

## Communication Services in Small and Medium-sized Enterprises: Experiences and Prospects

*Economic and Statistical Department*



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## Introduction

The world of enterprises is undergoing a complex and demanding activity of structural re-organisation, with the vital aim of incorporating the opportunities provided by digital technological innovation into entrepreneurial culture.

Besides enterprises, different national and supra-national actors are called into question; their difficult task is facilitating, governing and regulating such process.

In Italy, the Government has indicated its action strategy in the *Piano Nazionale Industria 4.0* (National Industrial Plan 4.0), by prioritising some areas of intervention, aiming at enhancing and incentivizing companies, for them to adapt to and fully join the fourth industrial revolution<sup>1</sup>.

The European Commission, as well as National Regulatory Authorities, support this vital challenge, both individually and through their representative body - BEREC, with a series of initiatives, including the forthcoming review of the European regulatory framework (Framework Review).

This work stands as an overview of the equipment and adoption of new communication tools and of the experience of micro, small and medium-sized enterprises in the use of communication services. Attention is focussed on both traditional fixed telephony, mobile phone and postal services, and on the use of the Internet and of the most recent platforms for sharing and exchanging information, such as social media. The results of this analysis provide useful food for thought for the aims of possible regulatory interventions and enable suggesting and steering possible policy actions. This study is part of a broader project which has recently seen the publication of a similar Consumer Report<sup>2</sup> by the Italian National Regulatory Authority (AGCOM).

The interest in how communication services (fixed and mobile, Internet and postal services) are consumed stems from the fact that communications in general, and telecommunications in particular, have meaningful and structural consequences on a country's productivity, employment and economic growth. After all, the existence of a close relation between the dissemination of electronic communications and economic growth is now a well-established phenomenon.

New technologies have significantly increased not only easy communications and social inclusion, but also the dimension of economic activities and productivity in the most diverse sectors of the economy, from the more traditional to the more recent and dynamic.

The pervasive nature of the impact of electronic communications on the economic and social fabric results from the features of such technologies which fall under the so-called GPTs (General Purpose Technology)<sup>3</sup>, as do other technologies in Information and Communication Technology (ICT).

Information and communication technologies facilitate the creation and dissemination of knowledge, thus enhancing decentralised decisional processes, coordination of working groups and information analysis. A quicker ability to manage information translates into the opportunity for enterprises to experiment with new communication modes with providers and into a new organisation of distribution systems. Ultimately, these technologies redesign, reorganise and simplify production processes, and outline new economic models, thus providing the world of enterprises with more opportunities.

The issue of the digital technology dissemination is therefore a pivotal theme for the development of

<sup>1</sup> Italian Ministry of Economic Development, *Piano nazionale Industria 4.0, Investimenti, produttività e innovazione*, (National Industrial Plan 4.0, Investments, Productivity and Innovation) 21 September 2016.

<sup>2</sup> Agcom, 2016, *Il consumo di servizi di comunicazione: esperienze e prospettive* (The use of communication services: experiences and perspectives), [www.agcom.it](http://www.agcom.it).

<sup>3</sup> Such technologies: *i*) are capillary widespread in heterogeneous context, therefore, they are an important production factors for

numerous other economic industries and sectors, *ii*) they are characterized by a remarkable technological dynamism which renders them better and more efficient despite continuously decreasing implementation costs and *iii*) they enable new innovation processes, since they make the production of new goods and services easier, faster and cheaper (Lupi, 2014, *Impatto economico e sociale delle comunicazioni mobili*, AEIT, n. 3)

Italy, as well as of the entire Europe. Placing the achievement of the so-called Digital Single Market among the priorities of its agenda, the European Commission stated that, in a few years, digital technologies have changed our way of living, communicating with the others, working, spending our free time, managing business and producing goods and services. If, on one hand, all this fosters improvements in quality of life, on the other it sets challenges related to lack of skills, to the emergence of new markets, and, therefore, different kinds of consumer protection; it also creates issues for re-organisation in the fields of industry, security and privacy<sup>4</sup>.

This analysis focuses on companies with less than 250 employees which, to be short, will hereinafter be referred to only as enterprises, or small and medium-sized enterprises (SMEs). These are the companies at the core of the Italian industrial system and, at the same time, they require policy makers to accompany them towards the new digital challenges. They were divided into three analytical groups: 1) micro enterprises (with less than 10 employees), 2) small enterprises (with a number of employees between 10 and 49) and 3) medium-sized enterprises (with a number of employees between 50 and 249).

As anticipated, the interest in enterprises with reduced size results from well-known features of the Italian economy, whose production fabric is based on independent work and very small enterprises, which are the backbone of the Italian productive system<sup>5</sup>.

Therefore, empirical evidence is based on interviews carried out on a sample of enterprises with a number of employees below 250, accounting for a universe equal to approximately 1,5 million units<sup>6</sup>.

The structure of this report recalls the Consumer Report and, when possible, comparative analysis will be made. The information collected on company's consumption experience will be presented according to the following logic: from the analysis on the equipment in devices for communication and Internet access (Chapter 1), an in-depth analysis of a series of aspects related to the choice and importance placed upon communication services will be provided (Chapter 2) followed by data on the level of satisfaction achieved in consumption and "loyalty" of companies to their providers (Chapter 3). Subsequently, the level of understanding of the services (connection speed, willingness to pay more for a faster Internet connection) will be addressed (Chapter 4) and, lastly, new consumption trends will be analysed. The last chapter (Chapter 6) includes a series of final considerations and will conclude the report.

Information from this research was integrated with a set of data from other sources enclosed into a box, aiming at proving the reader with a broader and more complete view of the issues addressed.

<sup>4</sup> European Commission, December 2015, *Monitoring the Digital Economy & Society, 2016 – 2021*.

<sup>5</sup> Istat, 2016, *Noi Italia. 100 statistiche per capire il Paese in cui viviamo*.

<sup>6</sup> For additional details on methodological aspects, please see the Appendix.

## 1. The digital profile of enterprises

The instruments singled out by the European Commission to achieve the objectives of a "smart, sustainable and inclusive" socio-economic growth<sup>7</sup> include all the initiatives aiming at enhancing the development of digital communication technologies, comprising the dissemination of high-speed Internet and those targeting the achievement of a single digital market.

In such a perspective, rather than the relation between enterprises and digital services offered on the market (mobile and home phone deals, and exploitation of online postal services), it is the modalities used by enterprises to interact with the increasing number of devices enabling access to digital technologies that have particular relevance. Indeed, access to the services in question is performed using particular devices; therefore, the dissemination of the latter has a remarkable impact on the services that can be transmitted.

However, the ownership of devices is not the only condition needed for using communication services, since most communication services also require users to subscribe to a service for accessing the network. Therefore, availability of devices and access to the network are fundamental to establish whether enterprises are inclined to use innovative services. This chapter will deal with the analysis of such aspects.

### Availability of devices

**Figure 1.1** illustrates the technological equipment of Italian small and medium-sized enterprises in terms of percentage.

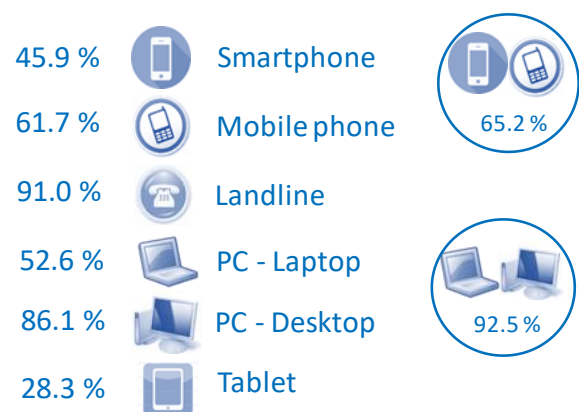
Fixed telephones and desktop PCs are, for their large dissemination, the main communication tools provided by enterprises to their employees: indeed, they fall within the equipment of Italian companies for 91% and 86.1% respectively.

Remarkable dissemination percentages are also observed for laptops and mobile phones; the latter are included into the previous generation of mobile

connectivity, and are used by 52.6% and 61.7% of enterprises respectively.

Smartphones (45.9%) and tablets (28.3%) are less widespread: these tools are more recent and are gradually establishing themselves in the world of micro, small and medium-sized enterprises.

Therefore, in general, enterprises tend to fixed working tools (telephone and PC) while mobile devices have a much smaller dissemination rate. For mobile phones, the rate (65.2%) is even lower than the rate for individuals, which equals 94%, since in the instance of personal devices (such as mobile phones and smartphones), employees often use their own devices and do not use corporate equipment.



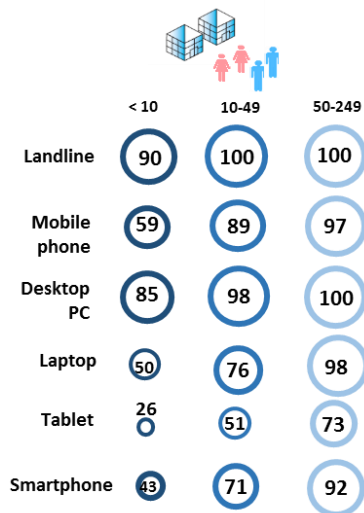
**Figure 1.1 - Device availability**

The variable discriminating the availability of devices in enterprises is their size in terms of number of employees. **Figure 1.2** shows that medium-sized enterprises, that is those with a number of employees between 50 and 249, see the percentage of communication device availability well above 90% for all the devices examined, except for tablets, recorded in 73% of the instances.

On the opposite end of the size spectrum, if we analyse micro enterprises, the highest availability rate is observed for fixed telephones (90%) and desktop computers (85%); while less than half of

<sup>7</sup> European Commission, 2010, Communication of the Commission, Europe 2020 – A strategy for smart sustainable and inclusive growth, COM (2010) 2020.

micro enterprises state being equipped with a smartphone (43%) or a tablet (26%). In terms of technological equipment, small enterprises - those with a number of employees between 10 and 49 - are more similar to medium-sized enterprises than to micro enterprises, thus highlighting a size-related threshold (above 10 employees) beyond which enterprises purchase more communication equipment for their employees.



**Figure 1.2 - Device availability per company size (%)**

### ***The digital profile of enterprises and access to the Internet***

Being able to access the Internet is vital for any kind of enterprise. Advanced applications - including those supporting information or document exchange with providers and clients (supply chain collaboration) or solutions based on cloud computing - made possible by high-speed connections, improve efficiency and effectiveness in the management of multiple activities.

Additionally, access to the Internet has proven to be a fundamental condition to sell products and services on the e-commerce, which provides benefits for both companies and consumers (**Box 1**). Indeed, the advantage of e-commerce for companies is widening potential demand by broadening territorial borders: indeed, for physical shops, potential clients include only those passing in front of the window, while e-commerce enables business in every corner of the world. Additionally, e-commerce enables companies to exploit the so-called long tail: the opportunity of selling only a

limited number of niche items while, in traditional commerce, it would not be profitable producing and/or selling such products, owing to storage issues and costs. Companies also benefit from a decrease in marketing, transaction and distribution expenses.

From consumer's point of view, access to a large variety of products enables comparisons in terms of deals and prices; consumers avoid queuing, not to mention that e-commerce provides the opportunity to purchase at any given time, and without time constraints. Consumers, as companies, benefit from the reduction of the costs related to the time spent looking for a product, acquiring information and identifying the best price. However, as shown by recent surveys on consumers, the role of physical shops for some categories of products, e.g. food products, remains vital for consumers, despite the access of some big players in the field.

From a purely economic point of view, the dissemination of the Internet also enables the reduction of transaction costs, that is those costs incurred by individuals or companies when they access the market to acquire (or sell) goods or services.

Concerning the availability of Internet connections in enterprises, the survey showed that Italy has now reached a very high rate: more than 90% of Italian companies have access to the Internet. The overview in terms of the number of employees showed that access to the net is a universal feature of small and medium-sized enterprises, while there is still room for improvement in micro enterprises (**Figure 1.3**).

As for the connection mode of the devices, it was observed that companies prefer wired connections to wireless connections: indeed, device connection through LAN cables has higher dissemination percentages (85.9%) than WI-FI (75.1%).

