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16 febbraio 2022

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La rivista è stata fondata nel 2009 da Alberto M. Gambino ed è oggi pubblicata dall'Accademia Italiana del Codice di Internet (IAIC) sotto gli auspici del Ministero dei beni e delle attività culturali e del turismo - Direzione generale biblioteche e istituti culturali (DGBIC) e dell'Università Europea di Roma con il Centro di Ricerca di Eccellenza del Diritto d'Autore (CREDA). Tutti i diritti sono dell'IAIC.

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THE IMPACT OF MOBILE DEVICES IN BUSINESS RELATIONSHIPS: LEGAL LIABILITIES AND RISKS Manlio d'Agostino Panebianco

ABSTRACT: In the modern society, the interaction of mobile devices and Apps with human persons is changing the lifestyle and habits. Unfortunately, several times these changes are not adequately observed with a holistic perspective: if, on the one hand, this social and technological evolution can reduce social divide, on the other hand, it can increase the misunderstanding in relationships, due to a decreasing level of attention. These have impact on individual life, and as well legal liability, especially when using personal devices and Apps in business relationships.

Tags: #mobiledevices #levelofattention #digitaldivide #screenrevolution #perpetualcontact

Introduction

In the last three decades, economy and society radically changed, due to globalisation and technologies, and the interaction between people and ICT devices influences the development both of society itself, lifestyle, behaviours and, as well, of technologies themselves. The result is that nowadays, each person is projected into the so-called *"infosphere"*¹ (or "cyberspace"), and mainly living between the real and digital dimension², with several changes hovering between *consolidated knowledge* and *positive expectations*.

¹ See L. Floridi, *The Fourth Revolution: How the Infosphere is Reshaping Human Reality*, Oxford University Press, 2016

² M. D'AGOSTINO PANEBIANCO, *Vivere nella dimensione Digitale*, Themis ed., 2019, p. 14 ss., about a classification of three dimensions of modern life: *Real* (characterised by the 5 senses); *Digital* (intermediated by ICT devices); *Virtual* (born by a bottom-up process, it is temporary condition of something which, although not clearly defined, produces legal effects).

A first issue is about the contemporary usage of the word "*communication*". In the literature, some authors argued about the coexistence of two different types of communication: the "*technical transmission model*" and the "*personal understanding model*". «The approach of the personal understanding model, whose design is embodied in Jürgen Habermas's communication theory, [...] is considered an interaction between people, which is dependent on mutual understanding with the help of symbols that convey meaning - preferably a language. Communication thus becomes an expression of human being-in-the-world. [...] Unlike the technical approach, the performance of communication consists not only in establishing a unified society whose goal is precisely to overcome distance and differencew³.

It is undoubted that this technological evolution concerns a natural and positive dynamic, that cannot be stopped: but, since there are some negative (mainly expected) impacts, it is important to guide and educate people in the use of these new technologies, in order to avoid some significant negative effects.

A second perspective concerns "*digital civic integration*": especially during the period of pandemic, as even highlighted by Prof. Sergio Mattarella⁴ «we have fully grasped the importance of using tools, including telematic tools, which allow access to essential operations», focusing on the social importance of reducing the digital divide, in particular for elder "*digital immigrants*"⁵. As a matter of facts, «investing in the opportunities offered by new technologies means promoting full inclusion of citizens of all ages in the country's relational and cultural life. Being excluded from the digital dimension can be a factor of social exclusion for an elderly person».

see Official Statement for International Day for Older Persons, 1st October 2021.

³ S. Krämer, *Medium, Messenger, Transmission*, Amsterdam University Press, 2015, p.21-23
⁴ On. Prof. Sergio Mattarella was previously Professor of Parliamentary Law at the Law School of the University of Palermo, and currently is the President of the Republic of Italy;

⁵ According to M. Prensky, *Digital Natives*, *Digital Immigrants*, in *On the Horizon*, MCB University Press, Vol. 9 No. 5, (2001), pp. 1-6, it is possible to define and classify "*digital immigrants*" people who grew up before 1985⁵) who were introduced to ICT later in life, with the consequent "*problem of adaptation*"; and "*digital natives*", who have been raised alongside developing technologies, but without any parental guide.

The affordability of services is directly related to the capabilities of people to exercise their rights to use the information for certain political, social or economic ends. The core of the issue lies in the requested need both to a universal access to affordable services, and to a significant improvement in human development: otherwise, these technological developments do not redress digital inequality, in fact, on the contrary they risk to amplify it⁶.

So, in this dual evolution⁷ it is important to focus also on reduction of the "*digital divide*", which assume a wider meaning in the current context: indeed, «the digital divide is not any one particular "gap" between rich and poor or between local and global, but rather includes a "variety of gaps believed to bear on the worlds inequitable distribution of resources"»⁸.

A responsibility that cannot fall only on the legislator, but must be shared both at the level of the TechGiant and of the users, through a process of collective and individual "*accountability*"⁹.

 ⁶ A. Gillwald, *Beyond access: addressing digital inequality in Africa*, in repot *The Shifting Geopolitics of Internet Access*, Centre for International Governance Innovation, 2017, p.39
 ⁷ Both social and technological.

⁸ See M. C. Bottis, K. E. Himma, *The Digital Divide: A Perspective for the Future*, in K. E. Himma and H.T. Tavani (Eds), *The handbook of information and computer ethics*, Wiley, 2008.

⁹ The term and meaning of "accountability" refers to the definition given by art.5 of Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation); it can be referred to that "substantial compliance" (and not only formal), which concerns a responsibility of being able to dynamically adapt the decisions and measures to the changing context, with aim of always being effective and efficient. In fact, according to Opinion 3/2010 "on the principle of accountability" of the Article 29 Data Protection Working Party, n.21 «The term "accountability" comes from the Anglo-Saxon world where it is in common use and where there is a broadly shared understanding of its meaning - even though defining what exactly "accountability" means in practice is complex. In general terms though its emphasis is on showing how responsibility is exercised and making this verifiable. Responsibility and accountability are two sides of the same coin and both essential elements of good governance. Only when responsibility is demonstrated as working effectively in practice can sufficient trust be developed»; and in n.22 the document stresses the need not to focusing on the translation in different languages, due to the arising possible misunderstanding, but to capture the genuine meaning of it, it is adequate to refer as well to "reinforced responsibility", "assurance", "reliability", "trustworthiness"; and in n.23 it is highlighted that «the document doesn't

In order to exploit and analyse the current "mobile" context, it is adequate to identify a legal pillar, as the "*red line*" which connects all the different arising issues: the main legal framework to refer is the Regulation (EU) 2016/679 (better known as GDPR), for at least two different reasons.

