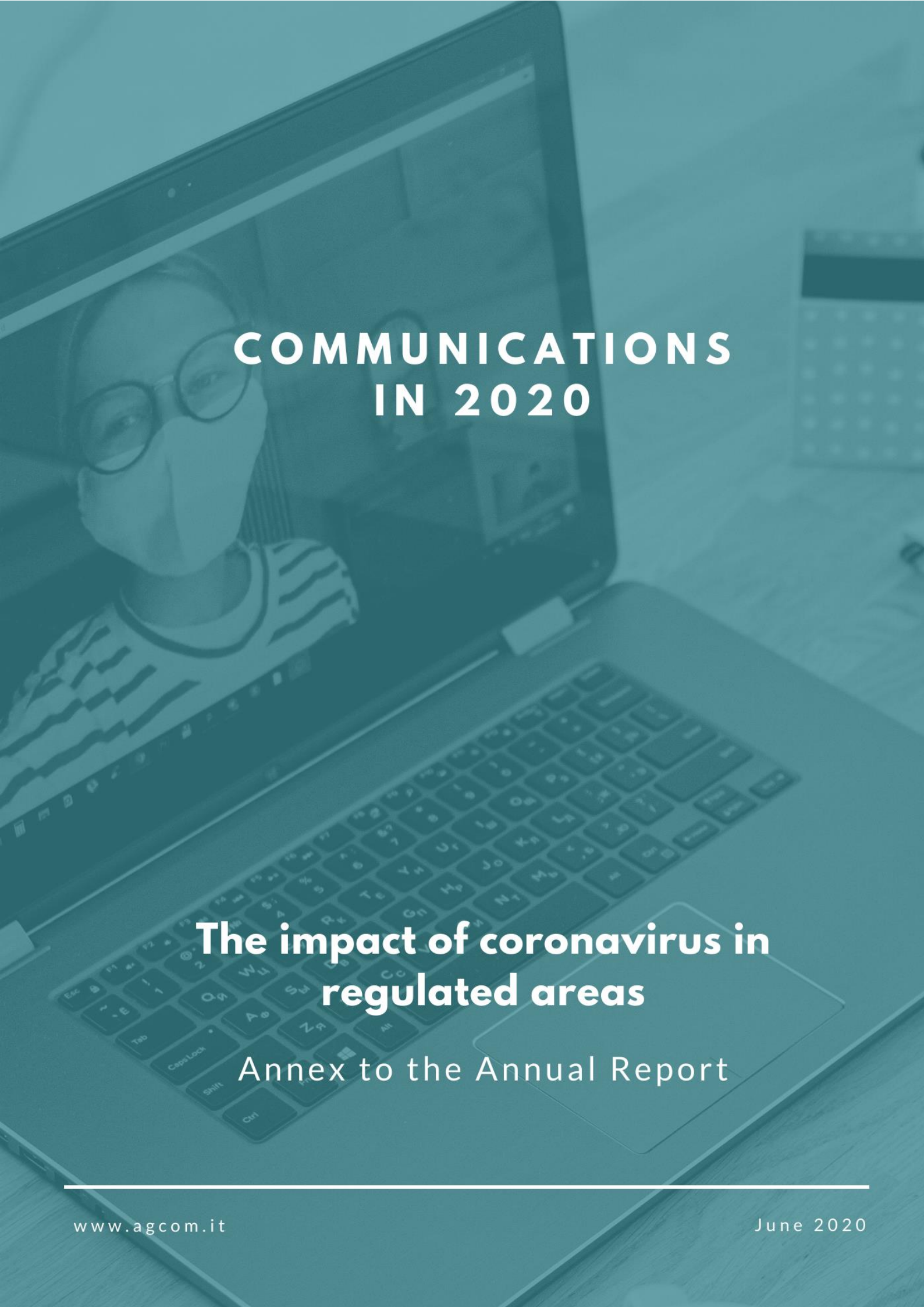


COMMUNICATIONS IN 2020

The impact of coronavirus in regulated areas

Annex to the Annual Report

www.agcom.it

June 2020

Index

INTRODUCTION

The communications sector played a central role in the management of the Covid-19 epidemiological emergency, proving once again to be the backbone of large segments of the economic and social system.

The Italian Government and authorities responsible for adopting measures to contain the contagion made use of traditional audio-visual media services, in particular public service broadcasting, as well as online platforms, to launch stable channels of communication with citizens and inform them through targeted media campaigns and institutional messages.

National and local authorities were able to ensure continuity in the provision of various essential public services, starting with education and health, reorganising their structures and modes of supply thanks to electronic communications networks and broadband and ultra-broadband internet access services.

Similarly, citizens and businesses made extensive use of electronic communication services to meet their working, economic and social needs. Consumers and companies were able to procure essential goods, within the limits of safety regulations and in compliance with social distancing measures, using, where possible, e-commerce and related parcel delivery services in the postal market.

Publishers and journalists provided extensive information coverage on the unfolding of the emergency situation, offering news and insights on all aspects of the current crisis.

In this context, the transition to the "new normality" is highlighting fundamental issues that affect, first and foremost, the role of telecommunications infrastructure and services, both fixed and mobile, and the role of internet as a precondition for the enjoyment of constitutionally guaranteed social rights: businesses, schools, families depend more than ever on the guarantee of sufficient connectivity to carry out a variety of online activities at the same time and on the coverage of broadband and

ultra-broadband networks. The digital divide emerges, in such a difficult period, in all its dimensions, starting from the socio-economic one as well as the infrastructural gap; it represents a demand factor on which to intervene for the recovery of growth in Italy.

During the epidemic there was a surge in online communication services. Since the first weeks of the emergency, offline and online information sharing has increased exponentially.

As a result of a generalized increase in the production of news about the coronavirus and a non-negligible incidence of online disinformation, the health emergency was accompanied by another emergency of global scope and due to an excess of information - not always accurate and correct on the Covid-19 epidemic. Italian and international institutions, including the World Health Organisation, have adopted specific initiatives to deal with the "infodemic" situation which disorients citizens and consumers called to respect the containment measures adopted.

In addition, in the first months of 2020, there was a significant increase in cyber threats and attacks, many of which were based on the exploitation of the socio-psychological vehicle of the current pandemic. Data exchange and communications security represents a central issue for the containment of the epidemic by means of tracking systems compatible with all the constitutional values at stake.

By imposing restrictions on travel and the opening of non-essential shops, the health emergency has strongly encouraged the use of e-commerce which, in the last two months, has seen a considerable increase in online purchases, especially for certain categories of products. Many businesses have gradually reopened but social distancing will remain valid and necessary to limit the risk of new infections: it is therefore conceivable that parcel delivery operators will continue to manage significant volumes, in compliance with prevention measures which require ad hoc regulations.

The crucial importance of activities constituting the communications markets - real backbone of the emergency management system -, continues to invoke public authorities' actions in order to face risks and opportunities of a rapidly and continuously evolving socio-economic scenario.

AGCOM was prepared to manage the strong acceleration that the epidemiological crisis impressed on digital transformation processes concerning domestic

organisation, or to redefine priorities and lines of action to provide targeted and timely responses to consumers and operators' demands.

Ultimately, the economic and social impact of the health emergency has led to a global crisis affecting businesses, households and consumers, thus requiring targeted actions - illustrated in paragraph 1 - and close monitoring of the markets, with ad hoc indicators for supply and demand. Results are shown in paragraph 2 of this study.

The analysis is structured according to a logical scheme that starts from the first interventions adopted by AGCOM, to deal with the initial phases of the epidemiological emergency, and then moves on to the examination of market scenarios and a broader overview of the communication sector. Forecasts for revenues and volumes in the 2020 communication system will then be shown, comparing the hypothetical trend in the absence of the Covid-19 emergency with what is expected to happen in the wake of the health crisis. Moreover, major critical issues that Italy has to face in order to facilitate the natural transition of the country to a fully digitalised system will be analysed; this section points out the main potential risks of social distortions and market failures. Finally, an overall and conclusive evaluation will be proposed, outlining some policy indications.

1 AGCOM ACTION DURING COVID-19 EMERGENCY

In order to promote the widest possible accessibility to electronic communications services and networks, Article 82, paragraph 6 of the Italian Decree Law no. 18 of March 17th, 2020, the so-called "*Cura Italia*" decree, reaffirmed AGCOM's role as the competent authority for any changes, additions or exemptions to ordinary regulations that may be necessary to deal with the emergency, ensuring competition in the infrastructure and services markets and, at the same time, users protection.

As a consequence of this law and of the provisions concerning postal services (Article 108), AGCOM has agreed a first package of decisions aimed at ensuring the operation of public utility services and the launch of initiatives focused on the emergency framework and the emerging needs of public structures involved in crisis management, of households and businesses, to help overcome the state of crisis and facilitate a return to normality.

More specifically, in order to offer solutions for emergency management, four Roundtables have been established on different areas of the communications sector: electronic communications, postal services, traditional media and online platforms. The establishment of those Tables is based on the opportunity to enhance a function that has always been performed by AGCOM, as independent and equidistant from all players in regulated markets.

The common goals pursued by the four Technical Tables are to encourage collaboration between the stakeholders involved, to share proposals aimed at solving the main critical issues that emerged during the emergency - thanks to coordination with the *Co.re.com* (Regional Communications Committees), owning special channels of communication with AGCOM in order to detect users' needs in the territory.

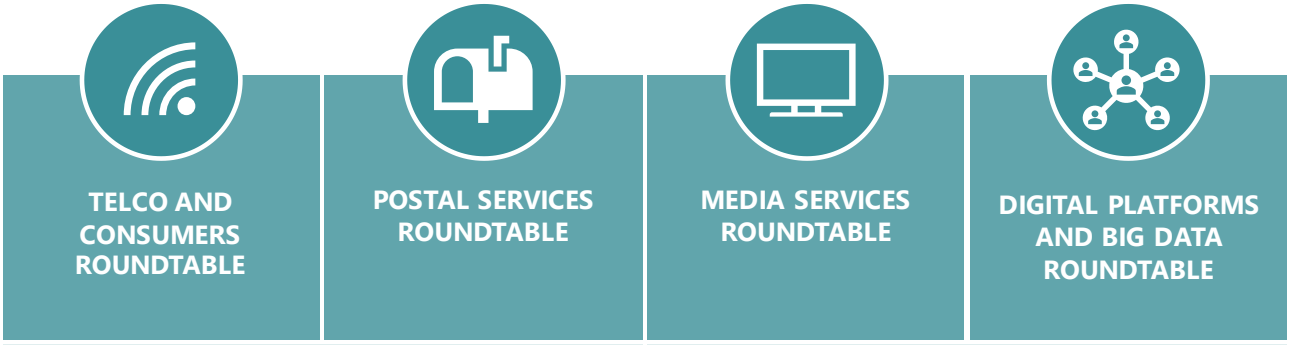
For each Table, specific mailboxes dedicated to every type of stakeholder have been activated; documents, data and updates have been published on a special section of

AGCOM's institutional website in order to assure transparency and publicity of every initiative.

Covid-19 Tables deal with crucial topics: the "*Telco and Consumers*" Table is in charge of coordinating actions aimed at strengthening and securing telecommunication networks and services, protection, facilitation and accessibility of digital services; the "*Postal Services*" Table is responsible for the reorganisation of post offices and postal and parcel delivery services; the "*Media Services*" Table coordinates the supervisory and control functions of audio-visual media service providers with particular regard to programmes and content relating to the epidemic and the health emergency; the Table "*Digital platforms and big data*" coordinates the online and big data system, in order to promote self-regulatory mechanisms aimed at countering disinformation phenomena related to the epidemiological emergency.

Technical Tables activities represent a co-regulation practice that is linked to the exercise of the traditional regulatory, supervisory and control functions entrusted to AGCOM and which have been activated to remedy specific critical issues highlighted by the epidemiological emergency. **Figure 1** illustrates the main actions taken by AGCOM, underlining the relationship between the coordination activities of the Tables and the regulatory and supervisory measures adopted by AGCOM in several sectors.

Figure 1 - AGCOM main action lines related to Covid-19 emergency



Roundtables main activities

- Upgrading and usability (availability, capacity, quality) of network **infrastructure** while respecting consumer rights
- Data and voice **traffic** monitoring of fixed and mobile electronic communication networks
- Reorganization of **postal** and **parcel delivery services** to ensure social distancing and implementation of new measures to encourage the spread of lockers for domestic deliveries
- Monitoring **information** accuracy in Covid-19 programmes aired by national **audio-visual media** providers
- Monitoring of online **disinformation** on Covid-19 issues and adoption of self-regulatory tools by digital platforms
- Publication of the **Report** on online disinformation – Special issues on coronavirus

Agents involved

- **Telecommunication** operators
- **Postal sector** operators
- **Radio** and **audio-visual media** services providers
- **Online** agents
- **Data science** task force
- **Research** centres and public and private academic institutions

Input and output

- **Specific mailboxes** dedicated to every type of stakeholder
- **Documents**, **data** and **updates** published on a special section of the AGCOM website

INTERNATIONAL COOPERATION

- **Coordination** among AGCOM, Italian regulatory bodies, sectoral cooperation bodies (BEREC, ERGA, ERPP) and the European Commission
- **Europe-wide monitoring** activities on internet traffic, online disinformation on Covid-19, initiatives undertaken in the postal sector in different Member States

REGULATORY FUNCTIONS

- Decisions to ensure the **functioning of public utilities**
- Measures to protect information **pluralism**, fairness and objectivity in all media
- Measures to ensure the **continuity** of **postal** and **delivery services**

1.1 ELECTRONIC COMMUNICATIONS

In the electronic communication sector, the focus of the measures taken in the first months of the emergency was on ensuring adequate connectivity to consumers and businesses across all sectors of the Italian economy.

The lockdown has in fact led to: a sudden and massive recourse to teleworking, smart working and online teaching in the public and private education system, including university education; a generalised increase in internet access services for the organisation of online events; the use of digital services and content, including information and entertainment.

In view of the growing demand for connectivity to cope with social distancing measures by businesses, schools, local health authorities, public administrations and citizens, the priority for AGCOM was therefore to ensure the functioning of the networks, including sufficient bandwidth capacity for essential services, as well as the operability and continuity of telecommunication services.

The new system necessarily had to respond to the various critical issues identified by AGCOM during the epidemic. In this sense, AGCOM has put in place a monitoring of traffic measured through the following KPIs (Key Performance Indicator), both on fixed and mobile networks: intensity and volume of data traffic, intensity and volume of voice traffic.

The percentage changes in these indices, starting on February 17th 2020 and compared to the values recorded in the pre-Covid period (week from February 10th to 16th 2020) were recorded on a weekly basis. Data concerning the monitoring of data and voice traffic on fixed and mobile networks are published on AGCOM's institutional website on a weekly basis: 20 reports were published as at 31st May 2020.

The survey was attended by 24 fixed network operators, equal to about 99% of the market, and 8 mobile network operators, equal to about 97% of the market. The monitoring made it possible to record **a significant increase in data and voice traffic during the lockdown period** (from 9th March 2020 to 3rd May 2020), **a trend that gradually decreased with the start of the so-called phase 2** (from 4th May 2020). These phenomena - increasing and decreasing - are more evident for the fixed network (see **Box 1**).

Box 1 - Average changes in internet traffic per period (February-May 2020)

FIXED-LINE

	LOCKDOWN	PHASE 2
Average data traffic intensity	+29%	+12%
Average data traffic volume	+57%	+28%
Average voice traffic intensity	+59%	+32%
Average voice traffic volume	+49%	+29%

MOBILE

	LOCKDOWN	PHASE 2
Average data traffic intensity	+17%	+11%
Average data traffic volume	+29%	+15%
Average voice traffic intensity	+35%	+16%
Average voice traffic volume	+37%	+25%

Source: elaborations on company data

Ultimately, monitoring has shown that there has been real pressure on demand for connectivity on existing infrastructure, in particular on fixed networks. This has made it necessary to use temporary network traffic management solutions to avoid congestion risks and ensure continuity of services. On the other hand, the recent progressive reduction in the increase in internet traffic has highlighted the appropriateness of the AGCOM approach to foster **regulatory incentives and facilitations aimed at promoting stable and quality connections through investments in ultra-broadband**, instead of zero-rating practices.

The emergency management required AGCOM to examine, at a European level, the exemptions provided for by the regulations on internet access services and net

neutrality (EU Regulation 2120/2015 "*Telecom Single Market*") in order to optimize the management of network traffic and avoid congestion problems linked to the exceptional circumstances of the epidemiological crisis, in derogation of the ban on differentiation of internet traffic and quality of services. The application of the exemptions has been the subject of an ad hoc monitoring system launched within BEREC for the bi-weekly verification of internet traffic conditions on European networks. The European coordination mechanism has been supplemented by the relevant reporting to the Commission, in order to tackle any congestion problems promptly.

Therefore, in parallel with these first emergency measures and in the perspective of a longer timeframe, the operators' proposals to ensure the expansion of bandwidth capacity, the investment promotion, agreements between businesses, even temporarily derogating from the existing regulation, have been examined while respecting users' protection. In this perspective, the discussion with traditional electronic communication providers has also been extended to companies operating in related markets, as well as consumer associations.

Further measures, aimed at facilitating the spread of remote working and e-learning, concerned the approval of TIM and Open Fibre proposals in order to ensure the reduction of migration contributions and of the notice period for ROE sale (optical building spreader). These proposals, implementing the "*Cura Italia*" decree, are based on a reduction of wholesale costs in order to encourage the widest availability of ultra-broadband services and to ensure the usability of applications dedicated to remote work, so as to reduce working citizens mobility on the territory.

1.2 POSTAL SERVICES

Epidemiological emergency highlighted two types of problems affecting postal services: on the one hand, the need to reorganise services in order to ensure compliance with social distancing measures; on the other hand, the increased pressure on delivery services due to growing purchases through online platforms and related e-commerce services.

In view of the different needs emerged both among businesses and users in the sector, the central issue for AGCOM concerned the balance between guaranteeing the continuity of ordinary services and health protection of consumers and postal service workers. In particular, Article 108 of the "*Cura Italia*" decree introduced rules aimed at reducing epidemiological risks linked to the ordinary way in which services are provided, whether regarding post offices or couriers' shipments. As a result of the limitations introduced, an ongoing regulatory action and coordination with operators in the sector was necessary, which resulted in the establishment of the aforementioned Technical Table. The liaison function performed by the Table was aimed, where appropriate, at providing indications and guidelines to facilitate the implementation of the measures adopted by the Italian Government to deal with the emergency and limit its negative effects, pending a progressive normalisation of activities.

As part of this coordination action, AGCOM also exercised a supervisory role over the way services were provided and post offices were organised, or other premises open to the public, assessing them in accordance with proportionality and reasonableness criteria in relation to the overriding interest of health protection. Supervision also covered other forms of communication to the public by operators, based on clarity, completeness and timeliness principles.

In this context, the web page dedicated to the Postal Services Table aimed to ensure maximum transparency for the benefit of operators and users by systematically publishing the regulations and provisions in force for the postal sector during the emergency period. For users, in particular, AGCOM made available an easily accessible list of links to the postal service delivery methods published by the main operators in the sector.

In particular, *Poste Italiane*, in its capacity as universal service provider, was involved in discussions with companies. The operator immediately informed AGCOM about

urgent measures adopted in close coordination and in compliance with the Italian Government and the Italian Civil Protection regulations: from the closure of some post offices to specific delivery methods for certain registered mails and parcels[1]. The aim of these measures was to find effective solutions to combat the spread of the virus, while ensuring maximum protection for employees and continuity of service.

The discussion with *Poste Italiane* also concerned new initiatives to reduce as much as possible the flow of customers into post offices and to reorganise the service, given a constant flow of volumes and despite the evident change in operating conditions[2]. The payment of pensions for the month of April was scheduled and staggered and, during the same period, the acceptance of national unsolicited mail sent by customers through business acceptance centres was suspended for one week. At AGCOM's request, *Poste Italiane* committed itself to ensuring the continuity of mail acceptance from alternative postal operators in areas not covered by the latter.

In addition to these measures, there was a need to identify solutions aimed at limiting the use of the postal service by business customers, limiting mailings to strictly essential communications or encouraging the use of alternative communication ways with customers.

In order to reduce the volumes of ordinary mail, AGCOM started a fruitful dialogue not only with the companies it regulates, but also with regulatory authorities of other sectors (ARERA, Bank of Italy and IVASS) considering that postal services main users are banks, utilities and insurance companies: together they account for about 60% of total *Poste Italiane* mailings in the business segment. With this in mind, operators committed to temporarily suspend all non-essential paper communications known as "courtesy communications". Similar commitments were requested by the Bank of Italy and IVASS to their regulated companies.

As regards the continuity of postal services, potentially at risk as a result of the state of emergency, AGCOM tried to identify short, medium- and long-term solutions in agreement with companies. In this perspective, reconnaissance activities were launched together with all the major operators in the sector. Given the considerable increase in online purchases, especially for certain categories of products (e.g. food,

[1] These measures were initially adopted in the municipalities of the so-called red zones and subsequently extended to the entire Italian territory.

[2] Compliance with rules on inter-personal distance between workers in territorial mail processing centres led to a reduction in the number of staff of more than 40%.

pharmaceuticals, electronics) and given the existence of physical distancing rules, the measures taken were based on the consideration that parcel delivery services would still maintain significant volumes. The distribution through parcel lockers, usually located in areas commonly frequented by users or in apartment blocks or office buildings (parcel boxes), seemed to be the most suitable solution, compared to ordinary delivery methods, to maintain the physical distance, eliminating the opportunities for contact between delivery operator and recipient. Therefore, on April 27th, AGCOM launched a special investigation aimed at identifying regulatory measures to promote the spread and encourage the use of lockers for deliveries at a national level.

1.3 MEDIA SERVICES

In the midst of the health emergency, acknowledging some critical elements in information dissemination that were made evident by office monitoring, it was found necessary to remind audio-visual and radio media service providers to guarantee adequate information coverage on Covid-19 issue, in compliance with principles sanctioned to protect correct and objective information; efforts were made to ensure the testimony of authoritative experts in the world of science and medicine in order to provide citizens with verified and well-founded information (Resolution no. 129/20/CONS). In particular, considering the remarkable increase in television viewers in the different audience segments and especially in the evening and pre-evening ones, and the consequent adaptation of the schedules of national broadcasters, AGCOM urged all suppliers to ensure adequate information on health emergency and, as a priority, attentive, correct and objective information, making broadcasters responsible in this sense as they exercise a function of general interest pursuant to art. 7 of the Italian Consolidated Law.

By means of the same measure, AGCOM decided to extend its invitation to the providers of platforms for video sharing as well: they were urged to adopt all the most appropriate measures aimed at countering the dissemination on the web, and in particular on social media, of incorrect information about the coronavirus or, in any case, disseminated by non-scientifically accredited sources.

The monitoring of compliance with the provisions stated in the recall act required constant vigilance, as a matter of priority, of initiatives taken by national media providers that, also for this purpose, took part in the aforementioned Covid-19 Emergency Coordination Table. In addition, the monitoring activity benefited from the collection of monitoring data required by current legislation on institutional political pluralism; data relating to subject matter and audience data are also published with a different periodicity (source: Auditel, processing: Geca Italia).

On AGCOM's website dedicated page, detailed information is also available on the specific initiatives taken by the main media service providers and platforms as well as decisions taken by AGCOM, following the recall act.

The activity of the audio-visual platforms was also the subject of intense international cooperation: in this context, ERGA launched a twofold initiative to extend analysis and monitoring activities on disinformation (already planned for 2020) to the phenomenon of online disinformation on Covid-19 issues and to undertake an analysis of economic impacts on the audio-visual sector as a result of the pandemic.

Particular attention was also paid to initiatives promoted to protect those with sensorial disabilities, through a dialogue with suppliers (first and foremost the public concessionaire) in order to achieve implementation of the ordinary measures provided for by the current regulatory framework.

1.4 ONLINE PLATFORMS

Digital platforms, big data and the online information system play a key role in the management of the Covid-19 emergency in Italy and worldwide. At the global level, the World Health Organisation (WHO) called on States to take specific measures to counteract the spread of information about the epidemic that are not always accurate and correct and caused a crisis in the crisis to the detriment of citizens and users, who are called upon to cooperate with institutions to put in place effective precautionary and prevention measures and, at the same time, bewildered by the circulation of false or misleading information about what to do. At the same time, the WHO itself and the European and national institutions identified the use of big data and, in particular, the development of tracking apps - based on geolocation data - as effective systems to

combat the spread of contagion, opening an internal debate within States and Europe on conditions and limits for the development of such systems.

In the light of these issues and the measures adopted by the Italian Government, the Technical Table together with the players in the online information system launched actions to combat online disinformation on medical and contagion-related issues. In addition, thematic working groups were set up focusing on the use of big data to identify measures to combat contagion through coordinated initiatives between online platforms, public and private stakeholders operating as technology partners and other Italian institutions.

In particular, among the initiatives taken by AGCOM, there is the establishment of a data science task force on online disinformation. The task force members are AGCOM's research partners that have offered to support the regulator pro bono for the production of quantitative analysis and monitoring data, by virtue of a consolidated scientific collaboration already started within the system of relationships and framework agreements with Universities and research institutions and research projects already carried out within the framework of the Table for the guarantee of pluralism and correctness of information on digital platforms.