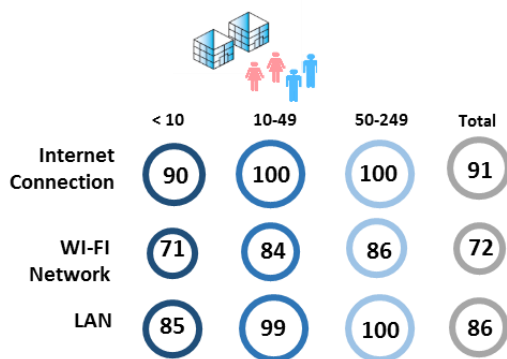
Though buildings need to be wired, LAN networks are more robust and safer compared to Wi-Fi networks; additionally, they are less affected by interference and enable higher connectivity. Naturally, the dissemination rate of LAN networks increases as the number of employees increases, and reaches all enterprises with at least 50 employees.

The dissemination of WI-FI networks also increases with the increase in the company's size, shifting from 71% for micro enterprises, to 84% for small, up to 86% for medium-sized enterprises; however, for the last two categories, data show that the increase is rather small.

Moreover, it is important to understand how much enterprises use Internet-based applications and are equipped with platforms to share and exchange information, to connect, create and exchange online content with their clients, considering that such platforms are increasingly seen as a privileged channel to access clients, given their growing dissemination.

The dissemination of practices and relational logics brought about by information sharing and exchange platforms can produce value and wealth in multiple forms for companies choosing to incorporate them into their production routine and organisational structure. Among the different platforms, companies consider social media as the more able to generate value. Indeed, social media can generate corporate value, both as information pools enabling marketing and customer profiling operations, and as privileged instruments to start a proactive and involved relation with customers<sup>8</sup>.

In this sense, the availability of at least one social media (a social network account or a blog) or a website is a vital condition for use.



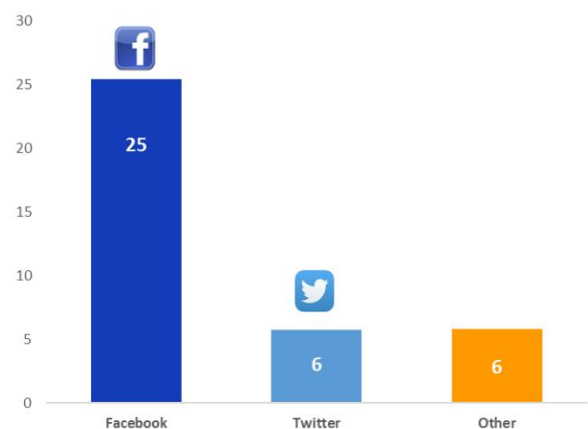
**Figure 1.3 - External and internal connectivity per company size (%)**

The most recent data published by Eurostat<sup>9</sup> show that 39% of EU companies with 10+ employees used social media (e.g. social networks, blogs, sites

for content sharing and wiki) in 2015, though social companies prefer social networks (**Box 2**). More than half of the EU companies which used social media, and namely, companies in the field of tourism infrastructures, said using them to collect opinions or customer reviews or to answer questions.

The results of the survey on Italian small and medium-sized enterprises show that 28% use at least one social medium. In Italy, as in the rest of Europe, social networks are the more widespread instruments in enterprises. Enterprises with at least one account on social networks see 10.8% having three corporate profiles on three different social networks, while 12.1% have two.

Concerning the platforms used for sharing and exchanging information, a fourth of the companies have a corporate profile on Facebook while Twitter remains uncommon (6%) (**Figure 1.4**).



**Figure 1.4 - Availability of a Social Network Account (%)**

In the adoption of these tools, sectorial and size-related differences emerged. Facebook dissemination rate reaches its peak (33.8%) in the case of companies operating in the sectors of commerce and tourism. The management and care of online reputation, that is building a positive opinion on the company, even having a single "like" or positive comment, is very important for their activity, since it facilitates purchase preferences and can influence a business' success. Instead, Twitter's dissemination percentage is higher than

<sup>8</sup> See SCREEN Report *I servizi digitali e le piattaforme applicative per le imprese e le pubbliche amministrazioni*.

<sup>9</sup> [http://ec.europa.eu/eurostat/statistics-explained/index.php/Social\\_media\\_-](http://ec.europa.eu/eurostat/statistics-explained/index.php/Social_media_-)

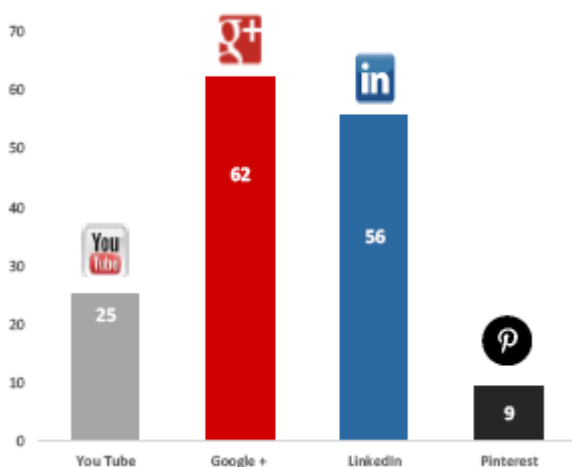
[\\_statistics\\_on\\_the\\_use\\_by\\_enterprises#Use\\_of\\_social\\_media:\\_highlights](#).



average when companies operate in the sector of services (8.2%).

Additionally, as the size of the company increases, the awareness of the importance of broadening traditional communication channels and, therefore being present on social networks, increases as well. In such a perspective, larger companies prove to be more oriented towards social networks: in companies with at least 50 employees, the availability of a Facebook account reaches approximately 40%. Similarly, as the number of employees increases, the presence of a Twitter account or an account on other social networks shifts from 5% to 11% up to slightly over 20%.

In the remaining category of "other" social networks used by companies, the most widespread is Google+ (62%); while 56% of the companies have their own LinkedIn account, mainly used to develop professional contacts. Concerning platforms targeting communication mostly via images and videos, such as YouTube and Pinterest, companies seem to show little interest in this type of communication with non-textual content (**Figure 1.5**) - unlike what emerged for individuals.<sup>10</sup>



**Figure 1.5 - Availability of an account on other Social Networks (% of Other)**

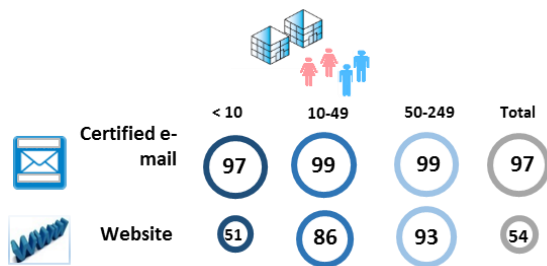
The availability of a blog or a website is a vital component in the relations of a company with customers, providers, employees and public administration.

Blogs, like social networks, provide users with the opportunity of actively participating in a debate with their comments, thus creating useful exchanges of ideas and opinions. Therefore, they are a potential versatile tool at a company's disposal to promote their business, products and the news in the field, to strengthen customer relations and acquire new clients. The potential offered by blogs is also recorded for social networks, which explains blog's reduced dissemination among companies (2.5 % only), even if dissemination rates increase for larger companies.

Websites are the first reference point for companies: they are a sort of digital business card. Companies can use their website to offer their services to end consumers or, in the production chain, to act as partners of larger companies. In Italy, unawareness of the potential offered by this tool is still recorded, especially among micro enterprises. Indeed, website dissemination rates increase as the size in terms of number of employees increases: for companies with less than 10 employees, only one out of two has its website; yet, this percentage rises to 93% for medium-sized enterprises (**Figure 1.6**).

Certified email (*Posta Elettronica Certificata* - PEC) now compulsory for all companies, is universally used, without differences related to the company's size. Though the norm achieved its aims, as it practically demanded that each entrepreneurial subject activate a certified digital mailbox, this did not translate into a similarly widespread use of certified electronic communication services: though all companies are obliged to have a certified email address, only slightly more than half of the companies declare actually using online postal services, including certified email (see Chapter 5).

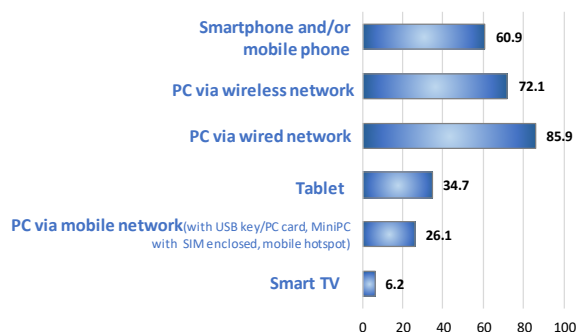
<sup>10</sup> According to data collected by GlobalWebIndex in the last quarter of 2016, 93% of Internet users watch video content on social media at least once per month.



**Figure 1.6 – Availability of certified email and website per company size (%)**

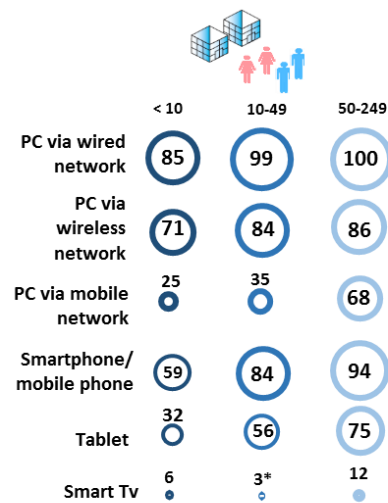
Concerning the devices enabling access to the Internet (**Figure 1.7**), 85.9% on average access the net via PC through a wired network. Access to the Internet via a PC through a wireless network (72.1%) ranks second. Smartphones as terminals to access the web have also reached a rather high dissemination rate (60.9%).

Tablets are chosen by 34.7% of the companies to access the Internet, while slightly more than a quarter of the companies access the Internet with a PC connected through a mobile network. Smart TVs still have little dissemination levels (6.2%) when it comes to accessing the web, however, such devices seem to be more of a home device than a corporate device.



**Figure 1.7 - Devices used to access the Internet (%)**

The analysis according to company size highlighted remarkable differences in the various types of access to the Internet from PC via mobile networks and tablets (**Figure 1.8**).



**Figure 1.8 - Devices used to access the Internet per company size (%)**

If, respectively, PCs via mobile network and tablets are used to access the network by 25% and 32% of the companies with up to 10 employees, the percentage of use increases with the number of employees, thus reaching percentages equal to, respectively, 68% and 75% in medium-sized enterprises. Instead, connectivity via smartphones or mobile phones is widespread even in the smallest enterprises: indeed, micro enterprises (that is those with less than 10 employees) see such access performed by 59 enterprises out of 100.

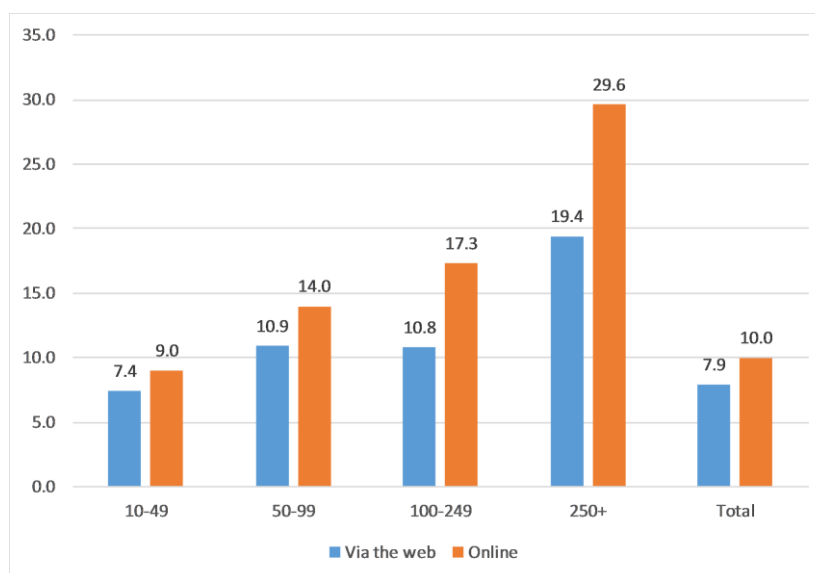
## BOX 1: E-COMMERCE: THE POINT OF VIEW OF INSTITUTIONS

E-commerce and free access to a single digital market are a priority of the EU Strategy 2020. The EU Strategy 2020, launched to create the favourable conditions for a smart, sustainable and inclusive growth, aims at re-launching the European economy through five objectives concerning employment, innovation, education, social integration and poverty reduction, climate change and energy.