Firstly, since the processing of personal data is a fundamental right¹⁰, and the right to privacy (the "*right to be let alone*"¹¹) in our current society has to be protected through a not-invasive *personal data processing*, according to the data subject's will, or in case of a legitimate interest of the Processor or given by a law. Then, since due to its dual territorial field of application¹², it gives a wide transnational perspective, as it should be in a globalized society.

¹¹ According to A. MOORE, Defining Privacy, in Journal of Social Philosophy, Vol. 39 No. 3, 2008, p. 412, it seems appropriate to report a brief summary indicates the variety and breadth of the definitions that have been offered in literature: «Privacy has been defined in many ways over the last few hundred years. Warren and Brandeis, following Judge Thomas Cooley, called it "the right to be let alone." Pound and Freund have defined privacy in terms of an extension personality or personhood. Legal scholar William Prosser separated privacy cases into four distinct but related torts. "Intrusion: Intruding (physically or otherwise) upon the solitude of another in a highly offensive manner. Private facts: Publicizing highly offensive private information about someone which is not of legitimate concern to the public. False light: Publicizing a highly offensive and false impression of another. Appropriation: Using another's name or likeness for some advantage without the other's consent." Alan Westin and others have described privacy in terms of information control. Still others have insisted that privacy consists of a form of autonomy over personal matters. William Parent argued that "[p]rivacy is the condition of not having undocumented personal knowledge about one possessed by others," while Julie Inness defined privacy as "the state of possessing control over a realm of intimate decisions, which include decisions about intimate access, intimate information, and intimate actions." More recently, Judith Wagner DeCew has proposed that the "realm of the private to be whatever types of information and activities are not, according to a reasonable person in normal circumstances, the legitimate concern of others"».

¹² Pursuant to article 3 "*Territorial scope*", the one concerning the processing of personal data made by a Controller or a Processor in the European Union; and the processing of personal data of data subjects who are in the Union by a controller or processor not established in the Union, where the processing activities are related to the offering of goods or services, irrespective of whether a payment of the data subject is required, to such data

focus on terms but pragmatically focuses on the measures that need to be taken rather than on the concept itself».

¹⁰ See Regulation (EU) 2016/679 (1) «The protection of natural persons in relation to the processing of personal data is a fundamental right. Article 8(1) of the Charter of Fundamental Rights of the European Union (the 'Charter') and Article 16(1) of the Treaty on the Functioning of the European Union (TFEU) provide that everyone has the right to the protection of personal data concerning him or her».

From "mouse" to the "mobile" and the "screen" revolution

In the time of the computer revolution, the personal computer equipped with a "*mouse*" was a real innovation, to which users soon became so familiar, that even a special verb was introduced into the vocabulary: to $click^{13}$.

But, only after a few decades, the size of the processors has been greatly reduced, significantly increasing their performance: this has allowed the introduction of battery-powered devices (even with lower power consumption), up to the elimination of the traditional keyboard, in favour of an increasingly intelligent "*touch screen*".

One of the most important "*components*" of current and modern society, which gained soon a centrality in the development both of technology and general interest, is the "*mobile device*", that according to literature can be extensively defined referring to a «mobile phone (also referred to hereafter as cellular phone or cell phone) is a wireless instrument that allows communication by radiowave within a geographic area covered by a cellular network system. [...] The diffusion of mobile phones has had a strong influence in many dimensions of peoples' lives, being used for different purposes, such as personal or professional communication»¹⁴.

Furthermore, it is adequate to highlight the dynamic evolution among "mobile", "touch screen" and "smart devices": indeed, «smartphone use cannot be considered entirely in isolation, but must be considered as part of a wider 'Screen Ecology'. Most people also have a tablet, a desktop/ laptop, landline and, increasingly, a smart TV, and they often move seamlessly from one screen to another»¹⁵. Likewise, the previous one, this new "*mobile era*"

subjects in the Union, or the monitoring of their behavior as far as their behavior takes place within the Union.

¹³ In English, the Cambridge Dictionary defines the verb "to click" as the action «to carry out a computer operation by pressing a button on the mouse»

¹⁴ N. Bento, *Historical diffusion of mobile phones and its impact on energy demand: Findings and outlook*, in *International Institute for Applied Systems Analysis*, 2012

¹⁵ P. Garvey, D. Miller, Ageing with Smartphones in Ireland, UCL Press, 2021, p. 107-

(made up of smartphones and touchscreen's devices) is characterized by the birth and diffusion of a specific new verb "*to tap*"¹⁶.

Obviously, nowadays, it is proper to talk about smartphones, that is not only the more high-tech-evolution of a cellular phone, hence these allow to make several (probably, illimited¹⁷) operations and activities, that goes into the direction of reducing the "*digital divide*"¹⁸, both referring to users and in terms of geographical areas, since mobile signals penetrate more easily into areas where landlines and Internet are not available, providing access to communication for those who live in poor and remote regions. It is important, when referring to "mobile", that it is the integrated combination of the hardware (device) and the software (mainly their applications, so called "Apps").

«Modern phones include features such as email, internet access, shortrange wireless communications (e.g., Bluetooth), photography, and music player. The new category of phones known as smartphones feature general computing capabilities that allow them to send and receive large amounts of information and run more complex applications. This technological progress was possible thanks to a new generation of phones and networks supporting higher speed connections and greater data transfers. The 4G is the fourth generation of cellular phone mobile communications standards which was recently launched in several countries, promising a speed of data transfer one order of magnitude higher than the previous generation»¹⁹.

