Electronic Mail

1.1. Electronic mail, what is it exactly?

If e-mail is a well-established communication tool and seemingly well-known, its official definition is not necessary. According to the General Commission of Terminology and Neology[1] and the list of terms relating to electronic mail in the official journal of 2 December 1997 [LEF 97], e-mail, a term in the field of telecommunications and IT, is a "service enabling the user typing, delayed consultation and transmission of electronic documents or messages on computers connected to the network."

According to this commission, the term is synonymous with electronic messaging, where, strictly speaking, the message takes the name of electronic mail that is "document received, consulted or transmitted by means of electronic mail." Since 1997, the official journal indicates that "the electronic message can include a text, or a series of sounds or images."

These two definitions were to be modified by the General Commission of Terminology and Neology in 2003, and published in the official journal of 20 June 2003 [JOU 03]. The current definitions since then are as follows:

– *E-mail:* a computerised document that a user receives, sends, or consults at a later stage via a network.

---

1 Commission ranking close to the Prime Minister created with the aim, among others, of updating the French language, of developing its use, especially in the economic field, scientific works, and technical and legal activity.

– *Electronic messaging*: The service enabling users to receive, send, or consult e-mails at a later stage.

We can see that these new definitions use the term e-mail as the first designation, the term electronic mail being considered as a synonym. In addition to this, the new definitions correct a small imperfection in the former meanings, which could lead one to believe that a message could be looked at before being sent.

Beyond the definitions and their slightly old-fashioned, austere and even stiff impression for a communication tool so innovating, agile and symbolizing modernity as the e-mail, it is the extraordinary adoption of the electronic messaging by the professional world that strikes us.

1.2. The most used communication tool in the professional world

Some years ago, however, some analysts predicted the end of e-mail, in pursuit of more fashionable tools like social networks such as Facebook or Twitter, instant messaging (*chat*), and even virtual offices [VAS 09]. If these latest tools were made the first choice in the world of private interpersonal relationships, it really is the e-mail which is the most used fundamental and inevitable business communication tool of modern business. The e-mail had even become, during the last decade, the most used mode of communication in the professional environment, overtaking the landline or mobile telephony which were expanding rapidly too.

1.2.1. *E-mail or telephone?*

During a survey carried out by the company Data Dimension in 2007 [DIM 07], 96% of businesses questioned declared to offer their employees e-mail access, 91% access to a conventional phone line and 86% access to a mobile. For their part, 99% of employees said they used mail for their professional communications, 80% the conventional phone and 76% the mobile.

In the course of a more recent survey [LAG 11], which covers 45 active businesses in the IT sector, we have established that 100% of them provide e-mail access to their employees, 93% access to a conventional phone

line and 95% access to a mobile. Better still, 86% of the companies questioned provide e-mail access to their employees on two or more devices, (office computer, laptop or smartphone) and 100% of employees used e-mail as their professional ends.

All the same, the enterprises consulted were part of an industrial sector which favors the use of electronic communication tools. The second survey confirmed without doubt the results of the first. Moreover, it is not only the number of businesses and employees who have access to e-mail in their workplace which is increasing daily but the number of messages.

In millions	2015	2016	2017	2018	2019
Number of e-mail addresses	4353	4626	4920	5243	5594
Number of e-mail users	2586	2672	2760	2849	2943

Table 1.1. *Number of e-mail accounts and users (2015–2019)*

1.2.2. *A growth that is not slowing down*

According the company Radicati [RAD 15], there were a little more than 2.5 billion users of e-mail in 2015, and this figure ought to be a little less than 3 billion between now and 2019 (see Table 1.1). If it should be noted that the increase in social networks and instant messaging tools contributes to the growth of the number of e-mail users – as you need an e-mail address to access these services – the number of professional e-mails is thriving. Yet according to this same study by Radicati, out of the 205 billion sent or received mails, 112 billion will be professional e-mails, this proportion should be maintained in the coming years, with almost 129 billion professional mails sent or received in 2019, out of an estimated total of 246 billion (see Table 1.2).