The data science task force involves prestigious research centres and academic institutions, including the Physics Department of the University of Rome "*La Sapienza*", the Enrico Fermi Institute in Rome, the Institute of Complex Systems of the Italian Research Council, the SONY Computer Science Lab in Paris, the Research Institute for Complexity of Ca' Foscari University in Venice.

The analyses and researches carried out on the phenomenon of disinformation and on the social and economic effects produced by true and false information on the virus and its diffusion are published on a dedicated GitHub page accessible and freely available from AGCOM's website.

This made it possible to acquire, already in the first weeks of the emergency, precise data and analyses on information needs of people during the Covid-19 epidemic, and on the evolution of knowledge needs in the following weeks, as well as on the effects of institutional interventions in relation to the demand for information and its geographical distribution.

Both within the Task Force and with other actors participating in the Table, the coordination was carried out by virtue of an action plan developed on the basis of the

positive experience of cooperation with the stakeholders of the online information system. AGCOM established a fruitful exchange of views with all the operators of online platforms belonging to Amazon, ByteDance (TikTok), Facebook (Facebook, Instagram, WhatsApp) and Google (Google Search, YouTube, and other services) groups, in order to learn about the measures implemented by these companies to combat disinformation.

It was intended to act on several fronts: the monitoring of online disinformation in line with previous initiatives and consolidated methodologies, but with a specific focus on issues emerged with the Covid-19 emergency; transparency and empowerment of online platforms users to which a range of tools are made available, including a dedicated web page to navigate the online information system and autonomously use verification tools such as fact-checking services; inter-institutional cooperation through participation in experts' networks on disinformation and big data.

As of April 2020, a special and recurring edition of the Report on online disinformation, dedicated to the topic of coronavirus, was launched. The publication of the first three special issues outlined the information scenarios characterising the national system both in the initial phase - relating to the first cases of contagion in Italy - and in the following months, which saw the worsening of the medical-health emergency and the implementation of containment measures for the entire population. By means of quantitative data, it was possible to analyse the growing trend of information and disinformation produced on the coronavirus and the incidence of contents conveyed by disinformation websites on the total amount of coronavirus news disclosed online.

In terms of transparency for citizens, an independent fact-checking service has been piloted on WhatsApp as a self-regulatory tool for online platforms. This service is a pilot project proposed by Facebook to combat disinformation on WhatsApp platform, which is unique worldwide.

AGCOM then set up an inter-institutional group with the Italian Data Protection Authority to jointly assess online platforms initiatives from a holistic point of view covering both the right to information and the right to privacy.

With specific regard to the use of big data in the medical-health sector, AGCOM also participated with two representatives in the task force for the use of data against the Covid-19 emergency set up by the Minister of Technological Innovation and Digitization in agreement with the Ministry of Health, to evaluate and propose data-

driven technological solutions and tackle the health, social and economic emergency linked to the spread of the SARS-CoV-2 virus on Italian territory.

1.5 FURTHER INTERVENTIONS

The emergency management also required context actions to support economic agents in the communication sector, and the whole country, in the common effort to face the crisis. The Italian Government, with the "*Cura Italia*" decree, also required all public administrations to adopt "all appropriate organisational measures to ensure the reasonable duration and prompt conclusion of the proceedings". Therefore, in compliance with this provision, the suspension of AGCOM's administrative proceedings pending on February 23rd 2020 or commenced after that date was ordered, also taking into account a further extension provided for by Article 37 of the subsequent Decree Law no. 23 of April 8th 2020 (so-called "*Liquidità*" decree).

On the other hand, the same resolution suspending the procedural deadlines (Resolution No. 130/20/CONS of March 18th 2020) identified those for which, by virtue of the prevailing requirements of rapidity and legal certainty in the markets, it was necessary to ensure administrative continuity. In particular, the suspension of time limits was lifted from proceedings on request of the parties which - due to their very nature and purpose - require the regulator to prepare all the necessary measures to ensure the prompt and regular performance of administrative activities also (or above all) during the health and epidemiological crisis; the same goes for those proceedings in which the predictability of regulation timing represents a fundamental aspect for the good performance of the markets, giving priority to certain urgent administrative proceedings as they relate to sectors crucial for an efficient emergency management, including public utility services.

In order to respond effectively to market needs, AGCOM also adapted its internal organisation in a timely manner; it introduced an exceptional measure concerning remote working for all employees who, already in the first week of March, were able to benefit from a timely adaptation to Italian legislation, which progressively introduced simplified and temporary methods of access to remote work for the purposes of epidemic prevention and containment. The ability to respond and adapt,

with a prompt supply of the IT equipment and telematic infrastructures necessary to ensure full efficiency and continuity of administrative action, makes AGCOM one of the national best practices in the organisation of remote working.

2 THE COMMUNICATION ECOSYSTEM FOLLOWING THE COVID-19 EPIDEMIC

2.1 THE ROLE OF COMMUNICATIONS IN THE ECONOMIC SYSTEM

The effects of the pandemic that hit Italy, such as the economic activities and household consumption halt since the first days of March, have already begun to become evident.

At current prices, the first quarter of 2020 saw a **decline in gross domestic product** and household **consumption** of 4.6% and 5.9% respectively, while total **investment** fell by 8.1%[3].

- **CRITICAL FACTOR**

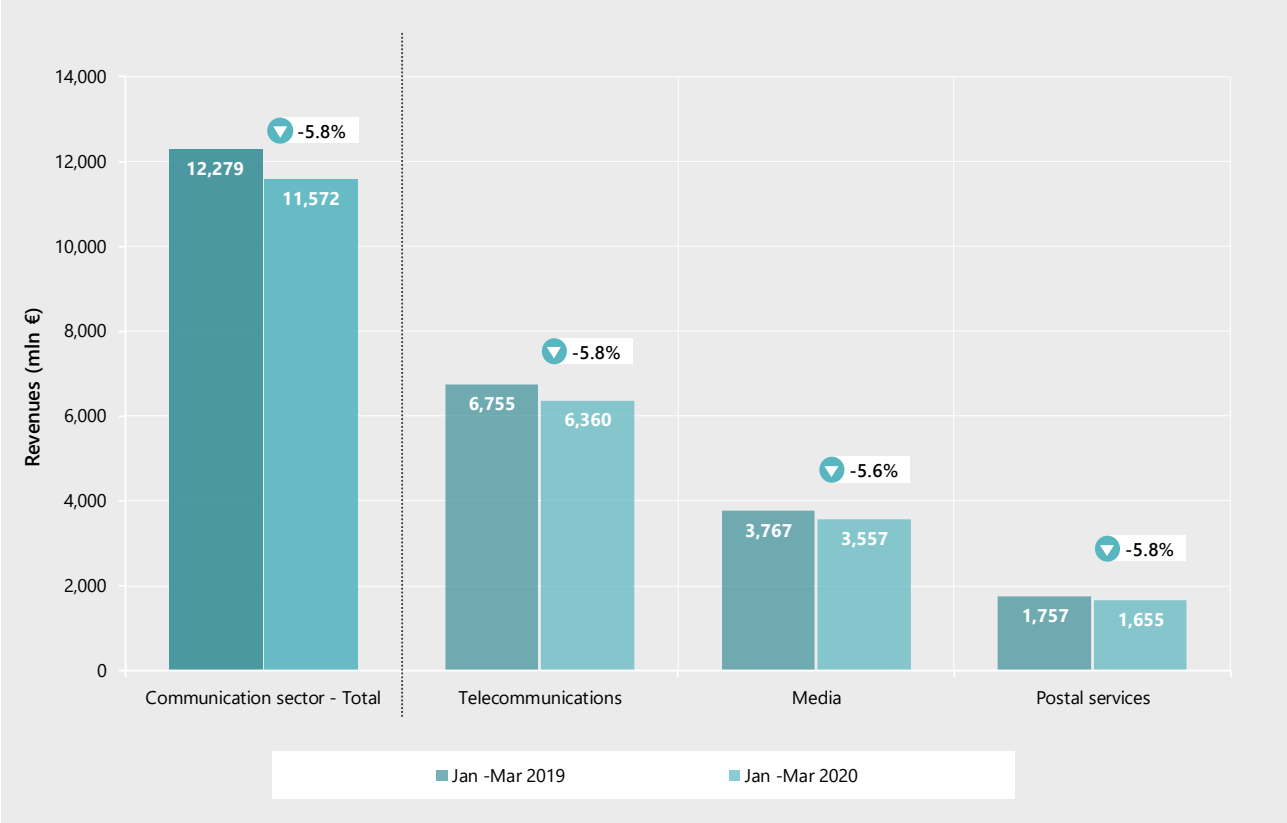
SIGNIFICANT ECONOMIC RESOURCES LOSS FOR COMMUNICATIONS

The performance of markets representing a direct institutional interest of AGCOM, in the January-March period, was significantly affected by the overall picture (see **Figure 2**).

Overall, the **economic value of the communication system in the first three months of 2020**, estimated at 11.6 billion euros in revenues, **is almost 6% lower than in the same period of 2019** and the three macro-sectors of reference show almost identical trends - telecommunications, media and postal services.

[3] See ISTAT (Italian National Institute of Statistics), National Economic Accounts (current price values), 29th May 2020.

Figure 2 - Revenues from communication sectors: performance in the first quarter (mln €)



Source: estimates on company data and various sources

With regard to **telecommunications**, the **fixed-line** segment saw a **more intense decline in revenues** (-7%) than the **mobile** segment (-2%) in the first quarter, with an overall reduction of around 400 million euros compared with the same period of the previous year. As stated in paragraph 1.1, this is the result of a strong increase in traffic volumes (voice and data).

During the same quarter, the **media sector** is estimated to have lost more than €200 million compared to the same period in 2019. **The reduction affected all sectors, with the exception of** video on demand contents (**VOD**), which in March - the first month of lockdown - showed a considerable growth rate (+42% compared to February, +60% compared to March 2019), exceeding 17 million unique users (estimates on Comscore data).

In general, the decline in household consumption and the production activities halt had negative effects both on the sale of advertising space (-9% compared to the first quarter of 2019) in different media, including the internet, and on the sale of copies

and add-ons of newspapers and magazines (-9% in the first quarter of 2020). This last figure seems even more worrying considering that newsstands remained open during the lockdown period.

As post offices were closed in March, the **postal sector** saw a **fall** of almost 25% **in revenues** from services included in the **universal service**. At the same time, the increased use of online purchases led to an **increase** of 3% in the resources for **parcel delivery services**; however, this result was partially limited by the decrease (-4%) in revenues from parcels to and from abroad due to the limitations introduced to contain the contagion affecting the management of cross-border mailings.

On the one hand, the performance of communication sectors in the first quarter of the year was therefore affected by **changes in individuals' behaviour** (e.g. greater use of e-commerce or online audio-visual content) and in **work organisation** (greater use of remote working), which, at least in part, were likely to accelerate the structural change already underway in Italian society and the redistribution of economic resources among the various players. On the other hand, as previously mentioned, it was marked by significantly declining economic results.

Therefore, **forecasting** the performance of communication markets over the year appears to be a **very complex exercise**, both because of the intrinsic characteristics of individual areas, which are marked by different levels of elasticity to economic trends, and because of the effects that specific government measures may have in the coming months.

Some assessments of the dynamics that the communication sectors could have experienced in the absence of the pandemic lead to a forecast of moderate growth (+0.5%).

Considering the currently available forecasts about the possible overall performance of the Italian economy (the Bank of Italy has recently forecast a reduction in GDP of between -9% and -13%), made even more complicated by the extraordinary nature of the crisis, it is clearly difficult to predict the expected trend for 2020 of communication markets; in this industry, exogenous **structural sectorial dynamics** are "interconnected" to the **effects produced by the epidemic**: for example, the reduction in the disposable income of Italian households, with consequent negative effects also on product and service consumption in reference markets.

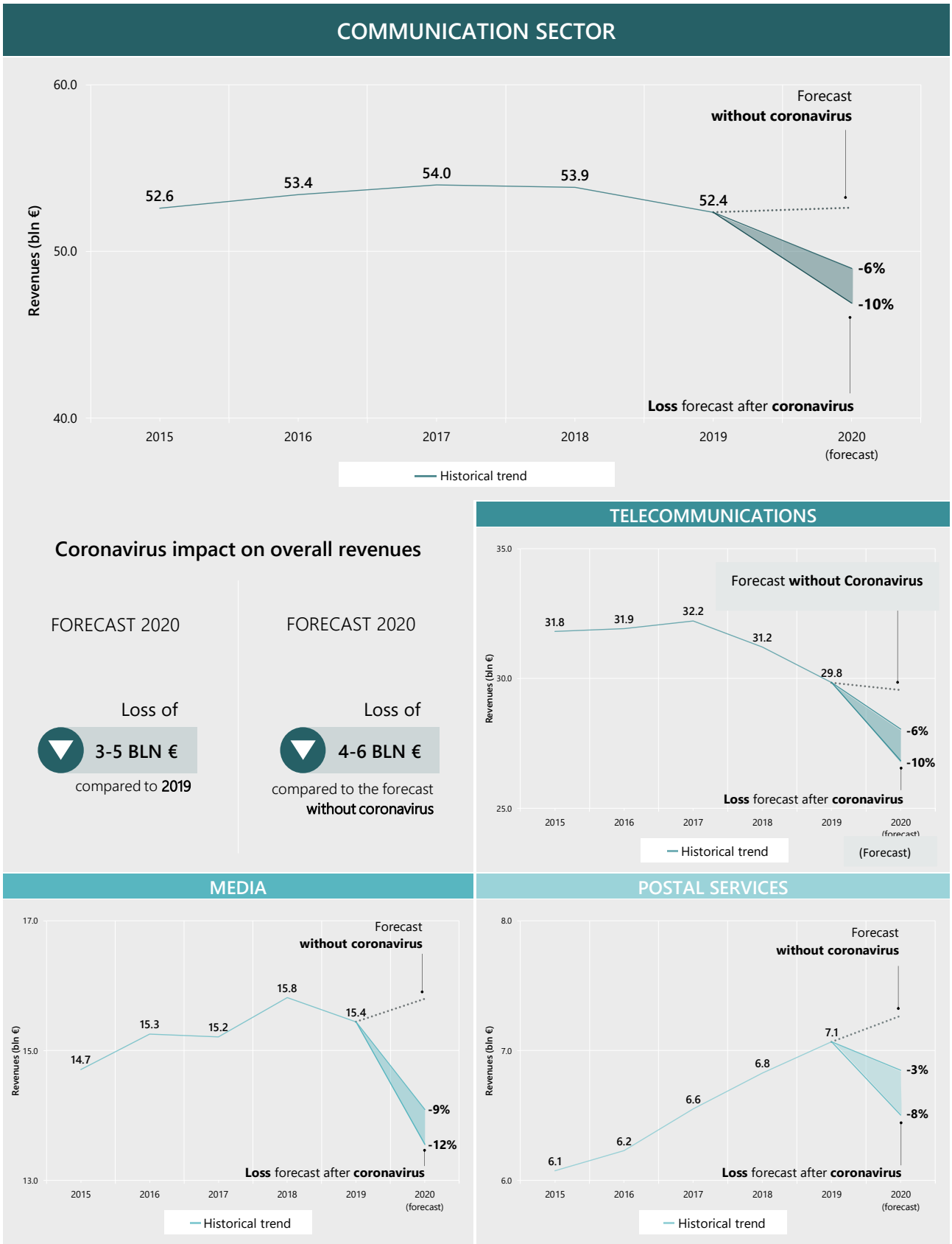
However, in order to forecast trends for 2020, general assumptions can be taken into account as shown in **Figure 3**.

In telecommunications, the trend is characterised by a strong contraction although lower than the general economic trend: a decline between 6 and 10% of the sector is expected, depending on the different macroeconomic scenarios (as said, between -9% and -13%). On the one hand, this evolution benefits from the growing demand for connectivity from businesses and families but, on the other hand, it is affected by the GDP trend that will have an inevitable impact on individuals' incomes and on technological investments of small, medium and large companies (so-called income effect).

As far as the media is concerned, the impact of the epidemic is expected to lead to a far worse scenario in the following months than that outlined in the first quarter. Both for advertising resources (as will be explained below) and for publishing products sales (already in persistent difficulty), a severe downturn is expected in all sectors and it will be significantly more dramatic than the general economic trend. The fee for the radio and television service should be less severely affected by the negative effects as it is a tax. Conversely, the VOD segment of Pay TV - which is now enriched by Walt Disney with the Disney+ service - is expected to keep on growing (thanks to the success of platforms such as Netflix and Amazon), albeit in a more limited way than in the first quarter of the year.

Finally, in 2020, the postal sector trend may still be affected by two long-observed factors: the structural downturn in traditional postal services and the gradual spread of e-commerce.

Figure 3 - The communicationsin 2020: forecasts (bln €)



Source: forecasts on company data and various sources

The above context leads us to predict that the overall value of the communication sector could fall **below 50 billion euros** at the end of 2020, with a **loss from 3 to 5 billion euros** compared to 2019, corresponding to a change of between -6% and -10%.

Looking at what the overall performance of the communication system in 2020 could have been, **the negative effect produced by the epidemic can be estimated to be between 4 and 6 billion euros**.

2.2 DIGITISATION AND INEQUALITIES

The economic and social effects caused by the Covid-19 pandemic have been, and will continue to be in the near future, strongly connected to the presence of inequalities and social exclusion phenomena that characterise, with different forms and levels, several countries of the world. Nations having more financial resources, better equipped health systems, more efficient telecommunication infrastructures, better services to the citizen and equalisation systems to support the most vulnerable sectors of society are best able to cope with the crisis generated by the pandemic, despite countless difficulties. On the other hand, the situation appears more serious in those contexts characterised by low financial liquidity, less availability of public health and technological infrastructures, less effective social protection instruments and inefficient digital public services.

As previously mentioned, the worldwide application of rules focused on social distancing to combat the spread of the virus further strengthened Internet role in influencing current socio-economic dynamics, including those related to inequalities and exclusion phenomena.

Therefore, the priority of the political agendas will necessarily include the introduction of social inclusion policies mainly aimed at reducing the risk of a worsening marginalisation of relevant groups of individuals.

In this context characterised by an accelerated use of technologies, digital exclusion risks turning into economic, social, educational, informative and even cultural exclusion.

- **CRITICAL FACTOR**

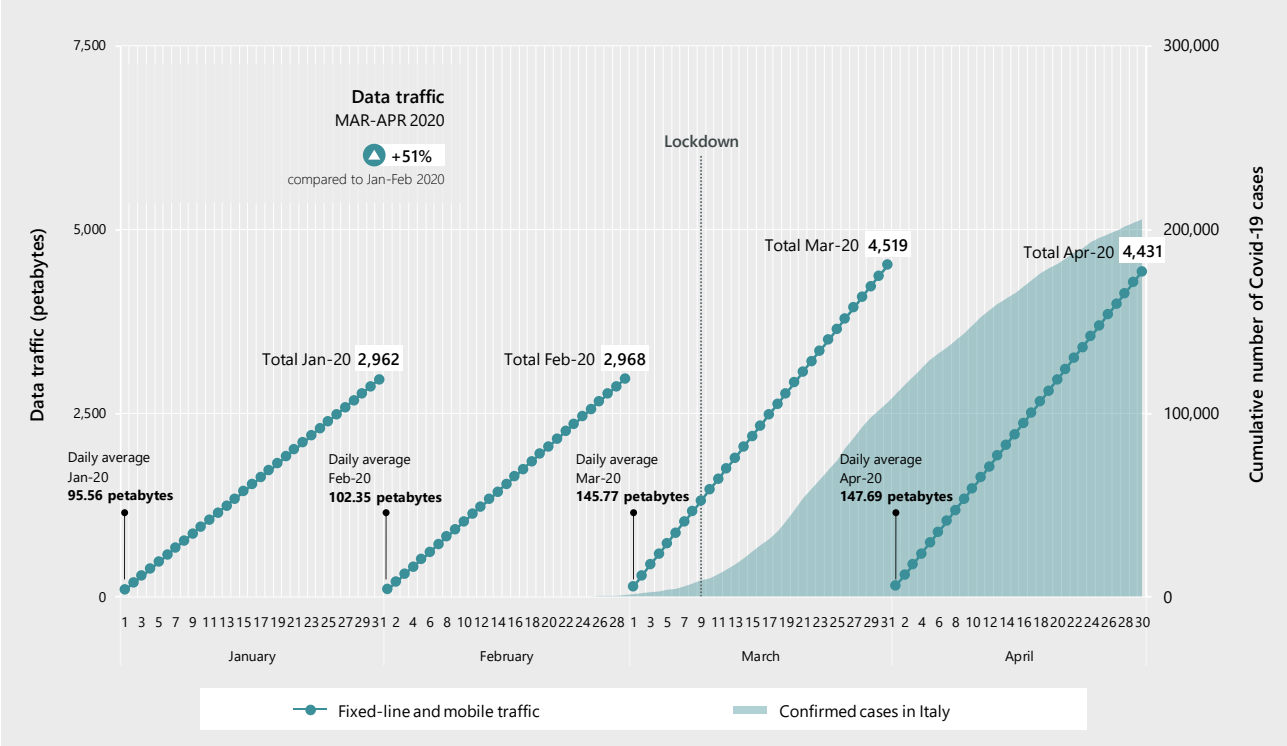
PRESSURE ON ELECTRONIC COMMUNICATION INFRASTRUCTURES

Access to the network has proved to be a fundamentally important tool since the contagion began to spread in Italy - turning them into a health emergency; in a period of forced physical isolation, it was able to provide individual citizens with a link with society. The pandemic has been an accelerator of a process that AGCOM had already

highlighted in numerous works[4]: "transferring" a significant part of people's lives onto the web. During the pandemic, the Internet provided citizens with a necessary means of access to many areas of daily life, including finding useful information, working from home, studying, having fun and staying in touch with the society, especially with family and friends[5].

As far as Italy is concerned (see also par. 1.1), data show a clear increase in the average daily internet traffic just at the same time as the first lockdown measures were adopted in the country (see **Figure 4**). Average daily traffic, from fixed-line and mobile networks, rose from an average of 98.84 petabytes (in the two-month period January-February) to 146.72 petabytes in March and April, for an overall traffic growth of 51%.

Figure 4 - Internet traffic during the epidemic (January - April 2020)



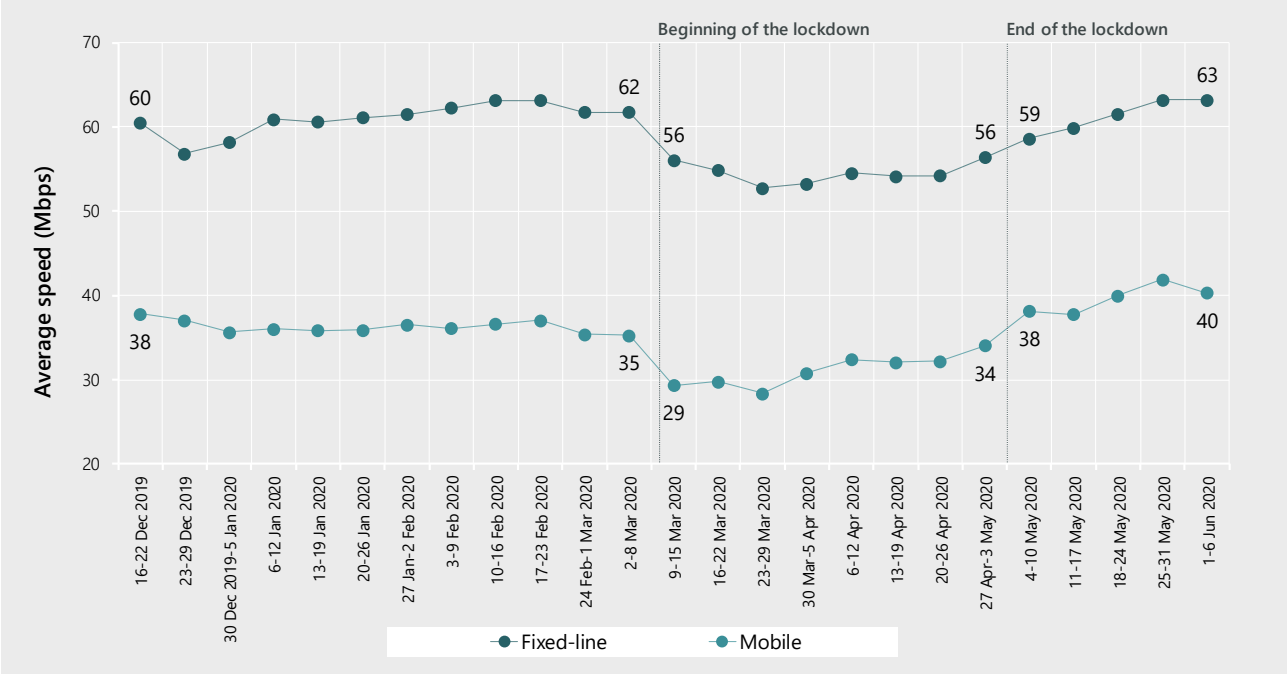
Source: elaborations on company data and various sources

[4] See, lastly, the AGCOM Report, L'informazione alla prova dei giovani (*News media challenged by younger minds*), 2020.
[5] On risks related to the use of the Internet, with particular reference to the world of information, see section 2.3.