Another interesting scientific perspective shows how «the smartphone is best understood not just as a device through which we communicate, but also as a place within which we now live. We are always 'at home' in our

¹⁶ In English, the Cambridge Dictionary defines the verb "to tap" as the action «to touch the screen of a phone, tablet computer, etc. in order to give an instruction for something to happen».

¹⁷ It only depends on the quantity of installed applications.

¹⁸ See D. Miller et al., *The Global Smartphone*, UCL Press, 2021

¹⁹ N. Bento, *Historical diffusion of mobile phones and its impact on energy demand: Findings and outlook*, in *International Institute for Applied Systems Analysis*, 2012

smartphone. We have become human snails carrying our home in our pockets. The smartphone is perhaps the first object to challenge the house itself (and possibly also the workplace) in terms of the amount of time we dwell in it while awake»²⁰.

This latter position highlights an interesting subject, especially from a legal perspective: the individual *perception* of an intangible thought as it is the most "intimate" and "safe" place, that is each-one's home.

«Mobile phones, together with computers, form the backbone of the information and communication technology (ICT) sector, which is at the center of the fifth long wave growth after the beginning of the industrial revolution (Perez, 2002; Freeman & Louçã, 2001; Ayres, 1990). The recent ICT paradigm is probably the most inclusive in history»²¹.

Finally, in this field, it is adequate to list and to consider at least three different elements: *Localisation* (ubiquity); *Time*; *Attention-span* (concerning mis-*understanding* and un-*awareness*).

Localisation (ubiquity) - One of the main reasons why "mobile" soon became one of the most features of modern structure of digital dimension, it is easily understandable: «Services in the mobile commerce area have some advantages over conventional e-commerce applications»²².

The key concept is a "*location-based service*", proposing or stimulating a solution to one or more personal needs, that the user (receiver) can perceive in that current contest. «Ubiquity is the most obvious advantage of the mobile device (Balasubramanian, Peterson et al., 2002). Mobile devices fulfil the need for real time information and communication at a level the desktop PC is unable to provide. The factor of ubiquity should be realized in a multi network environment enabling seamless access to services regardless of the network provider»²³. In this contest "the mobile marketing" was born: «the

²⁰ D. Miller et al., The Global Smartphone, UCL Press, 2021, p. 219-

²¹ N. Bento, *Historical diffusion of mobile phones and its impact on energy demand: Findings and outlook*, in *International Institute for Applied Systems Analysis*, 2012

²² A. Dickinger, *Perceived Quality of Mobile Services: A Segment-Specific Analysis*, Peter Lang AG, 2007, p.35-

²³ A. Dickinger, Perceived Quality, op. cit., p.35-

American Marketing Association's definition of marketing management provides a basis for defining mobile marketing: "Marketing management is the process of planning and executing the conception, pricing, promotion and distribution of goods, services, and ideas to create exchanges that satisfy individual and organizational goals"»²⁴. The mobile devices, since are free from traditional land-based Internet connections, amplify all the opportunities deriving from services using the current position of the user, as an added value strength of it.

Moreover, on the other hand, Artificial Intelligence, Machine Learning and the more and more connections and interactions of IoTs, increased the importance of using location, time and personalization in mobile marketing (mainly based on integrated profiling systems).

Finally, in the literature, some authors argue that they are the "consumers who increasingly expect tailored and location-based services": although perhaps, it would also be appropriate to consider that this appears more as a strategy of mass persuasion and influence, based on messages and "push" communications.

Time - The second factor to be considered that nowadays everything is *speed*: in the sinusoidal curve that represents time, the waves are narrow, and with very pronounced peaks (positive and negative). «Never before in the history of humans have, we seen such a hurry to get going. This is the consequence of the "mobile culture" that is progressively afflicting our society. Some people call it digital distraction, but others describe it as the way things are done today»²⁵.

Attention span - «One of the deepest concerns expressed by many scientists and researchers is the attention span that is shrinking, people are jumping from one message to another or speaking to three people at the same time and sometimes they call themselves as multitasking wise kids of the modern age. Well, it is easy to understand that the speed of communication, travel and

²⁴ A. Dickinger, Perceived Quality, op. cit., p.41-43

²⁵ K. R. Subramanian, *Myth and Mystery of Shrinking Attention Span*, in *International Journal of Trend in Research and Development*, Volume 5(3), 2018.

methods of transfer of speech and data have improved with innovative Technology, but the question is, are we allowing enough time at the receiving or sending end to complete or comprehend a message»²⁶.

The ever-increasing "*frenetic*" use of mobile devices (and related apps), brings out an evident lowering of the level of attention in communication which, both in the personal and at work, corresponds to an exposure to the risk of making *mistakes* and *misunderstandings*, which obviously have a significant impact both on social relationships and on the legal level, even in terms of the resulting liability.

Human relationships: the "wrong" perception of Mobile

In the *digital dimension*²⁷, all the relationships are intermediated by a technological device and/or those IoTs, based on OSNs, Artificial Intelligence, and Apps, and we are taking some fundamental aspects for granted, as if some events can never happen. Although ICT and OSNs open to a wider range of opportunities, both in terms of social and economic relationships, it is important to also consider another perspective and arising issue: too many times, it happens that people make confusion about the difference between a "tool" and its "aims"²⁸.

²⁶ K. R. Subramanian, Myth and Mystery, op. cit.

²⁷ M. D'AGOSTINO PANEBIANCO, *Vivere nella dimensione Digitale*, Themis ed., 2019, p. 14 ss., about a classification of three dimensions of modern life: Real, Digital, Virtual.

