that companies are currently enduring, caused by the crisis caused by COVID19, the Ministry of Industry, Commerce and Tourism has considered it necessary to adapt the conditions of the aid, for which it has been published in the BOE On September 4, 2020, Order ICT / 818/2020, of August 10 , by which the previous one is modified, in order to reduce the maximum co-financing that participating companies must provide , assuming this reduction the Ministry of Industry, Commerce and Tourism.

Active financing ([ACTIVA Financiación](#))

Its objective is the support of R&D&I projects related to Industry 4.0. This is a programme of preferential loans with EURIBOR interest rates, allocated for the implementation of digital solutions in Spanish industry, which would finance the implantation of key enabling technologies. This tool seeks to support projects that promote the digital transformation of companies in the industrial sector, thus complementing business efforts aimed at achieving their evolution into the digital economy. In particular, this action aims to support the incorporation of knowledge, technologies and innovations aimed at the digitization of processes and the creation of technologically advanced products and services with greater added value in industrial companies. It is aimed at companies that develop a productive industrial activity for a period of at least 3 years.

Projects are supported within the following typologies:

- Industrial research projects,
- Experimental development projects,
- Innovation projects in the organization and processes of small and medium-sized companies.

Financial support is in the form of repayable loans with the following characteristics:

- Maximum loan amount: 80% of the eligible budget;
- Maximum repayment term: ten years including a three-year grace period.
- Applicable interest rate: it is established in each call, being equal to or higher than the one-year Euribor interest rate published by the

Bank of Spain corresponding to the month prior to the approval of the call or, where appropriate, the month prior to its concession (in 2018, the applicable rate was 0%);

- Minimum eligible budget for the actions will be 100,000 euros.

Strategic plan for vocational and educational training

The 2019-2022 [strategic plan for vocational and educational training](#) adopted in November 2019 aims to make vocational education and training (VET) more responsive to the needs of the economy -including new digital sectors - and to boost participation in VET programmes, particularly at secondary level. The government plans to create 40 new degrees (both vocational and university level) in different ICT fields (such as 3D printing, industrial data, cybersecurity, big data analytics, automotive and self-driving). The strategy also proposes including a module on “*applied digitisation in the productive sector*” in all VET programmes at all levels (basic, intermediate and high). As for the [Observatorio nacional de las Telecomunicaciones y para la sociedad de la información](#), these programmes are responding to the increased demand for highly-skilled workers in manufacturing and sales, that need workers advanced digital skills, including workers with a more traditional engineering profile and others with newer skillsets, notably analysts, programmers, web and multimedia designers

Recommendations on the impact of technology on production work centers *(Recomendaciones sobre el Impacto de la Tecnología en los Centros Productivos de Trabajo)*

In 2018, CCOO, UGT and the employers' association AMETIC (Association of Electronics, Information and Communications Technologies, Telecommunications and Digital Content Companies), within the framework of a collaboration agreement between the parties, have presented a set of [labor recommendations for the development of digital transformation as a cross-cutting tool that affects all sectors of the economy](#). The document, which resulted in a set of recommendations originated in November 2017, with the initiative of one of AMETIC's associates (Grupo EULEN), who proposed this document to the AMETIC Management within the context of the forum of the Alliance for the Development of Digital Talent of AMETIC. A working group, in which representatives of CCOO and UGT participated together with the AMETIC team reached an agreement on the above-mentioned proposal. The recommendations have been designed to facilitate the implementation of enabling technologies in any productive center in any area or sector of the economy (Industry 4.0, Services, Smart Cities etc.), favoring the development of professionals and their digital talent; developing training policies that allow the acquisition of skills, knowledge

and techniques; and, ultimately, improving processes with the aim of increasing productivity, through better prepared professionals.

National coalition for digital skills and jobs

The [Spanish National Coalition](#), launched in July 2017, gathers around 200 stakeholders such as IT companies, education and training institutions, trade unions, foundations, associations and governmental organisations. The coalition is actively shaping the debate on developing a digital talent pool in Spain, promoting employability thanks to digital skills. It is run by AMETIC. The Coalition held the second edition of the digital skills awards in 2019 with several categories, in line with the [EU's proposal](#). They currently have 19 working parties (comisiones) providing input to [discussions on digital](#). They organised several events in 2019, such as the [second conference on AI](#) and the annual summit on the digital economy and telecommunication.

