"la Caixa" Foundation

The divide between analogue and digital

Collection Social Divides

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This issue forms part of the Collection "Social Divides", which is made up of the following publications:

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The analogue-digital divide persists among socioeconomic groups and in ITC skills

Digital technologies, or information and communication technologies (ICT), are playing an increasingly significant role in the life of the majority of people and organisations, and have become an essential element for economic and social development in every country. The speed and pace with which different countries and, within each of them, their diverse social or economic groups adopt these technologies vary. This leads to technological divides both between countries and between the different groups.

Technological divides can undergo natural dilution when an increase in user numbers leads to the emergence of economies of scale, which translate into lower prices and greater ease of use, as is happening in some technological spheres such as the access to and use of basic Internet services. However, digital technologies act as amplifiers of pre-existing skills and capacities, meaning that the benefits that they provide are greater for those people who already had advantages beforehand. In consequence, the latter will have more incentives to accelerate the adoption of digital technologies in comparison with the remaining groups. This will lead to the maintaining of (or even, to an increase in) some digital divides, and thus inequalities in other areas of life will increase. This is what seems to be happening with digital skills, the use of advanced Internet services and the digitalisation and digital transformation of businesses, in which it is proving extremely difficult to reduce digital divides.

Key points

1. Since the European Commission started to measure the digital development of the countries of the European Union through the Digital Economy and Society Index (DESI) in 2015, Spain has consistently ranked above the EU average. At present, following the exit of the United Kingdom from the EU, Spain remains in the vanguard of the digital development of the European Union, although it still lags behind other leading countries, prominently the Nordic countries. It also occupies a prominent place, on a European scale, in public digital services and connectivity. In the use of Internet by citizens, it ranks slightly above the European average and in the integration of digital technologies in companies and in digital skills, it falls slightly below the average.

2. With respect to the digital divide between rural and urban areas, despite Spain being a leading country in terms of connectivity, an important gap exists in terms of cover by networks of intermediate and high quality (over 30 Mbps and over 100 Mbps), which is in excess of 30 points (according to the values established by the European Commission's DESI) between the two types of area. This is reflected in the degree of adoption of access to the Internet through the fixed network.

3. The digital divide between Spain's socioeconomic groups is evidence that some of them present a degree of digital development close to saturation, equivalent to that in leading countries in the EU. Among these groups it is worth highlighting students, young people, people with higher education, and people with higher income levels. On the opposite side are pensioners, older people (55 to 74 years) and people with little or no formal education or with lower income levels.

4. The greatest divides, by order of relevance, are the divide in digital skills (in the order of 50-70 points between some groups), that of online transactions (between 30 and 48 points), that of digital consumption (between 20 and 45 points) and the Internet access divide which, although it has reduced considerably in recent years, remains high in some cases (between 21 and 32 points).

5. A special mention is merited by the divide that exists between employees and the unemployed, which reaches nearly 20 points in digital skills.

6. The gender digital divide continues to be present in Spanish society, but its dimension, in comparison with the divides in other groups, is fortunately smaller. However, the gender divide continues to manifest itself very strongly among specialists in digital technologies, as occurs across the whole of the European Union. In the case of Spain, as a percentage of the entire workforce, these specialists total some 3.2%, versus the 3.9% of the European Union. Among women, they total 1.1%, versus 1.4% in the EU.

7. Businesses also suffer their own particular digital divide. In this sense, the most decisive determining factor is a company's size and, to a lesser extent, its sector (manufacturing or services). The divide is greater in the adoption of technologies that are more widespread and smaller in those that are in the process of expansion, but, in any event, it is extremely high. Furthermore, the digital development of the largest companies doubles that of SMEs. This happens both with more mature technologies (electronic data exchange and social media networks) and with newer ones (use of the cloud, and of big data).

Key figures

57.5

The value of Spain's digital development according to the Digital Economy and Society Index (DESI, 2020), stands at 57.5 points, versus the European average of 52.6 points, and ahead of countries such as Germany, France, and Italy.[1]

89.8%

Some 89.8% of homes in Spain have broadband cover of over 30 Mbps.

3.2/1.1%

In the case of Spain, the percentage of digital specialists in the country's workforce stands at 3.2%. In the case of women, the percentage is 1.1%.

10-11th

Spain ranks in tenth position (eleventh if the United Kingdom is counted) with regard to digital development in Europe. Although it has slightly reduced its digital divide with Finland, which leads the classification in this sphere, it is still 14.8 points behind this country.

58.7%

The cover in the rural sphere is 58.7% in the case of broadband of over 30 Mbps.

5.3%

Electronic commerce represents only 5.3% of the income of small companies (those with fewer than fifty employees).

50-70p

The greatest digital divide is that relating to digital skills, in the order of 50-70 points between the most affected groups.

30-48p

The second great divide is that which occurs in the use of online transactions with divides that are usually situated, in the majority of cases, between 30 and 48 points.