²⁸ See Pope Benedict XVI, *Encyclical Letter Caritas in Veritate*, 2009, n.73 «Linked to technological development is the increasingly pervasive presence of the means of social communications. It is almost impossible today to imagine the life of the human family without them. For better or for worse, they are so integral a part of life today that it seems quite absurd to maintain that they are neutral — and hence unaffected by any moral considerations concerning people. Often such views, stressing the strictly technical nature of the media, effectively support their subordination to economic interests' intent on dominating the market and, not least, to attempts to impose cultural models that serve ideological and political agendas. Given the media's fundamental importance in engineering changes in attitude towards reality and the human person, we must reflect carefully on their influence, especially in regard to the ethical-cultural dimension of globalization and the development of peoples in solidarity. Mirroring what is required for an ethical approach to globalization and development, so too the meaning and purpose of

First of all, the "file" in the current and modern legal framework takes on a renewed meaning, which opens up to new scenarios, both in jurisprudence and in the responsibilities deriving from the use of mobile devices: in fact, in a recent judgment²⁹, in order to reach the merits of the question, it was established that the characteristics of a "*computer data*" (the file) are compatible and traceable to the definition of "mobile thing", as inferable from the Italian penal law³⁰.

The previous consideration highlights how "a file" (*i.e.*, a data "container", in its meaning of "mobile thing" described above), generates a direct connection between its content (information, personal data, data relating to intellectual property) and the relative and specific crimes envisaged by the law.

It is clear and evident how a mobile device, containing thousands of files and being the tool to transfer them, is a "new" source of so much legal liabilities for "mobile users" (such as data protection "accountability", cybersecurity, etc.). The question concerns the behaviour (conscious or not) adopted by the "messenger", which should be taken into account - in particular - when it leads to a criminally relevant conduct (for example, the violation of data processing, rather than intellectual property); or, when the same

the media must be sought within an anthropological perspective. This means that they can have a civilizing effect not only when, thanks to technological development, they increase the possibilities of communicating information, but above all when they are geared towards a vision of the person and the common good that reflects truly universal values. Just because social communications increase the possibilities of interconnection and the dissemination of ideas, it does not follow that they promote freedom or internationalize development and democracy for all. To achieve goals of this kind, they need to focus on promoting the dignity of persons and peoples, they need to be clearly inspired by charity and placed at the service of truth, of the good, and of natural and supernatural fraternity. In fact, human freedom is intrinsically linked with these higher values. The media can make an important contribution towards the growth in communion of the human family and the ethos of society when they are used to promote universal participation in the common search for what is just».

²⁹ See Italian Court of Cassation, II Penal Section, Judgment n.11959/2020.

³⁰ See C. Pagella, La Cassazione sulla riconducibilità dei file al concetto di "cosa mobile" oggetto di appropriazione indebita: un caso di analogia in malam partem?, in riv. Sistema Penale, 2021

behaviour assumes that form of tacit manifestation of the will to negotiate ("*per facta concludentia*")³¹.

It follows that - still on the level of legal liabilities - modern communication based on mobile systems (i.e., the tool) takes on a more pregnant meaning in the regulation of interpersonal relationships and business contracts, which - too often – on the contrary is underestimated and perceived as "insignificant".

Assuming that - a part from few large companies - most citizens and businesses are "*addicted*" by these OSNs and mobile tools to communicate³², without really considering any alternatives, some issues arise.

Indeed, from a risk management perspective, it is proper to recall the so called *«theory of black swan events»*³³, since the current development of the ICT is based on too few (private) operators (in a sort of *"funnel"*³⁴), and in case of any kind of temporary interruptions, many (public and private) activities would be negatively influenced, with a significant impact and negative consequences on social and economic relationships.

³¹ By way of example, when the delegate of a company requests and obtains multiple and repeated opinions from a professional, by sending short messages (except in the case of personal relationships and / or friendship), it is evident that the professional is carrying out his business (in the "digital dimension"), and not just by replying out of courtesy. In this circumstance, it is possible to configure two "converging" situations: on the one hand, "*per facta concludentia*", a professional contractual relationship has been established (normally, subject to payment of it); on the other hand, the professional assumes responsibility for the opinion expressed, regardless of whether he was fully aware of all the elements provided by the client, and also assumes the risk of misunderstanding, linked to the speed of response and brevity of the text.

³² For instance, many smaller companies use Facebook instead of a website, and/or Whatsapp (or similar chats) instead of emails.

³³ Actually, it is a metaphor that refers to those events considered impossible to occur or, so rare that it was not possible to predict (*i.e.*, unexpected event). See N. N. TALEB, *The Black Swan: The Impact of the Highly Improbable*, New York, 2010.

³⁴ As argued by A. Lior, *AI Entities as AI Agents: Artificial Intelligence Liability and the AI Respondeat Superior Analogy*, in *Mitchell Hamline Law Review*, 2020: «Analogies play an important role when it comes to legal reasoning. Using legal analogical reasoning is based on finding a unifying normative principle. This principle validates the comparison one is trying to establish, based on similarities or differences between the new subject matter and the familiar subject matter, upon which the analogy is based».

Furthermore, as already highlighted, (social and economic) *mobile* relationships are based on the principle that the mobile device is always with a specific person (as a unique entity): what it should be considered is that the "human person" (associated to a mobile device) can be everywhere, doing anything else than being called in a prompt interaction with the "*messenger*"³⁵.

"Messengers" and the lack of reciprocity in communication

In the last decades, the increasing use of digital communications tools (such as emails, short messages, chats, etc.) changed radically both the approach and the features of the users, especially referring to mobile communication.

«The bulk of our communication is not dialogical. Messengers are necessary when there is no unmediated interaction between sender and receiver; in other words, when communication lacks

reciprocity and is precisely not a dialogue. The errand is - to start with - a unidirectional, asymmetrical situation. In the messenger perspective, therefore, reflecting on media means at the same time challenging to a certain extent the fundamental dialogical orientation of the philosophical concept of communication»³⁶.

As a matter of facts, traditionally a social relationship was based on a dialogue, which assumes an interaction between the sender and the receiver (who both are "mobile users"); nowadays, communication is made by "messengers"³⁷ (the new definition of the sender) who post³⁸ something that

³⁵ The common idea that a prompt reaction is required is completely wrong: if you send a message, one should consider the recipient current condition, and/or that the message is not delivered.

³⁶ S. Krämer, *Medium, Messenger, Transmission*, Amsterdam University Press, 2015, p.20

³⁷ The difference between "messenger" and "communicator" relies on the approach: the first one, has a unidirectional one; while the second one, aims to establish an interaction between the sender and receiver.