Achieving the objective of growth and employment requires healthy and well-connected markets, where competition and accessibility for all consumers can stimulate entrepreneurial activities and innovation. The enhancement of the single market is thus one of the tools for achieving the first objective.

The single digital market, based essentially on the elimination of national barriers to online transactions, has the potential of improving access to information, leading to the increase in efficiency through a decrease in transaction costs, as well as introducing innovative business models. Indeed, an increase in electronic commerce, generates tangible effects not only for companies but also for consumers, including lower prices, more choice and increased quality of goods and services, as a consequence of the across-the-border trade and an easier comparison of the offers.

ISTAT (*Istituto Nazionale di Statistica* - Italian National Institute of Statistics) addresses these aspects in its report on information and communication technologies in enterprises. The research meets the needs of measuring the rate of use of new technologies by companies, in order to provide the European Union, the informative basis required for a comparative analysis among the different Member States and for the assessment of national policies. Namely, information on the rate of use of new computer and communication technologies, the impact of new technologies in relations with customers and providers, the automatic sharing of information within a company, electronic invoicing and electronic commerce was provided.



**Figure A.1.1 - Enterprises with at least 10 employees, which sold online or via the web over the previous year (%)**

Source: ISTAT Report : CITTADINI, IMPRESE E ICT  
(Citizens, Companies and ICT) of 21<sup>st</sup> December 2015

Online sales by companies are one of the indicators underpinning the DESI Index (Digital Economy and Society Index), which through a synthesis of the dimensions of connectivity, human capital, the use of the Internet, the integration of digital technology and digital public services, provides the European Commission a measure of the state of progression of the Member States towards a digital economy and society. To this end, it is worth noticing that 2015 data show that 10.0% of Italian companies with at least 10 employees sold their products online over the course of the previous year (against a rate of 8.2% in 2014); this share increases to 29.6% if the companies with at least 250 employees are considered, thus confirming the digital divide between small and large enterprises (**Figure A.1.1**).

The percentage of companies selling on the web is also on the rise compared to the previous year (7.9% against 6.3% in 2014); such sales channel continues being preferred compared to other online channels. Among the companies selling via the web, those having private entities as customers (78.9%) prevail over public administrations and other enterprises (58.7%).

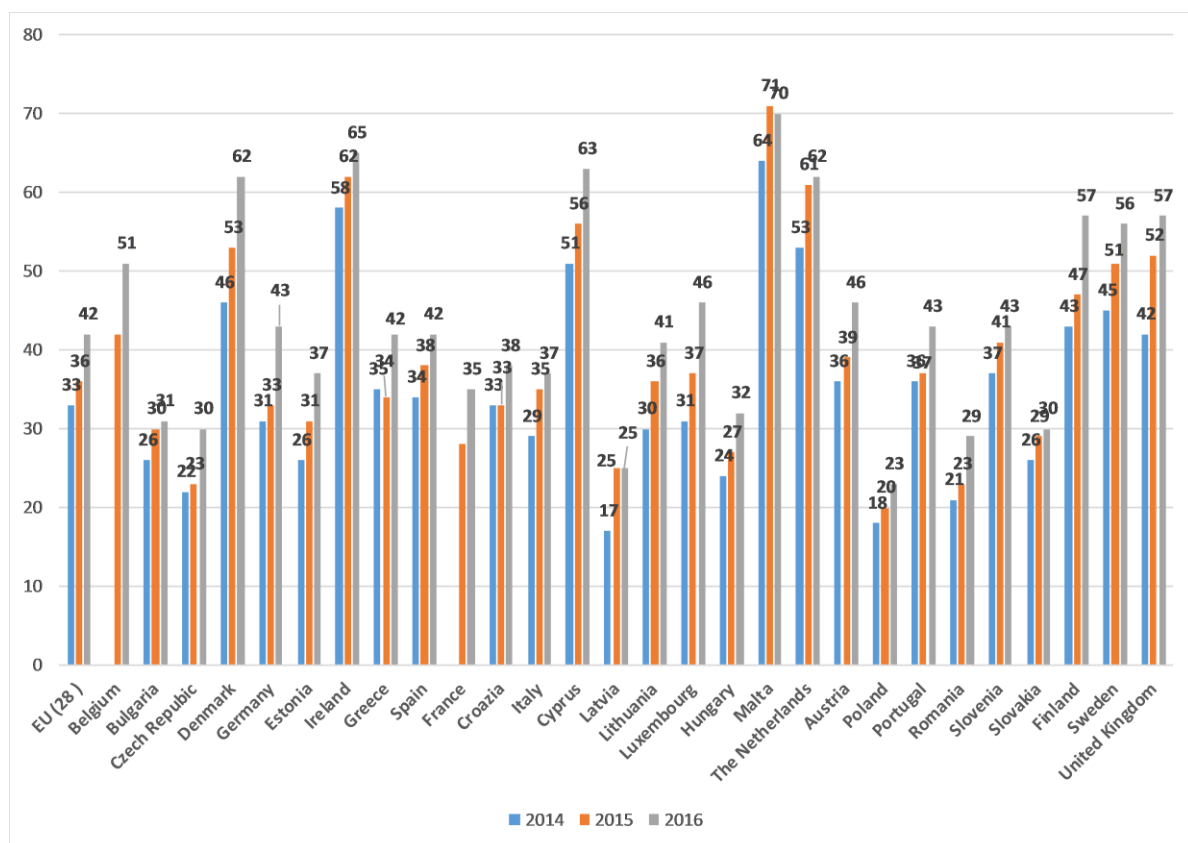
## BOX 2: USE OF SOCIAL MEDIA IN EUROPE

Eurostat, the Statistics Bureau of the European Union, periodically publishes comparative statistics on the use of social media in the different Member States (and namely social networks), considered as technological instruments of integration through new forms of communication and sharing.

Recent data show that the use of these tools tends to increase over time. The comparative analysis between 2014 and 2016 indicates that the companies using social networks went from 33% to 42% though with significant differences in the different EU Countries (**Figure A.2.1**).

The countries with the lowest percentage of companies using social networks in 2014 were Latvia (17%) and Poland (18%); two years later, while in Poland the percentage of companies has reached 23%, in Latvia it increased to 25%. On the other end, the countries with the highest dissemination of social media are Malta (shifting from 64% to 70% in the two-year period 2014-2016) and Ireland (shifting from 58% to 65%).

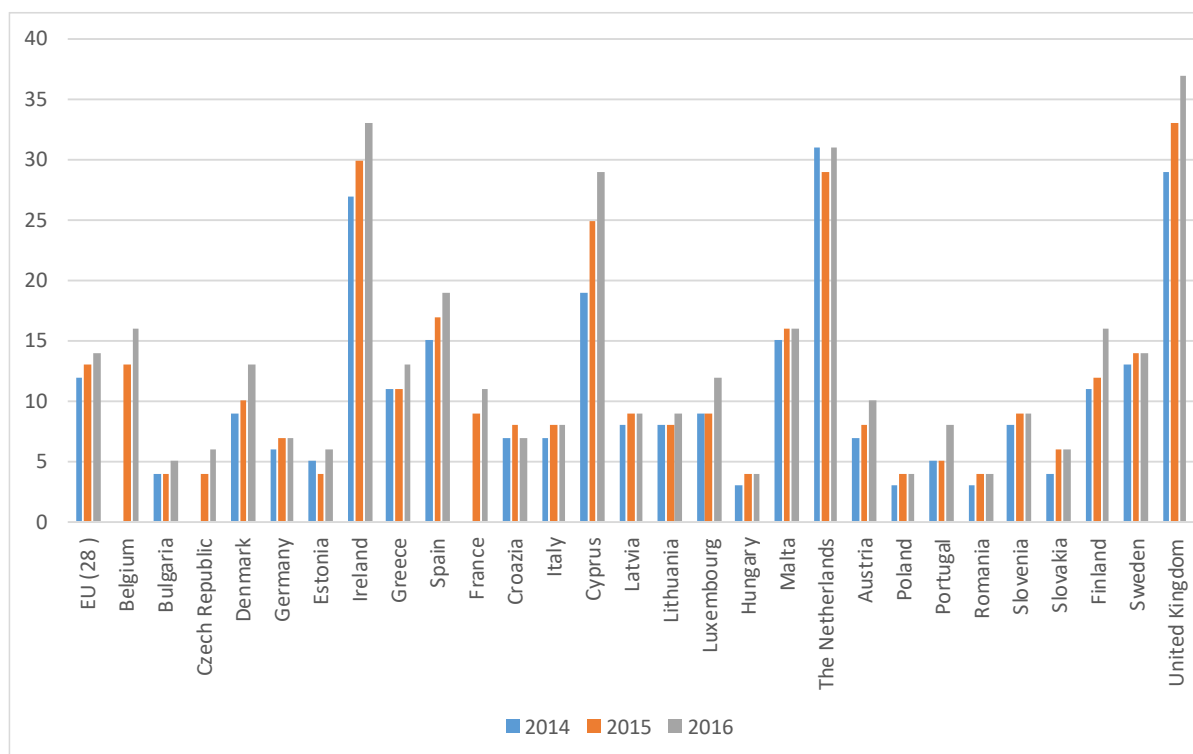
Concerning Italy, in the three-year period 2014-2016, the percentage of companies with at least 10 employees using social networks is below the European average: 37% vs 42% in 2016.



**Figure A.2.1 - Enterprises with at least 10 employees using social networks - Years 2014-2016 (%)**

Source: Eurostat - isoc\_cismt

The use of blogs or microblogs - differing since the former include text messages, images, audio or video, while in the latter, text messages are very short and links to other websites are provided (which may include videos, images or longer texts) - is less popular among European countries: 14% in 2016 (**Figure A.2.2**). Comparison at international level highlighted that such communication forms, which may be used internally or externally by the company, customers, partners or other organisations, are traditionally more widespread in Northern countries, particularly the United Kingdom (37%), Ireland (33%) and the Netherlands. Values lower than 5% are recorded in Hungary, Poland and Romania. Italy showed intermediate values, between 5 and 10%.



**Figure A.2.2 - Enterprises with at least 10 employees using blogs or microblogs - Years 2014-2016 (%)**



Source: Eurostat - isoc\_cismt

## 2. Communication Services

This chapter will address the relation between companies and communication services on the market, by particularly focussing attention on the type of fixed telephony and mobile telephone deals chosen by companies, on the use of postal services, as well as on the way companies judge the different communication services.

As opposed to the results of the survey on individuals, where the type of telephone deal subscribed showed a substantial uniformed feature among the sector of fixed telephony and mobile telephony - the percentage of consumers opting for a deal including both voice and data services was the same for fixed telephony and mobile phones (see Figure 2.1 of the Consumer Report) – for the survey on enterprises, data showed a more varied situation, indicating a partial difficulty in the world of small and medium-sized enterprises in updating their strategies and communication practices.

Data examined in the previous chapter confirm that fixed telephones are largely widespread among Italian enterprises (91%); hence, the services offered by fixed telephony are significantly preferred over those on mobile networks. 77% of the companies signed a contract for a fixed telephony deal including both voice and data services, while 10% subscribed to voice services only (Figure 2.1).

Mobile Telephony 		Fixed Telephony 	
Internet and voice services	39%	Internet and voice services	77%
Voice services only	13%	Voice services only	10%
Internet services only	1%		
None	43%	None	12%
Non-response	4%	Non-response	1%*

**Figure 2.1 - Types of fixed telephony and mobile telephony deals (%)**

The high percentage of companies equipped with a fixed network deal, along with the physical area of the company's headquarters, contribute to creating corporate "identity".