Following the outbreak of the pandemic, the intensity of internet use was unprecedented. Pressures on network infrastructure were immediately apparent as a major critical factor. As highlighted in paragraph 1.1, AGCOM, within the scope of its competences, intervened by seeking to balance the need to allow the largest number of individuals/households to connect to the network with the need to minimise the congestion risk by encouraging investment and assessing exceptional traffic management measures[6].

One of the main effects of this pressure was an inevitable slowdown of connection speed (see **Figure 5**).

Figure 5 - Average weekly download speed from fixed-line and mobile networks (Mbps)



Source: elaborations on *Ookla Speedtest.net* data

[6] Berec (Body of the European Regulators for Electronic Communications) Coping with the increased demand for network connectivity due to the Covid-19 pandemic, press release of 19th March 2020, which, inter alia, states that "*We are currently not seeing any major congestion problems and network operators seem to be coping well with the higher traffic load in the networks. But we nevertheless need to stay vigilant and be ready for if the situation changes. This is an extreme and unprecedented situation we are witnessing and we have seen over the past couple of days just how quickly things can change*".
https://berec.europa.eu/eng/document_register/subject_matter/berec/press_releases/9237-press-release-coping-with-the-increased-demand-for-network-connectivity

With the spread of the pandemic, the average download speed on fixed-line network in Italy dropped from 61 Mbps (16th December 2019 – 1st March 2020) to 56 Mbps during the first lockdown phase (2nd March – 17th May 2020), i.e., a reduction of 8.5%. As soon as reopening measures were planned, the average download speed returned to pre-coronavirus values. In the same periods, a similar trend can be noticed for download speed from mobile network: the decrease in speed was 11.5%, going from 36.4 Mbps in the pre-coronavirus period to 32.2 Mbps during the lockdown phase.

Internet connection speeds, therefore, slowed down, although not uniformly between the different Italian geographical areas. The reduction in video streaming quality, i.e., the reduction in bitrate streaming - implemented by some platforms, such as Netflix and YouTube and others[7] - relieved the pressure on the network.

From a general point of view, the pandemic consequences have represented an extraordinary stress-test of Italy's critical infrastructures and it highlights their dual relevance. On the one hand, the increasingly widespread trend that brings data processing closer to the location where they are generated (so-called edge computing) makes the network strictly dependent on the location and on server density in the area. As a result, countries with a greater distance face a technological and economic gap in the proper Internet functioning and risk falling behind in global competition[8]. On the other hand, as will be illustrated in the following pages, Italy is characterised by differentiated infrastructural situations bringing out territorial inequalities and imposing industrial policy considerations.

- **CRITICAL FACTOR**

INTERNET SAFETY

The spread of the pandemic and the consequent lockdown measures to limit its propagation led, as shown above, to an unprecedented use of the network.

On the other hand, this increase in use and time spent surfing the web generated a favourable environment for cyber-attacks. There are many types and techniques of

[7] On March 18th 2020, Thierry Breton, European Commissioner, announced on Twitter that Netflix is reducing the quality of its video streaming service. https://twitter.com/ThierryBreton/status/1240353171748331523

[8] For example, according to a research conducted by Tech4i2 (Coronavirus impact on Internet use), cloud service infrastructures are significantly lower in Southern and Eastern Europe, leading to a greater slowdown in these areas. https://bit.ly/3bSDhPC

attacks, resulting into different purposes: from financial and commercial scams (including those involving pharmaceutical and biomedical products) to personal data thefts (even through the dissemination of malicious apps), from "destructive" attacks, such as system data encryption followed by the request for ransom (so-called ransomware[9]) to attacks aimed at soliciting minors during video lessons.

During the epidemic, the most affected sectors were: research (with cybersecurity threats towards computers of university institutes and research bodies with enormous computing capacity that are normally used to combat the spread of contagion), health (with attacks both on hospital facilities, national and international bodies, with the risk of seriously jeopardizing the availability of essential services to combat Covid-19 and treat patients, as well as sensitive data confidentiality and integrity) and remote working (with the spread of attack techniques such as Business Email Compromise or CEO Fraud, and those targeting video conferencing services).

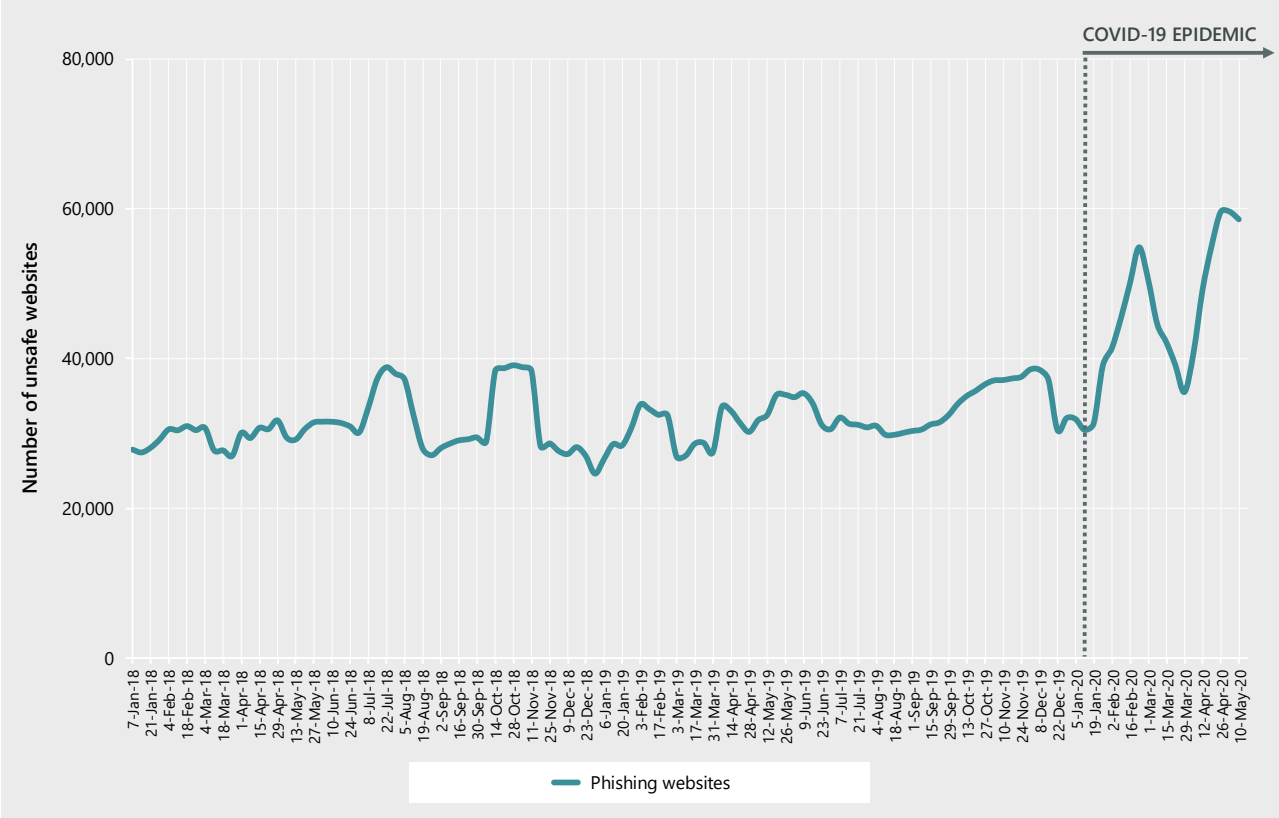
Generally speaking, the classification of cyber-attacks is broad and it is difficult to identify a synthetic indicator (for a classification see AGCOM, Report on Disinformation 2020, issues 2 and 3). Moreover, "attack" techniques and consequent "defence" actions reveal a context of absolute dynamism: the diversification of cybercrime is therefore a constantly evolving process.

Analysing data from the Google service monitoring users' security and with reference to only one type of threat on the network - the so-called phishing -, it is easy to understand how much the phenomenon was present even before the health emergency and its significant increase during the spread of the Covid-19 pandemic (see **Figure 6**)[10].

[9] Among attacks of this kind (that continued even after the lockdown), it is worth mentioning the one detected last May, just before the release of the "*Immuni*" app. A phishing campaign encouraged to download an app from a website apparently traceable to the Federation of Italian Pharmacists Orders, which actually hid a malware that, if executed, was able to encrypt all the files on the disk by changing the extension in .fuckunicornhtrhrtjrjy, then asking for a decryption ransom of 300€ in bitcoin.

[10] Phishing (which may also involve email) is a fraudulent technique and "*websites pretend to be legitimate so that they can trick users into typing in their usernames and passwords or sharing other private information. Web pages that impersonate legitimate bank websites or online stores are common examples of phishing sites.*", Source: Google, *Transparency report*. https://transparencyreport.google.com/

Figure 6 - Unsafe websites (phishing) detected by Google's Safe Browsing service



Source: elaboration on Google's Safe Browsing service data *https://transparencyreport.google.com/*

In particular, by exploiting citizens' anxieties and fears, cybercriminals opened numerous websites to scam and deceive people by offering them fake products and services such as treatments, supplements and vaccines. According to a recent Interpol report, the number of domains registered with the keywords "COVID" or "corona" increased significantly in just a few weeks[11]. Another analysis, carried out by Palo Alto Networks, shows that in the period between 9th March and 26th April, 1.2 million **new domains related to coronavirus** were registered; among them, more than 86,600 were classified as **"high risk"** or **"malicious"** (on average, 1,767 new malicious domains per day). In this context, **Italy** is the **first country in Europe** and the **second in the world** (after the USA) with the number of malicious domains registered on the Covid-19 theme[12].

[11] Global Landscape on COVID-19 cyberthreat #WashYourCyberHands https://www.interpol.int/en/News-and-Events/News/2020/Preventing-crime-and-protecting-police-INTERPOL-s-COVID-19-global-threat-assessment

[12] See Palo Alto Networks (Unit 42), COVID-19: Cloud Threat Landscape, 2020.

Generally speaking, it should be highlighted that the transition to a digital and interconnected society entails increasing security risks for citizens, businesses and public administrations. Once again, the pandemic was a test showing that the current digital ecosystem is very vulnerable, especially in Italy.

- **CRITICAL FACTOR**

DIGITISATION AND INEQUALITIES

Criticalities are not only of a purely technical nature, but they also involve the concern about a possible worsening of economic, educational, cultural and social inequalities as a direct consequence of digital inequality.

This is not a new phenomenon: it should be considered that globally, in 2019, only 54% of the world's population was connected and poorer regions had low levels of digital service penetration (e.g., in Africa, only 28.2% of the population had internet access)[13].

Observing the Italian digital reality, digital inequalities are mainly attributable to factors such as age, income and education. In 2018-2019, 33.8% of families did not have a computer or a tablet at home; the same percentage increased to 70.6% among families only composed of elderly people and, on the contrary, decreased to 14.3% among families with at least one minor. The level of education seems to be linked to computer availability too: only 7.7% of families with at least one graduate does not have a computer.

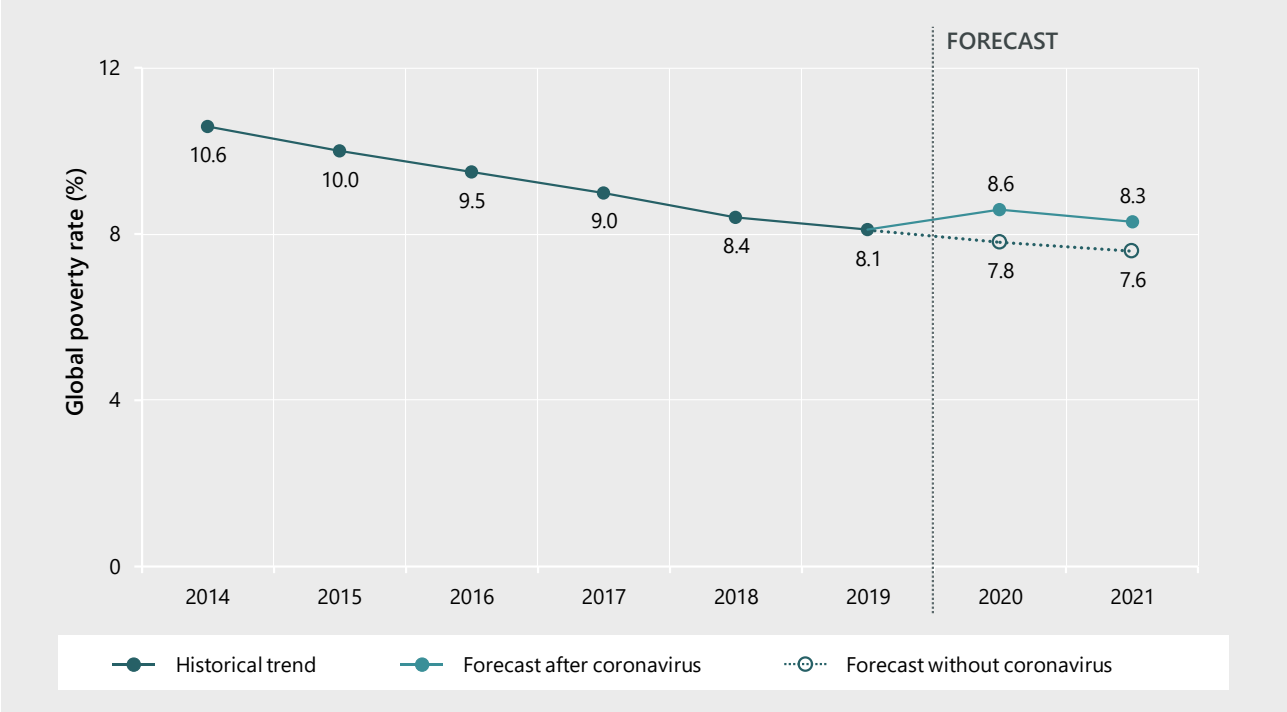
In this phase of the crisis, internet access will inevitably be affected by the reduction in national income caused by the current pandemic as this represents a major expense for individuals and families.

It is, in fact, widely held that the expected worsening of the national economies will tend to widen the income gap between "rich" and "poor"[14]. According to some estimates, Covid-19 effect will produce an increase in the global poverty rate for the first time since 1998 (**Figure 7**).

[13] ITU, Measuring digital development Facts and figures, 2019.

[14] See Bank of Italy, *Annual Report*, 2020.

Figure 7 - Trend in global poverty rate (% of population)



Source: elaborations on *blogs.worldbank.org* data

The pandemic impact on poverty will depend on many factors: in particular, the number of people living on poverty threshold in each country and the capacity of the various economic systems to withstand the impact.

For example, in Italy in 2019, almost 1.7 million families lived in absolute poverty, for a total number of almost 4.6 million individuals (7.7% of the total, 8.4% in 2018)[15]. Therefore, the impact of the pandemic on these categories can be very serious since their spending capacity appears to be very limited even in normal conditions.

Consequently, the pandemic onset will exacerbate the pre-existing social and digital inequalities, risking jeopardizing the slow digitization process that Italy has undertaken in the last decade.

It is not only a question of considering the factors linked to the country's infrastructure endowment which, among other things, thanks to considerable investments made in recent years by companies and the Government has made it possible to reduce the

[15] A family is absolutely poor if it cannot afford the minimum expenses to lead an acceptable life. The spending threshold below which one is absolutely poor is defined by ISTAT through the absolute poverty "basket". https://www.istat.it/it/archivio/244415

existing digital divide, especially between urban and rural areas. Rather, the pandemic clearly established that **digital inequalities are a complex and multidimensional phenomenon** in which **demand factors** (socio-demographic and economic factors) play a **key role**.

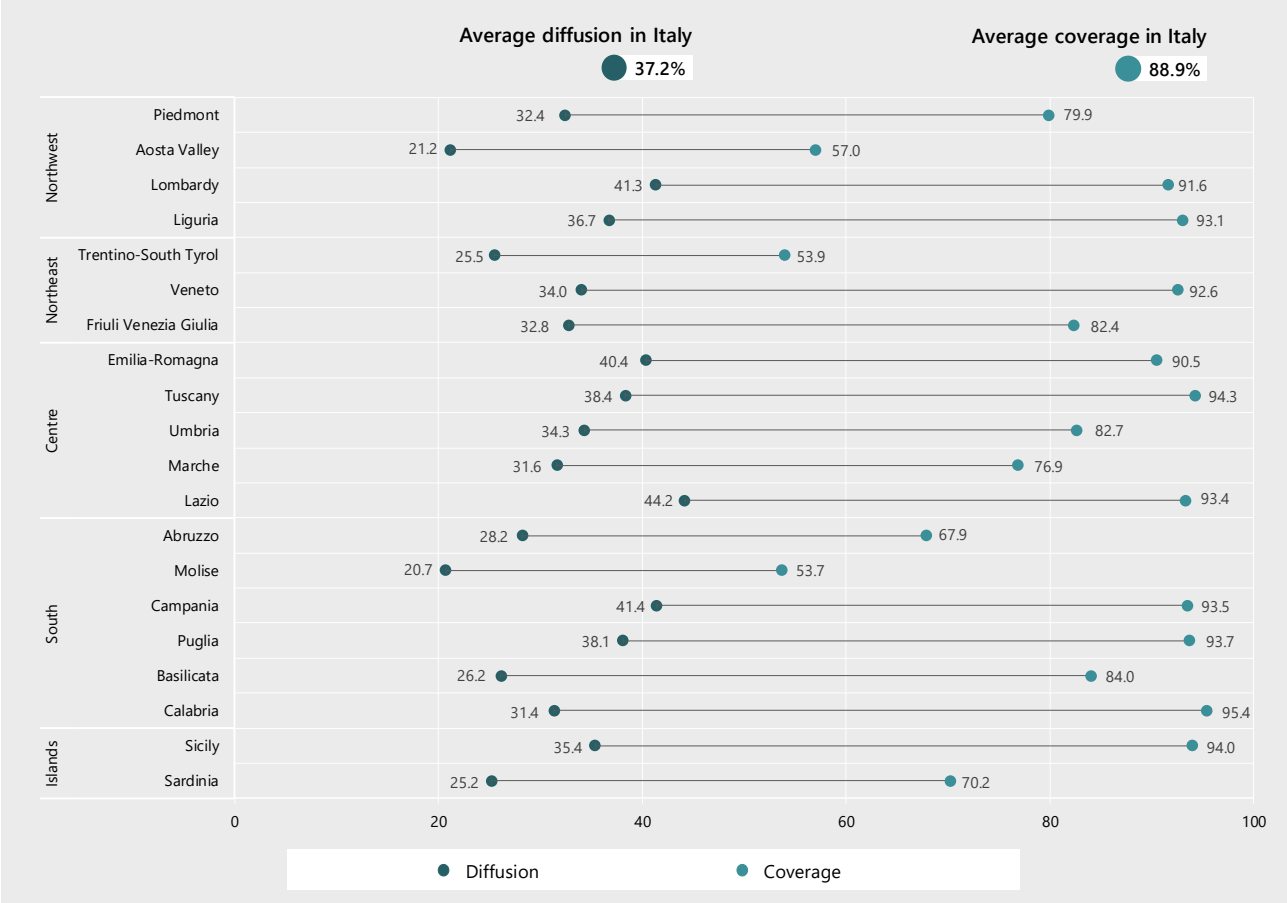
As repeatedly pointed out by AGCOM (e.g., during the Reports to Parliament), in Italy (see **Figure 8**) there is a strong discrepancy between the infrastructural coverage of the territory and the penetration of services. On the one hand, without appropriate infrastructures, operators could not offer better quality services. On the other hand, it is up to individuals/families (and businesses) to purchase connection services; this is based on decision making processes which, in some cases, can also be of a certain complexity.

Given a **territorial coverage** that potentially allows **88.9% of Italian households** to access Internet services with speeds greater than or equal to 30 Mbps, **only 37.2%** of them **actually have such a connection**.

There are also **major geographical differences**. In southern regions, in fact, the gap between coverage (infrastructure) and diffusion (penetration) of broadband and ultrabroadband services appears much wider. Regions benefiting from state infrastructure investments (such as Sicily and Calabria) have not seen the subsequent take-off of services. It further highlights how effective penetration is a complex phenomenon in which demand variables play a key role. Therefore, **stimulating the spending capacity of families** (demand pull) represents a necessary tool, **to be flanked by the planning of infrastructural investments** (technology push), in order to give a strong impulse to the Italian digitization process, especially at a time of such dramatic economic crisis.

Moreover, despite the substantial infrastructure investments linked to public and private intervention, the classic dichotomy between urban and rural areas has not been eliminated. In many provinces characterised by a complex orographic system (particularly due to the presence of mountains), coverage levels are still way below average. Technological progress, in particular through the diffusion of FWA (Fixed wireless access), is certainly the main lever to eliminate such a criticality and demonstrates the need for a policy approach based on **technological neutrality** and on a careful costs/benefits assessment, especially at a time of limited public and private resources.

Figure 8 - Comparison between service diffusion and infrastructure coverage for connection speeds ≥30 Mbps (% of households)



Source: elaborations on company data (for dissemination) and data used by the European Commission to calculate DESI, indicator 1b1 Fast broadband coverage - NGA (for coverage)

- **CRITICAL FACTOR**

NEW DIGITAL INEQUALITIES

During a pandemic, the effects due to digital inequality are exacerbated: it worsens the plight of those already showing a digital divide, but it also enhances the importance of inequality in the socio-economic context. In particular, citizens who can take advantage of adequate internet connections are in a condition of absolute advantage over those who do not have access to the network, i.e., have a "low" quality one. In the current period, the situation for the latter part of the population has inevitably become more difficult since, as repeatedly stated, the use of the network has become an essential tool for fundamental aspects of daily life.

Moreover, it is necessary to consider also all those individuals who usually connect to the internet only at work, at school or through public access (e.g., libraries and bars) and who, in this period, find the possibilities of participation in the digital ecosystem drastically reduced. This phenomenon is particularly relevant in those contexts characterised by low population density and complex orographic conditions and where access to good quality Internet connections in terms of adequate speed is often a public places prerogative.

The mobile network connection has partly mitigated the problem; the corresponding tariffs are in fact more accessible than those of the fixed network connection, but the replacement effect is limited (imperfect replacement) as consumption models requiring technical performance not always available on the mobile network are spreading.

The digital endowment by individuals/families also becomes a further critical factor, able both to widen pre-existing inequalities and to generate new ones. This naturally came to light when a significant part of the population was forced to work from home and the education system moved completely online, a phenomenon unprecedented in human history.

As far as the school system is concerned, the closure of universities and schools of all types and at all levels posed many challenges as, with the advent of the pandemic, digital inequalities exploded in all their severity due to the unprecedented number of students involved in e-learning.

Digital inequalities were then added to traditional inequalities inherent the educational system, which can be summarized in the different opportunities in terms of years of schooling and access to equivalent learning pathways.

As highlighted by AGCOM with reference to primary and secondary schools of first and second degree[16], this process reveals numerous critical issues whose effect is to generate an extremely heterogeneous panorama, from a geographical point of view: each school system, in fact, appears to be characterised by a specific level of equipment and digital orientation of teaching.

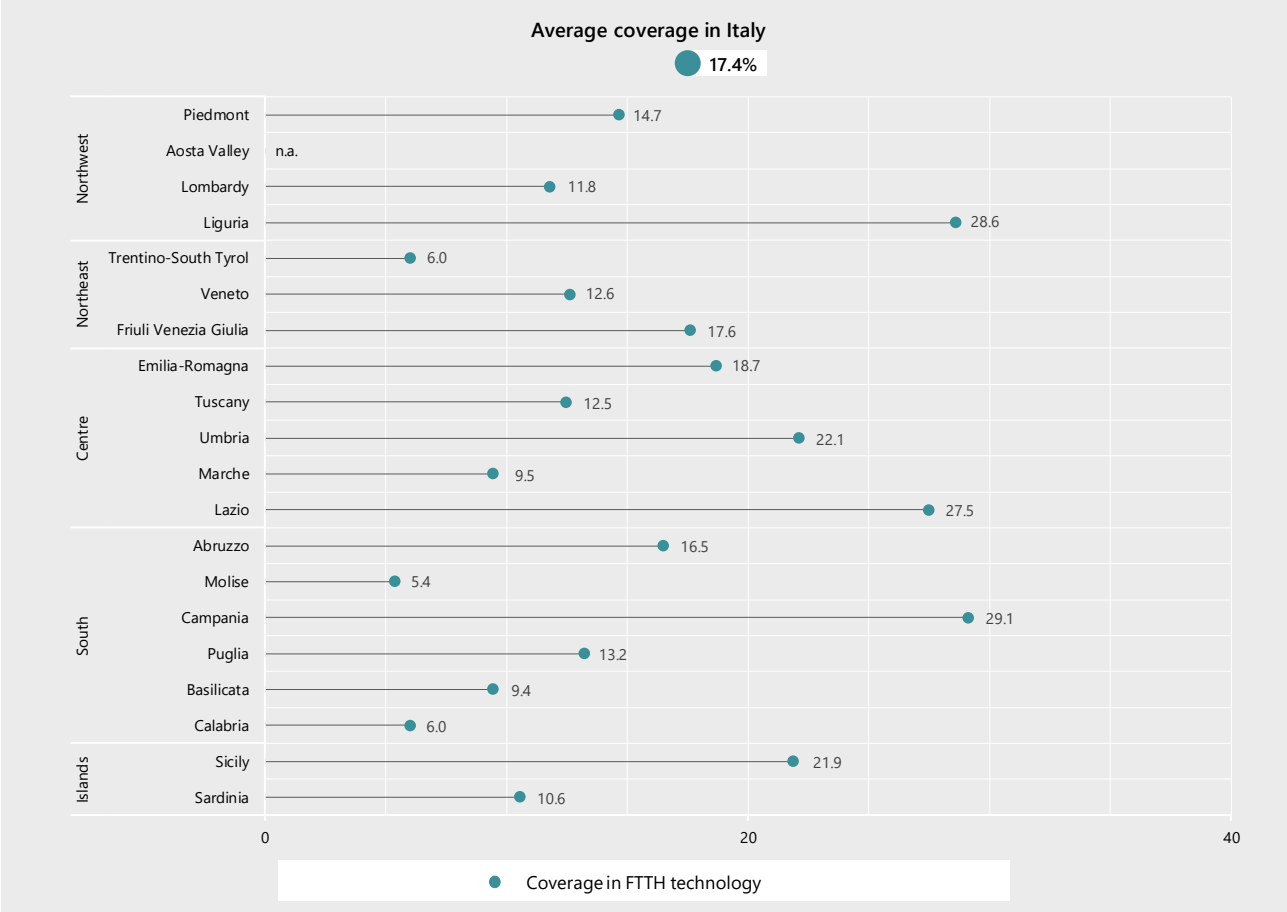
[16] AGCOM, Educare Digitale. Lo stato di sviluppo della scuola digitale. Un sistema complesso ed integrato di risorse digitali abilitanti (*Digital Education. The state of development of the digital school. A complex and integrated system of enabling digital resources*), 2019.