1 The DESI considers a value of between 0 (minimum value) and 100 (maximum value).

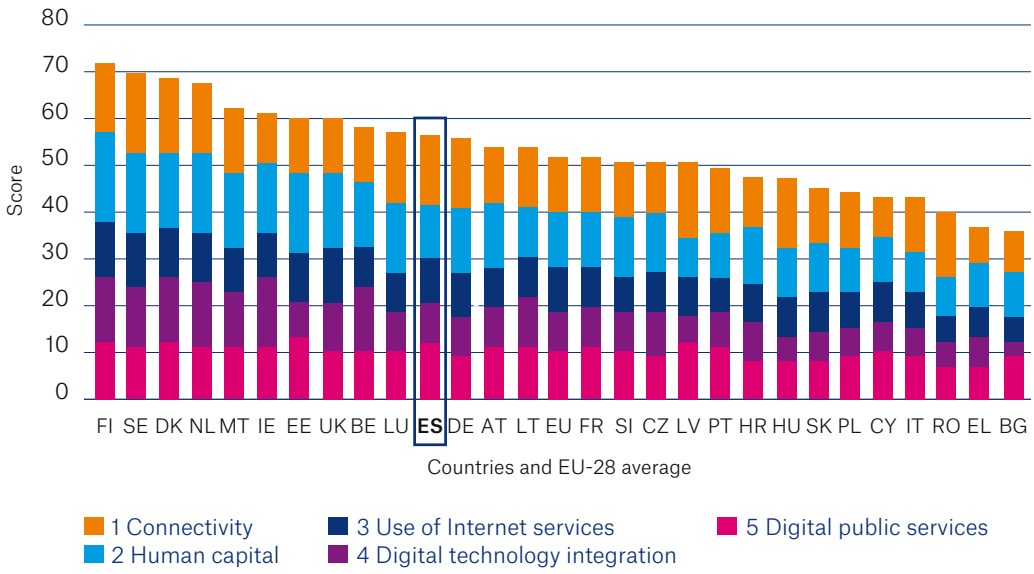
1 Digital development in Europe evidences the divide between the Member States

Since the year 2015, the European Commission has published the Digital Economy and Society Index (DESI), to measure the digital development of the Member States. The latest index published was that of 2020, with values from 2019. The European Commission advises in its global report that this does not reflect the changes that could have occurred as a consequence of the crisis caused by covid-19.

The global index for 2020 shows the unequal digital development of the countries that make up the European Union. The most advantageous position is occupied by those countries that already occupied it in previous editions of the DESI: Finland, Sweden, Denmark, and the Netherlands. None of the larger economies in the Union is situated among the leaders and the differences between countries continue to be very high.

Figure 1. **Spain occupies an intermediate position in digital development on a European scale, higher than the EU average**

Digital Economy and Society Index by sectors (2020)



Note: the Index considers the data from 27 countries of the EU and the United Kingdom. The initials correspond to the following countries: AT, Austria; BE, Belgium; BG, Bulgaria; CY, Cyprus; CZ, Czech Republic; DE, Germany; DK, Denmark; EE, Estonia; EL, Greece; ES, Spain; FI, Finland; FR, France; HR, Croatia; HU, Hungary; IE, Ireland; IT, Italy; LT, Lithuania; LU, Luxembourg; LV, Latvia; MT, Malta; NL, Netherlands; PL, Poland; PT, Portugal; RO, Romania; SE, Sweden; SI, Slovenia; SK, Slovakia; UK, United Kingdom. EU, European Union average.

Source: Digital Economy and Society Index, 2020. European Commission.

When the evolution of the global DESI is observed, the continual advancement in digital development across the entire European Union can be confirmed, but also the fact that there has been no success in reducing the digital divide between the Member States. During the period, the average digital development measured by the DESI has advanced from 38.9 points on average in 2015 to 52.6 points in 2020, but the distance has also increased between the country most ahead in this sphere, Finland, and the country which closes the classification, Bulgaria, from 30.8 points in 2015 to 35.9 points five years later.

There has been no success in reducing the digital divide between the Member States

During the period 2015-2020, Spain has experienced a digital development greater than that corresponding to the European average: it exceeds it by 4.9 points, against the 2.4 points of 2015. However, it has only managed to slightly reduce its distance from the European leader in this sphere, Finland. If this distance was 15.6 points in 2015, by the year 2020 it stood at 14.8 points.

During the period 2015-2020, Spain has experienced a digital development greater than that corresponding to the European average

2 Digital divides: between the Member States and within them

The Digital Economy and Society Index of the European Union is an excellent instrument for comparing the digital development of the countries of the Union and seeing how they are evolving in each of the five dimensions that make up the DESI (connectivity, human capital, use of Internet services, integration of digital technology and digital public services) as well as for studying the digital divides between EU countries.

However, to be aware of the digital divides that exist within each country, it is necessary to expand this information and analyse the value of each indicator, broken down by socioeconomic categories, environments, and types of businesses for each country.

In consequence, to obtain a more comprehensive picture of the digital divides between countries and within each country, it is necessary to address the study of the DESI and of the value of the individual indicators in each country, all broken down by socioeconomic categories.