The dissemination rate for devices enabling mobile transmission anywhere and anytime, such as

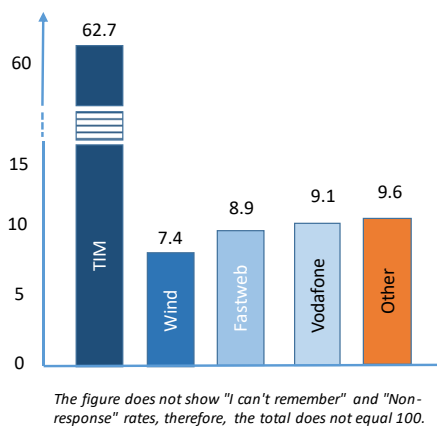
mobile phones and/or smartphones are lower compared to the results of the survey on individuals. Similarly, the percentage of enterprises which subscribed to mobile telephony deals including both voice and data services (39% vs 63% of the individuals) is also limited. The rate of companies which affirmed not subscribing to mobile telephony deals (43%) does not come as a surprise: after all, as highlighted in the previous chapter, it is not given that all companies, especially the smallest one, feel the need to enable their employees to be reachable for corporate purposes while not indoors.

Additionally, if the data on the types of mobile network deals and company size are cross-referenced, results indicate that micro enterprises (with less than 10 employees) which stated not signing a deal for mobile telephone services account for around 45% (against 18.6% of small and 14.5% of medium-sized enterprises). This could indicate that services used for personal and corporate purposes overlap: very often, in the smallest enterprises, personal devices may be used for work purposes as well.

### Fixed telephony

Concerning fixed telephony, monitored by the Authority through the Observatory for Communications, the structure of the market is still concentrated, as it is natural for markets characterised by high, fixed and sunk costs, among others.

Despite the presence of a high number of operators, most of which operate at regional level only, most of the market is concentrated on a few large operators. As shown in Figure 2.2, 63% of small and medium-sized enterprises which subscribed to a fixed telephony deal affirmed their operator is: TIM, 9.1% Vodafone, 8.9% Fastweb and 7.4% Wind. The share of companies which opted for "other" operators providing fixed telephony services reaches almost 10% and is also remarkable. Such operators are active on a regional basis and provide more suited services to local markets where small and medium-sized enterprises operate.



**Figure 2.2 - Choice of fixed telephony operator (%)**

Hence, market shares for fixed telephony are similarly allocated for both companies and individuals, with TIM still holding around 60% of the market.

### Mobile telephony

Concerning mobile network services, market configuration for small and medium-sized enterprises shows a rather concentrated structure (**Figure 2.3** - left side).<sup>11</sup>

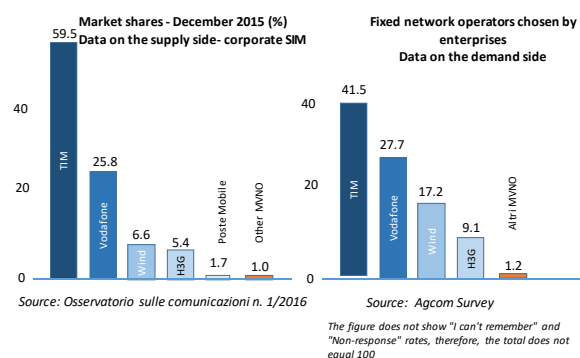
Compared to the sector of fixed telephony, two elements change competition dynamics: *i)* the number of operators, which, in absolute terms, is lower in the sector of mobile telephony services, owing to the constraining lack of frequency resources and *ii)* the more differentiated potential demand in the mobile network market.

The number of operators on the market of mobile telephony services, related with market dynamics (for example fusions, incorporations, takeovers, transfers) is approximately equal to 20: there are four structured operators (MNO - Mobile Network Operator), which own a mobile network, while the others are MVNOs - Mobile Virtual Network Operators, operators using the network of structured operators to provide their services.

In particular, **Figure 2.3** (right side), indicates mobile operator choices: a share above 40% opted for TIM, 27.7% for Vodafone and 17.2% for Wind.

Therefore 86% of enterprises turn towards the main fixed telephony operators for services on mobile networks as well; the operators chosen by enterprises rank, in terms of preference on the side of the market demand, in the same order both for fixed telephony and mobile network. In other words, TIM is the main provider, followed by Vodafone and WIND<sup>12</sup>. A more in-depth analysis shows that, additionally, more than 50% of the companies opted for the same service provider for both mobile and fixed telephony networks, clearly deeming the choice of a same operator more profitable; it is also true that, in companies, a same person may be entrusted with choosing both fixed telephony and mobile network services, as opposed to what emerged from Consumer Report, where the choice of mobile network hold a personal value, and appeared less bound to the choice of fixed telephony services, which, instead, has a family feature.

H3G plays a remarkable role with 9.1% of SMEs, while other minor (and virtual) operators gather minor shares which, together, reach slightly more than 1%.



**Figure 2.3 - Market shares and choice of mobile network operator (%)**

Concerning the number of available SIM cards (**Figure 2.4**), a share close to one third of the enterprises (27%) declared having a single SIM card, while 30.4% have more than 3 SIM cards. Again, the number of available SIM cards increases with the increase in the company's size.

<sup>11</sup> See Figure 2.5 of the Consumer Report.

<sup>12</sup> Data comparison between data communicated by operators and data collected in the survey on enterprises' consumption experience,

highlighted differences in market shares which can be ascribed, in part, to the sampling technique used in the survey, as well as the reference target for the latter (SMEs).



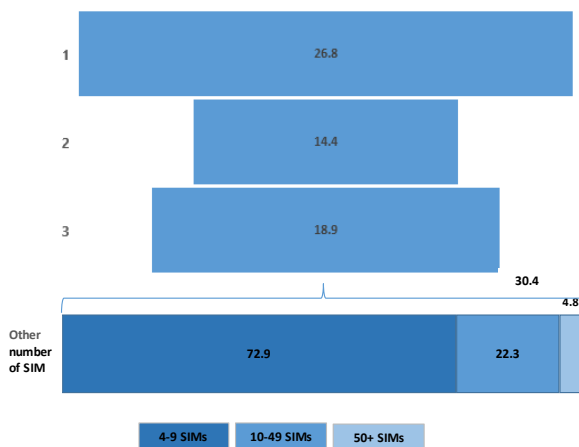


Figure 2.4 - Number of SIM cards (%)

### Postal services

Postal services, intended as services for delivering correspondence provided by private or public companies, play a prominent role for companies, which use such services to deliver packages, send invoices and letters addressed to individuals/organisations, as well as orders for their providers.

However, the dissemination of digital technologies introduced a series of changes in the relation to postal services both for individuals and enterprises: if, on one hand, the volume of paper correspondence (letters, documents, etc.) decreased, owing to the rise of electronic communications (e-substitution), on the other, new consumption habits, linked to the dissemination of e-commerce, led to increase in the demand of express mail services for package delivery.

In Italy, the universal postal service<sup>13</sup> is entrusted to *Poste Italiane*. The services falling within the universal postal service are divided into "reserved", that are exclusively provided by *Poste Italiane*, and "non-reserved", since they can be operated by other postal operators. The former includes the notification of legal documents and violations to the Route Code<sup>14</sup>, while the latter include recently deregulated services, such as the collection transportation, sorting, distribution and sending of internal and across-the-border correspondence

<sup>13</sup> The Universal Postal Service comprises: 1) collection, transportation, sorting, distribution of postal dispatches up to 2 Kg; 2) collection, transportation, sorting and distribution of postal packages up to 20 Kg;

(within the limit of 50 grams) and dispatches with registered letter related to the procedures of Public Administration.

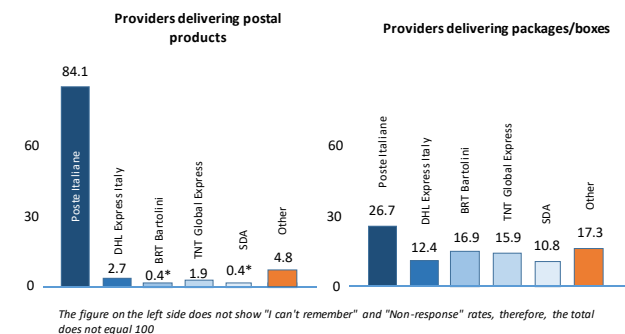


Figure 2.5 - Operators more frequently used to send postal products and packages (%)

If the analysis is limited to providers of postal services such as delivery of letters, invoices, postcards and other documents, the survey showed that most enterprises rely on the services of the former monopoly, *Poste Italiane* (Figure 2.5 - left side). Indeed, 84% of small and medium-sized enterprises – a similar share to the results of the survey on individuals – opted for *Poste Italiane*'s services for sending correspondence; nevertheless, it is highlighted that postal service providers are reluctant to enter a market in decline owing to the e-substitution process. It is worth noticing that the percentage of companies frequently choosing *Poste Italiane* decreases as the size of the company increases, and reaches 63.3% of medium-sized enterprises; such phenomenon can be interpreted in the light of the costs for the search of new providers, that can mostly be afforded by larger companies.

All the other providers are less frequently selected for sending correspondence. In the near future, it can reasonably be assumed that, as a consequence of the liberalisation process of the postal sector launched in 2011, the number of postal operators will tend to increase. However, as previously stated, it is also necessary to consider the structural decline in the segment which tends to discourage new subjects from entering the market.

3) services for registered and insured letters; 4) mass mailing (bank communications, invoices and payment forms, etc.)

<sup>14</sup> See art. 1 clause 4 of Legislative Decree n 58/2011.

Concerning the service for sending packages or boxes (**Figure 2.5** - right side), *Poste Italiane*'s share is drastically reduced and amounts to 27%. Other operators, such as *BRT Bartolini* and *TNT Global Express*, record percentages above 15%. A 17% share is held by "other" providers: in this instance, as previously observed for fixed telephony communication services, such providers are mostly a set of subjects operating locally.

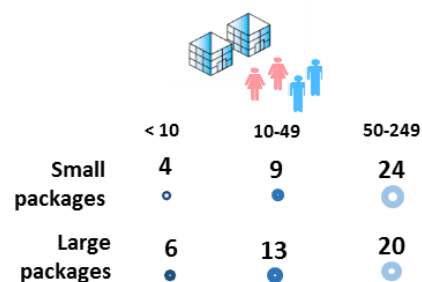
Generally, it is no wonder that, as opposed to the outcomes of the survey on individuals, where, on average, 10% of the individuals said not to have performed any postal sending through the postal service over the last month, only 2.7% of the companies stated non having sent correspondence over the month.

In Italy, the most common type of shipping for small and medium-sized enterprises is letters, in the form of communications addressed to organisations or individuals (42.3%) or private letters (26.0%). Packages not fitting a mail box are sent by 7.1% of SMEs, while 4.2% of the company stated sending small packages. The less used services concern sending invitations and postcards (3.4%). A substantial share of dispatches (9.1%) include invoices and registered letters, included into "Other" (**Figure 2.6**).



**Figure 2.6 - Products sent via the postal service (%)**

It is worth noticing that the percentage of postal products sent is a corporate function: both small and large packages see the share of products sent increase as the number of employees of the company increases. This also indicates that larger companies are more dynamic on the market (**Figure 2.7**).



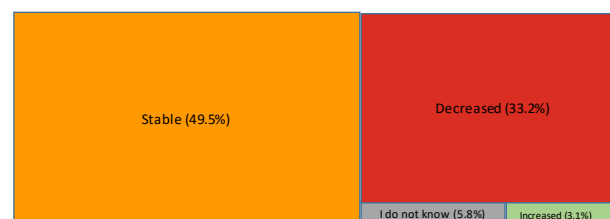
**Figure 2.7 - Packages sent per company size (%)**

Concerning the number of letters, postcards or documents sent on average per month, 36.8% of the companies perform less than 5 dispatches, 17.9% between 6 and 10 dispatches and 36.7% of SMEs more than 10 dispatches. Concerning the services provided by couriers, 34.1% of the companies send, on average, less than five packages or larger boxes, 8.7% send between 6 and 10 items and 10.7% of the companies send more than 10.