In billions	2015	2016	2017	2018	2019
Number of e-mails sent/received each day	205.6	215.3	225.3	235.6	246.5
Number of e-mails sent/received by businesses daily	112.5	116.4	120.4	124.5	128.8
Number of messages sent/received daily by customers	93.1	98.9	104.9	111.1	117.1

Table 1.2. *Daily message traffic (2015–2019)*

1.2.3. *A perfectly adapted tool for a business in touch*

The e-mail craze is not random. It is no wonder that electronic communications, and particularly e-mail, have significantly modified the methods of management, organization and work, and that they have improved the performances of companies and of the economy in general. Would globalization of the economy have been possible without the development of information and communication technologies (ICT) and of the worldwide communication networks? The answer is: unequivocally not! A communication tool which is simple, fast, and not costly has become inevitable in modern business for all types of communication, internal and external, from the circulation of a simple memo to the launch of vast promotional campaigns, aimed at the public or a network of already established customers. And the customers have not been outdone. In 2015, according to Radicati (Table 1.2), customers and consumers will have drafted or received just over 93 billion e-mails in 2015, and up to almost 118 billion in 2019.

What is more, globalization of the economy also feeds the use of e-mail. More and more businesses are communicating with distant sites, whether these are subsidiaries or operational sites, suppliers' branches, or customers based in other continents in different time zones or even using different daily calendars, like the Muslim countries for example where the day of rest is Friday rather than Sunday.

But is electronic mail so different from other communication tools available to professionals?

1.3. Characteristics and beginning of misuse

Firstly, it is good to remember the features of e-mail. If we go back to the definition published in the official journal and analyze it, e-mail is the means of remote communication (telecommunication) by computers (or similar equipment) connected to an asynchronous, and primarily textual network (particularly the Internet). What is more, e-mail is equally interactive and instantaneous (extremely quick as well as asynchronous) it works anytime anywhere due to the arrival of mobile telephony. Finally, it allows the sending of numerous messages as well as their storage and archiving [GAR 95, AKR 00].

1.3.1. *A remote and asynchronous means of communication*

First of all, e-mail is a means of telecommunication, that is, remote communication, in the spatial sense of the term.

As a result, there is no need to use e-mail to send a message to your neighbor in the office, right? But, we will see a little later that there is a big gap between theory and practice.

The notion of asynchronism means that a certain amount of time lapses between the sending and the receiving of the message, or more precisely between the sending of the message and the moment the recipient opens/reads the message.

The sender and the recipient of the message do not need to be online at the same time. The sent message is archived by the mail service of the recipient and they can access it when they connect. The recipient of the message is again absent in the temporal sense of the term.

This feature enables interaction with distant sites, situated in different time zones. It is also an excellent way to place orders or to exchange information between teams at times which do not overlap: the day team/night team, weekend team/week team, part-time, etc.

When the composer writes a message, the recipient is, therefore, absent, physically (spatially) as well as temporally. This absence in terms of space and time, which the British sociologist Anthony Giddens [GID 90] describes as contact with "the absent other", constitutes a fundamental element of modern electronic communications. It could be argued that it is going in the direction of traditional correspondence. However, the perception of the media has changed because of the disappearance of tangible, palpable communication supports, such as paper, which gives the feeling of physical presence is no longer in existence in the "virtual" electronic communications environment.

One consequence of the absence of the recipient is a greater risk of misunderstanding. According to Laurent Karsenty [KAR 08], misunderstanding is more probable in cases of distance (or remote) communication when the conversation participants do not share a common context; when the communication is asynchronous and there is a reduction in

direct interaction which enables us to affirm mutual understanding; and in the case of man–machine communication.

Moreover, when e-mail users draft their messages, they place less importance, on account of the distance, on their audience, the recipients and tend to become more self-centered, less attentive to others, less respectful of social norms, and conventions than in a face-to-face meeting [LEA 91].

We can see there is less empathy in electronic communication, as well as a drop in the capacity to objectively perceive messages (sent or received). The senders tend to consider their messages to be more positive than they really are, the receivers have the opposite tendency.

Asynchronism also gives the false impression that users can read and manage their messages when they wish, freely. If that is true in theory, practice indicates that this can lead to an overload of mail…. and family arguments. In fact, since e-mails can be read anytime and anywhere we see the barriers between work life and private life come down. Employees frequently read their e-mails outside office hours whether it is because they stay longer in the workplace or because they can access their e-mails from home.