Regional level

Industrial Plan 2017-2020 (Basque Government)

The Basque government adopted the [Industrial Plan 2017-2020](#), which contemplates arriving to 25% of the industrial weight of the Basque GDP, with an annually increasing budget (i.e. in the case of R&D, this could reach 5%). This Plan is part of the [Framework Programme for Employment and Economic Reactivation Euskadi 2020](#) and has been prepared in direct connection with all the initiatives in the area of competitiveness, such as the Basque Plan of Science, Technology and Innovation; the Energy Strategy 3E2030; the recently approved Entrepreneurship Plan 2020; the Business Internationalization Plan which will soon come out; the Digital Agenda 2020; the Employment Strategy, the Vocational Training Plans and the University Plan, as well as the recently approved Sustainable Transport Master Plan. The Industrial Plan will focus on 6 core issues, as well as a seventh cross-cutting issue which has to do with Industry 4.0. The aims of the cross-cutting Industry 4.0 issue include promoting the digitalization of the Basque industry, in terms of business models and technologies, through the digitalization of companies as well as value chains and training professional profiles related to advanced services linked to Industry 4.0.

Industrial Strategy of Andalucía 2020

The [Industrial Strategy of Andalucía 2020](#) proposes reaching 18% of the weight of industry and advanced services of the Andaluz GVA in 2020. This is accompanied by a Community Pact with the most important business

organisations and trade unions in Andalucía, which includes concrete objectives in different indicators.

In more detail and with reference to the structure of the document, the Industrial Strategy of Andalusia 2020 begins establishing strategic reference frameworks at the European, Spanish and Andalusian level. Thus, considering the European framework it reflects the guidelines formulated mainly in the [Communication For a European industrial renaissance](#), with the approaches of the [Initiative in favor of small EU companies](#). In the national framework, it includes the guidelines encompassed in turn in the Agenda for the strengthening of the industrial sector in Spain. The regional framework, finally, develops the guidelines that the [Agenda for Employment – Plan Economic of Andalusia 2014-2020](#) establishes regarding the Andalusian industry, incorporating the objectives that refer to it and adapting to the industry the objectives set for the set of productive sectors. The process of formulating the Industrial Strategy of Andalusia 2020 continues with the diagnosis Andalusian industry and with the analysis of the main trends that on a global scale will influence in the future of the industry. On the one hand, to achieve an accurate analysis, which ends in a SWOT analysis, a broad set of issues related to the Andalusian industry's structure is considered (size of companies, number of jobs, composition by branches, profile of businessmen and women, etc.), to the behavior of the ecosystem agents industrial (innovations, provision of intangibles, profile of human resources, adaptation environmental processes, etc.) and the results that the Andalusian industry is obtaining (productivity, added value, exports, etc.). The analysis of trends is aimed at probing the possible future changes and challenges in the coming years both at a global level, with mega-trends such as the globalization, sustainability, demographic changes, urbanization, threats to global stability, acceleration of product life cycles or public policies industrial and regulatory changes in each country; and the national ones influencing the characteristics of the industry such as the demand for manufactures, the location production, technological advances, changes in logistics, or the availability and cost of energy.

Directive plan of industrial promotion 2017-2020 (*Castilla y León regional administration*)

The Castilla y León regional administration has a history of social dialogue with the trade unions UGT and CCOO and with the business organisation CECALE in industrial matters. The [III Agreement for Industrial Competitiveness and Innovation in Castilla y León 2014- 2020](#) resulted in industrial growth high above the national average in 2016.

The overall objective of the Framework Agreement was reindustrializing Castile-Leon. So, the following focuses of action have been defined:

- Dimension of Industrial Infrastructure
- Financing
- Innovation
- Internationalization
- Industrial Environment
- Use of local resources
- Rural ADE (new public service designed to promote economic activity and the creation of new businesses in rural areas).

The aim until 2020 was to consolidate and increase the autonomic industry, since this sector supports the growth, the employment and the competitiveness of the most advanced economies, endows of stability and has a tractive effect on the rest of the sectors, especially in the one of services. Thus, the replacement and the modernization of a productive fabric that has to facilitate the generation of innovative companies in emergent sectors and based on the knowledge, as well as increasing the size of the companies of the Community consolidating the existing industrial fabric were deemed to be indispensable.