Part of this heterogeneity can be traced back to the different coverage level that characterises the various Italian geographical areas, in line with what was highlighted above for families (see **Figure 8**). However, different choices made by individual school systems, especially at regional level, are equally relevant. The combination of these two factors (availability of high-quality connection services and choices on digital equipment by schools) generates a very diversified situation contrasting with the principle of equal opportunities for young people in terms of educational processes and evolutionary growth.

For example, considering only the territorial coverage of qualitatively superior technology (FTTH - Fiber to the home), which should hopefully be the prerogative of all schools, a fairly significant lack of homogeneity emerges and it is therefore capable of producing situations of excellence and, on the contrary, conditions of technological backwardness of school buildings (see **Figure 9**).

The completely new impact caused by the pandemic also concerns another aspect: e-learning, in fact, in addition to the digital offer of schools and universities, requires digital equipment and skills from students. In addition, it is necessary to consider, particularly for the first years of school, the fact that e-learning requires the involvement of adults.

Figure 9 - Percentage of school buildings equipped with FTTH technology



Source: Survey on internet connectivity in schools, https://maps.AGCOM.it/

As far as equipment and digital knowledge are concerned, as mentioned, they appear to be very heterogeneous and strictly dependent on socio-demographic and economic factors; in the vast majority of cases, they must be added to the need to share devices (PCs, tablets, ...) among several members of the same family and the adequacy of space inside the home[17]. As far as the contribution of adults is concerned, a significant heterogeneity must also be considered: it is due both to the different cultural background and to the availability, in terms of time, that they can guarantee to support the e-learning carried out by children.

[17] For example, according to an ISTAT survey, in 2018-2019, 12.3% of school-age children (6-17 years old) did not have a PC or tablet at home, 57% had to share a PC or tablet, while only 6.1% had a personal PC. https://www.istat.it/it/archivio/240949

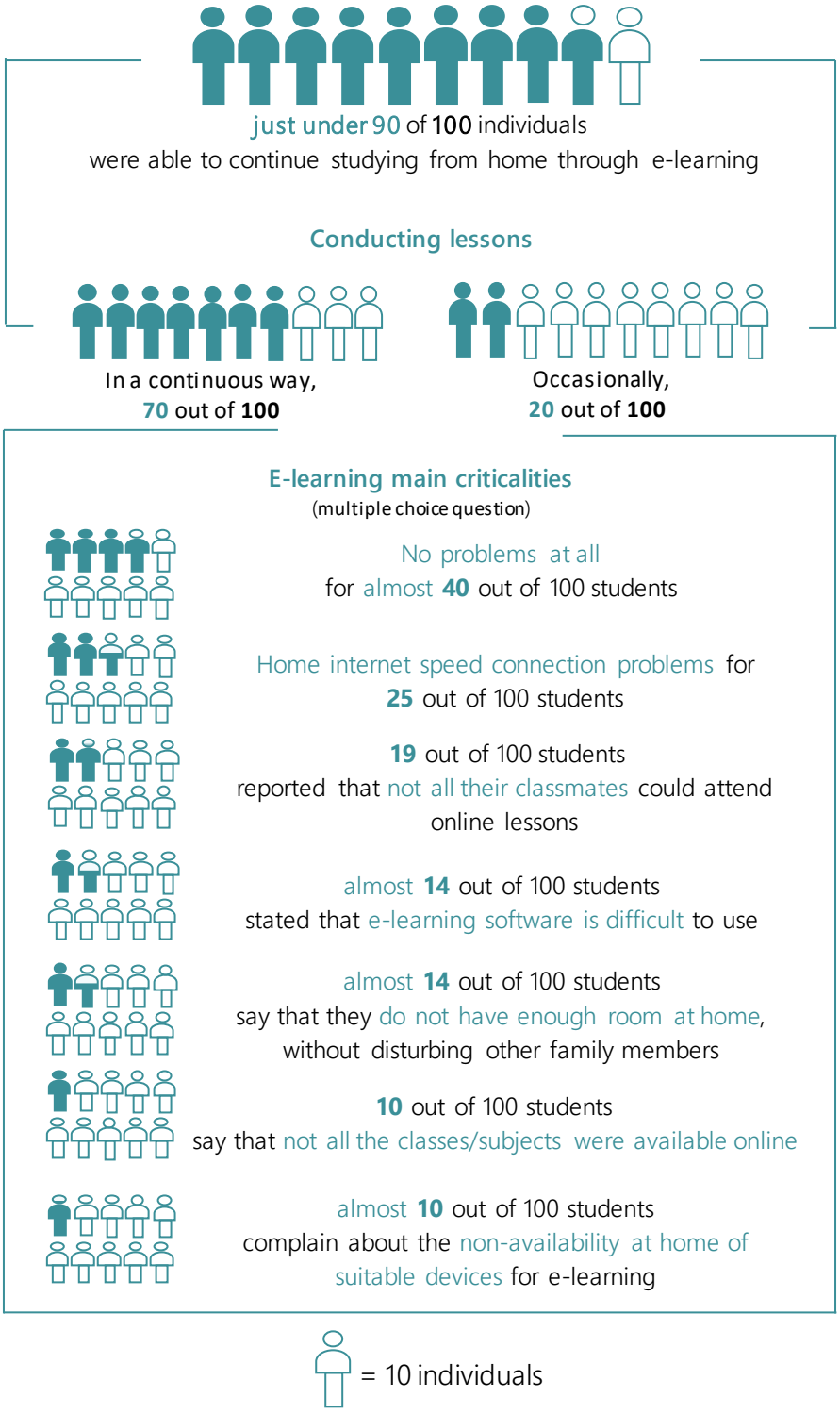
Different socio-economic starting conditions, therefore, have a significant impact on students' educational growth, especially at a time when, due to the pandemic, e-learning has become the unique learning tool. This criticality does not only concern Italy: **in April 2020, about 90% of students (of every grade) worldwide, equal to about 1.6 billion kids, found themselves dealing with e-learning**. If we consider that about 43% of them (i.e., about 700 million students) do not have internet at home and 50% do not have access to a computer, we can understand how globally significant the impact of the pandemic was, with the resulting risk that many kids are increasingly lagging behind in the educational growth and maturation process[18].

The risks underlying this emergency, therefore, cannot be underestimated, especially if e-learning methods will soon become an ordinary tool and no longer an exception linked to an extraordinary event.

As far as the Italian context is concerned, according to **research specifically conducted by AGCOM** (**Figure 10**), e-learning during the lockdown period involved almost 90% of the individuals interviewed.

[18] The number of students is related to those enrolled at pre-primary, primary, lower secondary and upper secondary education levels [ISCED levels 0 to 3], as well as tertiary education levels [ISCED levels 5 to 8]. https://en.unesco.org/news/startling-digital-divides-online-learning-emerge

Figure 10 - E-learning in Italy during lockdown



Source: AGCOM survey

This means, on the contrary, that more than **10 out of 100 kids have been excluded from the educational process**. In addition, a further 20% were only able to attend

courses from time to time, without being able to attend lessons regularly for the current school year.

With regard to the problems emerged in dealing with this period of e-learning, it should be pointed out first of all that only 40% of students stated that they did not have problems concerning e-learning. Numerous critical issues emerge and they are all potentially capable of exacerbating inequalities among students. If, on the one hand, the home Internet connection slowness proves to be the most relevant aspect for students and family members interviewed (25%), other problems emerged in this new phase are not insignificant. Not only do differences emerge between different school contexts but also within a single class, as it can be inferred from the 19% of students who stated that not all classmates were able to participate in e-learning. The difficulty in using e-learning software and the need to share spaces with other family members represent a critical factor for 14% of Italian students. Finally, the shortage in equipment availability and the lack of educational offer by schools (both with about 10%) represent two further factors capable of generating a highly heterogeneous school system, which risks fuelling inequalities from the earliest years of a person's life.

2.3 THE INFORMATION SYSTEM

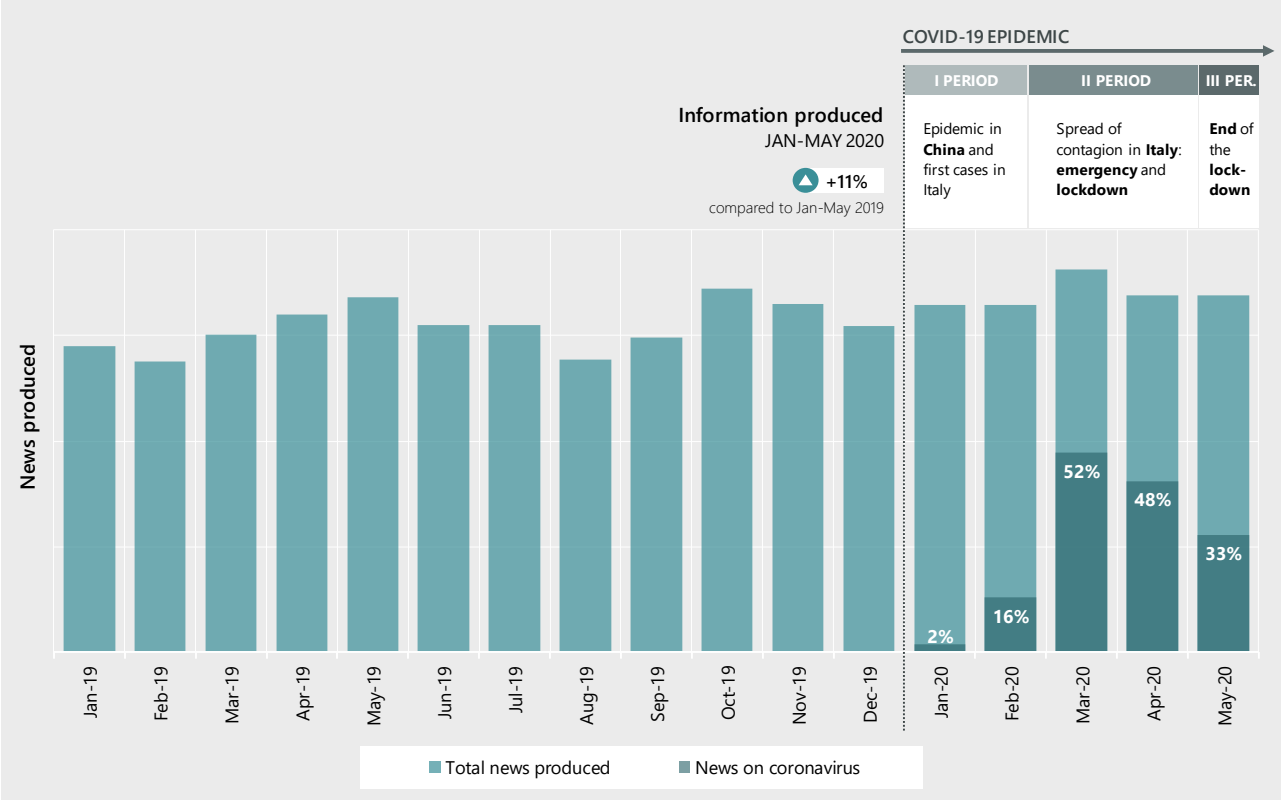
Over the years, AGCOM has constantly monitored national information scenarios, detecting trends and critical elements. Looking at the first months of 2020, the epidemic outbreak has affected the information system in two ways: on the one hand, raising the levels of some production indicators (supply) and news consumption (demand), on the other, accelerating trends already underway and exacerbating certain problems.

Since the contagion began to spread in the country, turning into a medical-health emergency, the Italian information system has inevitably been revolutionized in the proposed offer.

From as early as January, before the epidemic hit Italy violently, the information production (on any kind of news) showed an increasing trend, which then strengthened further in the following weeks. Overall, in the first five months of 2020, the space given by media to information increased significantly, both compared to previous months and in relation to the same time period in 2019. From January to May 2020, the total news produced by TV, radio, newspapers and internet increased by 11% compared to the same period last year (see **Figure 11**).

At the same time, issues related to the epidemic reached levels of media coverage (close to 60% on several days in March) never seen for other events since the war, with a production close to 2 million news pieces about the coronavirus (press and web articles, radio and television services, social content, ...).

Figure 11 - Information produced: total news and coverage of the "coronavirus" topic



Source: elaborations on Volocom data

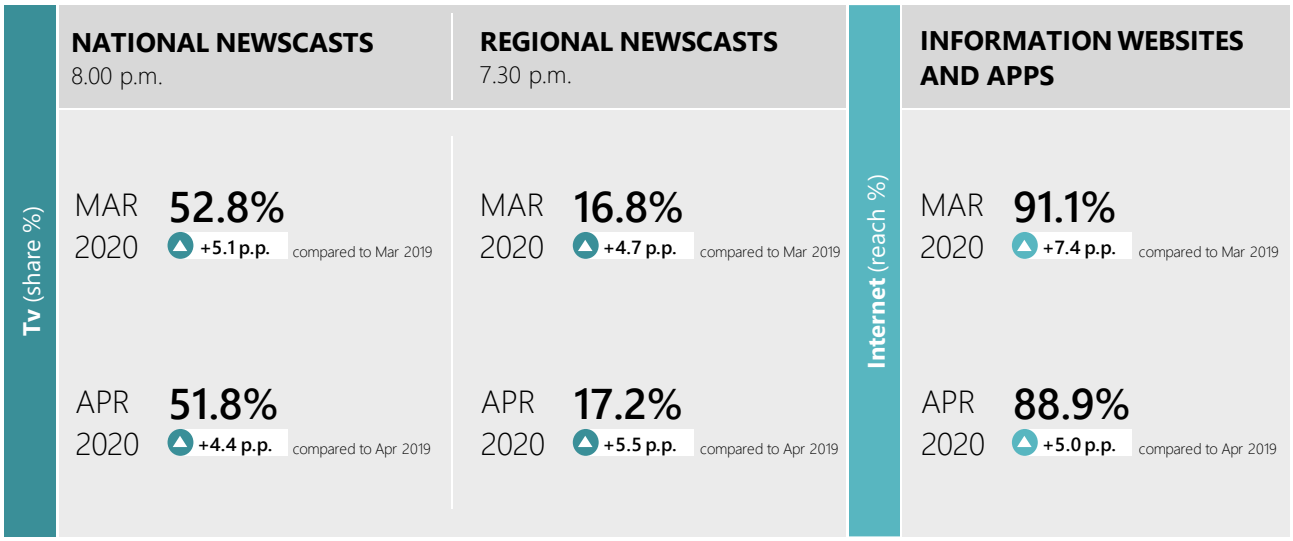
Media kept Italians informed while confined at home: stories, images, numbers of the pandemic, institutional communications, medical and scientific opinions and recommendations were conveyed through them.

Citizens' concerns and hopes turned into a need for information and knowledge, in the repeated search for news and updates. Thus, in the most acute phase of the epidemic crisis, television and online sources of information marked a surge in audience and use (see **Figure 12**).

In March and April, 8pm newscasts clearly exceeded the 50% share of viewers, with an increase over the same months of 2019 of 5 and 4 percentage points respectively.

Similarly, the local information transmitted by regional newscasts saw a significant jump in ratings during the lockdown, when viewers were more and more concerned about the events and the health situation in their local areas.

Figure 12 - Growth in news consumption during the epidemic



Note: national newscasts values are referred to TG1, TG5 and TG LA7; regional newscasts values are referred to TGR

Source: elaborations on Auditel-Nielsen and Audiweb data

During the epidemic, as seen above, without prejudice to the critical connectivity issues previously analysed, the closure of shops, the suspension of activities, the limitation of travel and the consequent shift to remote interaction modes led to an increase in the general Internet use. Consumption of many online services grew significantly and different categories of sites and applications showed above-average levels of usage.

These include publishers' information websites and apps (traditional and online only), some of which also offered discounted subscription to their premium information contents. In March, information websites and apps exceeded the 90% threshold of unique users out of the total number of connected individuals (more than 7 percentage points higher than in March 2019); this is also associated to an increase in time spent per person - more than doubled.

- CRITICAL FACTOR

SHARP CONTRACTION IN SOURCES OF INFORMATION FUNDING

A greater amount of information offered can be an indication (or at least helps to increase the probability) of a greater plurality and coverage of facts, topics and visions, giving citizens a wider opportunity to learn and compare different news and sources even within the same media.

However, quantitative values on the information offered need to be analysed from a broader point of view, which also calls into question other aspects of production, such as editorial efficiency, accuracy, the degree of analysis and, ultimately, the **quality of the information content** released.[19]. These elements are strictly dependent on information **financing**, that is essentially based on three pillars: advertising sales, sales to users (mostly in the case of newspapers and periodicals), and forms of public contributions (including the public service broadcasting fee).

Beyond business model peculiarities of each media, the sale of advertising space to advertisers has been the main economic resource in Italy.

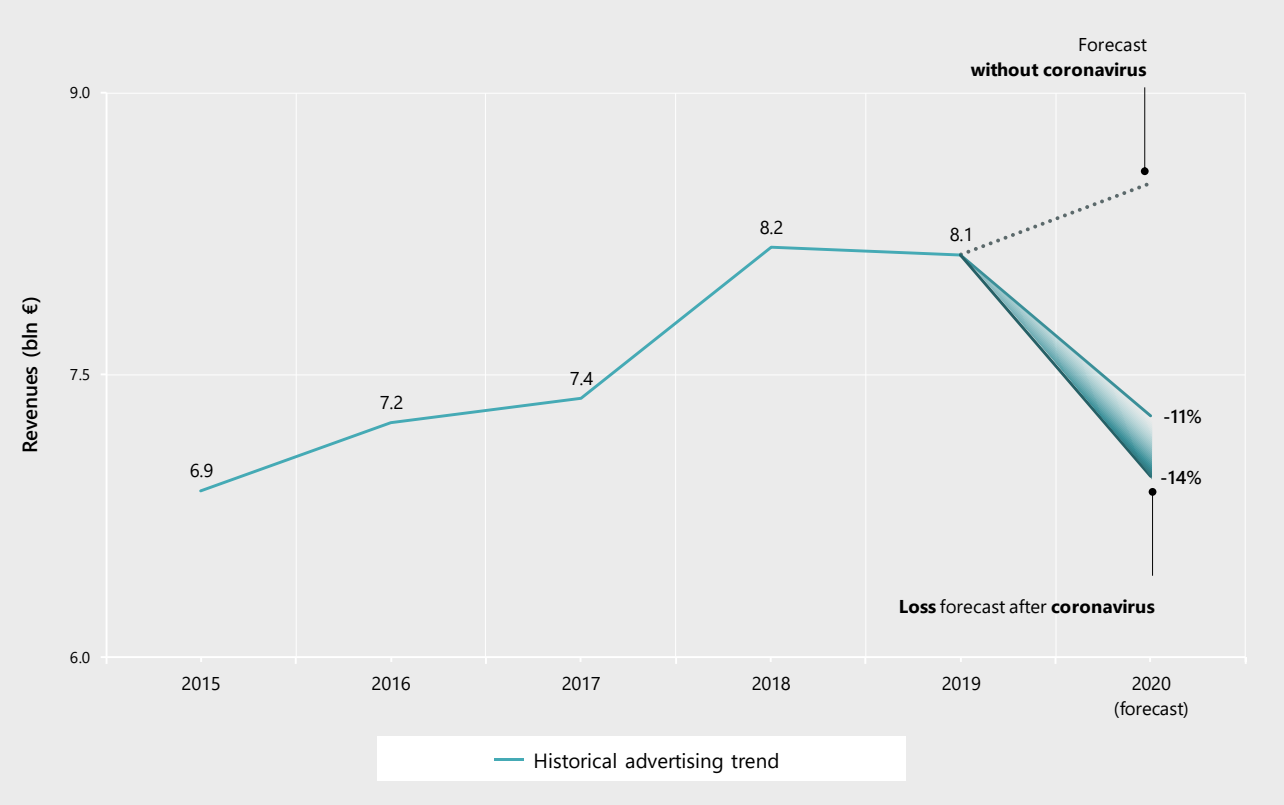
In a context marked at present by a serious economic crisis and a great deal of uncertainty for businesses and families as a result of the epidemic, we can only expect a corresponding **sharp drop in advertising revenues** and, more generally, as anticipated, for the entire media sector.

Despite the audience and news consumption growth reported at least for television and the internet, the economic results for the first quarter of the year are strongly negative for all media; moreover, forecasts suggest a **decline** in advertising revenues (caused both by the lower availability of advertising spending and lower sales prices for advertising space), which at the end of the year could range **between 11% and 14%,** with an expected loss of one billion euros compared to 2019 (see **Figure 13**).

In percentage terms, the **expected decrease** is much **more pronounced for the publishing segment**: the marked economic effects will join the already difficult situation outlined by the structural reduction in revenues that has long been affecting not only the advertising segment but also the sale of copies. It should be noted that, while demand for information on TV and online increased during the lockdown, the volume of newspaper and magazine sales continued to decrease significantly, although newsstands were among the few businesses that could remain open.

[19] In this regard, in order to update periodical analyses carried out through the Journalism Observatory, AGCOM has launched a specific survey concerning the impact of the epidemic on journalism.

Figure 13 - Forecast trend in advertising revenues

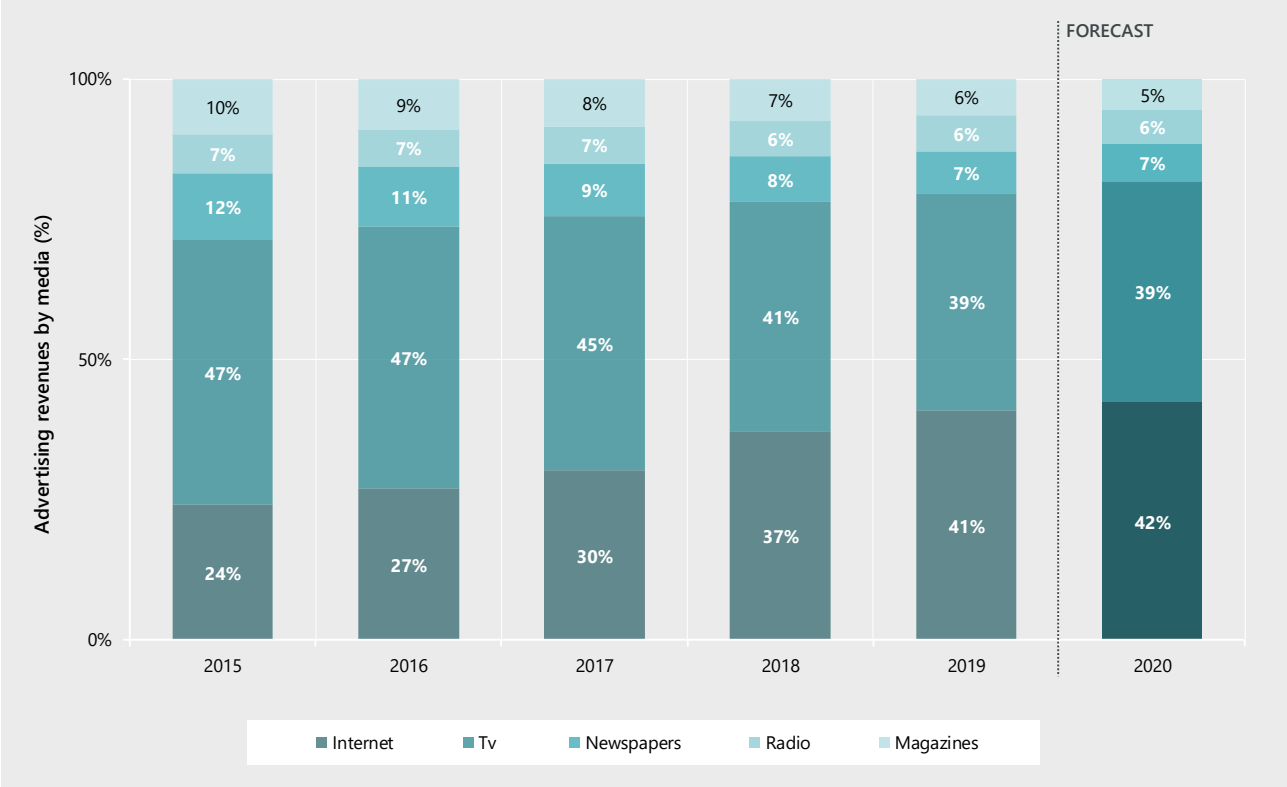


Source: forecasts on company data and various sources

As can be deduced from the previous figure, in 2020, the value of advertising might fall back to the levels of four or five years ago, rather than approaching the threshold of 8.5 billion, as might have been expected in the absence of the economic shock.