³⁸ This new term refers to the meaning of "publishing" and/or "sharing" something, especially on social media, mainly with the aim of attracting the attention of a large audience, for a sharing of one's experience or idea, but not with a real request for interaction, if not passive: it should be remembered that most social media is mainly based on the feedback of a "like", more than a "real reply".

would reach the receiver. In other words, someone who unilaterally wants to "inform" an audience (regardless of whether it is made up of one or more people who receive) of an object, with mainly the aim of passing their messages along across space and time with the least distortion possible.

Furthermore.

On the one hand, this *uni-directional* communication creates a sort of invisible social isolation, which can have serious effects in terms of negative social behaviours (such as anger, aggressivity, etc); on the other hand, this lack of reciprocity in communication also contributes to reduce the attention to the content of messages (independently whether the perspective is the one of sender or recipient), with a consequent arousing risk of *misunderstandings*.

The low level of attention of messengers

One of the main issues concerns the *lower attention* both of *mobile users* is about "*texting*"³⁹ and reading the messages, since mobile devices assumes that one can text and read immediately, anywhere and in any conditions (walking in the middle of the street, during a meeting, driving⁴⁰, etc).

³⁹ This new term assumes a different meaning as "the action of sending text messages", than "to writing" which is the skill of composing a text. Firstly, it was born related to the activity of writing SMS, that it is used to have a limit of 140 characters, and so many abbreviations were made; this limit was subsequently exceeded, thanks to the extensive use of social media chats, although this methodology evolved similarly, even towards the use of "*emoticon*" or "*emoji*", a sort of "*modern hieroglyph*" (*i.e.*, each icon or image has a common and recognized meaning).

⁴⁰ For instance, it is worth quoting that in Italy the use of any kind of mobile device with the exception of those with hands-free or with earphones is forbidden (pursuant to article 173 comma 2 of Traffic Laws), so that the sanction is very significant (a fine from euro 165 to 661 euro, and the suspension of the driving license from one to three months in case of relapse in the following two years). The reason is that a low-attention-behavior is dangerous both for the driver, other cars and in particular pedestrians: it has to be highlighted that the Italian Court of Cassation, with sentence no. 23331 published on October 23rd, 2020, specified that the fine is legitimate even if the driver is caught with a mobile phone in hand while parked at the red light. The municipality of New York, in 2019 - in order to guarantee the safety of "distracted" pedestrians - has even adopted a fine from 25 to 250 USdollars for those who are caught crossing the lines with their eyes on their mobile phones.

«All new waves of technology and presently, it is digital technology, has its effect; the onslaught of television, smart-phone, video, radio, social media is virtually shortening our attention spans. [...] Researchers in Canada surveyed 2,000 participants and studied the brain activity of 112 others using electroencephalograms (EEGs). Microsoft found that since the year 2000 (or about when the mobile revolution began) the average attention span dropped from 12 seconds to eight seconds»⁴¹.

On the one hand, generally speaking, less attention leads to a lower awareness - both active and passive - of the risks deriving from the use of mobile devices: a careless person is more vulnerable to cyberattacks, not detecting those elements (for example) of a phishing⁴² or of a financial fraud; or, it underestimates the usability of content published online, which may be protected by copyright, incurring crimes such as infringement of intellectual property⁴³.

⁴¹ K. R. Subramanian, *Product Promotion in an Era of Shrinking Attention Span*, in *International Journal of Engineering and Management Research*, Vol.7-2, 2017, p.85-91
⁴² the fraudulent practice of sending emails and/or messages purporting to be from reputable companies, in order to induce individuals to reveal personal information (such as passwords, credit card numbers, etc.).

⁴³ Referring to EU Directive 91/250/CEE of 14th May 1991; in Italy, referring to Law 22nd April 1941, n. 633 (Protezione del diritto di autore e di altri diritti connessi al suo esercizio); and to some specific article of Italian Penal Code, such as: messa a disposizione del pubblico, in un sistema di reti telematiche, mediante connessioni di qualsiasi genere, di un'opera dell'ingegno protetta, o di parte di essa (art. 171, first comma, lettera a-bis, C.P.); reati di cui all'art. 171 C.P., commessi su opere altrui non destinate alla pubblicazione, qualora ne risulti offeso l'onore o la reputazione (art. 171, third comma C.P.); abusiva duplicazione, per trarne profitto, di programmi per elaboratore; importazione, distribuzione, vendita o detenzione a scopo commerciale o imprenditoriale o concessione in locazione di programmi contenuti in supporti non contrassegnati dalla SIAE; predisposizione di mezzi per rimuovere o eludere i dispositivi di protezione di programmi per elaboratori (art. 171 bis, first comma C.P.); riproduzione, trasferimento su altro supporto, distribuzione, comunicazione, presentazione o dimostrazione in pubblico, del contenuto di una banca dati; estrazione o reimpiego della banca dati; distribuzione, vendita o concessione in locazione di banche di dati (art. 171 bis, second comma C.P.); abusiva duplicazione, riproduzione, trasmissione o diffusione in pubblico con gualsiasi procedimento, in tutto o in parte, di opere dell'ingegno destinate al circuito televisivo, cinematografico, della vendita o del noleggio di dischi, nastri o supporti analoghi o ogni altro supporto contenente fonogrammi o videogrammi di opere musicali, cinematografiche o audiovisive assimilate o sequenze di immagini in movimento; opere letterarie,

On the other hand, the *low level of attention in communication*, should be analysed from two different perspectives: the receiver of a message and/or a communication, has a lower capability to really understand the content and the meaning of a message (increasing the percentage of misunderstandings).

From the sender perspective, there is a growing and increasing production of messages and communications, which adopt the methodology of "*texting*", using multiple abbreviations⁴⁴, with two aggravating factors: firstly, the errors deriving from the *touch screen*, which make the aforementioned abbreviations even less and less understandable; moreover, due to the speed of our lifestyle, we tend not to read twice the message before sending it⁴⁵.

Indeed, the simplest principle of communication is that the sent message should be the clear and it has the same meaning both to the sender and to the receiver: on the contrary, *texting* through a OSN (or on a chat) have some under-evaluated risks.