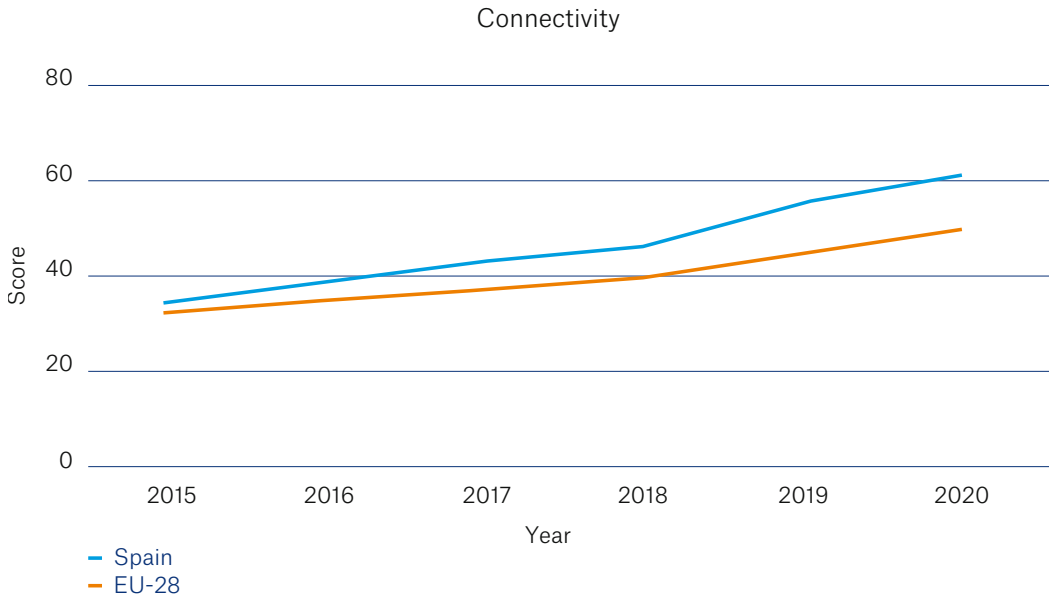
3 Rural and urban Spain present different rates of digital development

Spain occupies a position of leadership in connectivity within the European sphere. It ranks in fifth place and its distance with respect to the European average has gradually increased year after year, as reflected by the DESI subindex on connectivity, which includes indicators related with cover of the communications networks (how far these networks reach), with their implementation (how many households contact their services), with mobile coverage and with the prices of broadband.

Figure 2 and tables 1a and 1b. **The Spanish average for connectivity stood, in 2020, above the European average**

Data for the connectivity subindex. Spain and EU-28 (2020)

Connectivity	Spain		EU average
	Position	Score	Score
DESI 2020	**5**	**60.8**	**50.1**
DESI 2019	5	55.4	44.7
DESI 2018	8	45.9	39.9



	Spain			EU average
	DESI 2018 Value	DESI 2019 Value	DESI 2020 Value	DESI 2020 Value
Global implementation of fixed broadband % households	**73%** 2017	**77%** 2018	**78%** 2019	**78%** 2019
Implementation of fixed broadband of at least 100 Mbps % households	**18%** 2017	**30%** 2018	**53%** 2019	**26%** 2019
Cover of next generation access (NGA) % households	**85%** 2017	**88%** 2018	**90%** 2019	**86%** 2019
Cover of the very high capacity network (VHCN) % households	**71%** 2017	**77%** 2018	**89%** 2019	**44%** 2019
Cover of 4G % households (average among operators)	**92%** 2017	**94%** 2019	**95%** 2019	**96%** 2019
Implementation of mobile broadband Subscriptions per 100 people	**92** 2017	**96** 2018	**99** 2019	**100** 2019
Preparation for 5G Spectrum assigned as a % of the total harmonised 5G spectrum	**ND**	**30%** 2019	**30%** 2020	**21%** 2020
Index of broadband prices Score (0 to 100)	**ND**	**ND**	**51** 2019	**64** 2019