For both companies and individuals, it was observed that there is a positive correlation between the number of dispatches performed on average on a monthly basis, and the inclination to use more innovative postal services: the larger the company's attitude to use traditional postal services, the larger its inclination to use online services.

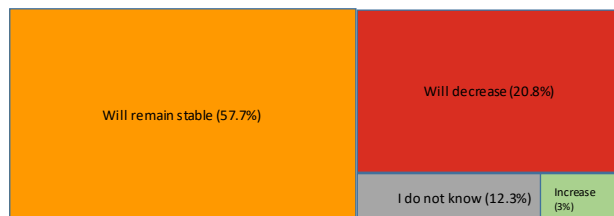
For a better understanding of the changes in the choices of the companies, past and prospective information about the changes in the use of traditional postal services was collected; companies were asked to assess how the use of postal services has evolved in the recent past and how it will possibly develop in the near future.

If the variations occurred over the last year are considered (**Figure 2.8**) half of small and medium-sized enterprises (49.5%) stated that no major modifications occurred.



**Figure 2.8 - Variation over the last 12 months in the use of traditional postal services**

57.7% of the companies stated they believe their consumption habits in the use of postal services will remain unvaried in the following 12 months, while a consistent share of 12.3% of companies are not able to forecast (**Figure 2.9**).

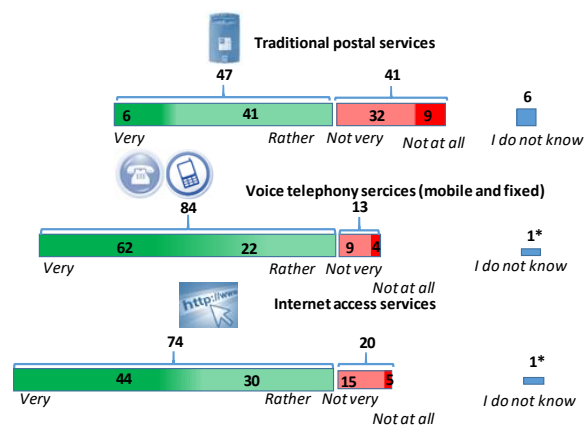


**Figure 2.9 - Modifications over the upcoming 12 months in sending and receiving traditional postal products (%)**

### ***The importance of communication services for companies***

In order to understand how SMEs perceive the vital role of communication services and the need, that can no longer be postponed, to start a path towards digital transformation, the results of the assessment on the importance attached by companies to the different communication services will be presented below.

Fixed telephony and mobile phones rank first as communication form for companies: 84% of the companies define voice services as "very" or "rather" important (**Figure 2.10**). With respect to the survey on consumers, where the Internet was considered as indispensable by over 90% of the individuals, prevailing over more traditional communication services (such as voice and postal services), Internet's importance is not yet part of the cultural heritage of Italian small and medium-sized enterprises: 74% of companies deem access to the network important.

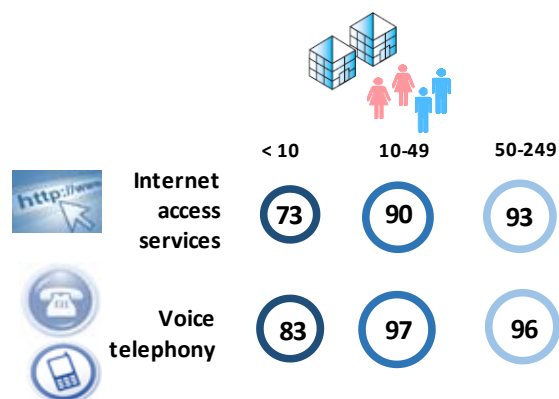


**Figure 2.10 – Importance attached to communication services (%)**

Traditional postal services have the lowest value on the scale of importance (47%) as it was already observed for consumers.

On the grounds of what has been observed, the survey shows that Italian SMEs and particularly micro enterprises have a modest digital culture; indeed, 93% and 90% respectively of the representatives of medium-sized and small enterprises attach vital importance to services for Internet access for their company, against 73% of the actors in the world of micro entrepreneurship (**Figure 2.11**). Data on the perceived importance of online services confirm that mostly-individual companies struggle to recognise the opportunities provided by the net.

The gap is reduced on the issue of assessing the importance of fixed telephony and mobile telephone services in terms of company size, yet, micro enterprises remain less inclined to acknowledge the structural importance of a communication service (83% against 97% of small and 96% of medium-sized enterprises).



**Figure 2.11 - Communication services perceived as "very" or "rather" important by company per size (%)**

Hence, access to the world of digital innovation from smaller entrepreneurial actors seems to be hindered by a cultural barrier. Yet, micro enterprises themselves, which account for the larger share of the Italian economic fabric, may be the production actors which can reap more benefits in the new digital environment of communications.

Thus, the survey seems to suggest the opportunity for a structural national policy of incentives for digitalisation in micro and small enterprises. This action, as imagined in the Consumer Report (see Conclusions), should not be limited to economic incentives, but rather aim at a cultural literacy strategy for new digital languages targeting the smallest actors

### 3. Satisfaction level with respect to communication services

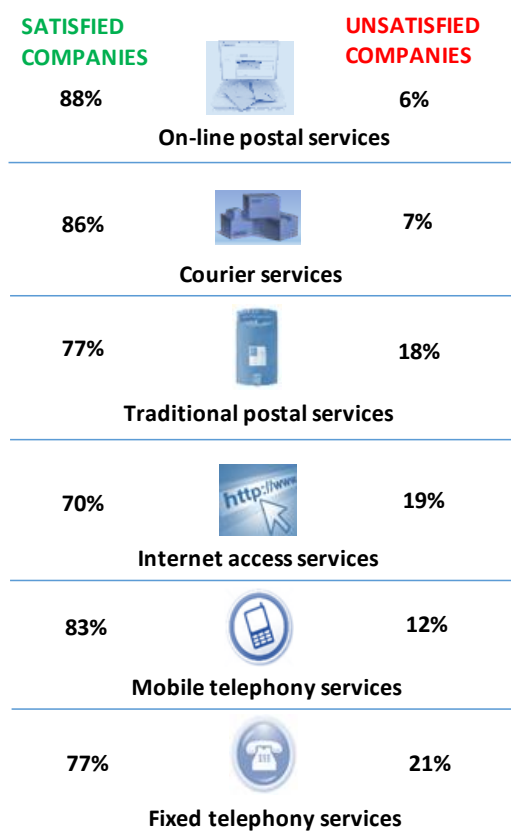
One of the issues of interest to both the regulator and other stakeholders is the level of satisfaction, intended as a measure of the well-being users attach to services.

From the regulator's viewpoint, understanding which aspects render the experience of a service user satisfactory is of the utmost importance, since this can support the verification and understanding of the efficiency of regulatory interventions: both those on consumer protection (transparent information, certain rules to change operator, norms on agreements, etc.) and those aiming at rendering users more aware of the advantages brought about by a competitive market. Knowledge of the companies' satisfaction degree may also become a vital tool to define new regulatory actions or improve existing ones.

By using the perception Italian small and medium-sized enterprises have of their satisfaction level with respect to communication services, this survey highlighted a high average level of well-being (**Figure 3.1**).<sup>15</sup>

Satisfaction levels are undoubtedly at the core of consumption experiences, and namely when it comes to consuming services, since satisfaction mirrors the link existing between users, in this case small and medium-sized enterprises and service providers.

In this sense, high satisfaction levels could indicate a close relation between enterprises and providers, based on confidence and loyalty.

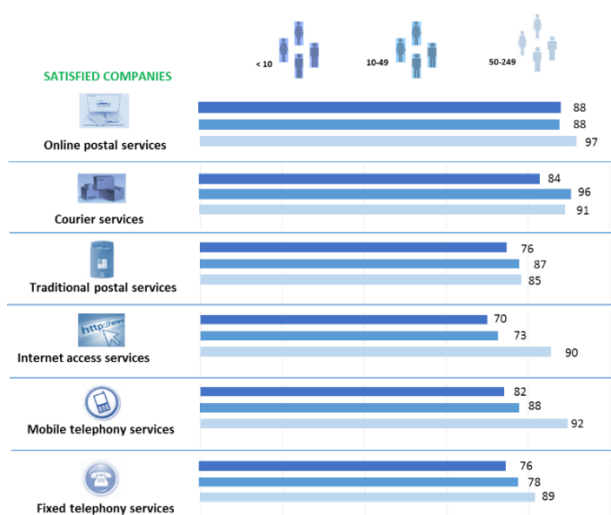


**Figure 3.1 - Satisfaction level for communication services (%)**

Considering the answers provided by companies, it was observed that the highest rate of satisfied companies is recorded for online postal services (88%); express courier services rank second (86%); for numerous companies, these services are indeed vital for the good functioning of their business. The lowest percentage of satisfied enterprises was recorded for Internet access services (70%).

<sup>15</sup> In the survey, in order to define the different satisfaction levels as precisely as possible, responses indicating satisfaction levels were articulated into four categories: *very satisfied*, *rather satisfied*, *not very satisfied*, *not at all satisfied*. In order to facilitate data

interpretation, response modes were coupled in order to obtain two macro categories: i) those satisfied (including *very* and *rather satisfied*) and ii) those unsatisfied (including *not very* and *not at all satisfied*).



**Figure 3.2 - Satisfaction level for communication services per company size (%)**

If the analysis is limited solely to the group of satisfied companies (very or rather), with respect to different communication services, an in-depth analysis on the size factor (**Figure 3.2**) shows that, on average, satisfaction levels increase as the number of employees increases, exceeding 90% for courier, Internet access and mobile phones services and reach 97% for online postal services.

This correlation between satisfaction levels and company size should not come as a surprise, since larger companies are also those investing more and accessing services with higher quality standards. Additionally, the perception of satisfaction may partially result from the different use of such services by micro enterprises on one hand and by medium-sized enterprises on the other. It results in turn that expectations do not match consumption experience.

If unsatisfied companies alone are examined, and focussing on fixed telephony and mobile phone services and Internet access, data show that - in line with the results of the survey on consumers - the main reason for non-satisfaction is the poor quality of services, with peaks above 60% for Internet access services and close to 50% for mobile phones services (**Figure 3.3**).

The lowest percentage of unsatisfied companies owing to poor quality is recorded for fixed telephony services (42%). In Italy, as opposed to the directives of the European Commission (see Recommendation 2007/879/CE), AGCOM found that there are significant differences in the

technical and commercial features of the services offered to residential clients, that is consumers, and to non-residential customers, that is companies, thus creating two remarkably different markets for access to the public network at a fixed location. Indeed, even if, from a purely functional point of view, the service sold can be the same for the two types of customers, peculiar features are observed in the demand from the two types of customers. More specifically, while residential customers access the telephone network to meet the need to increase communication modes among individuals, non-residential customers see such services as vital productive factors for the functioning of their business. Therefore, they require both dedicated solutions for the specific needs of their clients and more guarantees in terms of quality, availability and performance. These different needs lead the same operators to arrange different processes for service provision and to ensure different levels of quality and assistance, according to the type of customers reached, such as customised provisions for recovery interventions in case of malfunctioning.

	Internet access services	Mobile telephony services	Fixed telephony services
Poor quality of the service	63	48	42
Service disruption	35	27	33
Service not meeting the advertised features	26	14*	17
Other	7	17*	23

**Figure 3.3 - Non-satisfaction level for communication services (%) (multiple choice question)**

Service interruption is a reason for non-satisfaction for 35% of the companies using the Internet and for 33% of the companies using fixed telephony services. Services not meeting the advertised features reach their peak among Internet users (26%).

Other reasons for non-satisfaction include, namely: high costs for fixed telephony and mobile networks, and slow browsing for Internet services.

In the sector of electronic communications - both fixed and mobile - thanks to technological developments and liberalisations, it is possible to choose among different providers and among a large variety of services. The choice may also



include switching to another provider offering services with higher quality and lower costs.