It assumes a (too) fast action, and, mainly, most of the time a message is sent, without being read (at least) twice before sending⁴⁶. This means that the sender is not always completely aware of the content, and whether the form is "understandable" or with the same meaning to the recipient⁴⁷.

⁴⁴ created to cope with the limitation of 140 characters.

drammatiche, scientifiche o didattiche, musicali o drammatico musicali, multimediali, anche se inserite in opere collettive o composite o banche dati; riproduzione, duplicazione, trasmissione o diffusione abusiva, vendita o commercio, cessione a qualsiasi titolo o importazione abusiva di oltre cinquanta copie o esemplari di opere tutelate dal diritto d'autore e da diritti connessi; immissione in un sistema di reti telematiche, mediante connessioni di qualsiasi genere, di un'opera dell'ingegno protetta dal diritto d'autore, o parte di essa (art. 171 ter, C.P.); mancata comunicazione alla SIAE dei dati di identificazione dei supporti non soggetti al contrassegno o falsa dichiarazione (art. 171 septies, C.P.); fraudolenta produzione, vendita, importazione, promozione, installazione, modifica, utilizzo per uso pubblico e privato di apparati o parti di apparati atti alla decodificazione di trasmissioni audiovisive ad accesso condizionato effettuate via etere, via satellite, via cavo, in forma sia analogica sia digitale (art. 171 octies, C.P.).

⁴⁵ This statement, in a completely empirical way, is demonstrated by the need for OSNs to introduce the function of cancelling the message (making it no longer visible to the recipient) within a short period of time after sending.

⁴⁶ For example, on Whatsapp, it is possible to delete messages just for the sender or request that messages be deleted for both the sender and the recipient(s).

⁴⁷ For example, when we were pupils, at school the teacher taught us to write a draft, then after having corrected and revised, to rewrite in the "definitive" copy. Similar process

Another risky aspect concerns the group chat, due to the high quantity and frequency of messages sent by all participants, it increases the possibility to miss the possible important information.

In terms of misunderstandings, it is appropriate to highlight that another issue is about the "*double blue tick*" (and the consequent liability). This latter one does not mean that the recipient (really) read and understand the message. As a matter of facts, from a legal and technical perspective, it only means that the message has been opened. Sometimes, this kind of misunderstandings is the cause of some kinds of "litigations".

The effect of what above reported is an increasing legal risk, mainly for two different reasons.

On the one hand, since *mobile communication* is becoming - more and more - part of the working sphere, each *mobile message* becomes - as a piece of a more complex puzzle - alternatively⁴⁸, a preparatory element for the stipulation of a future contract (*ex ante*) or, a component of the work performance - whether of a subordinate or professional nature, etc. – that, *in itinere*, declines and represents the behaviour of the parties. *De facto*, these inaccuracies risk falling back - from a legal point of view - to the perimeter of *negligence*, *imprudence*, and *inexperience*, or rather of *wilful/intentional* and/or *unconscious misconduct*⁴⁹. Each of these actions inherently carries legal liabilities, which in the most serious cases can expose "*the agent*"⁵⁰ to censure, sanction and/or compensation for damage.

On the other hand, several of the most spread Apps⁵¹ are implemented for a *personal use* (and not for a working one), and therefore are apparently

when writing an email: as a matter of facts, in email programmes, you have a "draft folder", precisely for the reason that an email could be used as a "work tool", in which it is important to take care of both the *form* and the *content* (substance) of the message. ⁴⁸ just by way of example, and not exhaustively.

 ⁴⁹ See, for example, R. De Paolis, *Responsabilità degli enti e reati colposi: verso il tramonto dell'"interesse o vantaggio"?*, in Riv. *Giurisprudenza Penale*, 2021, n.1/bis, p.4
 ⁵⁰ See A. Lior, AI Entities as AI Agents: Artificial Intelligence Liability and the AI Respondeat Superior Analogy, in Mitchell Hamline Law Review, 2020.

⁵¹ It is important to highlight that the device is the hardware component, while the socalled "Apps" concern the operative software.

"free", both in terms of use and charges of all kinds, with some possible infringements of the legal framework.

Personal v/s Professional use

The first issue concerns data protection compliance: as a matter of facts, some doubts raise on the use of personal data and meta-data⁵² (both deriving from the use of the same Apps), in terms of collection and profiling of users' behaviours, and the consequent sale⁵³. It is a fact that, recently, even some OSNs began to propose even a *"corporate*" profile to manage business relationships, although it requires for Controllers further steps, than the simple and direct migration.

Furthermore, for a "working/professional" use of mobile devices - from a GDPR perspective - it is adequate to consider that priorly it is necessary to evaluate (both the *formal* and *substantial*) compliance⁵⁴ both of the security measures, but above all on the retention of personal data, both in terms of duration of data retention and physical storage location⁵⁵.

⁵² According to T. Gill, *Introduction to Metadata: Pathways to Digital Information*, in B. Murtha (ed.), *Metadata and the Web*, The J. Paul Getty Trust, 2008, Metadata, is a composed word, by meta- + data, which literally means "data about data" are information about another set of data, providing further and enriched information about it. In literature, it is possible to list several distinct types of metadata, such as: Descriptive metadata; Structural metadata; Administrative metadata; Reference metadata; Statistical metadata; Legal metadata.

⁵³ Pursuant to article 5 of GDPR.

⁵⁴ According to the *principle of accountability*, by the Processor and the Controller.

⁵⁵ Indeed, the transfer of personal data outside the EU is possible only if specific conditions are met, such as – for example - the consent of the *data subject*, a legitimate interest of the Controller, or in force of a legal obligation; and in any case, only after having carried out an assessment of the data processing conditions by the new Controller (Processor) in the non-EU country. For a further in-depth analysis on this topic see, for example, V. Gallo, *I servizi di cloud computing e l'ambito di applicazione del Regolamento (UE) n. 2016/679: verso l'avvicinamento del modello europeo e statunitense?*, in *Diritto Mercato Tecnologia*, 2018.