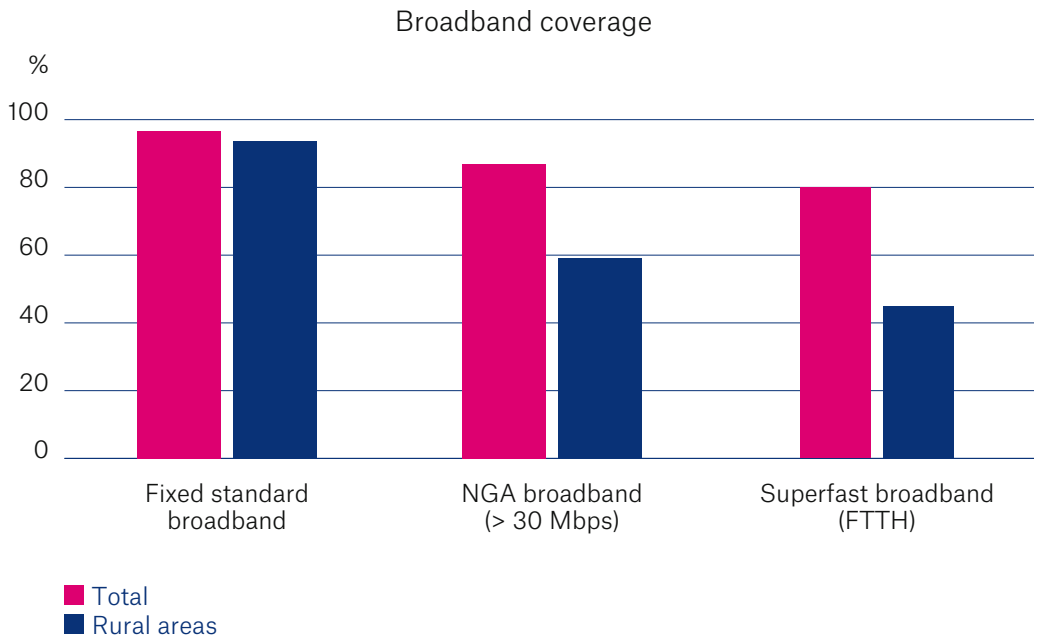
Note: the European average includes the United Kingdom (member of the EU-28 at the time the Index was published).

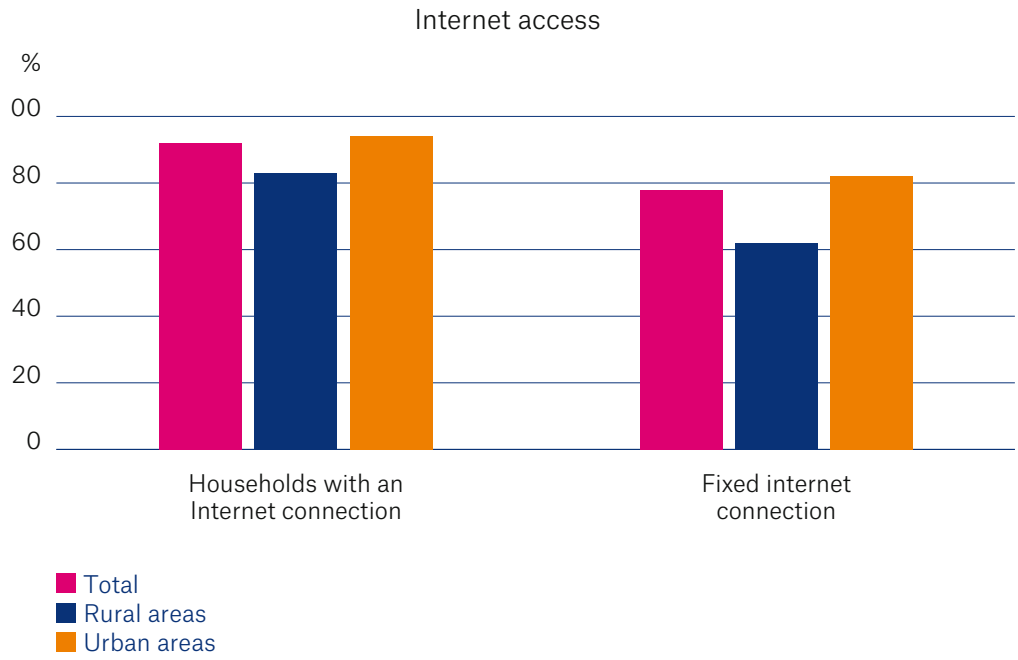
Source: Digital Economy and Society Index, 2020. European Commission.

In Spain, as in the rest of the European Union, the degree of development of connectivity is different in rural and urban areas. Both broadband coverage (standard fixed, fast – new-generation access, NGA – and superfast – fibre optics to the home, FTTH) and the implementation of the Internet in households exhibit different behaviours. These show the existence of a prominent digital divide between rural areas and urban areas (between 30 and 35 points in the cover of fast and superfast broadband, and 21 points in the implementation of Internet in households).

Figure 3. **Broadband cover and Internet access are greater in urban areas than in rural areas**

Broadband cover and Internet access in Spain, by areas (2019)





4 Differences between socioeconomic groups are more pronounced in ICT skills

The greatest digital divide between socioeconomic groups is that known as the skills gap. Although the average percentage of people with basic or advanced digital skills is only 57.2%, the digital divide is nearly 70 points depending on the employment situation, nearly 50 points depending on age, 54 points in relation with prior studies, 47 points with regard to income, 15 points with regard to environment and 3 points with regard to gender.

The second great divide is that which occurs in the use of online transactions (electronic commerce, banking or administration), with differences in the order of 30 to 48 points, depending on the groups, with the exception of those divides related with the environment (between 10 and 15 points) and gender (between 0.5 and 3 points).

Also presenting major divides is digital consumption (reading of online news, use of audio or videoconferencing), situated between 20 and 45 points with the exception, once more, of environment and gender, which present smaller gaps.