People frequently read their messages on Sunday afternoon or in the evening either to catch up on the backlog from the previous week or to start the week with a "clean" inbox. While in theory we were promised greater freedom, practice reveals the pressure that professional e-mails put on people and the gradual invasion of our private time by our professional roles (see Chapter 3 on this subject).

1.3.2. *Almost instantaneous and interactive*

Despite being asynchronous, e-mail enables interactive and instantaneous (almost real time) communication, particularly on business networks, whose speeds allow practically immediate transmission, like during a conversation. It could in this way replace the telephone, or better still, instant messaging, also called online chat.

Just how instant the communication is makes it similar to a verbal conversation, at least in terms of chronology. An illusion then appears: certain users will be led to believe that e-mail is as transient and ephemeral as a verbal conversation, or a telephone call which would never be recorded.

Nonetheless, it is a written conversation, and what is written remains, even messages, which can be saved and archived, researched, retrieved, and reused and resent for an unlimited duration of time [AKR 00].

It is important not to write in an e-mail what you think inside, what you would not want to shout out loud in public! The range of unfortunate conversations, like those between colleagues around the coffee machine, can in fact have disastrous effects when it is expressed by e-mail, a written means of communication … and long lasting.

1.3.3. *Textual*

E-mail is a mainly textual communication tool. It was conceived, in fact, for the exchange of short written messages, even though the current messaging systems enable the transmission of all types of documents, including video and audio files. As pointed out earlier, the textual mode allows simple and quick use, like mobile telephony Short Message Service (SMS) or instant messaging (chat).

Despite the possibility of using smileys, e-mail is a poor channel in terms of transmitting non-verbal language, including intonation, emotions or conversation context. These elements would normally allow the recipient to interpret the received message correctly or for the person who drafts the message to transmit their emotions properly [BYR 08]. Unfortunately, many message senders are desperate when faced with the inadequacy of the textual communication channel, and sometimes have difficulty while drafting their messages in an appropriate way, leading to misunderstanding on the part of the recipient. This is particularly the case where multi-cultural teams exist with different mother tongues and a different standard of education.

During conversation, when the speakers share the same space, they will use non-verbal body language like the nod of the head or eye contact, smiling, or any other type of gesture or physical attitude to supplement the textual message with other bits of information. We see this partly in telephone communication, where the speed of speech, intonation and pauses can communicate emotions or elements of meta-information. This is not possible with e-mail.

1.3.4. *Ubiquitous and mobile*

E-mail has become mobile and has acquired ubiquity. This is not due to electronic messaging systems themselves but to the development of ICT devices being able to connect to messaging systems. Formerly confined to fixed office computers, electronic messaging is now accessible by smartphone, laptop or digital notepad.

Any time, any place, anyone can access their messaging service, in total freedom … or under duress. In fact, practice shows that this feature can have varying consequences, which range from work intruding into private life, to information overload, even addiction to electronic equipment, or even professional burn out.

While increasing flexibility of the boundaries of professional roles, e-mail has also contributed to the fading frontiers between personal and professional life, work time and leisure time, public–private, and upsets the work–life balance.

Moreover, constantly having a communication device on our person is a source of interruption, even distraction which can turn out to be fatal, especially when we are driving. This is particularly true with new forms of electronic communication developed around mobile platforms, like SMS, micro-blogging, or chat, and social networks. The messages pile up and a succession of notifications appears on our smartphone screens.

These notifications are unsolicited interruptions that oblige us, if we want to acknowledge them, to abandon what we are doing, to dedicate our attention an instant to reading a message associated with the notification whatever the subject may be. It takes over our cognitive environment and has a direct and immediate effect on our attention and our performance.

1.3.5. *Which allows numerous messages to be sent*

Electronic messaging systems enable the sending of numerous messages, that is, the transmission of a single message to a great number of recipients, be it individuals or grouped together in mailing lists or newsgroups or even using generic addresses. It is, therefore, possible to send or resend messages

to a virtually unlimited number of recipients as long as their addresses are known to the sender, and these cost nothing, or next to nothing.