As a matter of fact, the total amount of advertising revenue over the last five years and forecasts without coronavirus were strongly influenced by the rise in online advertising (of major international platforms in particular), which in 2019 exceeded television advertising sales, with a share of over 40%. Under any possible scenario, this share appears to consolidate in 2020 (see **Figure 14**). Although the epidemic impact is not expected to spare online advertising - so much so as to reverse a positive trend that seemed unstoppable -, it is assumed that the gap between online advertising and funding in other sectors will continue to widen.

Figure 14 - Advertising revenues by media



Source: elaborations on company data and various sources

The growing importance of online platforms in the information and communications system and their position of strength at national and global level (which will be discussed in more detail hereafter) also calls for a broader reflection in order to protect information pluralism. The problem of platform accountability should be taken into consideration. The epidemic has exacerbated, among others, some critical issues that have emerged in recent times: they relate to the role of platforms in the application of tools for detection, removal and control of content, accounts and social pages. Using those tools, especially with regard to publishers and political subjects, raises important questions about the legal nature of the policies adopted by platforms and the consequent legitimacy and opportunity that they can independently remove information content, pages and profiles, unlike other regulated media. Clearly, this issue will require a comprehensive legislative action to strike a proper balance between rights and values at stake, while fully respecting freedom of information and pluralism.

- **CRITICAL FACTOR**

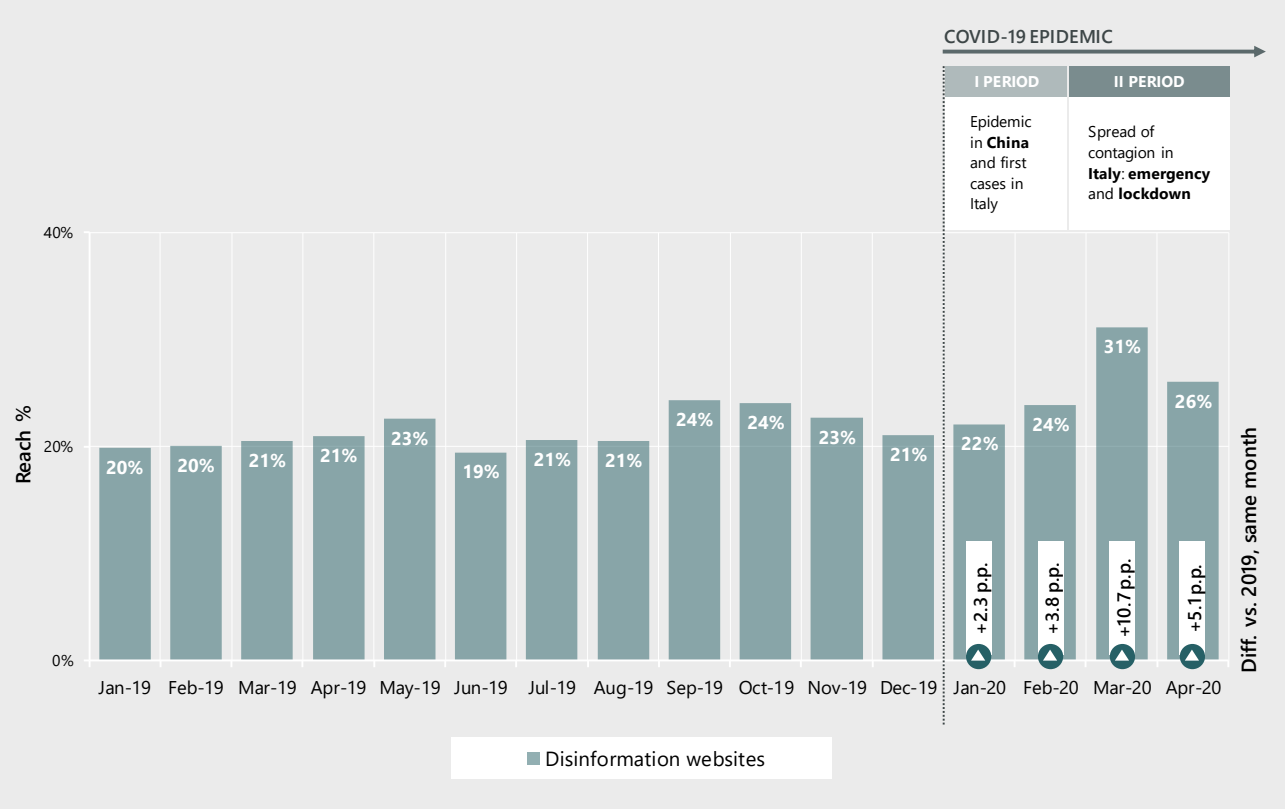
DISINFORMATION

An **interdependence** relationship between information and disinformation systems has always been in place: it is a close link between **information system critical issues** and the dissemination and consumption of **disinformation**.

The contraction in information revenues and investments, the related regression in the use of verification mechanisms within the journalism and the limited time needed to update and produce information (especially online) are likely to compromise information adequacy in terms of accuracy, in-depth analysis and coverage. Moreover, in the case of coronavirus-related issues, the difficulty of discerning between true and false news is further complicated by the lack of an established scientific knowledge base on the subject.

In this context, citizens are increasingly at risk of relying on alternative and unqualified sources which are often at the root of disinformation strategies. Over the first few months of 2020, and especially in conjunction with the Italian outbreak of the epidemic, disinformation sources (identified as such by external debunking specialists) reached growing audiences. In March, in the midst of a medical emergency, **more than 30% of Italian internet users consulted disinformation websites** (almost 11 percentage points more than in March 2019), accessing them directly or through redirection from social networks and search engines (see **Figure 15**).

Figure 15 - Unique users of disinformation websites (% of total during the month)



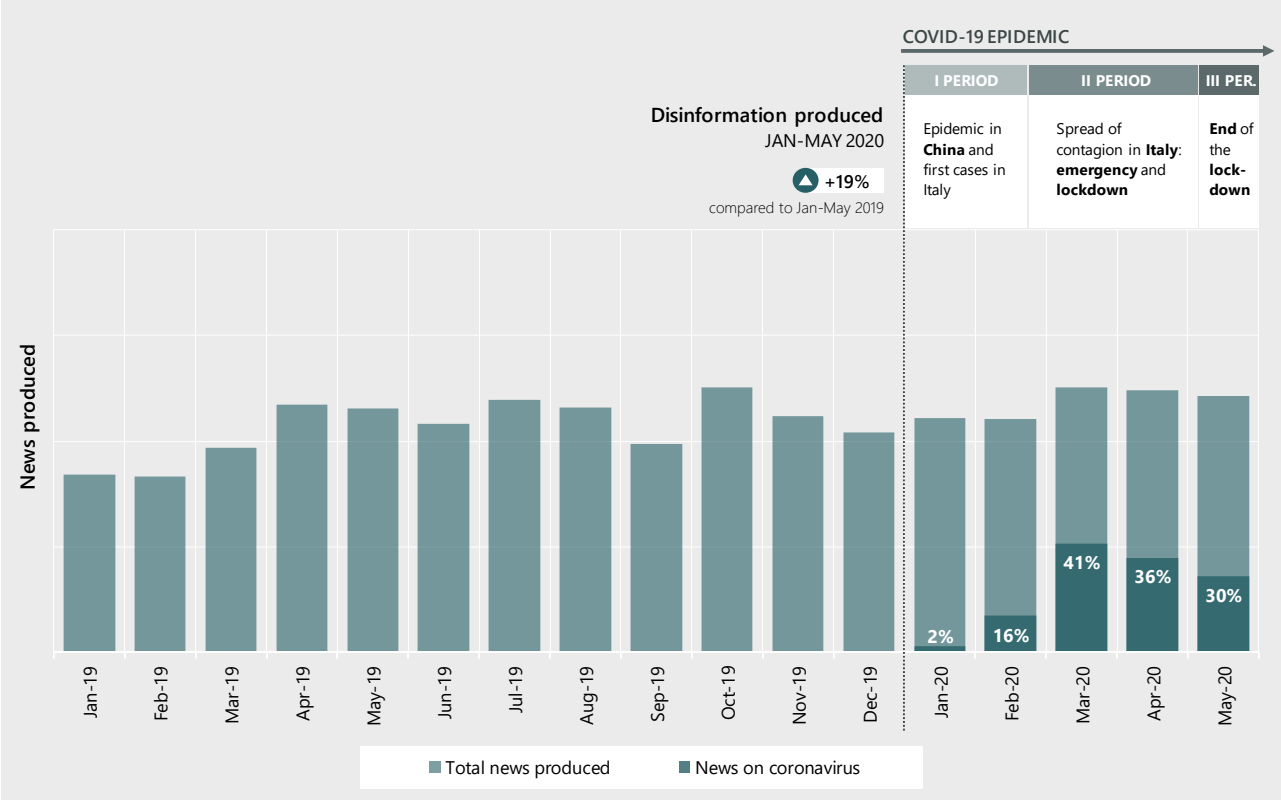
Note: the websites taken into account relate to disinformation sources detected by external debunking specialists.

Source: elaborations on Audiweb data

Concerning the production, the number of articles, posts and tweets published by disinformation sources on their websites, pages and social accounts has started to increase since January. Comparing the first five months of 2020 with the same period last year, the total volume of online disinformation on any topic increased by 19% (see **Figure 16**).

Similarly, to what was found for information, disinformation sources also devoted significant space to coronavirus issues (around 40% of the total in the most critical phase of the epidemic emergency).

Figure 16 - Disinformation produced: total news and coverage of the "coronavirus" topic



Note: the disinformation produced refers to news published by disinformation sources (websites and related social pages and accounts) identified as such by external debunking specialists.

Source: elaborations on Volocom data

It is estimated that in March a disinformation site produced an average of 4 new articles per day on Covid-19-related topics. This is considerable given that disinformation sites typically take on a role that aims to give impetus to fake news; once triggered, they are likely to become the subject of a viral propagation through social networks and other online platforms.[20].

Analyses carried out by AGCOM within the Report on Online Disinformation - Coronavirus Special showed that articles on the epidemic disseminated by disinformation sources - all using a communication style based on terms leveraging **negative emotions** and **anxiety** - are generally attributable to some **prevailing narratives**, mostly focused on **conspiracy theories**, **risks** related to contagion and **news stories** concerning the health sector.

[20] See the AGCOM Report, News vs. Fake nel Sistema dell'Informazione (*News Vs. Fake in the Information System*), 2018.

Many of the most widespread fake news in Italy and in the world dealt with issues capable of triggering irrational behaviours and beliefs[21], such as medical and pseudoscientific ones about miracle cures and unreal remedies resulting in dangerous consequences for one's own health and for others.

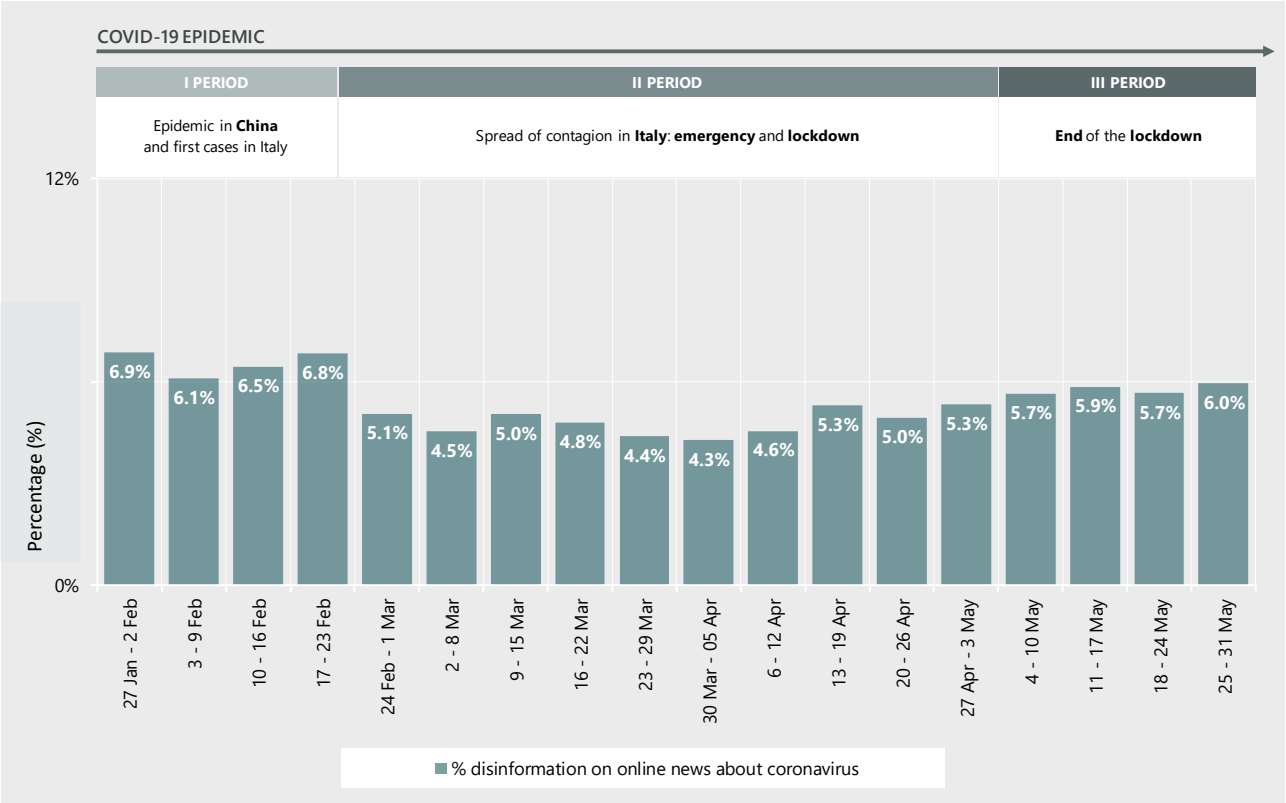
In the specific case of the epidemic, where information quality is one of the key principles for contagion containment, the importance of preventing, promptly detecting and combating pathological disinformation phenomena once again emerges in all its evidence.

Over the years, AGCOM has undertaken a specific regulatory path in this sense, acting as an independent institution and a guarantor; last February, it ordered the implementation of a continuous monitoring system focused on information quality.

Considering all the coronavirus content available online, the system showed that during the most difficult weeks of the Italian emergency (The epidemic period, see **Figure 17**) disinformation was limited by the strong growth of the information component - especially in March, it was often below 5%. The weight of disinformation on coronavirus, which is however showing a recovery (up to 6%), reached the highest levels when the contagion was marginally affecting Italy and, indeed, the attention of information sources was weak.

[21] In order to strengthen information and disinformation analysis systems, AGCOM is experimenting innovative methods concerning users' reaction to news of different quality and reliability evaluation, cognitive mechanisms influencing decisional processes underlying the fruition of news and perceptions of phenomena and other elements characterising the individual and the surrounding context. Moreover, at the beginning of June, a specific survey was carried out by the SWG company in order to investigate perceptions linked to coronavirus news.

Figure 17 - Disinformation incidence on online news about coronavirus



Note: the disinformation produced refers to news published by disinformation sources (websites and related social pages and accounts) identified as such by external debunking activities.

Source: elaborations on Volocom data

The ability to access quality information is of primary importance to the community. At all levels - from the medical-healthcare one, to the ideological, political, social and economic level -, disinformation is able to generate distortions in business, institutions and citizens' decisions, leading to failures of choices and policies.

In other words, the alteration of the information set available to individuals represents a problem from the social well-being point of view. Information constitutes a fundamental resource for all economic agents operating on the markets, insofar as it contributes to consumption and production choices. Its incompleteness and asymmetry, in fact, produces inefficiencies in prices, in goods and services quantity and quality and in wealth distribution between businesses and consumers. In addition to these general effects, there are further negative consequences deriving from information imperfections, which can affect other aspects such as health, safety and the environment. Therefore, disinformation is a serious problem not only from a policy

point of view, but also from a commercial one. The latter is extremely relevant in the recovery phase Italy is experiencing: the country is committed to the delicate task of building up the recovery, which involves, among other things, the promotion of widespread national entrepreneurship and Made in Italy brands. Online fraud and commercial disinformation did not go unnoticed during the epidemic either. Deceptions based on counterfeit brands, truthful elements manipulated and fake information on products and companies (very widespread especially in the agri-food sector) risk misleading consumers and undermining the reputation, even internationally, of Italian companies - already affected by the economic crisis.

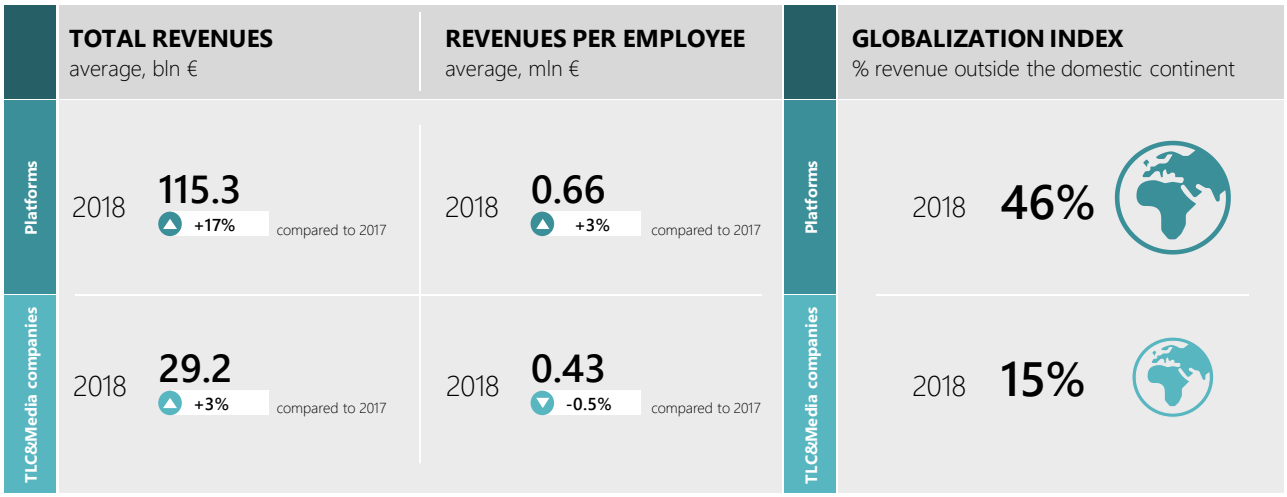
2.4 COMPETITIVE SCENARIOS

Online platforms success in the global competitive scenario can be appreciated from several points of view; hence, it should be considered the number of users reached and the traffic realised, as well as other parameters - including the growing market and equity value, high profit margins, high level of capitalization, exceptional spending capacity in R&D activities.[22]. This phenomenon is bringing about a real **revolution in the modern economy and society**, with particularly evident effects on traditional services, including communications; it has also favoured the development of new services and new markets.

The significant rise of online platforms is easy to observe if **overall revenues** - both globally and nationally - are considered. In addition to extraordinary growth rates, overall global volumes are four times higher than those achieved by leading electronic communications and traditional media companies, partly because of their presence in worldwide markets (see **Figure 18**). Offering mainly intangible services, platforms generate almost half of their revenues **outside of the domestic continent**, compared with a share three times lower for telecommunications and media companies, which suffer from the difficulty of offering services in countries where they do not own infrastructures.

[22] See AGCOM, Osservatorio sulle piattaforme online (*Report on Online platforms*), 2019.

Figure 18 - Indicators of growth, productivity and globalization of platforms compared to telecommunications and media companies

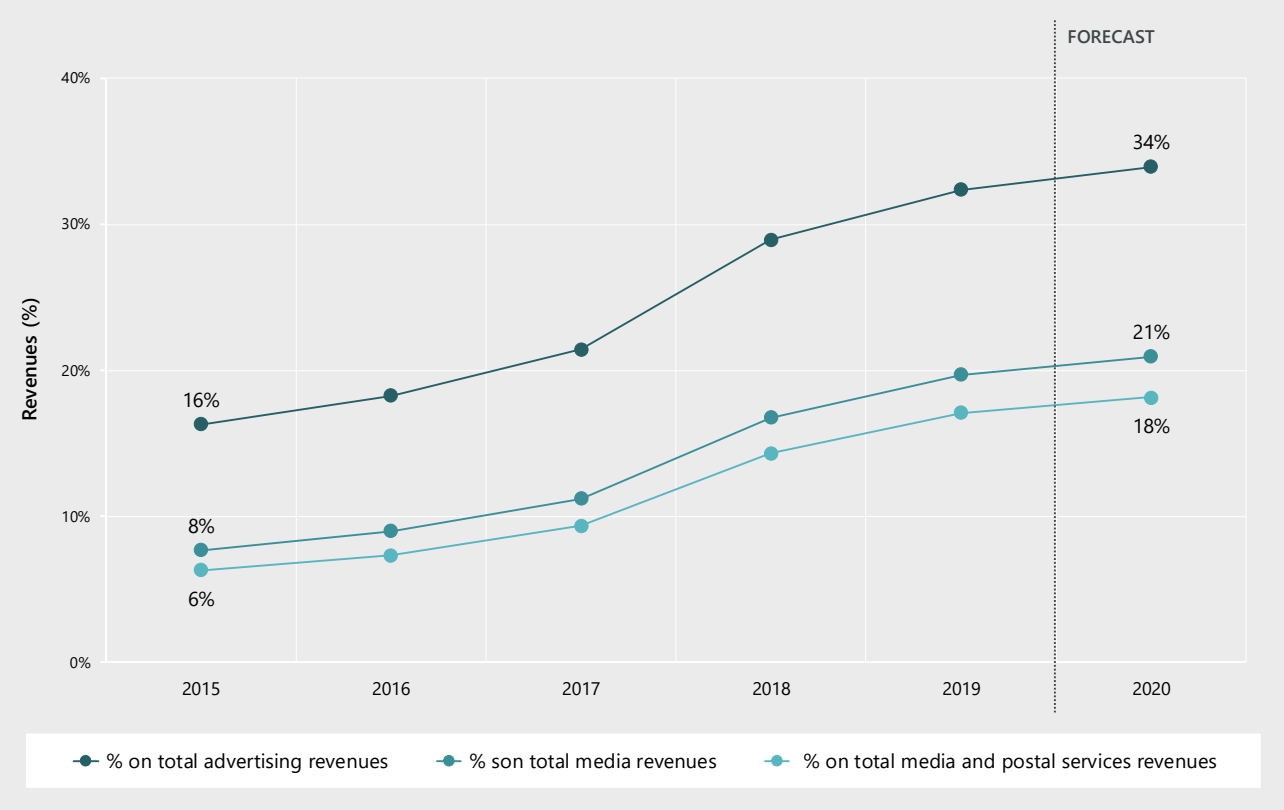


Source: elaborations on company data and various sources

At an Italian level, as shown in **Figure 19**, as platforms entered the various areas of activity composing the communication sector, an increase in their importance has gradually taken place. In the advertising sector, where platforms have been operating since at least 2010, their share doubled in the period 2015-2019 and it now exceeds one third of total resources. Considering media sector total revenues and including earnings on the user side, the share of revenues from platforms appears to have doubled (to over 20%) as pay-tv services have become more significant since 2015. Finally, extending the analysis to postal services and parcel delivery, the weight has almost tripled (even if platforms are more recent in this field).

As a result of Covid-19 contagion spread in Italy, there was a transformation in supply and demand in the communication sectors where platforms are active (see above). The forced closure of certain sectors (including physical shops), the impossibility of travel combined with a general state of uncertainty for families and businesses in which Italy still finds itself are likely to lead to a contraction in advertising revenues but also in the entire media sector and main postal services for 2020. The general revenue contraction phenomenon - confirmed by the first quarterly results - seems to have had a much less evident impact on platforms than other communication operators, thus intensifying the growth dynamics of the relative importance.

Figure 19 - Incidence of platforms in communication sectors (% over the year)



Source: elaborations on company data and various sources

As observed over time, platforms represent an innovative resource throughout the communication chain, with positive effects on social and consumer well-being. Even during the health emergency, they allowed social interaction processes and new services provision; they facilitated and accelerated, among other things, digitization paths in the provision of private and public products and services that until a few months before were not even conceivable.

On the other hand, their affirmation on the markets introduces new forms of criticality linked to the technological and economic nature of these operators - a more in-depth examination will be provided below.