The traditional access divide (frequency of Internet use) is the divide that has decreased most with the passing of the years, and although it continues to be high, at present it stands between 21 and 32 points for the four most unequal groupings of groups (those differentiated by employment situation, age, studies and income). The smallest divides are those related to the environment (8.5 points) and gender (0.7 points).

The individual groups that present a greater digital development globally in all indicators are students, who lead development in practically all indicators

From the viewpoint of classification by groups, gender is the one that presents the smallest digital divides in all spheres (situated between 0.7 and 3 points); it is followed by that derived from the environment (between 8.5 and 16 points), that of income (between 20 and 47 points), that of education (between 21 and 54 points), that of age (between 27 and 55 points) and that of employment situation (between 32 and 70 points).

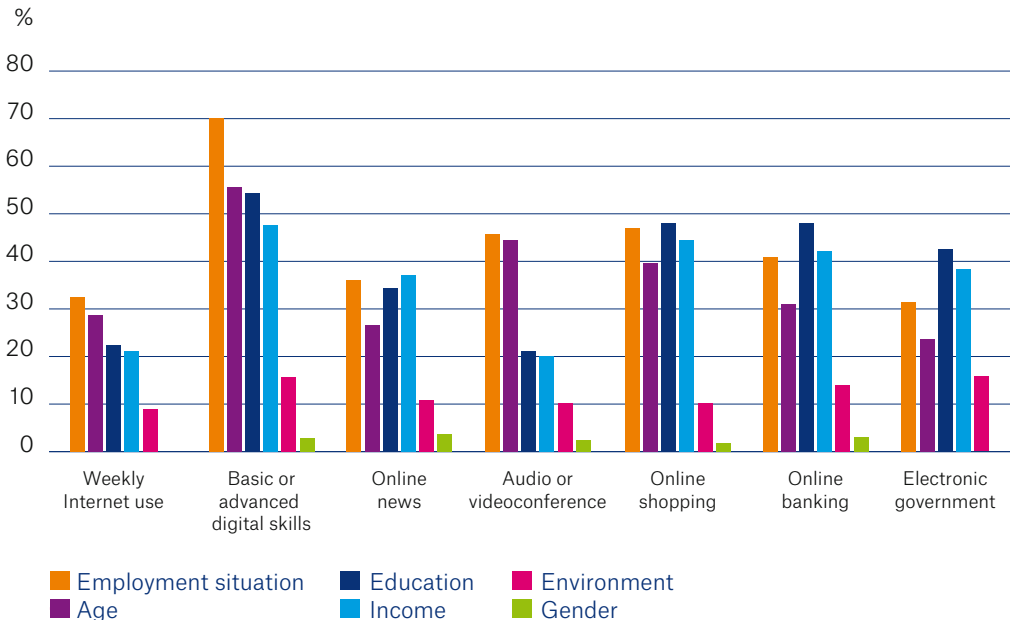
The groups that present a lesser level of development in digital skills are pensioners

The individual groups that present a greater digital development globally in all indicators are students, who lead development in practically all indicators. They are followed by the group of young people and that of people with higher levels of education or higher levels of income, which both present similar degrees of development.

The groups that present a lesser level of development in digital skills are pensioners, followed by people aged 55-74 years, people with little or no formal education and those who have lower income levels.

Figure 4. **Gaps in Internet use and in digital skills manifest themselves between socioeconomic groups**

Digital divides by groups in the use of Internet and in ITC skills. Spain (2019)



Source: compiled based on the DESI, 2020.

5 The gender gap persists among specialists in digital technologies

In recent years, the unequal presence of men and women among specialists in digital technologies in the workforce has attracted special attention from the European Union, to the point that the European Commission has included this digital divide in the calculation of the DESI.

Among the Member States a difference exists in the percentage of specialists in digital technologies that each country has as a percentage of its total workforce (from less than 2% to over 7%). In turn, the percentage of women is even smaller (between 0.5% and 3%), which gives rise to the marked digital divides between men and women in this sphere.