Moreover, though the issue of consumer empowerment - intended as the set of processes able to increase information, knowledge, contractual power, ability to communicate and to transfer requests by rendering users pro-active actors on the market - is on the rise, users, be them consumers or companies, are not often fully aware of the different opportunities provided by the market. Despite a regulatory framework based on the concept of opt in and opt out<sup>16</sup>, users still need to opt in and have the opportunity of choosing the service they actually want. Some users may also overestimate their current position owing to the so-called *status quo bias*: an inertial force which encourages them to favour the current situation and hinders change, even if the latter could be more profitable.

One of the main objectives of regulatory actions is setting certain and transparent rules to enable a quick switch of operator, without unjustified charges. Once the conditions for shifting from one operator to another easily and at a reasonable cost are guaranteed, the actual migration procedure depends on a series of elements ascribable to individual users: such factors determine whether a user is inclined to switch operators. Migration levels surely are an important indicator of the involvement in the market of demand. However, the reasons behind a user switching operator depend on their perception of the providers as well as on the presence of valid alternatives on the market.

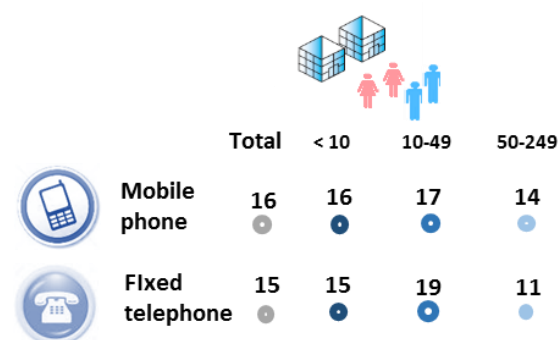
Communication service providers, instead, are interested in rendering their relation with customers as long-lasting as possible. Indeed, numerous studies demonstrated that keeping a client is cheaper than looking for a new one<sup>17</sup>.

In practical terms, a trade-off in the behaviour of companies using communication services and of service providers was observed. On one hand, companies are increasingly informed about the quality of the services they require and, therefore,

they are potentially more inclined to switch provider. On the other hand, if the maturity level of these markets is considered, competition among operators occurs especially in the form of keeping the client's loyalty to prevent the interruption of the contract.

Initially, the percentage of those switching operators are linked to the overall level of satisfaction with respect to the subscribed operator. Indeed, approximately 80% of those who deem the relation with their operator satisfactory have not replaced their fixed telephony operator; such a percentage increases to 87% in the case of switch of mobile phone operator. Many companies, as previously highlighted, seem to have developed such a feeling of satisfaction with regards to their current provider, that they do not feel the need to modify their contract.

If the focus is shifted on those who switched operator over the last 12 months, it emerges that 15% switched provider on the market of fixed telephony services and 16% in the market of mobile network services (Figure 3.4). The higher mobility rate for mobile phone services may also be determined by the existence of less strict and less binding contractual forms compared to fixed telephony.



**Figure 3.4 – Companies that switched operator in fixed and mobile telephony per company size (%)**

An interesting aspect is the identification of the features of the companies with a higher inclination to switch and the reasons for replacing their provider. Both micro and small enterprises switch

<sup>16</sup> With reference to subscribing and unsubscribing to a service.

<sup>17</sup> It is difficult to establish how much money can actually be saved; some works estimate that such difference may oscillate between 10 and 15 times compared to the cost incurred to acquire a new client (Gillen T., 2005, *Winning New Business in Construction*, Gower Publishing Ltd., John L. Daly, 2002, *Pricing for Profitability: Activity-*

*Based Pricing for Competitive Advantage*, John Wiley and Sons, Strouse K., 2004, *Customer-centered telecommunications services marketing*, Artech House Inc.).

operator more often compared to medium-sized enterprises: such a difference could be ascribed to the decisional nature of the operator replacement process which, in smaller companies may be similar to an individual decision and therefore be less affected by the decisional processes followed by larger companies.

Data seem to suggest an increase in the awareness of companies about making their choices. Indeed, though the economic factor still is the key element that pushes companies to change, other motivations operate as well. The economic conditions for service provision are the main reason affecting the decision for 72% of the companies in the instance of fixed telephony services and for 64% in the instance of mobile network services (**Figure 3.5**). Malfunctioning was the main reason for change for 32% of the companies which switched fixed telephony operator and for 27% of those switching mobile network operator. These shares are higher compared to consumer behaviour, since fixed telephony and mobile phone services are vital production factors for enterprises and affect the

functioning of their activities, thus requiring, as mentioned above, tailor-made solutions, as well as larger guarantees in terms of quality and performance.

Additionally, the offer of more suited services affected 21% of fixed telephony switchers and a lower percentage of mobile network switchers, equal to 19%.



**Figure 3.5 - Reasons for switching provider (%)**

All in all, in the choice of provider, a more precise and business-functional selection of telephony services by enterprises seems to be taking shape.



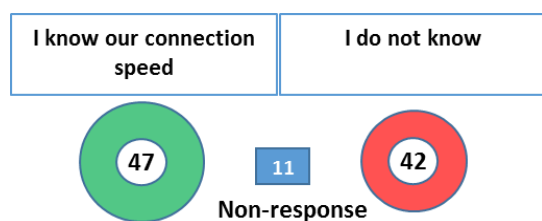
## 4. Internet: knowledge of connection speed and willingness to pay for a high-speed connection

Access to the Internet via high-speed connections (broadband and ultra-broadband) is vital for any company. Indeed, high-speed connections enable the use of advanced web applications which improve efficiency and effectiveness in the management numerous corporate activities.

In the framework of service provision relations, the dissemination and importance of high-speed connections attach importance to the aspects related to the quality of Internet connection services from a fixed station and, namely to connection speed and service availability.

A better understanding of consumption modes and of how companies orient themselves among the numerous offers on the market is undoubtedly of interest to steer regulatory actions.

Despite the efforts made by this Authority to increase transparency in the sales of Internet deals, and, in this sense, despite the development of a project measuring connection quality, among others, 42% of Italian SMEs ignore the speed reached by their own web connection (**Figure 4.1**). This value is very close to the results of the Consumer Report where it was highlighted that 45% of individuals ignore such information.

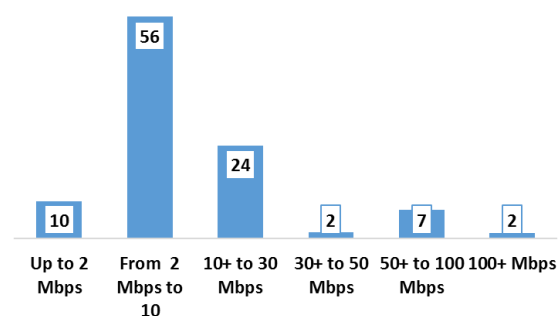


**Figure 4.1 - Companies per knowledge of connection speed (%)**

Another aspect to be analysed is that the number of companies ignoring their connection speed decreases as the company's size increases: for micro enterprises, the share is equal to 42.7%, for small enterprises the percentage decreases to 38.1%, while only a quarter (24.1%) of companies with at least 50 employees ignore their connection speed. This probably because, in larger companies, economic resources for technological development are such as to enable the presence of

stable personnel dealing with both internal communication on the new technological tools and, increasingly often, with the so-called digital transformation.

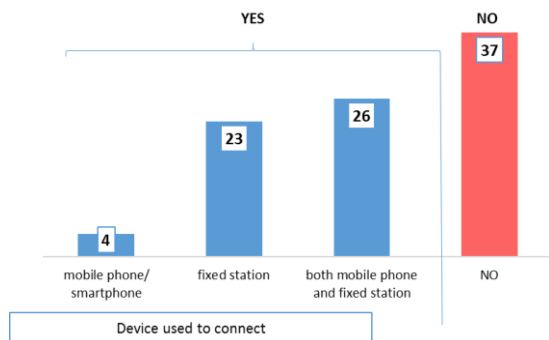
Among the companies which stated knowing their Internet connection speed, it was observed that the majority affirm to connect at a speed up to 10 Mbps (66% of those who state knowing their connection speed), while those connecting at a speed comprised between 10 and 30 Mbps (24%) rank second. The percentages of companies stating to connect at speeds higher than 30 Mbps are of minor importance (**Figure 4.2**).



**Figure 4.2 - Companies knowing their connection speed per speed range in (Mbps) (%)**

If Internet connection speed is cross-referenced with company size, it can be observed that speeds up to 10 Mbps are declared especially by micro enterprises, while higher speeds characterise companies with a higher number of employees. For example, if the speed range between 2 and 10 Mbps is considered, 58% of micro enterprises said falling into these category, against 39% of medium-sized enterprises.

The analysis shows not only that 42% of the enterprises ignore their Internet connection speed, but also that approximately 2/5 of Italian SMEs are also unaware of the existence of software testing such speed (**Figure 4.3**). Small and medium-sized enterprises are recorded to be more informed: indeed, while 38% of micro enterprises affirmed ignoring the existence of software testing Internet connection speed, this percentage decreases to 12% in companies with at least 50 employees.



**Figure 4.3 - Knowledge of software measuring Internet connection speed (%)**

In the subset of companies which affirmed knowing about software testing connection speed from a fixed station and/or mobile phone or smartphone, 54% also used such software. The use of such software is particularly widespread in medium-sized enterprises (59%), those with a number of employees comprised between 50 and 249, as well as in companies doing business in the sectors of trade/tourism (64%), compared to 39% of companies in manufacturing and 57% of companies operating in other sectors. The high percentage of companies using such software operating in trade and tourism can be also interpreted in the light of what was discussed in Chapter 1: the importance of online reputation management for this kind of companies, and, therefore, of the use such companies make of tools to assess their actual connection speed.

As mentioned above, the aspects related to knowledge of connection speed are particularly important for regulatory actors. On one hand, the lack of knowledge of such important aspects may help or strengthen user inactivity; shifting to a contract offering a broader range of services, but at a higher cost, often does not occur due to lack of information about possible benefits. On the other, service providers may exploit such information void to steer users towards deals that do not fully meet their needs, thus creating evident phenomena of market failure.

Hence, this Authority is faced with the need to contain trade off effects between mere consumer protection and fostering a broader knowledge of

the services offered on the market and their features. This, to ensure increased ability to choose and greater contractual power (consumer empowerment), aiming at positioning on the offers most suited to one's needs.

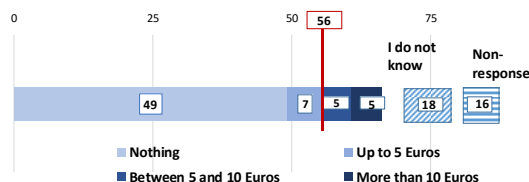
As for individuals, the analysis on whether companies deem faster Internet connections from a fixed station useful, was carried out by tapping into the data about Italian company's willingness to pay. Willingness to pay is the amount that a company would be willing to pay to have a faster Internet connection, such as a ultrabroadband connection<sup>18</sup>. Users should attach higher utility levels to the increased benefits brought about by faster connections, for which they should be willing to pay an additional sum (see Consumer Report *Approfondimento 4*)<sup>19</sup>.

From the point of view of service providers, knowing whether companies are willing to pay is a vital information since it could steer the definition of the packages offered. Therefore, a correct identification of the economic value that companies attach to communication services - and, namely, to faster Internet connections - becomes a vital information enabling operators to keep room for manoeuvre on prices and to market a series of commercial deals, for companies to choose those best suited to their needs.

Regarding the willingness to pay for a shift towards a faster Internet connection (compared to the current one) it was observed that, for almost 3/5 of the companies, the shift to a faster connection should cost maximum 5 additional Euro per month (**Figure 4.4**). 10% is willing to pay more than 5 Euro. The share of companies (18%) not having clear idea about their willingness to pay to enjoy a faster connection is also remarkable and is well above the one recorded for individuals (10%).

<sup>18</sup> Ultrabroadband connections include all network technologies enabling connectivity from 30Mbit/s to above 1Gbit/s.