This makes mail an extremely efficient tool for circulating information, from which to transmit data to an entire team, or to launch a marketing campaign online, one of the main components of digital marketing. This feature causes many problems, spam being the most renowned as it is the most frequent and harmful, and as it is accompanied by an overload of information and e-mail.

This feature also creates concerns on the issue of privacy; private conversation to be precise. When a message is addressed to one single recipient, the sender should consider this a private conversation with this contact only. However, it is the case that some messages of a "private" nature are retransmitted to other recipients, either deliberately or not.

This also happens somewhat differently, when a user accidentally uses the "respond to all" function, sometimes with explosive consequences while thinking they have sent a private answer to the sender alone.

We do not know the problem of damage to privacy well, when some mail, considered private or personal by their sender (see above), are resent to a number of recipients without the prior knowledge of the writer, and sometimes to put him in a difficult position.

1.3.6. *On to the storing and archiving of messages*

Storing and archiving messages is an integral part of messaging systems, which also enable the filing, indexing and sorting of messages in a much easier, safer, more cost-effective, and speedy fashion than telephone or traditional mail. According to the procedures and choices of the user, messages can be kept and stored online – on the messaging system of the company or in the *cloud,* or hard disk, or on other memory of different computers in use (company or personal laptops, office or family computers, etc.)

Employees often use the messaging system of their company to send and receive personal messages. According to the annual study published by the

company Olfeo [OLF 14], a French company involved in IT security, the length of personal surfing has gone past an hour (63 minutes) per day for the first time in 2013 (see Table 1.3).

	2010	2011	2012	2013
Time spent in the office (daily) on the internet	1h34	1h29	1h37	1h48
% of time spent on personal surfing	63%	58%	59%	58%
Time spent daily surfing in office (mins)	59	52	57	63
Amount of time annually spent on personal surfing in the office (days)	29.5	26	28.5	31.5

Table 1.3. *Reality of Internet use in the office (2010–2013)*

As a recent ruling of the Court of Appeals [CAS 15] reminds us, "written messages (SMS) sent or received by the employee through the telephone provided to them by the employer for work needs are presumed to be of a professional nature, in that the employer has the right to view them without the person concerned being present, unless they are identified as being personal."

This approach has been extended to e-mails sent and received by means of the messaging service given to users by their companies. This feature and this ruling should make users careful about the protection of their privacy, even well after they leave the company.

This leads on to the question of access to private or confidential data to employees who have privileged access to the messaging service on account of their managerial or technical roles (IT or Communication Network staff for example) [WAR 90, LOC 98, MIL 00].

1.4. E-mail versus other communication tools

Table 1.4 shows a comparison between e-mail and other more traditional means (post, telephone) or other developing means (chat/SMS).

	E-mail	Post	Telephone	Chat
Asynchronism	Yes	Yes	No[a]	Yes
Instantaneity	High	No	Top	Yes
Interactivity	High	Low	Top	High
Bulk mailing	Yes	Yes	Weak (Teleconference)	No
Archiving	Electronic	Manual	Answering Machine	Weak
Editing	Natural	Possible	No/Very weak	Weak
Textual	Yes	Yes	Yes	Yes
Appendices Attachments	Yes	Yes	No	Yes

a) With the exception of vocal mailboxes and answering machines

Table 1.4. *Comparison of e-mail to other media*

These different tools of communication have almost all the features described, but to differing degrees. It is because of these differences that, depending on the circumstances, we should choose one means of communication over another in order to get the desired result.

EXAMPLE 1.1.– to inform a colleague of a change of geographic appointment.

This type of information can have a strong emotional value for the person who will be the object of this change. The ideal would, therefore, be a meeting in person with the supervisor, in the framework of discussions. Nonetheless, if only the four means of communication in Table 1.4 are available, the telephone would be chosen, which offers the best mix possible: synchronous communication, therefore, instant and interactive, and which allows us to detect at least some of the emotions of the person on the phone.

EXAMPLE 1.2.– to tell the off-site team about new internal measures.

E-mail, which enables the sending of a number of attachments and which is asynchronous, will be the tool of choice if it is to send new measures directly to colleagues concerned, or to transmit instructions for them to follow up on (for example when these instructions are posted online, on an intranet or a shared web page).

It appears that communication situations of the company, whatever their structure (hierarchy, flat, in networks, broken up, etc.) are open to the advent of e-mail as the number one means of communication. That explains the development of this tool in professional correspondence.