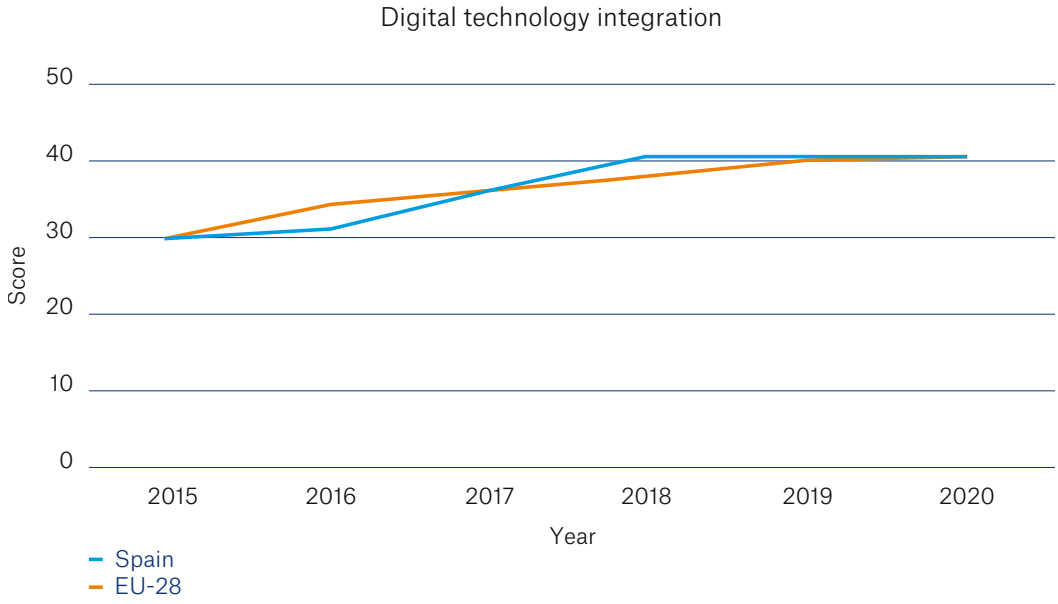
6 The average for digital technology integration in Spain is slightly lower than the EU average

The European Commission measures the digital development of businesses and the use that they make of digital channels in the DESI, in a subindex titled "Digital technology integration".

Figure 5 and table 2. **Lower digital technology integration in Spain with respect to the European average**

Data for the Digital Technology Integration Subindex. Spain and EU-28 (2020)

Digital technology integration	Spain		EU average
	Position	Score	Score
DESI 2020	**13**	**41.2**	**41.4**
DESI 2019	12	41.3	39.8
DESI 2018	11	41.1	37.8



Note: the European average includes the United Kingdom (member of the EU-28 at the time the index was published).

Source: Digital Economy and Society Index, 2020. European Commission.

When the indicators used to calculate the dimension of digital technology integration for Spain are broken down by business type and size, the following conclusions are obtained:

- In all spheres, and for all indicators and all groupings, important digital divides between businesses exist.

- The greatest divides arise when businesses are broken down by size and activity, together.

- Digital divides are larger in the digitalisation of businesses than in electronic commerce.

- As the degree of sophistication of digital technologies increases, the adoption of these by businesses decreases. The digital divide between businesses also decreases in absolute value, but in relative value it increases. Thus, in the use of enterprise resource planning systems, already mature technology, some 43% of businesses use them, and the divide wavers between 38 and 44 points. In the case of social media networks, they are used by 29% of businesses and their divide varies between 28 and 36 points. The use of the cloud is reduced to some 16% of businesses, with a divide of between 18 and 35 points. The use of big data decreases to only 11% of businesses, with a divide of between 15 and 21 points.

- The volume of electronic commerce over the total is 17% and the divide varies between 19 and 30 points. This is the only case in which the gap is greater between sectors than between businesses of different sizes.

7 The divide under debate: the impact of covid-19 on the digitalisation of the economy and society and on the digital divides

The speed of digitalisation of the economy and society of Spain, Europe and the world has increased exponentially in recent years. There is no doubt that the digital revolution has been the fastest of all the technological revolutions experienced by humanity to date.

> The digital revolution has been the fastest of all the technological revolutions experienced by humanity to date

In Spain and the European Union alike, this is easily contrasted if the evolution is observed of households connected to the Internet and that of users of the Internet. In fifteen years, significant changes were observed in Spain: while in 2004 only 15% of households connected to the Internet using broadband, by 2019 this connection percentage stood at 91%. Furthermore, weekly use of the Internet by the population increased from 31% in 2004 to almost 88% in 2019.

On the one hand, if digital development is measured in a more complex way, incorporating into the measurement not only connection to the Internet, but also the use that people, businesses and organisations make of it, the time perspective is reduced, due to a lack of data for such an extensive time horizon, but the richness of the measure increases. The digital transformation represents a transversal and multidisciplinary process that does not involve only material resources but is also enriched by different variables such as talent, skills or innovation.

On the other hand, if digital development is evaluated via the DESI, for which data exists from the year 2015 to the year 2020, a continuous advancement is observed: on a scale of 0 to 100, in just six years, the European Union has advanced from 38.9 points to 52.6, and Spain, from 57.0 to 72.3 points. To illustrate what this rate of advancement means, and being aware of the inaccuracies committed in these types of predictions, it could be affirmed that, at the current pace, the term for reaching what is today considered full digital development (DESI values above 90 points) could take the whole of the European Union around 15-20 years.

This is a short time if compared with that required by other technological revolutions, but too long to achieve an almost universal spread of the Internet in Europe and taking into account, furthermore, the speed and capacity for disruption that characterises the current digital transformation and new technologies.

Perhaps this is one of the reasons that have most influenced the decisions of the public powers to intensify their commitment to digital public policies that contribute to digital development. The consideration of digital development as a public asset that must be promoted by the public powers in order to achieve a suitable level of production, strengthening public-private collaboration, has been the guideline for public action in both Spain and the European Union alike over the last twenty-five years. The most evident manifestation of this has been the digital strategies that have been developed over the course of recent years in the European and Spanish spheres.