In addition, some considerations regarding the crashes⁵⁶ (*i.e.*, interruption of the service) would also be appropriate: in fact, since these are designed for personal use, they do not guarantee a "proper" *business continuity*, which could in some cases result in non-compliance with "Availability"⁵⁷, one of the three fundamental principles provided by GDPR.

Whether using a digital tool which remotely (especially when cross-border, and extra-EU) processes data and information, a prior assessment is required, and if the purposes of the processing might be larger than the one expected by the Controller, an addition of information to data subject is required.

From another perspective, some Apps allow to send "vocal messages" that, in a business field, arise some more issues: the first one concerns the impossibility to scan and select personal data, and especially in case a data subject exercise his/her rights⁵⁸, in particular to delete one or more personal data, but not all of them⁵⁹. Moreover, from a data management perspective, any kind of research on an audio become more difficult, and it requires more space for storage, and additional security measures.

Finally, it is adequate to highlight that a misuse of these digital tools (both emails, chats, and social Apps), even due to the above reported causes (low attention, receiving the message in the wrong moment/context, etc.), push users to forward messages, with - at least - two possible impacts: (a) sending to the wrong recipient, exposing to a *data leak*⁶⁰; (b) shifting the task and the responsibilities to another person, without giving any explanations on the reason why the message has been forwarded, and/or any indications to what to do specifically, and in particularly without knowing whether this receiver is really able to manage the issue.

⁵⁶ It is necessary to remember that these events are not "*black swans*", since they happen very often: the most recent concerned WhatsApp, Instagram and Facebook which were offline for 5 hours on October 4th 2021, as had already happened on 19 March of the same year (for one hour), without forgetting the "world blackout" which occurred on March 13, 2019, with a record of 14 hours of downtime for applications.

⁵⁷ In compliance to article 32 of GDPR, the three principles to respect in personal data processing are at least, Confidentiality, Integrity, Availability.

⁵⁸ Referring to articles 15-18 of GDPR

⁵⁹ Referring to article 17 of GDPR

⁶⁰ i.e., an unintentional information disclosure, which is particularly dangerous when it concerns sensitive personal data or confidential information.

The stress of being in perpetual contact

In this perspective, the factors previously described can be summarized in an excessive use of ICT devices (such as computers, smartphones and similar ones), and the related the possibility of "perpetual contact" (regardless of time and place), and the impossibility of being "*out of contact*", that lead to an increasing "*time pressure*", and therefore becoming a source of stress, with a significant impact on health and quality of life of each person⁶¹.

This new phenomenon is also called "*nomophobia*", «or NO MObile PHone PhoBIA is used to describe a psychological condition when people have a fear of being detached from mobile phone connectivity»⁶², that is an extreme fear of not having your phone or not being able to use it, or as well an «anxiety caused by not having access to social networks or messaging apps»⁶³.

So, *mobile devices* became one of the most significant sources of "*perceived*" stress, that has negative effects on physical and psychological well-being, increasing some "bad" habits such as eating to regulate mood or distract, smoking, taking drugs, taking tranquilizers, sleeping more, etc.⁶⁴. «Perhaps it is no accident that tech-users have sought to solve paradigmatic problems of digital wellbeing with techniques that explicitly aim to tackle anxiety, procrastination, and distraction –problems that are associated with spending too much time online»⁶⁵.

Taking as an example, during the COVID-19 pandemic - which can be considered as a peak period in which the negative effects of these excessive use of ICT and Mobile devices have occurred - some research has highlighted

⁶¹ M. Bittman, J.E. Brown, J. Wajcman, *The mobile phone, perpetual contact and time pressure*, in *Work, Employment & Society*, 23(4), 2009, p.673–691

⁶² S. Bhattacharya, M. A. Bashar, A. Srivastava, A. Singh, *NOMOPHOBIA: NO MObile PHone PhoBIA*, in *J Family Med Prim Care*, 2019, p.1297–1300.

⁶³ S. Walton, Ageing with Smartphones in Urban Italy, UCL Press, 2021, p.87

⁶⁴ See R. A. Shih, S. O. Meadows, M. T. Martin, *Medical Fitness and Resilience*, RAND Corp., 2013, p.21-28

⁶⁵ C. Burr, L. Floridi, *Ethics of Digital Well-Being*, Springer, 2020, p.123

that people were experiencing greater adverse mental health effects - including higher levels of stress, anxiety, depression⁶⁶.

Some studies, as well, highlighted that in a long term, these phenomena even became pathologies or forms of addiction that modify both social relations and behaviour, with peaks of aggression and excesses, even behavioural disorders. «There has been some investigation of "smartphone addiction" as a disorder that is similar but phenomenologically distinct from internet addiction. In the limited number of studies to date (17-19), however, it is impossible to disentangle the use of smartphones *per se* from use of the internet via these devices and determine the phenomenology that would be unique to smartphone addiction»⁶⁷.

From a legal perspective related to the working-use of these mobiledevices, for example, it is worth to consider that some Countries (such as Italy⁶⁸) has a specific legislation on "*health and safety in the workplace*" that requires the employer and recognizes periodic breaks (of variable time, depending on the job) from staying in front of a *screen*⁶⁹.

The combination of the *digital dimension* and of the increasing use of different forms of "*distant job*" (such as home-, remote- and smart-working), make the *mobile device* a "*work tool*", like a more traditional pc: so, in order to protect the (mental and physical) health of the worker, it could be required

⁶⁶ See also C. Krubiner, M. O'Donnell, J. Kaufman, S. Bourgault, Addressing the COVID-19 Crisis's Indirect Health Impacts for Women and Girls, in Center for Global Development, 2021

⁶⁷ S. Kaye, M. Farrell, Disorders associated with excessive use of internet, computers, smart phones and similar electronic devices, in Public Health Implications of Excessive Use of the Internet, Computers, Smartphones and Similar Electronic Devices, Appendix C, World Health Organization, 2014, p.90

⁶⁸ Decreto Legislativo 9 aprile 2008, n. 81

⁶⁹ It is worth to highlight that the Screen revolution is directly connected to the large use of mobile devices.

to redesign (and extend) the perimeter of the "*right to disconnect*", also in order not to incur into further criminal conduct⁷¹.