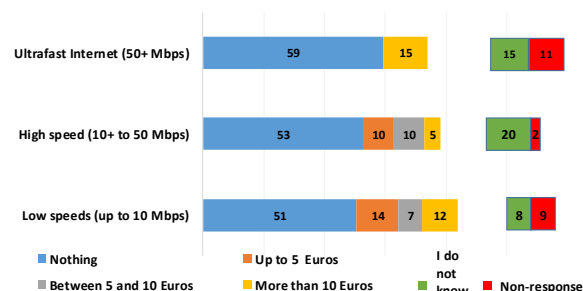
<sup>19</sup> Hanemann W.M., 1991, *Willingness to Pay and Willingness to Accept: How Much Can they differ?* The American Economic Review, 81(3), 635-647.



**Figure 4.4 - Willingness to pay for increased connection speed (%)**

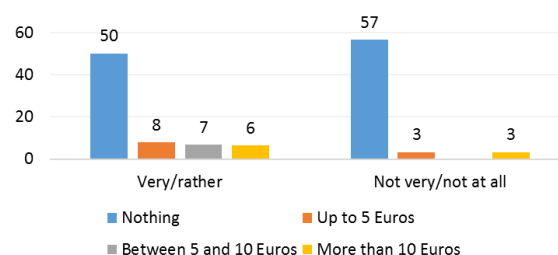
With respect to company size, if the category of micro enterprises sees 50% of them not willing to pay, the share decreases to 34% for medium-sized enterprises. Similarly, only 5% of micro enterprises is willing to pay more than 10 Euro, while the percentage of enterprises willing to pay the same sum doubles (10%) for medium-sized enterprises. Surprisingly, the share of companies affirming not knowing how much they want to spend for a shift to a faster Internet connection increases as the size of the company increases. This is probably related to the fact that as the company size increases, organisational complexity increases as well, therefore, it is difficult to assess the implicit value of the service for all the units composing the company.

A further indication of how the value of Internet connection speed is perceived can be inferred from cross-referencing two piece of information: current connection speed and willingness to pay for a faster connection. Data show that companies with low-speed Internet connections (up to 10 Mbps) and, therefore, with lower technological equipment, are more willing to invest and increase their budget to enjoy a faster connection (33%) (**Figure 4.5**). Instead, only 15% of the companies already equipped with a service at a speed above 50 Mbps, would be willing to pay more than 10 Euros. This highlights that, currently, there is no significant demand above 50 Mbps even from small and medium-sized enterprises.



**Figure 4.5(\*) - Willingness to pay for current connection speed (%)**

Additionally, it was observed that the same scarce inclination to spending was also recorded for companies which deem Internet access services important, though this inclination is wider among those attaching less importance to such services (57% vs 50%) (**Figure 4.6**).



**Figure 4.6 - Willingness to pay and importance of the Internet (%)**

The previous statements show that the growth of Italian SMEs is slowed down by several factors, including the prominent limited dissemination of high-speed connections.

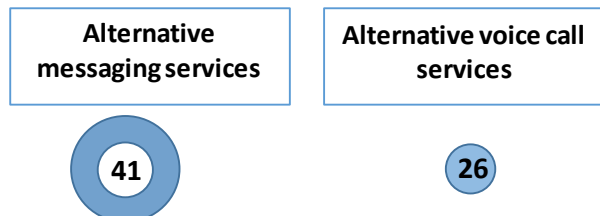
The considerations made on the same issue in the framework of the Consumer Report apply to companies as well: interventions on the side of demand with certain effectiveness would include actions aimed at spreading broader knowledge and awareness of digital culture to undermine the marginalisation that new communication forms still experience among Italian entrepreneurial actors as well. In this sense, introducing the so-called digital vouchers, an economic contribution to be used to increase digital equipment among users, should be matched by information campaigns and by long-life training programmes for digital competence.

## 5. New Trends

We repeatedly recalled that technological developments often introduce new communication forms and tools. To this end, the focus was also placed on the experience of Italian small and medium-sized enterprises with the most recent communication tools, such as new messaging services (*WhatsApp* or *Messenger*), services that can replace traditional voice calls (such as *Skype* calls) and online postal services as a substitute for traditional mail.

In general, corporate consumption profiles are more limited compared to individuals (**Figure 5.1**): while messaging services are largely widespread among the population (63%), only 41% of the companies use them. Data on companies may also result from alternative messaging services being able to reach only users equipped with devices that can receive, for example, *WhatsApp* messages.

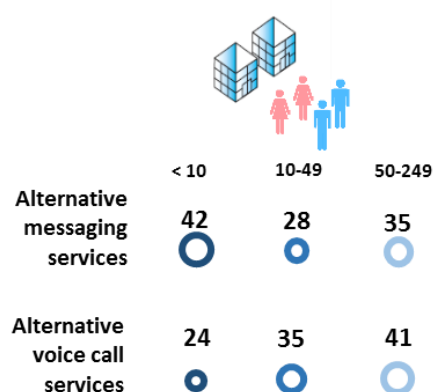
Instead, alternative voice calls, are much more widespread among companies (26%) than among individuals (21%).



**Figure 5.1 - Dissemination of alternative messaging and voice call services (%)**

Regarding new alternative messaging services, it is possible to suppose that their role will be strengthened in the future. Indeed, as the Authority already highlighted<sup>20</sup>, companies providing apps for social communication are introducing new software tools for communication between individuals and companies and enable app users to get into contact with specific companies, such as banks, airlines or taxi cooperatives.

Some social communication apps already provide additional functions compared to those for user communication, thus, they are emerging as actual platforms enabling users, for example, to perform payments. Developers of such alternative communication services aim at putting companies into contact with their customers: companies can inform their users about the services provided, send order confirmations, as well as information on the status of deliveries, by using different tools compared to those used to date (SMS, phone calls, e-mails).



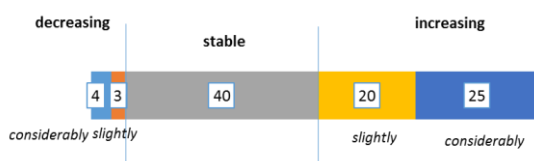
**Figure 5.2 - Dissemination of alternative messaging and voice call services per company size (%)**

The major users of alternative messaging services are micro enterprises (**Figure 5.2**). Concerning alternative voice call services, their use increases as the size of the company increases; indeed, if micro enterprises see the use of new voice call services spread in one company out of four, dissemination rates increase for small companies (35%) and are even higher for medium-sized enterprises (41%).

The analysis on data concerning how companies modified their use of alternative services over the previous 12 months provided information which can partly explain what was previously discussed about the dissemination of such technological innovations. Namely, significant increasing trend in the use of alternative messaging services was recorded. 45% of the companies stated that their use of alternative messaging services increased

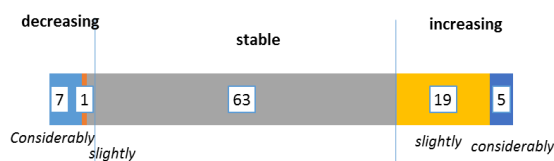
<sup>20</sup> AGCOM, 2016, *Indagine conoscitiva concernente lo sviluppo delle piattaforme digitali e dei servizi di comunicazione elettronica. I consumer communications services*, par. 123-124.

over the last year (**Figure 5.3**). No variation was recorded for 2/5 of the companies over the course of the previous year.



**Figure 5.3 - Modifications over the last 12 months in the use of alternative messaging services (%)**

Concerning alternative voice call services (**Figure 5.4**), 63% of the companies stated not varying their consumption, while around a quarter of the companies stated their use increased. Anyway, it was observed that the variation over the previous year was higher for messaging services, owing to the recent app breakthrough addressed earlier in this chapter which involved the world of small and medium-sized enterprises as well.

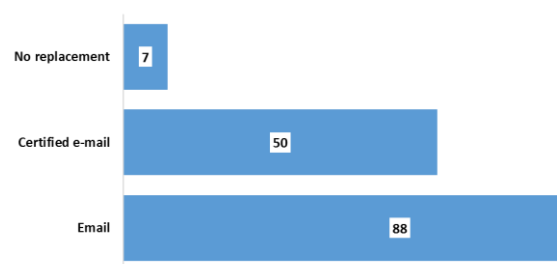


**Figure 5.4 - Modifications over the last 12 months in the use of alternative voice call services (%)**

The sector of postal services, in particular the segment of traditional mail (letters, postcards, documents, etc.) has significantly and structurally decreased with the rise of the Internet and the subsequent success of free digital communication (e-mails).

More than one third of Italian SMEs stated that their use of traditional postal services decreased over the last year. Again, such values increase as the company size increases (19% for micro enterprises and 33% for medium-sized enterprises). In the communication modes that replaced letters and postcards, the lion's share goes to e-mails (88%) also in the version of certified e-mail (50%). Compared to the survey on individuals, which highlighted that traditional postal services are being reduced rather replaced, companies have clearly started replacing traditional postal services with new services (**Figure 5.5**). Furthermore, to this end, it is worth

highlighting that the substitution process with certified e-mail concerns half of the SMEs, against 20% of consumers.



**Figure 5.5 - Substitute forms for traditional postal services in the companies which reduced the use of traditional postal services (%)**

The use of any digital and online postal services is widely widespread among companies, as opposed to data emerged from the Consumer Report; indeed, if more than half of the companies declared using them, only 16% of individuals use this kind of services (**Figure 5.6**).



**Figure 5.6 - Use of online postal services (%)**

## 6. Conclusions

The aim of this report was providing an overview of the experience of Italian small and medium-sized enterprises (SMEs) with the use of communication services, thus enabling evidence-based regulation by AGCOM, in the perspective of future policy-making strategies and for providing useful information to stakeholders.

Compared to the results of the Consumer Report, SMEs seem to react more slowly to the changes increasingly undergone by the world of communications over the last years. While individuals substantially seem to be in line with international models for access and use of new communication services, emerging namely for the youngest generations and the so-called “Millennials” (age range 14-34)<sup>21</sup>, the world of small and medium-sized enterprises is still moving too slow.

When it comes to technological equipment, research highlighted that a substantial portion of SMEs is still connected to structures and organisational practices belonging to the previous media season: fixed telephony and desktop computers are the main communication devices and to access the net (see Chapter 1). In telephone communications, fixed networks are still significantly preferred over mobile networks.

The trend of building one's own digital identity, that is any kind of online presence, is only partially widespread. Indeed, though 90% of micro enterprises, those with less than 10 employees, are equipped with Internet connection, only 50% have their own website. The share of companies with limited online presence decreases as company size increases: for small enterprises (with employees comprised between 10 and 49) this share reaches approximately 14%, while for larger companies (50-249 employees), the percentage decreases to 7%. The category of size is, in line with the results of economic literature, the variable which, more than others determines the differences in the use of communication services in enterprises.

The different inclination to invest in creating spaces for online presence, cannot only be ascribed to larger resources - be them economic or skill-related, which, of course, are more available to larger companies - but rather to the modest digital culture of Italian enterprises, and namely micro ones. Indeed, among the actors in the field of micro entrepreneurship, slightly more than 70% attach significant importance to Internet services, compared to over 90% of small and medium-sized enterprises (see Chapter 2). Data on the perceived importance of online services confirm that micro enterprises struggle to recognise the praised opportunities provided by the net. Yet, small enterprises themselves may be the productive actors which could reap more benefits from digital technologies, such as: better chances to come into contact with talented and skilled workers, larger access to markets, increased opportunities for funding (e.g. crowdfunding), improved communication, increased access to technologies, larger product development, reduction of red tape burdens<sup>22</sup>.

Online communication services and certified emails are privileged communication channels that companies should be able to exploit to improve customer relations, to render their relations with institutions and national and local administrations simpler and more effective, to optimise communication procedures, and to find new opportunities to produce value and wealth. In this respect, there is a remarkable gap between the availability of a certified e-mail address- which is virtually universal and showed no differences in terms of company size - and its yet marginal use: empirical evidence show that slightly more than half of small and medium-sized enterprises use online postal services, including certified e-mail (see Chapter 5), though the trend is increasingly oriented towards paper-digital substitution.