- **CRITICAL FACTOR**

BIG DATA AVAILABILITY AND ENHANCEMENT CAPACITY

The extraordinary platform growth - representative of a real paradigmatic discontinuity - is closely related to the specificities of Internet services (multi-sided

structure), in which platforms act as intermediaries by exploiting and enhancing individual user data[23]. Considering the possibility of reaching a very wide audience (as well as the time spent and the actions taken by users), platforms are able to collect a large amount of individual data marked by volume, variety and speed of acquisition according to the services offered. Regardless of the specialization degree of the service determining the possibility for the platform to acquire differentiated data[24], user data play a central role in online services business models.

Over time there has been an increase in the ability of platforms to efficiently collect, store and aggregate heterogeneous datasets of individual user data; moreover, they use sophisticated big data analysis techniques to make real-time decisions, thanks to some infrastructure assets that they own, update and expand every year. Users' data become crucial in their direct exploitation (through online advertising), in the possibility of using them to transform production, use and interaction processes underlying traditional services (from retail to postal services, from audio-visual and musical entertainment to the automotive sector) and, finally, in the creation of new products and services (new markets).

Large masses of individual data are therefore an irreplaceable strategic asset providing platforms with a competitive advantage that can undercut competitors over a longer time horizon. This dynamic is particularly evident if ARPU (average revenue per user) is considered and compared to main publishers' one: it shows the ability of these operators to enhance advertising contacts.

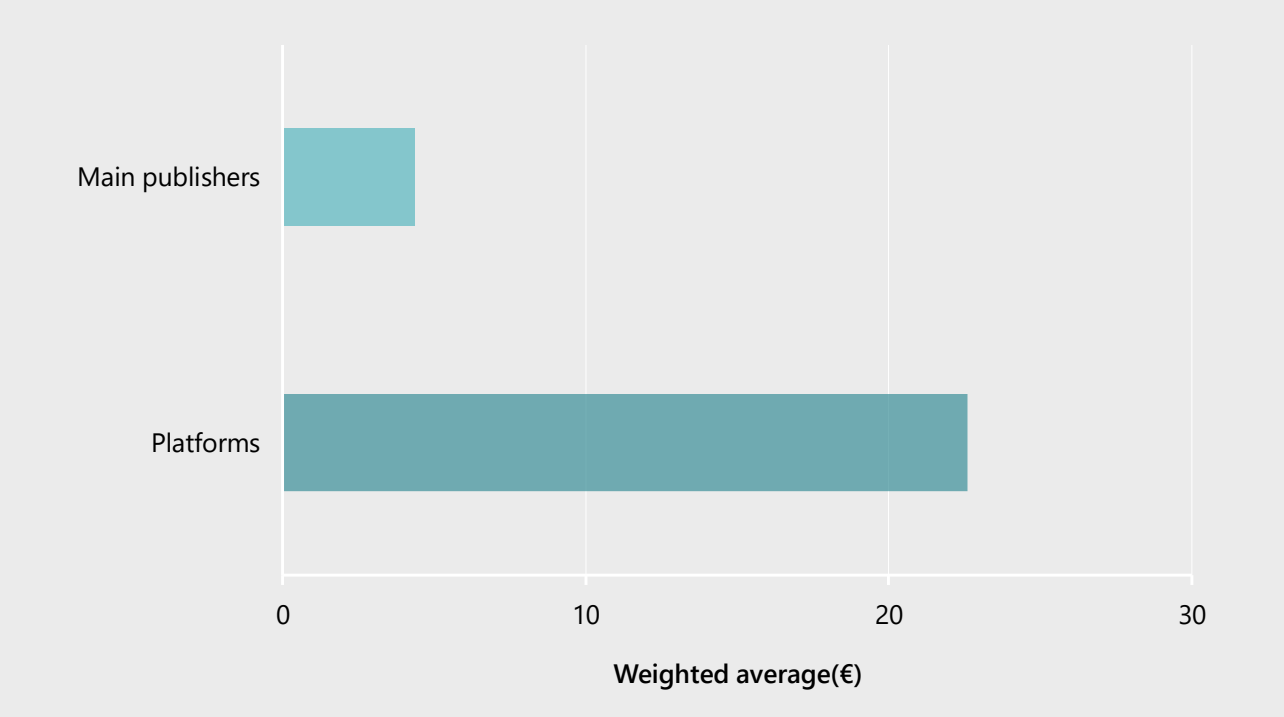
ARPU values in Italy (see **Figure 20**) highlight the ongoing difficulty for publishers to compete with platforms in online advertising sales, the predominant funding source for online information.

As stated above, the health emergency is leading to an economic crisis comparable to a recession: publishers from traditional media have been intensely affected and they had already shown signs of weakness in the run-up to the pandemic.

[23] See the Sector inquiry on Big data published by AGCOM, Agcm and the Italian Data Protection Authority on 27th November 2019.

[24] Among platforms, Google, Amazon, Apple and Microsoft stand out for the greater differentiation of data acquired (searches made, purchases, email/messages exchanged, requests addressed to voice assistants, apps and downloaded content, information related to health and payments made, ...). Facebook and Netflix, having a more specialized offer in certain services, acquire data essentially through social network/instant messaging (Facebook) activities and the use of content. See AGCOM, Osservatorio sulle piattaforme online (*Report on Online platforms*).

Figure 20 - ARPU in Italy (advertising revenues per user)



Source: elaborations on company data and various sources

- **CRITICAL FACTOR**

GEOGRAPHICAL LOCATION OF PLATFORMS

As platforms mainly provide intangible services, they are able to cover the entire world without necessarily establishing an office in the territory where services are offered. The geographical location of their headquarters - often far from areas where they offer their services - creates first of all an accountability problem, both from a regulatory and a socio-economic point of view.

During the epidemiological emergency, we witnessed an accentuation of some pre-existing critical issues, such as the obstacle for governments, regulators and citizens to interact with platforms; this problem is closely linked to the distance from their headquarters and so from strategic and general business activities, but also from the place where decisions concerning local markets are made. This issue, especially in contexts requiring timely intervention - for example, with regard to the legitimacy and appropriateness of content and account detection and removal policies adopted by platforms -, combined with a market regulation problem and a risk of not ensuring a

level playing field, entails a strong element of social criticality likely to undermine the very principles underlying democratic societies where socio-economic life participation and responsibility are two fundamental elements. In this regard, location policies adopted by platforms represent a tax contribution issue that is linked to their multinational nature and to digital goods and services features.

- **CRITICAL FACTOR**

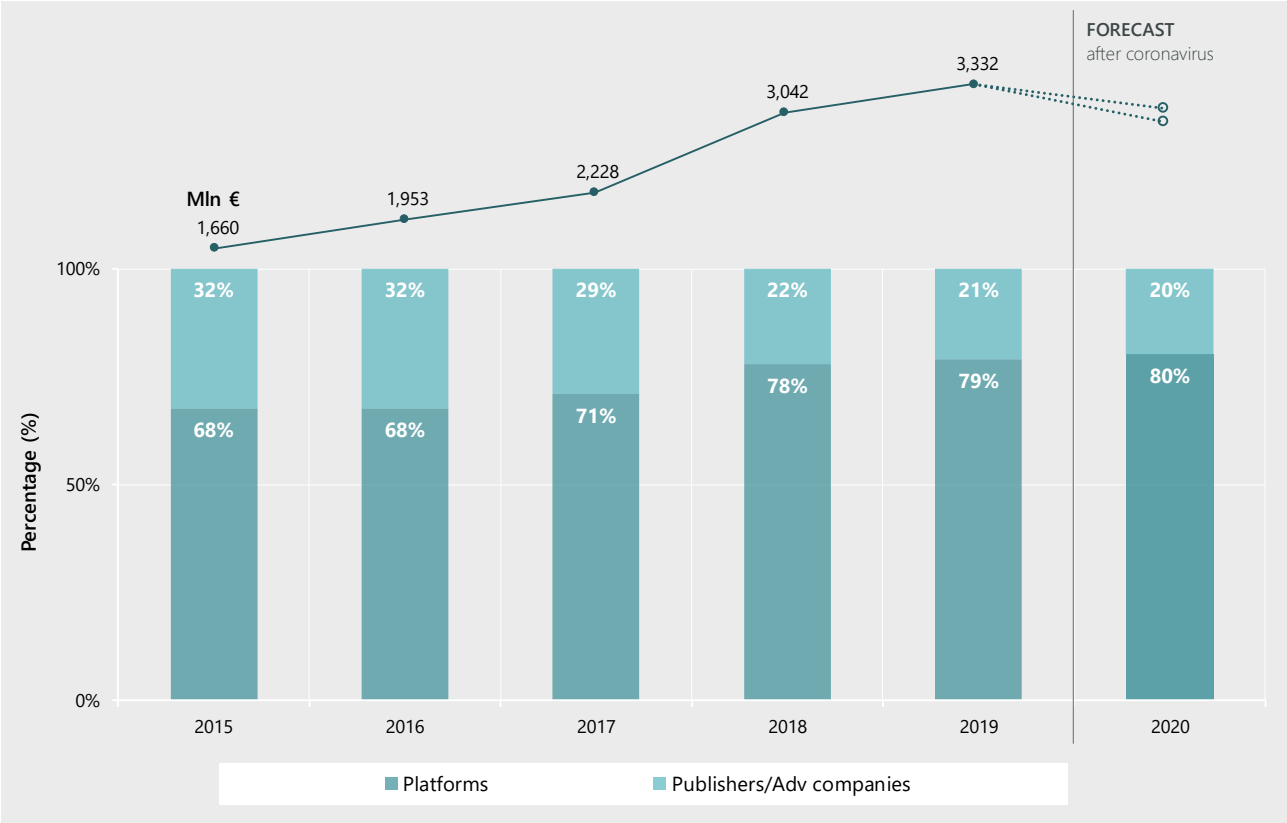
MARKET CONCENTRATION AND INTEGRATION

The rapid rise of platform on the international scene led to a sudden change in competitive structures of the business sectors in which platforms operate. First of all, the intrinsic economic characteristics of these activities (presence of economies of scale, fixed and sunk costs, low effective multi-homing and high switching costs, network externalities, weak capacity constraints) tend to generate a higher level of concentration. The risk is: if these factors are present at the same time or in combination, they may generate one unique leader controlling the majority of the market. Moreover, vertical integration and horizontal differentiation strategies enabled platforms to take a leading position in various stages of the value chain, both upstream and downstream. Worldwide, the shares of leading platforms are never below 30%, reaching almost 80% in case of operating systems (desktop and mobile), and more than 90% in other online services (e.g., search).

Although a growth in business models based on revenue generation on the user side may be observed (either as an exclusive or main source of funding), online services, especially if related to the information ecosystem, continue to generate revenue mainly from the advertising side. It is precisely in this sector that we are witnessing a significant growth in big online platforms' importance compared to other operators (represented by publishers and their historical advertising sales agencies. In 2019, total volumes managed by platforms reached 79% of the total (an increase of 135% compared to 2015). Taking into account the 2020 forecast growth in platforms' share of managed advertising revenues and despite the decline in forecast revenues for the sector as a whole, this trend seems to be further exacerbated by the consequences of the epidemiological emergency. Therefore, the pandemic consequences - which will persist for a long period of time - seem to have had a less significant impact on platforms than on other operators; ultimately, there is a risk of consolidating and

reinforcing publishers' difficulties in competing in the advertising sector with these big international players (see **Figure 21**).

Figure 21 - Incidence of platforms in online advertising (% of total revenues)

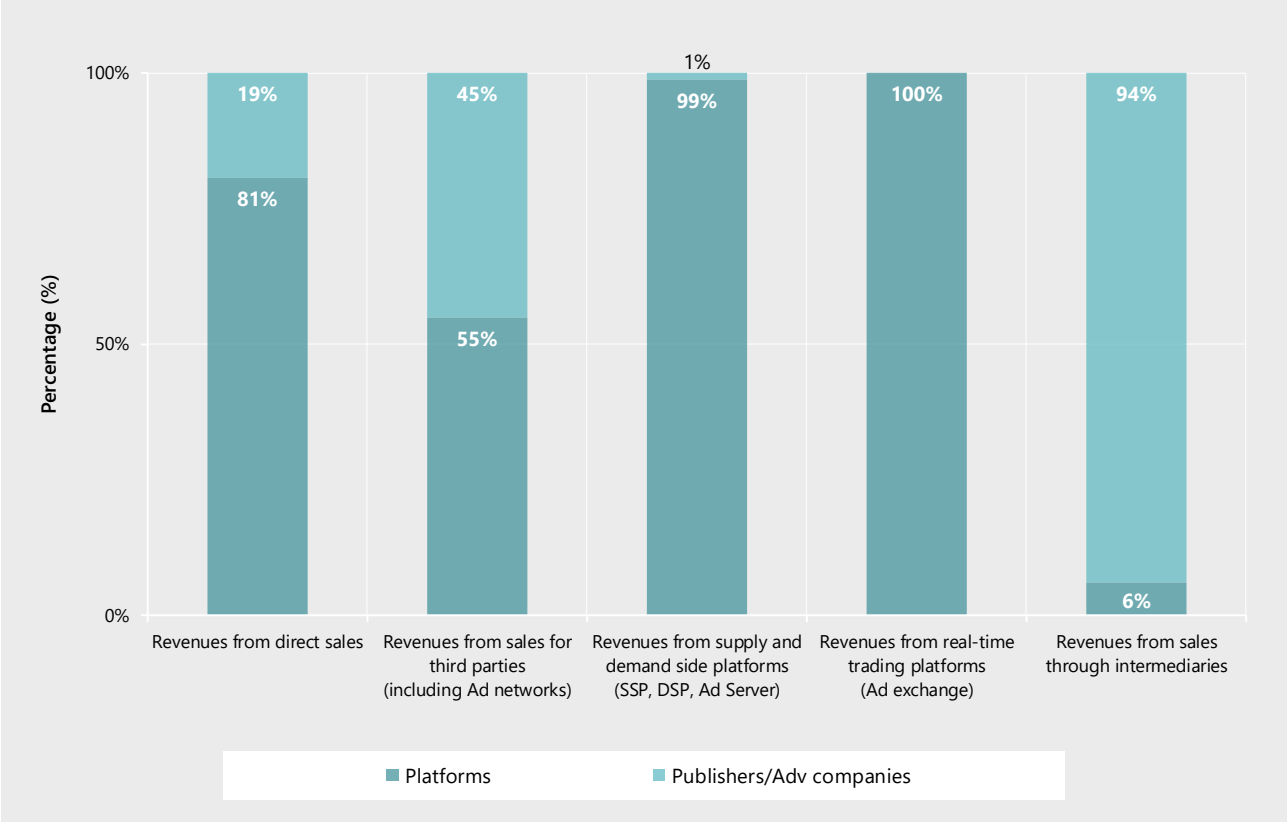


Source: elaborations on company data and various sources

Over the last decade, the online advertising space trading system has become increasingly characterised by automatic buying and selling processes that do not require direct contact between advertiser and publisher, but rather intermediated and re-intermediated by numerous operators, i.e., automated technological platforms connecting the demand for advertising (advertisers/media centres via the demand side platform - DSP) with the supply of advertising (publishers/adv companies via the sell side platform - SSP). If programmatic advertising entails advantages, both for advertisers and publishers, on the other hand, the greater use of this sales model increases the advertising system (and its players) dependence on technological intermediaries (ad networks, affiliate networks, search engines, social networks). In all the steps making up the advertising chain, we are witnessing a predominant presence

of platforms that, in addition to advertising revenues from technological services (SSP, DSP, Ad Server and Ad Exchange), obtains significant shares from the direct sale of advertising space on their sites and applications, as well as from advertising sales for third-party operators (see **Figure 22**).

Figure 22 - Online advertising sector: revenues by category of operator and type of activity (2018, %)



Source: elaborations on company data and various sources

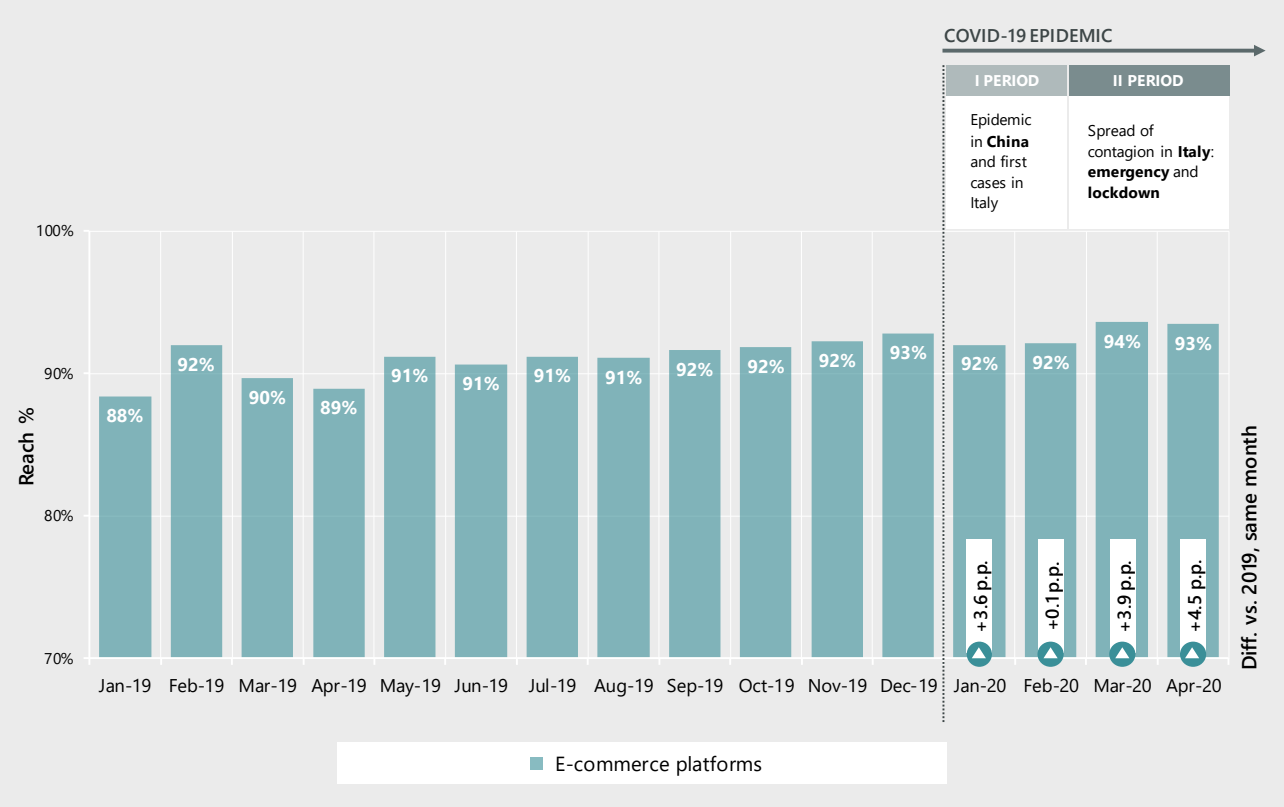
Vertical integration processes implemented by platforms, which are likely to have an impact on competitive structures, also affect the postal sector, with particular regard to parcel delivery services, linked to the e-commerce sector.

Parcel delivery services, unlike universal service mail, are constantly expanding. In terms of revenues, they account for the bulk of postal sector's resources, a share that is expected to continue to grow in 2020, regardless of the forecast assumptions made.

The performance of the sector (in value and volume) is strictly dependent on the amount of sales made through e-commerce.

During the epidemic and due to the lockdown arrangement, travel restrictions and the closure of business activities, online shopping was the only way to purchase many kinds of goods and services: it certainly contributed to amplify the already positive trend of e-commerce. The growth of the sector in the first four months of 2020, which is evident from a comparison with the same period in 2019, affected the number of users accessing e-commerce platforms as well as the value of online sales. In March and April, e-commerce sites and apps reached their peak, with unique user shares of 94% and 93% of total online users, 4-5 percentage points higher than in the same months of 2019 (see **Figure 23**).

Figure 23 - Unique users of e-commerce platforms (% of total web users)



Note: values refer to sites and apps in the "Retail" category.

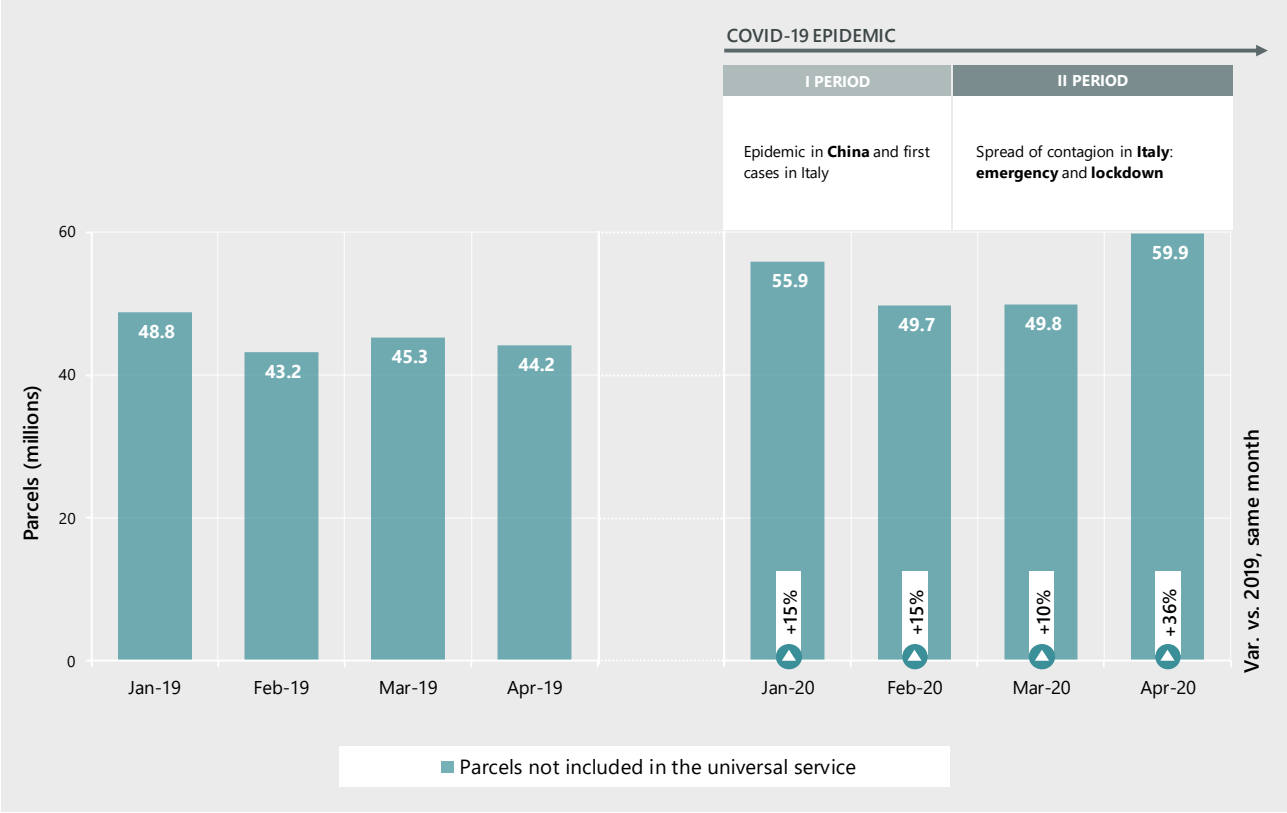
Source: elaborations on Comscore data

If the number of unique users of e-commerce platforms provides a clear indication of citizens (at least potentially) interested in buying, ISTAT (the Italian National Institute

of Statistics) recorded a real acceleration of online sales during the lockdown period. In sharp contrast to other forms of retail trade, it is estimated that online sales value increased by 19% in March and 27% in April (compared to March and April 2019).[25].

The volume of parcels managed (not part of the universal service) started growing before the spread of contagion in Italy but, compared to the first months of 2019, it showed a significant increase during the lockdown (especially in April), when it reached almost 60 million parcels, that's to say +36% compared to April 2019 (see **Figure 24**). This is despite the reduction in the cross-border component (mostly due to restrictive measures introduced to contain contagion) and the temporary suspensions (especially in March) of deliveries of non-essential goods by some operators.

Figure 24 - Parcels not included in the universal service: volumes during the epidemic



Source: elaborations on company data and various sources

From a competitive point of view, the parcel delivery sector as a whole is characterised by a fair degree of competitiveness. However, due to the close interdependence between e-commerce and parcel delivery services, the vertical integration between

[25] See ISTAT, *Commercio al dettaglio (Retail)*, 5th June 2020.

the same areas requires particular vigilance and surveillance of competitive structures and conditions evolution[26]. For example, Amazon is the main e-commerce platform in Italy[27], the sixth largest operator in non-universal parcel services, with a progressively increasing share[28], as well as a strong economic position in some market areas (B2C deferred deliveries).

On the one hand, e-commerce is the driving force behind the development of the postal parcel sector; on the other hand, delivery services are of great importance in the online sales process, as the cost, type and quality of delivery and return services influence the purchase choice and the degree of consumer satisfaction and, consequently, the likelihood that the consumer decides to buy again on the same platform. The role that online sellers play in selecting postal operators that will deliver the goods purchased to the end customer should also be taken into account.