The health crisis has highlighted the pressing need for digital development

In the European Union and Spain alike, the commitment to achieve digital and green development was already one of the backbones of political action prior to the covid-19 crisis. One of the effects of the crisis has been precisely to strengthen this commitment, through different mechanisms.

Firstly, the health crisis has highlighted the pressing need for digital development in order to tackle these types of situations. It is difficult to imagine what the response to lockdown would have been without any advanced digital services. What would have happened if the communication networks had not supported the increase in traffic generated by the need to work from home, attend classes online, relate with others, shop or be entertained? And what if businesses had not been able to continue with a large part of their production because workers were unable to access their workplaces, even remotely, or what if companies had not been able to organise themselves for this? What would have happened if the suspending of face-to-face classes had meant the complete standstill of the education process? Would it have been possible to maintain lockdown and social distancing if the only way of relating with others had been via telephone? And if we could not have done our shopping online? These are simply rhetorical questions that do not require any answer, but that point to the need to reflect in depth on the impact of digitalisation on society.

The covid-19 crisis has spectacularly accelerated the adopting of digital technologies by companies

Secondly, the crisis has accelerated digital development in Spain and in the rest of the world alike. According to a recent study by McKinsey & Company (How COVID-19 has pushed companies over the technology tipping point – and transformed business forever), the covid-19 crisis has spectacularly accelerated the adopting of digital technologies by companies, in such a way that in just a few months changes have taken place that previously would have required years. Among these changes, prominent are the acceleration of the adoption of the digital channel for customer relations and the digitalisation of the offering of products and services, as well as the pace of adopting changes that affect digitalisation within companies (home working, distance collaboration, demand for online services or the use of advanced technologies). Changes that have taken place in a few months and which would have needed, before the crisis, between three and ten years.

The lockdown has accelerated the use of Internet in households and has forced many people to rapidly familiarise themselves with the use of ICT

Digital development has not only affected companies, but also people. In November 2020, Spain's National Statistics Institute published the data from its Survey on the Use of Information and Communication Technologies in Households (INE, 2020), which was conducted between March and September 2020. This survey includes, at least partially, the pandemic's effect on the use of ICT in households. The results ultimately confirm what was already suspected: that lockdown has accelerated the use of Internet in households and has forced many people to rapidly familiarise themselves with the use of ICT. In relation with people aged 16 to 74 years, it is worth highlighting the following:

- If data from the 2020 DESI index are compared with data from that of 2019, the percentage of people who have never used the Internet has fallen from 8.4% to 6%, and that of people who use the Internet every week has increased from 87.7% to 91.3%.

- The most noteworthy point is the evolution that has taken place in people's digital skills: the percentage of people with basic or higher digital skills has increased

from 57.2% to 60.2% and, as for people with advanced skills, they have gone on to represent 41.1%, with respect to 36.1% previously.

- The Internet use that has grown most is online calls (something that was easy to anticipate, since this was the only medium possible for interacting with friends, family and home working), followed by online banking and shopping.
  However, it has also highlighted the digital divides of Spain's economy and society. The high number of students that have not been able to follow classes online, whether due to the access gap (households without an Internet connection), the usage gap (the digital skills of pupils for adequately using the digital medium) or the schooling gap (capacity of schools and teaching staff to continue with the educational format remotely and online), as pointed out by Zubillaga and Gortazar in their article "COVID-19 y educación: problemas, respuestas y escenarios" (Roldán et al., La economía española en tiempos de pandemia, Debate, 2020), is a good example of some of the gaps that are present in Spanish society.

The asymmetrical impact that the development of home working has had – and will have in the more than probable case that it becomes consolidated – on different types of workers in the labour market is also a source of concern, highlighted by the covid-19 crisis, as pointed out by the governor of the Bank of Spain, Hernández de Cos, in his appearance in the Spanish Parliament (2020).

The partial closure of the face-to-face services of shops and public authorities, and their substitution by exclusively online services, has had as its consequence the fact that some groups, who were already privileged, have seen an increase in the benefits that they obtain from the use of the digital channel versus other groups who cannot or do not have the necessary capacity to use it.

Since the use of digital technologies has become more essential during the pandemic, pre-existing divides have been revealed

For the first time it has been directly witnessed how, at least in a crisis situation like that experienced, digital divides increase social inequalities in a generalised way. It has also been confirmed that economic and social development is not possible without digital development. Some months ago, in September 2020, the European Commission published the study Shaping the digital transformation in Europe (European Commission, McKinsey & Company, 2020), which estimates the increase in gross domestic product that could be reached as a consequence of greater digital development in Europe and reveals that the positive effect will be a function of the level of digital development of each country.

It is worth asking what changes will remain once the covid-19 crisis has been overcome. Perhaps it is too soon to provide a conclusive answer. But what is indisputable is that many of these changes will remain and possibly some will even intensify, especially those that are coupled with improvements in use for citizens or in productivity for businesses. Nor are there any doubts regarding the unequal distribution of the charges and the benefits that this would bring with it and the need, in consequence, to tackle the policies necessary to guarantee an equal distribution of the same, and to ensure that nobody ends up lagging behind and that everyone has the opportunity to make the most of the advantages arising from digital development.