Additionally, the analysis highlighted that companies record good satisfaction rates for the communication services examined. Such results are supported by the fact that more than 80% of

<sup>21</sup> See AGCOM Consumer Report.

<sup>22</sup> OECD, 2017, *Key Issues for Digital Transformation in the G20*, Report prepared for a joint G20 German Presidency/OECD conference, Berlin.



SMEs who deem their relation with their telephone service provider satisfactory, chose to maintain their operator (see Chapter 3). Among the companies that switched to another operator, though economic conditions still remain the main reason for change, other factors were indicated, such as disruptions or the search for deals better suited to the company's needs.

As described, besides a scarce knowledge of the speed reached by the Internet connection (42% of SMEs ignore their connection speed), the growth of enterprises is slowed down by the limited dissemination of super-fast connections and by the unwillingness to pay more (recorded in around 50% of the cases) for a faster connection (see Chapter 4).

In brief, this report underlined remarkable differences in the use and implementation of innovative communication practices between micro enterprises on one hand and small-medium-sized enterprises on the other. Indeed, companies in the intermediate size range adapt to the innovations in communication services in a way more similar to that of medium-sized enterprises.

Barriers to the implementation of digital technologies are particularly clear for micro enterprises - the fabric of the Italian industrial system - and may have different origins: 1) economic barriers: considering the current difficult context, corporate cash crisis, along with the difficulties in obtaining credit at sustainable costs, led to a remarkable reshaping, if not elimination, of technological investments; 2) cultural barriers: the scarce dissemination of digital culture does not encourage its development; technology is often considered as foreign and far from a company's core business. The true revolution does not consist

in implementing or buying innovative devices (for example hardware or software), but rather in implementing a series of actions aiming at acquiring new operational and organisational corporate knowledge; 3) scepticism, or inability to assess the benefits of digital economy.<sup>23</sup>

To facilitate the path towards overcoming such barriers, increased efforts by policy makers would be beneficial. Such efforts should target, for example, not only the adoption of policies facilitating access to capitals, but also strategies for literacy in the languages of digital technology, such the activities to support competence centres, aiming at creating the conditions to facilitate the digital transformation process<sup>24</sup>.

Efforts to fill the digital gap - which as discussed, is particularly emphasized in small and very small businesses - are equally supported by private actors<sup>25</sup>.

AGCOM is an active party to this process, in compliance with the competences entrusted to the Authority. Evidence addressed in the previous chapters and the critical aspects related to information asymmetries (namely, incomplete or inaccurate information under a technical or economic point of view) require this Authority to focus continuous attention on the correct functioning of electronic communication markets, as well as, to implement analytical activities and regulatory enforcement, on both the side of supply and demand. This report is a step towards this direction.

<sup>23</sup>On this issue, see OECD works: 1) *Stimulating Digital Innovation for Growth and Inclusiveness: The Role of Policies for the Successful Diffusion of ICT*, OECD Digital Economy Papers, No. 256, OECD Publishing, Paris, 2016; 2) *The Future of Productivity*, OECD Publishing, Paris, 2015; 3) *Recommendation of the Council for Enhanced Access and More Effective Use of Public Sector Information*, OECD, Paris, 2008.

<sup>24</sup> The *Angeli Digitali* (Digital Angels) project launched by *Confindustria Digitale* is positioned in this perspective and aims at supporting SMEs entrepreneurs in the digitalization process. The so-called digital angels are centres on local areas, equipped with

technological skills and different business models, aiming at enhancing digital transformation in Italian SMEs.

<sup>25</sup> The projects *Eccellenze in Digitale* (Digital Excellence) and *Crescere in Digitale* (Growing Digital), stemmed from the cooperation of different organisations, including Google and Unioncamere are worth a mention. Their aim is offering young people training and traineeships and provide companies with new digital skills. Through a new online training path, entrepreneurs can find new ideas to use the web as a tool to strengthen their business and to incorporate the innovative logics of digital languages into their administrative routines.

## Methodological Appendix

The results presented in this report are based on a research project<sup>26</sup> launched with a group of Italian Universities and, namely, on a sample survey aimed at observing the use of the different communication services (wired and mobile telecommunications, Internet services, postal services) by enterprises.

The survey was carried out by the *IZI - Methods, analysis and economic assessments* company, on a sample of 600 enterprises with less than 250 employees operating on the Italian territory. Data collected were subsequently processed as to obtain a representative sample of the companies working on the entire national territory.

The sample survey on the use and consumption of communication digital services by enterprises was subject to data validation processes with official Italian sources and, where necessary, a re-weighting procedure was applied.

The following is a methodological note describing the choices made to define survey methodology, sampling design, questionnaire administration, estimation phase, and the assessment of estimate reliability.

### Sampling plan

Reference population for this survey is composed of companies operating on the entire Italian national territory in the sectors of manufacturing, trade and services, in the juridical form of society of persons or capitals, with less than 250 employees (around 1.5 million) resulting from official statistics on enterprises.

The planning phase of the sampling design considered variability sources likely to determine heterogeneous phenomena, in order to maximise efficiency in the estimates produced. On the grounds of such assumption, the design envisaged a stratified sampling plan with no-reinsert random extraction. The overall sample size was fixed at around 500 units.

The sampling plan assumed the *ex-ante* planning of analysis domains<sup>27</sup>, identified as aggregations of elementary strata, defining sample size, with the constraint of the pre-definite sample size, so as to ensure a pre-determined level of reliability of the estimates in the domains. *Ex-ante* domain planning enables an appropriate representation of segments with less numerous populations, which, in the case of a proportionate design, would not be represented with the necessary reliability.

On the operational level, such procedure resorted to due allocation techniques in the strata of a fixed-size sample. Planning study domains is an issue for the allocation of the sample in the strata, once the constraint on the reliability of the estimates produced is set. The issue of allocation was solved by resorting to a specific procedure able to ensure homogeneity in the sampling errors in the domains. Allocation was also considered in the phases of estimation and construction of the weighing coefficient, which enabled the sample to be re-conducted to the distribution observed in the population of reference.

Study domains were defined by territorial allocation (geographical area of the company's legal residence), by business sector and by company size, imagining that such elements could recover part of the variability of the features of interest.

Strata were defined by nested study domains. The definition of the strata, study domains and variable partition considered in the design was based on the study of the population of reference.

The criteria used in study domain stratification and planning are the following:

- Geographical area (North-West, North East, Centre, South and Islands)
- Company size (<10 employees, 10-49 employees, 50-249 employees)

<sup>26</sup> The *Servizi e Contenuti per le reti di Nuova Generazione – Screen Project* is part of AGCOM research activities on the economic, technical, social and legal issues of new generation networks, with particular focus on services, contents and applications that can be used through the new networks.

<sup>27</sup> Analysis domains are specific subpopulations of interest for which the aim is obtaining a pre-determined level of reliability of the estimates produced.



- Business sector (Ateco Section 2007, 4 modes: manufacturing, construction sector, trade and tourism, other services).

### Pilot survey

The pilot survey, implemented with a view to verifying the tuning of survey tools and the correctness of the sampling design, was completed in the first week of September, by administering - via the web - questionnaires to 57 enterprises. The pilot survey was conducted on more than twice the number of companies in the initial design. Enlarging the pilot sample was decided to guarantee increased ability to provide useful indications to optimise the survey tool.

Overall, the pilot survey was successful and confirmed the substantial functionality of investigation tools.

Minor and non-structural modifications to the original questionnaire were performed, such as those to prevent the results of the survey from being affected from the seasonal character of the survey, which could have taken August as a month of reference, thus leading to distorted results and lack of data representativity - owing to the holiday nature of August for corporate professional routines - of the *last month* considered.

Response rate in contacts with enterprises were remarkably lower than those for surveys on individuals; therefore, the time window for data collection was extended compared to the original prevision, thus anticipating the need to send repeated reminders in order to reach the saturation of the strata defined in the sampling design.

### Data collection

Data collection was carried out with the CAWI technique (Computer-assisted web interviewing) on the extracted units.

Contact technique was cured to show the features of the survey to the interviewed units. The survey had fact-finding institutional aims, for the Authority to understand how society is developing

with respect to the use of technologies in communication. The communication technique was therefore finalised to reducing the number of overall non-responses, thus limiting phenomena that may lead to distorted estimates and sample self-selection.

The first contact with companies was established by sending an email to all the enterprises in the selected sample, with the invitation to participate in the survey and the link to access and fill out the e-questionnaire.

Monitoring of the phase on the ground included verifying the completed questionnaires against the stratification grid and enabled to steer non-responses with respect to sample allocation.

Interviews were administered in the third quarter of 2015.

### Estimation phase

After the collection, verification and normalisation phases, an estimator - a weighing coefficient able to link the results of data collection to the related population - was applied to the sample of responding companies.

The adopted estimator was constructed by using particularly powerful weighing techniques. This was required both to enable the sample to retrace the profile of its population of reference, and to correct possible distortions in the respondent sample induced by non-random trends of overall non-responses.

Tuning the estimation strategy required the use of indirect estimators using auxiliary information related to the variables under investigation. Namely, a calibration weighing estimator was applied<sup>28</sup>. Such method, based on model-assisted estimators<sup>29</sup> enables to bind the sample to the structure of the population of reference used in the stratification phase.

The general structure of the procedure is composed of: 1) determining a base weight defined as the inverse of inclusion probability for each sample unit; 2) correcting overall non-responses (enabling to correct the base weight for the

<sup>28</sup> Deville J.C., Särndal C.E., 1992, *Calibration Estimators in Survey Sampling*, in Journal of the American Statistical Association, vol. 87.

<sup>29</sup> Dorfman A.H., Royall R.M., Valliant R., 2000, *Finite Population Sampling and Inference: a Prediction Approach*, New York, John Wiley & Sons.

distortion effects induced by non-responses, thus respecting the structure of the theoretical sample); 3) determining the final weight according to the methodology of calibrated estimators.

Therefore, the approach on the grounds of fully model-assisted estimators enabled the finalisation of estimators weighted on auxiliary information. Besides using the information on auxiliary variables by reducing sampling variance, such class of estimators enjoys a series of properties, including calibration, according to which the estimates of the totals of auxiliary variables correspond to the known overalls in the population. Thus, it is possible to weigh the estimated population according to the known totals obtained from the population of reference, de-aggregated according to specific features.

Reference aggregates, used as known totals from the weighing procedure, were obtained from ISTAT structural statistics on enterprises.

Auxiliary information used in the construction of the weighted estimator included:

- Geographical area (North-West, North East, Centre, South and Islands)
- Company size (<10 employees, 10-49 employees, 50-249 employees)
- Business sector (Ateco Section 2007, 4 modes: manufacturing, construction sector, trade and tourism, other services).

The calibration plan was developed by imposing the respect of nested constraints and by controlling that partitions did not contain an insufficient number of sample units, thus risking an increased growth in estimate variance.

The estimator thus obtained, applied as a multiplier coefficient to sample units, enabled the production of estimates on the population of reference, so as the aggregates referred to each nesting in the calibration plan matched with the corresponding overall known total obtained from ISTAT structural statistics on companies.

### Assessment of estimate reliability

As any sample survey, the estimates provided are subject to sampling errors. The procedure to calculate the sampling error associated with the estimates produced is grounded in the usual techniques known in the field, deriving from the choice of the proposed estimator. More specifically, the pivotal feature of weighted estimators is asymptotic convergence to the generalised regression estimator. Thanks to this property, it is possible to use all the known analytical results for the generalised regression estimator, including the analytical form of the variance of the generalised regression estimator, which may be used to calculate error in the estimates produced by the calibration estimator<sup>30</sup>.

Estimate reliability level is measured with the variance coefficient,  $CV(p)$  referred to a generic estimate of a relative frequency  $p$  in the population. The variance coefficient enabled the construction of confidence intervals at 95%.

Given the reduced size of the sample, the results obtained from the reliability assessment of the estimates produced, suggested producing estimates referred only to planned domains, geographical area, company size and sectors, whose reliability levels were known.

<sup>30</sup> Deville J.C., Särndal C.E., 1992, *Calibration Estimators in Survey Sampling*, in Journal of the American Statistical Association, vol. 87.