It is clear that in such an outlined context, where different services (in the same or in distinct steps of the supply chain) tend to be offered in an aggregate manner, strong positions held in the upstream sector by vertically integrated operators (especially if they are big online platforms oriented to a platform envelopment logic[29]) can be exploited as a lever to put pressure on their competitors in related sectors.

- **CRITICAL FACTOR**

EMPLOYMENT LEVELS AND PROFILES

Another element of concern closely related to platforms establishment at a global level is the effect on employment. Indeed, online platforms show higher labour productivity

[26] See also Annex B concerning AGCOM resolution n. 350/19/CONS on the analysis of the parcel delivery services market.

[27] According to Comscore surveys, among all e-commerce platforms, Amazon firmly holds the top position for the number of unique users reached through its sites and apps; in March and April 2020, those figures increased by 8% and 5% respectively compared to the same months of 2019. Specifically, in the first 4 months of the year, the number of Amazon's unique users out of the total number of connected users was between 75% and 77%, while for the second e-commerce platform (eBay) it remained below 44%.

[28] See Chapter 3 of the Annual Report of AGCOM – 2020.

[29] *Platform envelopment* means a type of offer that, using the same production factors, consists of different and differentiated services belonging to different but connected markets, with overlapping user bases. See T.R. Eisenmann, G. Parker e M. Van Alstyne (2011), ''Platform envelopment'', *Strategic Management Journal*, 32 (12), 1270-1285.

than telecom and media companies (see **Figure 18)**; overall, an online platform employee generates **53% more revenue than a telecom and media company employee**. High productivity values of online platforms, while indicating greater levels of innovation, conceal the risk of reduced use of labour, especially of intermediate and traditional professionals, as well as in countries outside the domestic context. To better understand the extent of this problem, we should consider Netflix: its productivity index per employee **(€1.9 million per employee**) is more than four times higher than Comcast (one of the world's leading players in the audio-visual sector). The same goes for Amazon: despite being the platform with the lowest revenue per employee, if compared to the largest traditional distributor (Walmart), its labour factor productivity value (300,000 euros) is about twice as high.

In other words, considering the technological and infrastructural structure (as well as costs) and the way business and services are delivered (often immaterial), platforms reach unprecedented levels of globalization and can, therefore, base their product creation and production activities in other countries and still being able to jointly meet worldwide consumers' needs. From this point of view, countries such as Italy - even though they generate high and growing levels of revenue - are mainly consumer markets and services and products are designed, created and produced abroad. As these services and products replace services and products mainly manufactured and based in Italy, this leads to professional desertification - also with reference to work with a high intellectual content.

One of the most evident epidemic consequences in Italy is precisely related to the **drop in the labour demand** that has affected all professional categories[30], although with a greater incidence for certain jobs (sales and service workers) than for others (intellectual and clerical professions, which can be carried out remotely)[31]. Although the medium- to long-term implications of the pandemic on labour sector are difficult to predict, **the economic activity contraction effects on labour demand may be long-lasting**, as with other recessionary phenomena.

[30] According to ISTAT data, in the first quarter of 2020 there was a contraction of 0.4% in employment compared to the previous three months. See Bank of Italy, *Annual Report*, 2020, p. 103 et seq.

[31] See Bank of Italy, *Annual Report*, 2020, quote.

2.5 HOW THE DIGITAL ECOSYSTEM AFFECTS THE SOCIAL CONTEXT

The digitization process accelerated by the current pandemic crisis, the success of intangible services, the success of a few big globalized platforms having their registered offices abroad are all elements that pose a tax problem involving relevant economic components to the Italian social system.

In this context, the establishment of an **effective taxation system of digital economy and society** appears to be unavoidable, especially considering the large capacity of online players to bill a significant share of their revenues abroad. Tax issues related to the advent of digital economy and the consequent dematerialization of business activities must be examined in the light of peculiar characteristics related to these new companies, which are relevant for the identification of new tax conditions.

The need to tax multinational corporations' incomes dates back to the first decades of the last century; the taxation of their cross-border activities is historically based on some cornerstones. With about 3,000 bilateral agreements (tax ruling) between states, a fragile balance has been reached; over time, this has allowed nations a fiscal sovereignty and multinational companies to contribute to the revenue of the countries in which they established their organisation. The first cornerstone was based on the concept of "**permanent establishment" of the company**, which made it possible to separate the right of a State to tax activities carried out on its territory by a foreign company (the so-called source State) from that of the State of origin of the foreign company itself (the so-called State of residence), which could take into account already paid taxes on the basis of the territorial connection criteria provided for by the applicable tax legislation. The permanent establishment represents a fundamental institution of international tax law since it locates the "multinational" company income (it operates in a plurality of countries) and determines, with respect to it, the ownership of the national taxing power, thus allowing the income to be allocated among the States involved. Over several decades, this concept has been suitable to meet the needs that had generated it and has allowed the regulation of multinational activities and the enforcement of taxation power in the various States.

However, in an increasingly globalized and digital economy, the basic connotation of the "permanent establishment", i.e., the inspiring principle of the entire international

system in force regarding multinational corporations' taxation, is being overcome. Big global digital platforms offer **activities with new features of mobility, immateriality and volatility** (see **Figure 18**); if they do not require personnel in the place where they operate (see the previous paragraph on employment issues), they undermine the concepts of source state and residence state, and therefore, one of modern democracies founding concepts: social responsibility and participation in the life of the country, also in relation to the economic weight.

The **immateriality and volatility of online transactions** make it difficult to identify the source State and the territory in which a single transaction takes place; the concept of State of residence has also changed: for digital enterprises, it is often identified with the physical place of origin of the intellectual property and no longer with the place of actual corporate management. Nowadays, the State of residence claims to become the source State also for activities carried out outside its own territory. This conceptual approach led to a **conflict among States** concerning the development of a common strategy for web companies' taxation within the OECD.

A consequence of the evolution of such an articulated regulatory framework and of new economy corporations' features is that, for decades, we have been witnessing **tax avoidance** aimed at eroding the taxable bases of the national corporate tax, to the point of zeroing them.

This phenomenon takes on considerable importance if we consider that such behaviour - together with a different tax treatment of traditional multinational corporates' incomes - causes tax avoidance conditions encouraging all entrepreneurial subjects, also for competitive equilibrium reasons, to adopt similar tax base erosive strategies; the latter allow them to **escape any kind of taxation**, especially in countries such as Italy which, as mentioned above, represents consumer markets in an increasingly exclusive way.

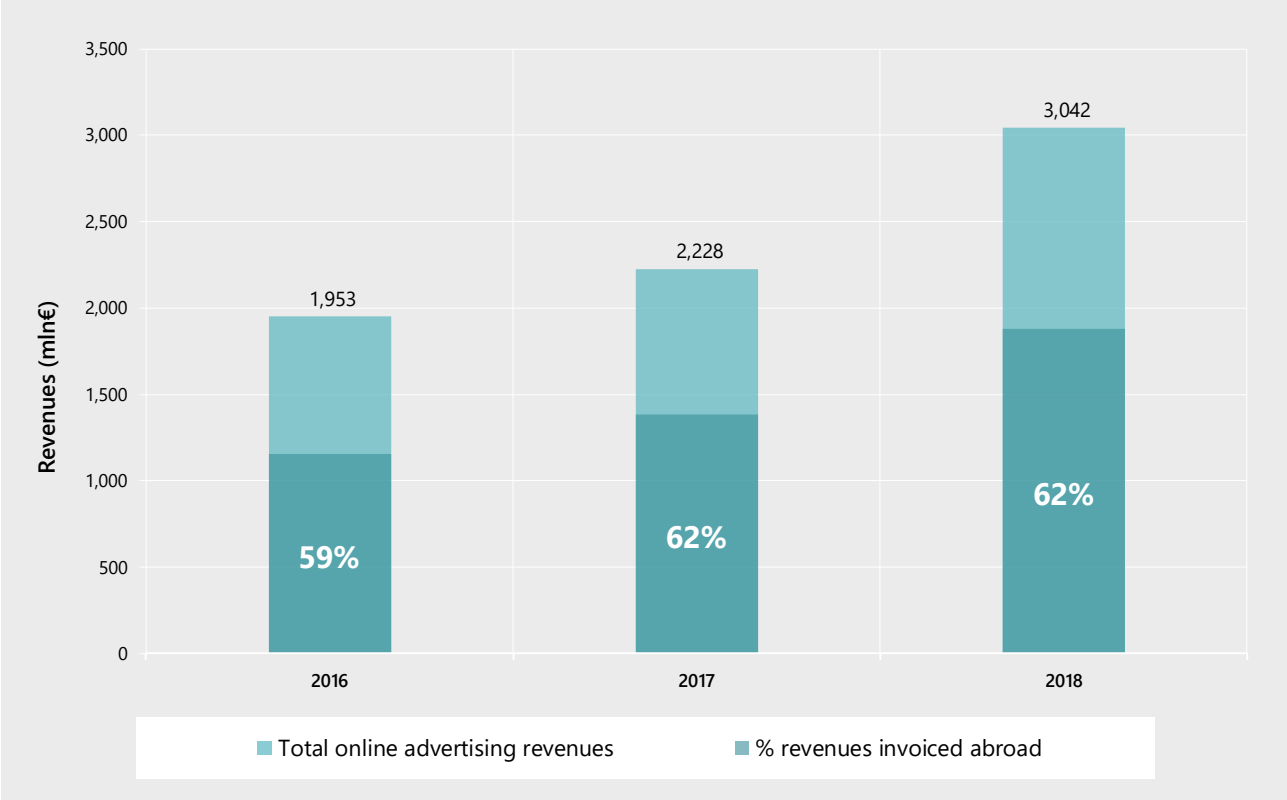
On an international scale, it was estimated that six of the world's leading digital platforms paid a total of only **54%** of the taxes they should have paid to the US administration in a decade. A study carried out in December 2019 by Fair Tax Mark[32] analysed the fiscal conduct over a decade (2010-2019) of the six major digital platforms, called Silicon Six (Facebook, Google, Amazon, Apple, Microsoft and Netflix). It highlighted how these multinational corporates - in full compliance with pro

[32] See Fair Tax Mark, The Silicon Six and their $100 billion global tax gap, 2019.

tempore tax rules in force - used tax strategies constantly eroding the tax base. Taxes paid were systematically lower than if they had been calculated on the basis of the theoretical pro tempore tax rates in force. The average effective tax rate, in fact, was only 16.2%, compared to the theoretical tax rate in the USA, which averaged 28%. Moreover, taxes paid also turned out to be much lower than those they would have had to pay if calculated at the average annual rate of 23.7% applied to other companies in OECD countries.

Concerning Italy, as far as AGCOM is responsible, the growing importance of revenues from advertising sales as the main funding source for the media sector and in particular revenues from online advertising, which now represent the leading advertising source, exceeding 3 billion euros per year, should be highlighted (see par. 2.3). However, only a small part of services provided in Italy is invoiced in Italy: over the last 3 years, about 60% of online services have been invoiced by foreign companies, subtracting revenues that did not contribute to the taxable income in Italy for a total of 4.4 billion euros (see **Figure 25**).

Figure 25 - Revenues from online advertising in Italy (total and invoiced abroad)



Source: elaborations on company data and various sources

Therefore, the establishment of a **fair and socially efficient taxation of the digital economy players' wealth** on a multinational basis makes a tax system reorganisation increasingly urgent.

At present, the international community is following two main lines of action to deal with this phenomenon: on the one hand, the supranational commitment in order to introduce **new connection criteria** or to shape the existing ones in relation to web multinational corporates' business models (with particular regard to the notion of "permanent establishment"); on the other hand, **the implementation of ad-hoc tax cases** in order to "self-protect" the taxing power of individual States. These cases are intended to be in force at least until agreement on long-term measures is reached at international level.

At the international level, the OECD undertook several initiatives aimed at overcoming some critical issues related to the digital economy taxation, such as the Base Erosion and Profit Shifting (BEPS) project; the latter was based on a number of actions focused on existing international tax law principles, such as the permanent establishment. Initially, this intervention provided for an interpretative adjustment of its traditional definition in the belief that a radical discipline change was not necessary. Subsequently, as a result of global economy changes due to digitization, the OECD focused on identifying a **renewed definition of permanent establishment**, as well as defining a correct allocation of web companies' profits. That was done through a **restyling of transfer pricing rules** and a **new concept of nexus, linking the company to the territory of the State it operates in**; this new concept takes into account the "marketing intangibles" notion, i.e., users' contribution to value creation, and the significant economic presence notion (meaning, significant digital presence), even in the absence of a stable physical organisation.

However, as stated in the most recent OECD document[33], as well as in the last Inclusive Framework meeting (held in January 2019), there is currently no sharing among the members in finding a joint solution. Disagreements do not only concern amendments in permanent establishments rules, but also the establishment of a **temporary and special tax on digital services**. The OECD has not reached final solutions to the digital

[33] OECD, *Tax Challenges Arising from Digitalisation – Interim Report 2018. Inclusive Framework on BEPS*.

economy challenges yet; it has postponed the adoption of a globally agreed solution until the end of 2020.

In addition to this long-term global project, several second-best initiatives were launched by some countries in a unilateral manner; they aimed at temporarily tackling those fiscal problems and they were adopted by Italy, France, Great Britain, Austria and Turkey, in the wake of what sketched out by the European Union.

The European Commission intervened in the current international debate on the digital economy taxation and submitted two different Proposals for Directives (Proposal COM(2018)147 final and Proposal COM(2018)148 final), respectively providing: (i) a structural action with regard to permanent establishment identification and taxation rules , and including the "significant digital presence" concept; (ii) an economic and temporary intervention, through the establishment of an "Interim Web Tax" on certain digital services revenues to be paid in the country where these services are provided.

The first regulatory proposal outlines an ad hoc, and therefore special, tax status for web-enterprises only: their taxation is placed in an area of absolute specialty. The second proposal, on the other hand, subjects to taxation all revenues deriving from certain digital services, with particular regard to those in which users contribute significantly to the value creation process - user's interaction represents a fundamental and unavoidable factor (see par. 2.4).

As far as Italy is concerned, the 2020 Finance Act adopted a Digital Services Tax (DST or *ISD in Italian*), in line with the European Digital Service Tax model and its text. The Digital Service Tax is an indirect tax on gross revenues (excluding VAT) from the supply of certain digital services; it is an indirect tax aimed at affecting the service provider's turnover which, being a consumption tax, may not conflict with existing double tax treaties concluded over time by individual EU Member States.

3 2020 AND BEYOND: THE DIGITAL WORLD TO COME

The actual health emergency has **inevitably accelerated the Italian digitization process**, which has been underway for years but, as is well known, is slowly evolving compared to other European countries.

Citizens, families, businesses and institutions found themselves facing the need to use digital services to continue working, studying, keeping informed and to maintain their family and social relationships. The pre-existing tendency to **"relocate" one's life on the web** has suddenly become concrete for all citizens.

In this scenario, **the telecommunication infrastructure proved to be a strategic Italian asset**: thanks to network connection, Italy was able to continue operating, albeit in different ways and at different times compared to the usual ones. **The information system proved to be a key element** in the emergency situation: it conveyed news but also proper behavioural indications to limit contagion, with immediate repercussions on safety and health. **Postal services**, and in particular the parcel delivery segment, **supported people in meeting their needs**.

The emergency period represented a **real stress-test of the digital system and the Italian communication system**, which, on the whole, proved their reaction capacity to the exceptional situation. At the same time, **the health crisis revealed a number of critical issues,** mostly **pre-existing weaknesses,** which should be carefully considered, both in order to seize the opportunity to address them and because they risk exacerbating in the near future as a result of the pandemic effects on economy and society.

3.1 CRITICAL ISSUES TO FACE

The health crisis direct consequence is the **loss of economic resources** across the Italian economic system, and in particular, for the communication sector (main focus of this document).

Covid-19 effect: between **3 and 5 billion losses** in the sector

The most affected sectors are those experiencing structural difficulties, such as daily and periodical publishing and postal mail services with a particular focus on the universal postal service; however, t**he decrease in revenues affects the communication system as a whole**, from telecommunications to media services to postal ones. Although some segments - video on demand (VOD) and parcel delivery services - benefited from the lockdown phase, **the crisis recessive effects are likely to affect households' and businesses' consumption** and this will also affect communication services, more or less intensively according to the severity of the recession. Considering the **pro-cyclical trend of advertising investments**, a significant decrease is also expected in the economic resources from advertising which constitutes the main source of information funding in Italy.

The economic recession resulting from the health crisis will produce **effects on both the demand for communication services and on supply**, affecting not only the communications sector but also the entire Italian digital system, amplifying its structural weaknesses.

Demand deficit and digital inequalities

In the previous pages, an Italian **structural lack of ultra-broadband services demand** was observed. Despite some recent improvements, the discrepancy between network coverage and service penetration highlights a situation which still constitutes an element of **structural weakness**, as AGCOM itself has repeatedly pointed out.

37.2% of connected households (≥30 Mbps) vs. a potential **88.9%**

The main concern for the future is the **chain effect** that low demand for fast connectivity services may have **on the entire digital system**. It is clear that a good quality Internet connection is a prerequisite for the development of all online operating sectors representing nowadays almost the entire economic system - including the public administration. During the lockdown, it was possible to understand how essential a high-speed internet network is for the digitization of a country; it is essential to have access to a series of services, especially the most advanced ones, such as e-learning or remote working.

In this regard, data collected by AGCOM on a representative sample of Italian families indicate that one of the most common problems for citizens (especially students and workers) was **connection speed**.

This issue was especially evident during the lockdown phase; partly, it is the result of an emergency situation putting pressure on the telecommunication network but, mainly, it is a consequence of the low ultra-broadband services penetration within the Italian society.

From a territorial point of view, the gap between infrastructural coverage and ultra-broadband services diffusion appears to be much greater in southern regions; the discrepancy varies on the territory, thus creating a **territorial digital divide** that inevitably affects the digitalisation of the Italian economy and society as a whole.

The digital divide is not only territorial and does not only concern the implementation of broadband services, but hit also includes technological equipment availability (e.g., devices to access the Internet) and digital skills. It is therefore possible to mention a **social digital divide** that cuts across the Italian population, that is intertwined with geographical differences and that inevitably refers to socio-economic disparities.

The **technological endowment** of Italian families shows inadequacies which, especially in the perspective of a complete social digitisation, represent a major obstacle and an unacceptable condition in the case of essential services such as education. According

to ISTAT, only 22% of Italian households have a PC or tablet per family member and, in southern regions, 41.6% of households do not have a computer at home.

As regards **digital skills** in particular, despite several initiatives launched in recent years, data from the 2019 Digital Economy and Society Index (DESI) show that Italy ranks 25th among the 28 EU Member States. The most significant shortcomings concern human capital and digital technologies integration.

Only **22%** of the population is equipped with advanced digital skills

The health crisis recessive effect, by grafting on such backwardness in demand, risks exacerbating economic and social inequalities but also the already existing digital inequalities, with a return effect due to their importance for citizens' educational and professional growth.

It should be noted that, despite Internet access prices being among the lowest in Europe, the **income effect** will pose a problem this year. Some forecasts (including those of the Bank of Italy), assume a widening of the gap between rich and poor, which in Italy is already higher than the European average and has remained substantially unchanged for 10 years (according to Eurostat data).

The richest 20% have an income **6 times higher** than the poorest 20%

The fast connection demand structural lack and the **digital divide** represent the base of **economic disparities**; therefore, the real risk is that Italy will not only be unable to make progress towards digitization, but will also find itself facing **new and growing situations of social exclusion** of large population sections.

In this regard, during the emergency period and according to data collected by AGCOM, a substantial number of students were cut off from the educational process.

12.7% of Italian students didn't benefit from e-learning

These data are unacceptable for an developed democracy: they must make us consider the real social exclusion risk, especially if economic and social disparities are added to technical and organisational problems (such as those that certainly occurred during the health emergency) and if a more intensive use of online education and remote working is expected in the future.

Supporting demand is therefore the **biggest challenge** for the coming months. The lack of connectivity demand represents a **complex multidimensional problem**, as it doesn't only depend on economic factors but also on socio-demographic and cultural ones. Moreover, it is an essential condition to rethink an effective **digitization plan for Italy including infrastructural interventions** (technology push), **demand improvements** (demand pull) and **IT security solutions**.

Issues related to the provision of communication services

Concerning critical infrastructure projects, the epidemic crisis will lead to a significant reduction in private investment **affecting the quality of services, network maintenance and its safety**. Especially during the lockdown phase, the pressure on the network due to an **increase in traffic** and the resulting **slowdown in speed performance** suggest that, in order to support a digital society, it is necessary to **continuously invest** in telecommunication networks using several available technologies (according to the principle of **technological neutrality**) and encouraging infrastructure innovation able to bridge the current territorial differences in order to eliminate **digital divides**.

Coverage difference (≥30 Mbps) among regions exceeds 40 p.p.

Closely linked to infrastructural reliability and the need to maintain a high level of investment (public and private), there is an increasingly important element for the future, as it reveals a system vulnerability: **Internet safety**. The increase in network use

is associated with an **increase in cyber-attacks** affecting citizens, businesses and public administrations.

A digital switchover plan involving a significant part of people's lives must necessarily **address issues** related to citizens' **safety and privacy** in an **organic manner**.

The crisis affects investments in critical infrastructure in the country, but it also impacts the consequent **service** supply and information, in this context, is of paramount importance. This difficult period demonstrates the need and urgency of a solid, pluralistic and quality information system. Citizens are asking for more and more information, so much so that information audience share on different media (TV and internet in particular) has never been as high as in the past months. However, this situation reveals another **paradox linked to the present period**.

Despite a growing and incessant demand for information, a **sharp decline in funding sources** can be observed. This year, it will reach significant and unforeseen levels. Globally, the above-mentioned reduction has been in place for at least a decade and it is now **upsetting the information system at its root** as it affects employment, but also information provision nature and structure.

Negative effects will unsurprisingly hit publishing sectors more as they already suffer from a structural reduction in revenues and, even during the lockdown (when online and TV information demand increased), continued to lose revenue.

- 1 billion euros in advertising revenue for information

This situation risks undermining the foundations of Italy's democratic life; more than others, this country needs **news and investigations** on aspects going beyond the virus spread: it is crucial to consider social phenomena such as **organised crime** that, in the coming months and as repeatedly stated[34], risks playing an important role also as a

[34] In June, the second Rapporto dell'Organismo permanente di monitoraggio ed analisi sui rischi di infiltrazione della criminalità organizzata nel tessuto sociale ed economico post-coronavirus (*Report of the Permanent Monitoring and Analysis Body on the risks of organised crime infiltrations into the social and economic fabric post-coronavirus*) was released; it reveals a: *"Great vitality of organised crime in the post-Covid-19 period, with a range of illicit businesses ranging from tourism and catering to services, from the health sector to the waste sector, from gaming and betting to the management of sports facilities and gyms, to the distribution and trade of food, road haulage, manufacturing industry, energy, real estate, trade and car rental, as reported by the Anti-Mafia Investigation Directorate (DIA) analysis"*.

consequence of difficulties affecting an important and vital part the society (families, entrepreneurs, shopkeepers, artisans, students).

The decline in economic resources within the media sector is likely to have a **negative impact on the breadth and the quality of information coverage**. This system has experienced a decade-long crisis and if it were to weaken even further, it would cause **negative effects**: publishers - even new online publishing that is now appearing on the Italian news scene[35] - will presumably have to reduce costs by dedicating less human, economic and time resources to the accuracy, in-depth analysis and coverage of the news.

This is crucial, since the information quality and the disinformation spread are a critical issue that the information system was already facing before the health emergency.

It is precisely in this situation that **disinformation** showed its **danger**, directly affecting citizens' safety and health.

In March, almost **14 million** Italians stumbled upon disinformation websites

Through experimental analyses, AGCOM demonstrated how **credulity** with respect to **fake** and/or inaccurate **news** is strongly connected to the **educational level** and **digital knowledge** of citizens, as well as to pre-existing **misperceptions** concerning those phenomena[36]. In a country where digital skills are very limited and the educational process risks excluding new segments of the population, the disinformation problem and its consequences must be considered a priority; that should not be due to ideological reasons (as it may happen) but, on the contrary, to include different points of view in a discussion based on shared and common facts.

Disinformation effects affect citizens, their **freedom of expression**, but also the economy itself as it alters the information base on which citizens and businesses build **their consumption and production choices**. This seems extremely important in the relaunch of Italy's economic and production system, especially if we consider the

[35] See the AGCOM Report, Osservatorio Testate Online (*Observatory on Online Publishing*), 2018.

[36] See the AGCOM Report, Percezioni e Disinformazione (*Perceptions and Disinformation*), 2020.

possible negative effects of **commercial disinformation** on Italian companies' reputation - even on an international level - and the need to support and enhance the **Made in Italy** brand.

The emergence of online platforms in the new ecosystem

Economic and social consequences of the health crisis affect the entire communication sector, both on the demand and the supply side; these effects spread to the digital economy and the economy as a whole, affecting in particular the Italian system weaknesses.

At the moment, it doesn't seem that the negative trend specifically concerns **platforms** operating in the different areas of the communication sector (including catering, tourism, transport, etc.). Some of them, indeed, benefited from the emergency: it is the case of platforms offering paid audio-visual media services and those active in e-commerce to which parcel delivery services are linked.