8 Proposals for the future. Conclusions

Digital development has a decisive influence on the economic and social development of all countries. For this reason, the European Union and Spain alike have made a decided commitment to the digital transformation of their economies and societies, for which they have developed digital strategies whose centrality has gradually increased with the passing of the years. This digital development has led to an increase in digital divides between different groups and groups of businesses. On occasions, these digital divides have been temporary and have been reduced with the passage of time. On others, the digital divides cannot be closed due to technological change itself and the differences that are revealed between the different groups as a consequence of digitalisation. In these cases, the digital divide may become the origin of new inequalities in the non-digital sphere.

This digital development has led to an increase in digital divides between different groups and groups of businesses

The covid-19 crisis has revealed in an intense way the importance of digitalisation in the economy and society, as well as the digital divides that existing in Spain and in the rest of Europe. It has also accelerated the digital development of all countries and has opened up the debate on what to do to ensure that nobody ends up lagging behind in a post-covid-19 scenario, where digitalisation will play an even more relevant role. An unexpected result of the crisis has been increased perception of the digital transformation as a global public asset, which requires public intervention to guarantee that this necessary transformation will take place in the quantity and quality required through public-private collaboration and to ensure a fair distribution of the charges and benefits of digital development.

> Of all technological revolutions, the digital revolution has been the one that has spread with the greatest speed

Of all technological revolutions, the digital revolution has been the one that has spread with the greatest speed. However, it is necessary to accelerate its roll-out in order to tackle crises like the current one and improve the living conditions of all people, by tackling both global digital development and the reduction of digital divides.

Based on the analysis of digital development in Spain and the digital divides that exist on a countrywide scale as well as with the rest of the European countries, the following recommendations are proposed to improve global digital development and reduce certain divides :

Close the divide in cover and access between rural and urban areas

This would improve global development and would eliminate the gap existing between both areas. To do this, it is considered that efforts must be consolidated and expenses shared through an intelligent division between the public and the private sector. For this purpose, it is necessary to minimise costs through the elimination of duplicities in investments and it must be guaranteed that the infrastructures generated are at the service of all operators.

Increase digital skills and the use of the Internet among the more disadvantaged groups

The problem related with digital skills is not a generalised problem. It especially affects specific social groups, particularly the least advantaged. So that these groups can be incorporated into the digital world, it is necessary for them to confirm the usefulness that digital skills might have for them. This means that the Internet must be conceived as a medium for achieving a purpose and not as an end in itself, and that programmes designed to increase the digital skills of citizens must respond to the specific needs of the groups at which they are aimed and focus on the most disadvantaged groups.

Reconsider training for employment and continuous training

The training required for each job will evolve according to technological developments. It is no longer possible to think about a single qualification acquired at one time in a person's life that will serve for the rest of that person's working life. It is necessary to highlight the importance of training for employment and continuous training, agreeing these aspects with social agents and the education sector, and designing mechanisms for permanent review in order to guarantee their applicability at all times. Special attention must be paid

to the acquisition of basic and advanced digital skills, as well as to disruptive technologies such as, today, artificial intelligence, big data and supercomputing.

Design a special programme to multiply the presence of women in the digital professions in the medium term

The presence of women in digital professions and studies is very minor, in both Spain and the rest of the European Union. This means that a significant part of the talent that exists is not being used. Changing this situation in the short term is not easy, since this deficit is evidenced at all educational levels. However, in the medium and long term, substantial changes can be achieved. For this, it is necessary to act on several fronts: a) the conception of the programme as a programme under constant review; b) the inclusion of digital content, not only in specific studies of digital technologies, but also in all those studies that require a growing use of digital tools to support their own contents; c) the review of the contents of courses that lead to the obtaining of qualifications related with digital technologies, and d) improved visibility of women in these types of professions.

Redesign the current system of support for the digitalisation of SME and entrepreneurship

An environment must be created that favours collaboration and cooperation between different public administrations, at state, autonomous region and local level, and the private sector to promote initiatives supporting the digitalisation of SME. For this, it is necessary to consolidate the multiplicity of support systems for each administration within a single network that is clearly identifiable and respectful with the competencies of all the administrations. This network must facilitate the knowledge of the SME help and support mechanisms that the administrations offer and must respond for its actions before society as a whole. It is essential to establish, furthermore, effective mechanisms of transparency and evaluation of the aid programmes and their dissemination.

Create a technologies for equality fund, with an associated structure of governance, in order to cope with unforeseen situations

It is necessary to create a fund to finance the development of public and private seed projects in favour of equality which include, among others, projects for the digitalisation of the education, health, social services and training for employment systems. It is necessary to create open and transparent governance structures, with public-private participation, for the promotion of digital equality programmes in the General State Administration, that serves as a model and a stimulus for the rest of the public administrations.

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