On the other hand, the III Framework Agreement marks the aim to attract and fix projects investors reinforcing the image of the Community and recover industrial capacities lost during the crisis, through the definition of plans of industrialization.

Moreover, an agreement has been signed among five of the political parties represented in the regional parliament which recognises the [Directive Plan of Industrial Promotion 2017-2020](#) as the referential instrument for industrial strategy. This Directive Plan includes the commitment that public spending in R&D&I reaches 3% of non-financial public spending in regional ministry budgets in 2019, and the goal that manufacturing activity reaches 20% of the GDP of Castilla y León in 2020.

Specific provisions for the pandemic emergency

[Recovery, transformation and resilience plan for the Spanish economy](#)

This important digitalisation strategy has been initiated with the recovery, transformation and resilience plan passed in October 2020 by the Spanish government. This plan is founded on four key pillars, one of which refers to the digitalisation of Spain and intends to transform the Spanish digital model, making a social evolutionary leap through the means of digitalisation. Initially, the plan will be implemented in areas of automation (a highly digitalised sector) and garment manufacturing, and not in the metal sector. Therefore, even though the strategy is aimed towards the entire industrial network and will thus include the metal sector, at the time of writing the present document, it could not be assumed that this strategy would be extrapolated to the metal sector. The strategy will first be implemented in medium-sized companies, which have significant pulling-power

capacity (namely the capacity of attracting talent, investment, and digital infrastructures) over other companies that have relations with them as suppliers or subsidiaries. The strategy is focused on concrete areas (training, investment, infrastructures).

[Royal decree 28/2020 regulating remote working](#)

As for many countries worldwide, Spain has recently seen a marked increase in the number of employees working from home as part of its bid to decrease physical contact between individuals and curb the COVID-19 pandemic. Prior to March 2020 when the pandemic hit, remote and home-working was relatively unusual in Spain and therefore largely unregulated. As a result, it was widely acknowledged that there needed to be a legal framework to protect and designate the rights and obligations of employers and employees alike in that new world of remote and working from home. The Royal Decree 28/2020, which entered into force in September 2020 as a result of a social dialogue agreement, regulates remote working, namely requiring remote working arrangements to be formalised through written agreements and registered at employment offices. The Royal Decree in analysis grants remote workers the same rights as those who carry out their activities on company premises and is based on the voluntariness and agreement between workers and employers (refusal to work remotely, exercise of reversibility to face-to-face work and difficulties for the adequate development of the distance work activity, which are exclusively related to the change from a face-to-face service to another that includes remote work will not justify the termination of that individual's employment contract, nor lead to the substantial modification of working conditions). The decree in analysis only applies to remote working that is carried out on a regular basis, meaning that over any three months at least 30% of the employee's total hours are carried out remotely. Throughout the regulation, the role of collective bargaining is reinforced, being it expressly mentioned with reference to the exercise of reversibility (return to work in person after agreeing to work remotely) by the parties, the right to disconnect, the identification of the tasks and functions that can be carried out through remote work, the conditions of access and development of the work activity through this organizational model, a maximum duration of distance work, as well as additional content in the remote work agreement. Workers shall not be asked to assume any expenses related to equipment, tools, media and consumables related to the development of their work activity. Collective bargaining will establish the form of compensation for the expenses derived from this form of distance work. Likewise, the right to adequate time registration is regulated, which must include the time of start and end of the day, together with the rights to occupational risk prevention (i.e. risks assessment must take into account the specific risks of this type of work, especially psychosocial, ergonomic and organizational). The use of telematic means and the control of labor provision through automatic devices shall in any case guarantee the right to

privacy and data protection, as well as the right to digital disconnection outside of working hours. The law will not apply to labor personnel at the service of Public Administrations, which will be governed by its specific regulations. Until this specific regulation is approved, the provisions of article 13 of the Workers' Statute will remain in force for the workforce at the service of the Public Administrations.