Still in the labour sphere, it is worth to be highlighted that "*distant-workers*" can use mobile devices assigned to them by the company or personal devices used for both work and private purposes: the phenomenon of BYOD (acronym for *Bring Your Own Device*), which represents a widespread method and choice of many companies, however, it exposes them to cybersecurity risks since not always it can be sure of the security level of the devices. In this sense, it has to be recalled both the Guidelines published in 2015 by the European Data Protection Supervisor on the use of mobile devices for work purposes, and the Regulation UE 2016/679 (GDPR) which requires that - in accordance with the principle of *accountability* - preventive evaluations (*assessments*) must be carried out and consequent appropriate security measures adopted, both of an organizational nature (instructions, training, controls, etc.), and technological.

Finally, it is adequate to consider that "*being in perpetual contact*" has also a divergent effect: on the one side, it allows to maintain relationships through

⁷⁰ This right is considered a fundamental one that allows workers to refrain from engaging in work-related tasks – such as phone calls, emails and other digital communication – outside working hours. «There is currently no European legal framework directly defining and regulating the right to disconnect. The Working Time Directive (2003/88/EC), however, refers to a number of rights that indirectly relate to similar issues: in particular, the minimum daily and weekly rest periods that are required in order to safeguard workers' health and safety. Furthermore, the right to disconnect should be considered in relation to attaining a better work–life balance, an objective that has been at the core of recent European initiatives – for example, Principles 9 (work–life balance) and 10 (healthy, safe and well-adapted work environment and data protection) of the European Pillar of Social Rights, as well as the directive on work–life balance for parents and carers – although they do not refer specifically to the right to disconnect» (EurWOrk, European Observatory of Working Life). See, also, G. Alioti, *FIM-CISL vs. Industry 4.0*, in riv. *International Union Rights*, Vol. 25, No. 3, Industry 4.0, 2018, pp.18-19.

⁷¹ For example, referring to Decreto Legislativo 8 giugno 2001, n. 231, recante "Disciplina della responsabilità amministrativa delle persone giuridiche, delle società e delle associazioni anche prive di personalità giuridica" which includes among the significant crimes, also the criminally relevant conducts from which it is benefited, inherent in the commission of the crimes of *manslaughter*, *serious* and *very serious injuries*.

ICT devices, in the *digital dimension*; but, on the contrary, it exposes to create a condition of social isolation in the *real dimension*, increasing the impact of *digital divide*⁷².

Conclusions

It appears clear how this technological evolution led to a significant change both in the lexicon, and in the deep meaning of these new terms, not only related to technical aspects: there is an evident perceived difference between "*texting*", "*posting*" and "*writing*", between "*communicators*" and "*messengers*", and as well between "*clicking*" and "*tapping*".

According to this different perception, it is expected that even the legal liability deriving from these actions should be different: the question whether there is a difference between the impact on the reputation a human person of a "*posted message*", than a statement in an article in a *printed* newspaper? Probably the "common" perception is that the first one is lighter than the second, but in practice it is the opposite, due the extent of the diffusion of the message and the duration of publication⁷³. It is interesting that these have also a significant impact on the investigative activity, given that the collection of *evidence* - for years now - takes place both on a material and immaterial level (digital information and data).

The second consideration is that the "*digital dimension*", since it is mainly based on mobile devices and IoTs, exposes to risk at a *global level*, and not only to local one as it was in the past, as it happened during the October 4th OSNs crash⁷⁴. This has to be considered in the Processor's assessment (in

⁷² See the previous given definition of "*digital divide*" as a form of social exclusion.

⁷³ For an in-depth analysis on this topic see, for example, G. D'Alfonso, *Recensioni* 'diffamatorie' in rete e lesione della reputazione digitale d'impresa. Illecito aquiliano e valutazione comparativa degli interessi dell'impresa e degli internauti, alla luce degli indirizzi giurisprudenziali sui limiti all'esercizio del diritto di critica, in Diritto Mercato Tecnologia, 2019; and A. Napolitano, L'equiparazione giurisprudenziale, aspettando (invano?) il legislatore, tra direttore di un giornale cartaceo e responsabile di una testata telematica, in Diritto Mercato Tecnologia, 2018

⁷⁴ WhatsApp, Instagram and Facebook crashed down for 5 hours.

particularly, required by the *accountability principle* stated by GDPR), especially when measuring the probability of occurrence (it is proper to recall the "black swan" metaphor and/or "the 80-20 rule"⁷⁵) and the related impact on operative processes (for example, in case of mobile marketing campaigns, home/remote/smart working, etc.), requiring alternative solutions to guarantee *business continuity*.

The third open issue concern "*digital divide*", as form of social exclusion, and the current national and international policies. The question is whether all the recent national and international legislations (see EU regulation) are properly focused and legitim? Or there is little balancing between the political and technical component in the choices? For example, since the use of apps (*i.e.*, *green pass*) assume that a citizen should has a mobile device and a digital connection, which means *una tantum* and continuous costs. Furthermore, it should be appropriate to focus on some particular cases, who cannot have a direct access to ICT: for example, those sensitive categories (disables, elder people, minors) who in most cases, it is not considered that they have a tutor, who cannot access to their data⁷⁶.

Probably, in these cases, a (yet) digital alternative should be required, at least for a transition period.

At last, but not least, these technological and social changes have a significant impact on legal liabilities: a new education on not under-evaluating some common behaviours is required, to avoid an expected increasing of illicit, litigations and insignificant individual conflicts.

⁷⁵ It is also known as the Pareto Principle: that is an aphorism which asserts that for any given event, the 80% of effects is the result from 20% of all causes, meaning that a small cause might have a significantly large impact.

⁷⁶ For example, in Italy, this delay emerges and is evident from the decision of the Italian Institute for Social Security (INPS) of 1 October 2021 (see See INPS Message n. 3305 "Delega dell'identità digitale. Richiesta e revoca della delega online attraverso credenziali SPID, CIE o CNS"), which finally allows citizens unable to use independently the web services (as previously listed), to be able to delegate a trusted person and / or a legal guardian to access online services on their behalf.

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