The underlying **trend** concerning these players seems **solid** and **structural**: platforms' economic weight within the communication sector has been growing over time and this trend seems to have been further accelerated by the crisis.

Platforms importance: 80% online advertising, 34% advertising, 21% all media, 18% media and postal services

The reactivity of the platforms to the crisis is linked to their features: their ability to provide intangible services, completely unrelated to any territoriality principle, **reaching global markets**; **cost efficiencies** they are able to achieve; **vertical and horizontal integration** that allows them to be present in several market segments and exploit leverage strategies.

During the lockdown, the impossibility for people to move favoured their status as **unavoidable intermediaries** for consumers, but also for the companies; platforms were essential not only for the supply and sale of goods and services, but also as a source of information, as well as a means of interpersonal communication.

In fact, platforms represent an **innovation resource** across the communication chain: if we look at the economic system more generally, their innovation capacity can **have a positive impact on social well-being**.

As platforms' economic impact increases, some **important critical issues** related to their operation become more relevant.

From the competitive structures point of view, **platforms tend to acquire market power and contribute to the concentration** of the areas they operate in. This concentration is the result of intrinsic market characteristics, in addition to vertical and horizontal integration strategies pursued by the platforms, as well as their competitive advantage. These are, in particular, the **big data** on users: a **non-replicable strategic asset** allowing platforms to acquire economic resources and, therefore, to gain market positions, both through the direct monetization of such data, online advertising and their use in production and marketing processes of goods and services or for the creation of new products and, therefore, new markets.

Specifically concerning the communication sector, platforms play a **leading role** in the **online advertising** market: they are present **throughout this complex chain**, providing intermediation services and technological elements for advertising space purchase and sale.

Platforms' ability to drain large advertising resources is an element of concern for the information system which finances a large part of its production through advertising.

Platforms' advertising ARPU: **5 times higher** than publishers' ARPU

In a recession context, the economic imbalance in favour of platforms increases the **dependence of the Italian industry** (publishers, agencies, developers, advertisers, companies, etc.) and of citizens on platforms.

Online platforms also play an important role in the **postal sector**, as parcel delivery services are closely interdependent with e-commerce and, therefore, with e-commerce platforms. During the lockdown phase, online sales naturally grew and also the economic weight of the platforms.

Despite an increasingly strong presence of platforms in all areas of communication, clear shortcomings concerning actionable rules are still evident and it is therefore difficult to ensure their full accountability to the Italian public authorities.

AGCOM has long since inaugurated a regulatory and analytical process in its expertise areas taking into account the entry of platforms into communication markets; moreover, it has explored innovative tools, such as the use of technical tables and forms of self- and co-regulation (see Annual Report). However, there is a perceived difficulty in acquiring information and data from platforms and, at the same time, the need to rapidly adapt the regulatory and legislative framework to the evolving competitive environment (see Big Data Survey, cit.).

The geographical location of platforms, on which any regulatory or monitoring intervention should be based, is the critical element making it difficult to acquire information. As platforms provide intangible services, they can establish their headquarters and their business functions organisation - defining strategies and behaviours to be adopted in local markets - in different territories, even far away from the countries where they actually offer their services. This complicates the exercise of regulatory power at a national level and also makes interaction with them more difficult, not only for national regulators but also for other institutions and citizens.

In the perspective of extending the community's benefits linked to the presence of these economic players in the communications sector, there is therefore a problem of social responsibility and regulatory accountability of these platforms: on the one hand, a complete regulatory framework able to guide the legal framework of these entities to social utility is missing, as for other types of companies; on the other hand, an efficient regulation of the platforms cannot disregard the fact that they are subject to obligations, making their activity more transparent and accountable to the Italian regulator.

The Covid-19 emergency exacerbated the rise of these economic players at all levels: it is therefore necessary to counterbalance their economic power with an adequate participation in social costs that Italy will bear in order to recover from the crisis, leveraging social responsibility and the shared value of companies towards the community from which they receive resources.

Approximately 60% of Italian platform revenues are billed abroad

There is a problem of the platforms' tax contribution and, more generally, there is a problem of an effective taxation system definition within the digital economy. This critical issue is likely to worsen in the near future as the Italian production system will be undermined by the health crisis and by the intensification of social and economic inequalities.

Ultimately, at a global level, we are witnessing a process of so-called "platformisation" of economies and societies which poses serious and urgent matters, especially at a time of rapid digitisation as a result of the pandemic crisis.

3.2 FURTHER DIGITAL TRANSFORMATION

Analyses carried out on the communication sector show how, during the health emergency, individuals and companies in Italy showed a **great reaction and adaptation capacity** and the communication system proved to be a **strategic segment** of economy and society.

At the same time, there are some elements of **structural weakness** in the Italian **digital economy** that, according to forecasts for 2020, are likely to worsen with the economic recession.

The health, economic and social crises essentially represent a **challenge** for **Italy**, for its ability to transition to digital in an economically effective, socially efficient and dynamically sustainable way.

The health and economic crises are a **unique opportunity to overcome difficulties** not only because Italy has been able to become aware of its development capacity and potential, but also because at a global level we are experiencing a phase of expansion in public spending, which offers the **opportunity to make special interventions**.

In this perspective, it is useful to note that any digitization plan can only **start from the resolution of the most problematic aspects**. Furthermore, digital policies planning must take into account the **interdependence among different aspects of a digital system**, that is to say mutually connected parts interacting and co-evolving together (see **Figure 26**).

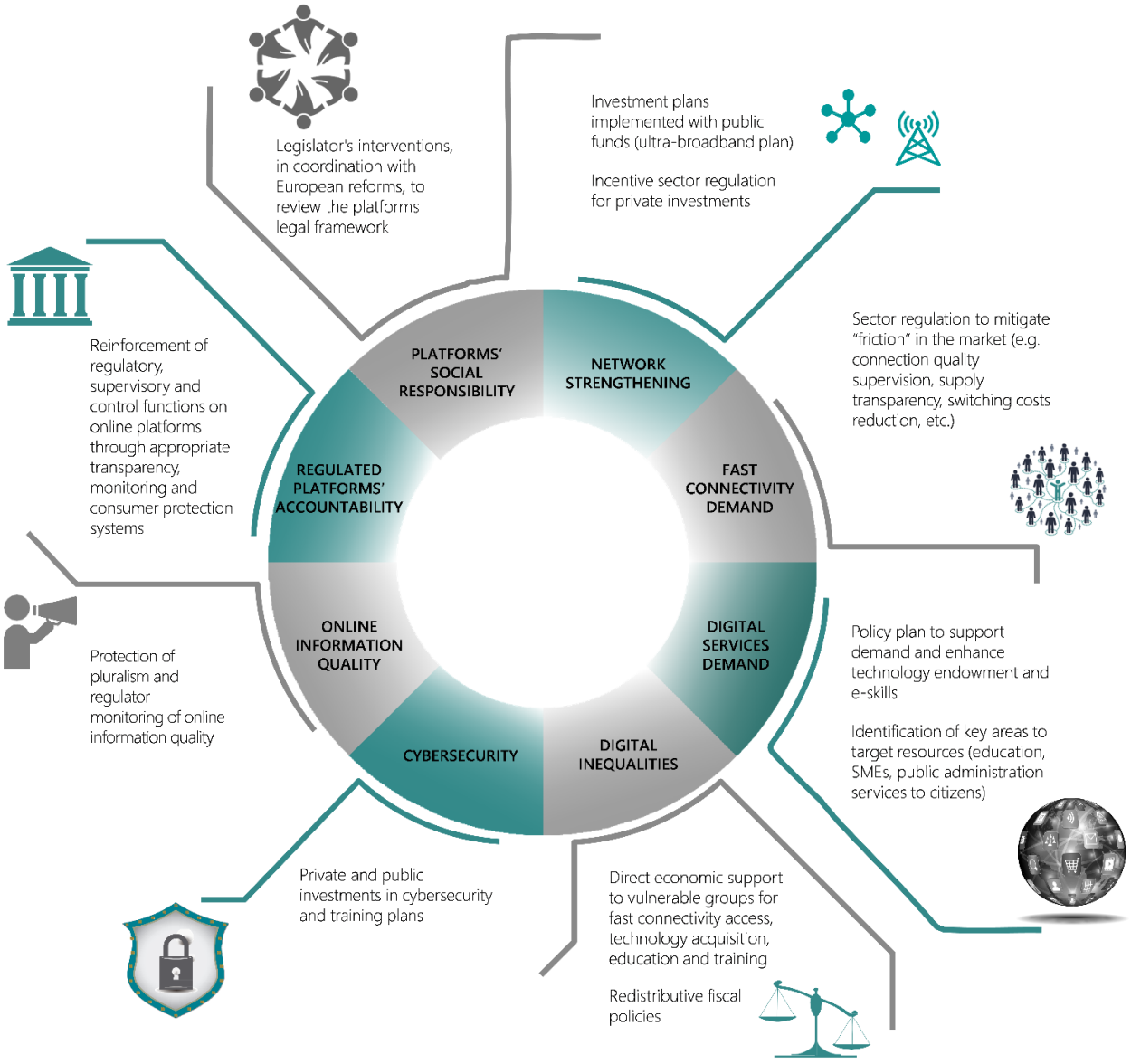
Concretely, adopting a **systemic approach** means that the network infrastructure strengthening (technology push) becomes closely related to the connectivity demand (demand pull), which affects the digital services supply-demand that, in turn, affects network security. The digital economy development fosters a supply and demand features change - in the communication sector but not only - and new scenarios are emerging, marked by the presence of global players such as platforms. These changes must be followed by the development of a system of rules adapted to the Internet context and ensuring participation in the economic and social life of all those involved in the system.

As a result of these connections, policy interventions on individual aspects would be poorly effective and would not allow a full digitisation of the country. Consequently,

only a **wide-ranging and multi-annual plan** is capable of driving the economy and society towards a greater digitisation and ultimately towards a socially efficient balance.

Finally, given the different nature of structural issues, **policy instruments should be different and targeted** to the objective they are intended to pursue. From this point of view, it is possible to distinguish two main categories of instruments: on the one hand, the sector regulation carried out by AGCOM and, on the other hand, the role of digital policies.

Figure 26 - Structural criticalities of the Italian digital system and public policies



AGCOM's digital strategy

The initial pages of the present document describe activities carried out by AGCOM to deal with the health emergency and with regard to the communication sector. They provide an overview of what was done in the past months during this extraordinary situation so that businesses and citizens could continue to offer and benefit from communication services - extremely important during the emergency - in compliance with the anti-contagion rules.

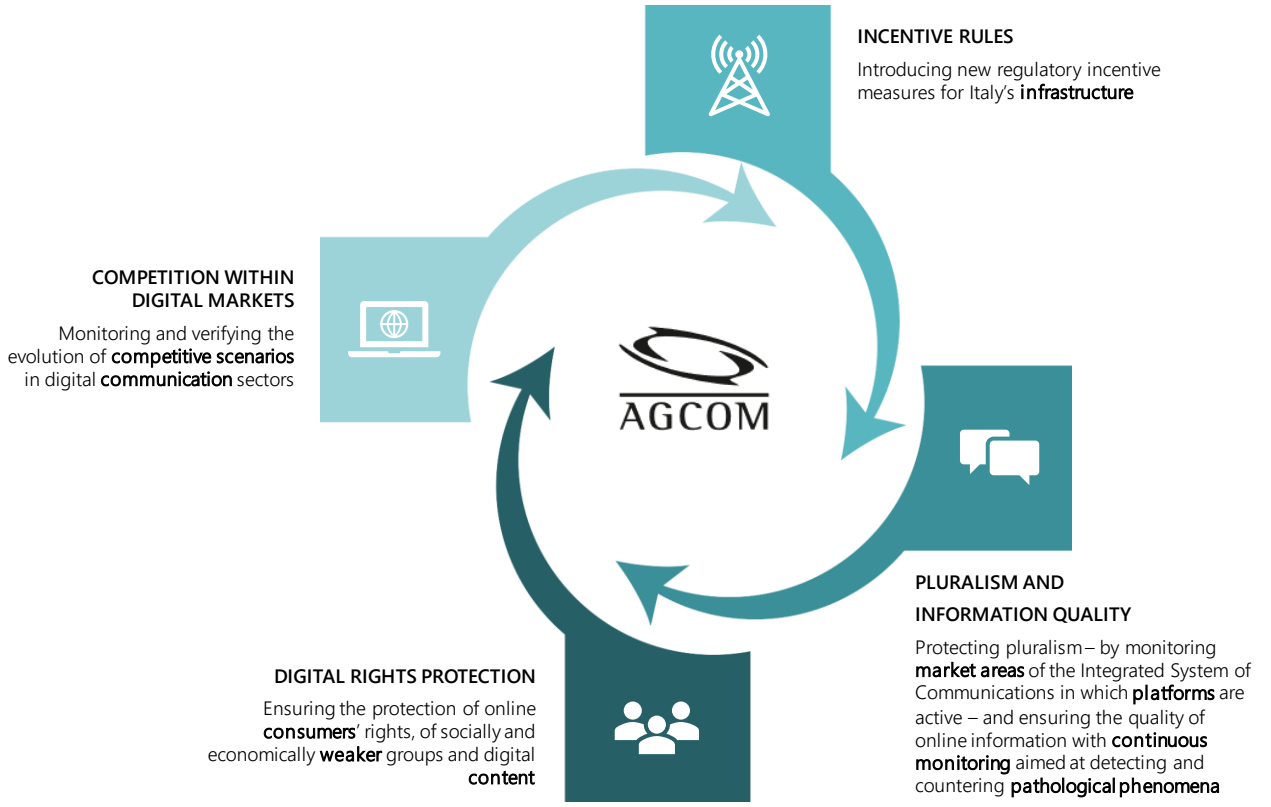
In its "ordinary" action, the regulator contributes to Italy's digitization through a series of interventions focused on three main critical issues: the telecommunication network, the information system and the role of platforms in the communication sector.

By means of incentive regulation based on investments in the telecommunication network, AGCOM exercises its action with regard to companies in the sector, combining the promotion of competition with an efficient level of investment according to a principle of technological neutrality and thus contributing to infrastructure upgrading.

The regulator also supports institutions in charge of the implementation of the Italian Ultra-broadband Strategy. In addition to giving an opinion on development plans, it has an active role in defining access conditions to networks created with public funds and it also has a supervisory role in ensuring services quality and a maximum territorial penetration.

In addition: it monitors the quality of Internet access services and their prices; it puts in place a series of measures aimed at improving the supply conditions transparency in order to simplify consumer choice; it regulates switching costs; and it provides measures to protect vulnerable social groups. All these tools allow AGCOM to mitigate "frictions" on the market by creating a favourable context for the development of connectivity demand. More directly, AGCOM has also recently used the take-up of ultra-broadband access services provided over very high capacity networks as a criterion to calibrate regulatory obligations of the notified operator (see Annual Report).

Figure 27 - AGCOM digital strategy



As far as the information system is concerned, AGCOM's monitoring role to protect pluralism, to control the information quality and to contrast disinformation has already been mentioned (see Annual Report). In the digital system, the regulator must create a healthy online context in which citizens and businesses can access information and form a correct opinion on facts and news that inevitably guide consumption behaviours and production choices.

The most complex aspect concerns AGCOM's role with regard to critical issues related to the presence of platforms in the communication sector. As mentioned above, these players represent key economic, social and competitive elements of the digital economy. In this regard, the regulatory framework controlling AGCOM's action has been subject to some revisions in recent years; the latter have partially extended some of the rules to these players as well: it has concerned electronic communications, media and postal services. As a result of these steps, AGCOM began to interact with platforms and to implement a series of actions (see Annual Report).

However, in order to address the issues related to the characteristics of the platforms (concentration of market power and big data, geographical location, participation in

the national economy), with a view to **developing a healthy digital system**, an evolution of the regulatory framework is needed to improve the accountability of these players. There is an ongoing policy debate at international and European level on these issues; beyond the specific instruments to used, it states the **unavoidable need to define a renewed framework of rules** obliging platforms to take their responsibilities towards the societies they operate in.

Public policies for Italy's digitization

The main pillar for Italy's digitization and the overcoming of its critical issues is a policy strategy that, contrary to what regulation can do, makes economic resources available and channels them towards priorities, establishes procedures and revises the productive system organisation (including public administration) and reallocates economic resources to support citizens and businesses in difficulty.

In this perspective, analyses carried out in the previous pages indicate that digital divide issues should be more oriented towards **policies that support demand**[37]. It may be useful to plan a real **multi-annual strategy**, as was done on the supply side for the NGA network implementation, **providing an organic plan of actions that will put in place initiatives already underway and the following ones**. It means implementing a series of effective actions that are able to balance, on the one hand, the need to spread greater knowledge and awareness in the use of digital tools and, more generally, a digital culture and, on the other hand, to minimize the number of people not participating in the digital ecosystem or participating at a disadvantage (for example, through low-speed connections).

In this sense, attention should be paid to families, businesses and public administration. As the most important shortcomings lie in digital skills and technology endowment, a direct intervention with **economic resources combined with education and training programmes** is desirable in order to facilitate access to digital services and improve users' abilities.

In order to channel resources into **key areas** representing a **stimulus to heighten the demand for digital services** in Italy, recent experience suggests that the **education system** is a crucial element; it should serve as a tool to direct technological and

[37] On this topic, see the AGCOM Report, Il consumo di servizi di comunicazione: esperienze e prospettive (*The use of communication services: experiences and perspectives*), 2016.

economic resources to families (e.g., in the form of vouchers) and schools, to upgrade technologies (hardware, software, e-learning platforms) owned by students and teachers and also to spread a digital culture through them.

The second key element is enterprises and in particular **small and medium-sized enterprises**: **industrial policy** should focus its measures on investment plans in order to promote enabling technologies (e.g., cloud, robotics, big data, cybersecurity) and to train professionals in the information and communication technology field.

By supporting the demand of individuals, families and businesses, it will be possible to lay the foundations for digital knowledge and awareness diffusion which, in turn, will be able to significantly boost the ultra-broadband spread.

The third key element in a process of organic digitization of socio-economic activities is public administration: it plays an equally important role in accelerating and spreading the digital services use among the population. Over the years, the various public administration digitization plans have taken into consideration different aspects (transversal infrastructures, enabling platforms and acceleration programmes) and different projects (e.g., the Resident Population Registry, the public digital identity system - SPID, pagoPA, etc.). This phase appears to be a good opportunity to carry out an "audit" of the ongoing projects and, above all, to encourage the **completion of those aimed at providing final services to citizens**. These are the most complex interventions as they imply instruments innovation but also a **reorganisation and a simplification of underlying services and administrative procedures**, compared to the analogue world.

From the citizen's point of view, a part of public administration digitisation policies should be oriented to **avoid fragmentation of available tools** and to undertake a continuous and more effective communication to make citizens aware of available digital services and access modalities. According to data collected by AGCOM, it is evident that **more than 60%** of Italian citizens do not have a SPID (*Italian Public Digital Identity System*) and **almost 70%** do not have a certified e-mail address.

Concerning **digital inequality**, there is a territorial digital divide among different Italian areas (related to demand) and of a socio-economic digital divide (transversal to Italian society): this situation implies a direct subsidy to those in need and at **risk of social exclusion**. Alongside redistributive policies based on general taxation, **economic subsidies** for the signing of Internet services contracts and for the purchase of

technological devices (computers, tablets, etc.), which are prerequisites for digital services access, can be envisaged.

Beyond economic support, it is a priority that in such situations of digital divide, **access to education and training** should always be guaranteed, not only because this is a right but also because exclusion from these services has social costs which will burden the community for a long time to come.

Together with policies to support demand, another area of action for digitisation development concerns **connectivity provision** and in particular **infrastructure enhancement and network security**.

Regarding the first point, unlike what happens on the demand side, there is a structured framework of rules and actions at European and Italian level for public and private investments to upgrade telecommunication networks. In particular, **a plan has already been launched** under the Italian Strategy for the ultra-broadband together with a series of instruments to implement the network throughout Italy - from the use of Italian and European public funds, to co-investment options between private players, to direct State intervention through Infratel *(in-house company of the Ministry for Economic Development, active in the telecommunication sector)*.

In this phase of economic recovery, in order to **reduce the infrastructure gap**, it could be useful to **accelerate the so-called "grey areas" plan** and **update the ultra-broadband plan** in order to improve and extend it - geographically, technologically and economically - in the light of infrastructural interventions carried out by private operators and to enhance certain services such as e-learning and remote working. In addition, it is advisable to implement a wiring plan for at least school buildings and public offices.

Within this framework of infrastructure interventions, particular attention should be paid to rationalising resources and avoiding inefficiencies, coordinating public and private investments and using a **mix of available technologies** (optical fibre, but also radio technologies) while respecting technological neutrality.

A new social pact for the digital society

Data and analyses of the main global economic players falling within the definition of **online platforms** show that they now represent the **key organisational structures** underpinning the entire communication system in the digital economy.

Platforms entailed a reorganisation of economic systems they operate in, introducing organic changes beyond the ordinary access and competition dynamics in the markets: because of their economic and organisational structures, it is necessary to **reconsider theoretical models** underlying traditional regulatory functions of markets replaced by the platform model. This need was widely felt at Italian and European level even before the epidemiological crisis and it highlights a **number of issues that should be solved by means of legislative reforms** suitable for interpreting constitutional democracies key principles within the emerging economic context.

As already mentioned above, a central theme is **platforms' accountability and social responsibility**. At a time when major global platforms appear to be among the few economic players least exposed to an epochal economic crisis, Italian and international institutions have to ensure that these companies make a full contribution to the new digital social context too; they should therefore adopt appropriate legislative and regulatory instruments to guarantee effective implementation on an equal footing, encouraging the global compliance with rules and not their circumvention.

At present, according to services and digital content offered, platforms can be more or less subjectable to transparency and accountability systems within the communication sector; it also depends on the potential redefinition of markets and of the subjective scope of regulation imposed by reforms in the European electronic communications, media and postal services sector frameworks.

Adaptations concerning European harmonisation areas **didn't consider some very important sectors** of the Italian democratic life: e.g., election campaigns regulation and the protection of fundamental rights and liberties potentially affected by "algorithmic decisions" at the base of the private enforcement system developed by platforms in order to enforce States' law (anti-terrorism rules, fight against child pornography, copyright, privacy) and their own corporate content policies on prevention and fight against hate speech and online disinformation.

The need for an **organic reform of responsibility and penalty systems** applicable to platforms in relation to the current discipline of the "online intermediaries" has emerged on several occasions; the reform should take into account the concrete influence on the information flow shown by search algorithms and recommended by the main players of the information system operating in an economic or market context often characterised by the "winner-takes-all" dynamic.

Given these players' economic power in the global data market, an essential aspect of any reform concerning the online platform regulation is the adoption of a **data discipline within the digital economy** that, through a holistic approach, is able to mitigate security, transparency and market efficiency values.

The Covid-19 experience has highlighted some of the limits concerning current regulations on the collection and processing of personal data; this is due to some obvious **information asymmetries** between platforms and consumers involved in the economic relationship underlying data exchange (see Big Data sector inquiry, cit.).

Finally, the inequality is evident at institutional level but also because of the **lack of homogeneity in legal systems** applicable to online platforms in the different EU Member States and within individual national systems. While some forms of ex-post protection - in particular judicial protection - are already fully applicable in courts for the purposes of the enforceability of rights and legitimate citizens' and users' claims, **a "regulatory accountability" organic discipline is lacking**; it would allow to intervene earlier and more effectively to protect the right to information and pluralism of information with adequate access and non-discrimination guarantees, as well as transparency (the latter value is partially protected by the P2B Regulation). The development of such ex ante regulatory systems requires the fulfilment of a revision process of the theoretical and methodological framework underpinning existing instruments, which, moreover, is already underway at AGCOM and other national and European regulators. The development of monitoring systems using data science techniques and methods is, in this sense, an unavoidable step towards the adaptation of existing regulations and the exercise of supervisory functions.

The Legislator has the fundamental role to recall online platforms operating in Italy to their **social responsibilities**, bringing also major multinational corporates of the digital economy in the bedrock of constitutional duties. At a time when communication sector reorganisation and transformation seem to be of crucial importance in providing effective responses to the current global crisis, the subjection of these organisations to the law of States must be oriented towards restoring the constitutional values balance with an economic activity regulation aimed at ensuring (in addition to compliance with international and European obligations) full compliance with several principles: health protection, public finance, social and environmental safety and

sustainability in working conditions and in the cultural and environmental heritage management[38].

Taking the "platform-based economy" as a benchmark for desirable legislative reforms in the communication sector, in the aftermath of the epidemiological emergency, it will be crucial to ensure that the digital economy will develop on a new social contract with economic and social players involved in the economic recovery pursued by European policies in response to Covid-19.

It would be desirable to develop an organic plan that is aware of the "shared value" represented by the digital ecosystem and conscious of social and human costs caused by the crisis; institutions should compensate for these costs with appropriate tax and contribution levers to be paid by players holding the greatest share of economic power but also by exploiting the digital transformation as an opportunity to streamline and reduce administrative burdens in order to make the Italy more competitive.

[38] In this regard, reference is made to Constitutional Court ruling no. 200 of 2012 on corporate social responsibility.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