[Royal Decree 30/2020 and III Social agreement in defense of employment \(III Acuerdo Social en Defensa del Empleo\)](#)

On September 29, 2020 the Ministry of Labor and Social Economy and the Ministry of Inclusion and Social Security and Migrations have reached the [III Social Agreement in Defense of Employment](#) with the representatives of the trade union organizations CCOO and UGT and the representatives of the business organizations CEOE and CEPYME, which allowed the extension of the benefits of the Temporary Employment Regulation Records (ERTE) until January 31, 2021. As for the Decree, which contains several social measures with the objective of maintaining the employment regulations approved in March 2020, aimed at tackling the crisis created by the COVID-19 pandemic, the companies of any sector or activity that see the development of their activity impeded as a result of the new restrictions or measures adopted as of October 1, 2020, both by national and foreign authorities, were entitled to benefit from the benefits of the ERTE as for the scheme provided in the decree which distinguishes between temporary suspension of employment prior to or following October 1, 2020. Companies receiving social security exemptions as per Royal Decree Law 30/2020 had to maintain employment for an additional 6 month-period while the 6 month-period for maintenance of employment in companies that were previously subject to this obligation started once the previous 6-month commitment was expired. In addition, the following measures were extended Until January 31, 2021:

- the prohibition on conducting terminations based on force majeure or economical, technical, organizational or productive reasons related to COVID-19;
- the maximum length of temporary contracts was interrupted; and
- the prohibition on working overtime, conducting new hirings or carrying out any subcontracting during the application of an ERTE related to COVID-19.

Any hiring or subcontracting conducted as a result of the existing workforce not being able carry out such activities has been considered as an exception to the abovementioned prohibition.

[Relaxation of processes for obtaining credits from the General Secretariat for Industry and SMES, and the payment of interest \(Flexibilización de](#)

procesos para la obtención de créditos de la Secretaría General de Industria y de la Pequeña y Mediana Empresa, y el pago de intereses)

As a consequence of the exceptional measures adopted in Royal Decree 463/2020, of March 14, published in the BOE of March 14, 2020, the state of alarm was declared for the management of the health crisis situation caused by COVID-19, many economic activities. For this reason, it was necessary to implement a series of measures whose primary objective was to sustain economic activity in the face of the transitory difficulties that are occurring in Spain as a result of the COVID-19 crisis. This measure was aimed at supporting a policy for industrialization, with the aim of continuing to provide liquidity to companies to develop their projects. Thus, temporarily, and only for the purposes of the calls for loans granted by the SGIPYME (General Secretariat for Industry and Small and Medium-sized Enterprises) that were pending resolution at the time of the entry into force of Royal Decree 463/2020, of March 14, which declared the state of alarm for the management of the health crisis situation caused by COVID-19, the guarantees to be provided by the applicants have been presented after the resolution of the concession and prior to the payment of the loan. Once the call was resolved, the beneficiaries had to provide the guarantees for the amount indicated in the concession resolution and in the modalities established in said calls. The beneficiaries of industrial project loan concessions granted by the SGIPYME may also requested modifications to the amortization schedule of the same during the period of 2 and a half years from the entry into force of Royal Decree 463/2020, of March 14; as long as the health crisis caused by COVID-19 has caused periods of inactivity of the beneficiary, reduction in the volume of its sales or interruptions in supply in the value chain.

Chapter 5. Conclusions

In line with the conclusions set forth in SoDiMa's Project final [Position Paper](#) and considering both the national and supranational level of social dialogue arena and the policies analysed in the present report, it is possible to affirm that the Covid-19 pandemic saw an important role not only in accelerating of the digitalisation across Europe, but also for social dialogue in crisis management, as well as now in the planning phase of economic recovery which, in turn, is closely connected to digitalisation and innovation processes. In brief -and despite current differences in terms of budget allocation and strategic planning in the areas of automation, digitalisation and innovation between the countries considered- it has been possible to identify recurrent factors with reference to necessary preconditions, objectives and expected results outlined in the policies selected and illustrated among which it is worth mentioning the need of (1) ensuring the availability of enabling skills for Industry 4.0 designing adequate training policies, ensuring the access to workplace training and avoiding skills imbalances within national, regional and sectoral labour markets, (2) guaranteeing a high level of commitment and involvement of social partners, public actors and labour market stakeholders in the co-design and evaluation of effective innovation, development and industrial policies and supporting academia-business linkages which are particularly important for the successful translation of knowledge, first into innovation, and then into industry, higher productivity and improved competitiveness for the Italian, Spanish and Slovenian metalworking industry and economies as a whole, (3) ensuring an adequate level of investments and a future oriented legislative framework to allow companies to take part in the new paradigm and be themselves the levers of change and (4) considering and enforcing the strategic role of digital to manage the coronavirus pandemic and to support the economic recovery.