1.5. The structure of e-mail and its susceptibility to misuse

Few professionals can today do without electronic messaging. Fewer still know or understand what is underlying technically speaking behind the label jean.dupont@nomdedomaine.fr. We are not intending to go into the technical details of electronic messaging systems here. We are simply going to do a preliminary analysis of the misuse associated with different structural components of electronic messages.

1.5.1. *Structure*

The structure of electronic messages has been defined and standardized by the Internet Engineering Task Force (IETF). The IETF is the taskforce in charge of the definition and standardization of technical features of the Internet. The standards that are created are done so by means of an international consultation process open to all, to which any expert can contribute. That is why these technical standards are called Requests for Comments (RFC).

Its structure has been defined in the standard RFC 5322 [IET 08]. It consists of *the message envelope,* which contains all the necessary information for the transmission of the message to one or several recipients (meta-information) as well as the body of the message which is the substance of the message or the message strictly speaking.

1.5.1.1. *Envelope (meta-information)*

The envelope, as in traditional postal service (and by analogy), contains information that enables the sending and delivery of the message.

1.5.1.1.1. Recipient(s) address(es)

For the sender's part, the envelope contains the address/es of the recipient/s which are placed in the *recipient address field*. The addresses can be name specific or can take the form of a distribution list i.e. a structured list of addresses.

The recipients can be primary (direct) or secondary. The addresses of the direct recipients appear in the *recipient address field "To:"*. This indicates that, according to the sender of the message, these recipients are the ones that the message has been sent to as a priority. The secondary recipients receive a "carbon copy" of the message, the same as the typed message, and their addresses appear in the *recipient address field "Cc:"*.

The sender can equally decide to send the message without showing the address (and, therefore, the identity) of certain (or of all) the recipients. That is why we have the *recipient address field "Bcc:"*. The recipients in this category will receive a blind carbon copy, that is they will receive the message even though the other recipients will not be informed of this.

It is a very useful field for sending circulars to a list of clients, for example, without their respective addresses being communicated to other recipients.

1.5.1.1.2. Subject

The envelope also contains the field "*Subject*:" that the writer can use to inform the recipients of the subject (theme) of the message, for example: "Subject: Mission to Biarritz". Most messaging systems keep the subject of the received message when the recipient responds ("Rep:") or resend it to other recipients ("Fw:"). The corresponding indication is then automatically added before the subject of the original message, which indicates that the message is an answer (in the example we have given: "Subject: Rep: Mission to Biarritz") or a resend ("Subject: Fw: Mission to Biarritz").

1.5.1.1.3. Sender's address

Finally, the envelope also contains the e-mail address of the sender (*Sender Address Field*). When the sender uses several different addresses (for example to sort messages by subject, function, client, partner, etc.), the Sender Address Field indicates to the recipient what address to use if one is sending a response (which will be automatically used in the *reply* function).

1.5.1.1.4. Time stamping

When the message is sent, the messaging system will automatically add the time and date of sending to the envelope of the message being sent.

1.5.1.2. *Body of the message (content)*

The body of the message contains the substance of the message to be transmitted to the recipients. In the beginning – last century! – messaging systems were limited to the sending of text messages. Since those days, technology has evolved considerably and allows users to send practically all sorts of content: documents, photos, videos, audio files, web pages, etc. in the form of *attachments* or integrated in the body of the message according to their nature and their format.

1.5.2. *Envelope and body of the message: two possible targets*

Like most electronic items, both the envelope and the body of the messages can be tampered with or altered. E-mail, which was devised as one of the Internet's first channels of communication, bears the values which prevailed at this time (in the 1970s) in a spirit of community. It was not created as a robust mechanism integrating powerful issues of security.

Practice shows that users often use (and abuse) the possibility of modifying the envelope as much as the body of the messages. As Langford rightly pointed out [LAN 96], "what is ethically acceptable should reflect what is technically possible", and the technical characteristics of e-mail open the door to a multitude of unethical practices, from "inoffensive" jokes sent everywhere and which inundate the networks to organized crime, or from simple procrastination to friendly or hostile spam.

In the body of the message almost anything can be said, and the behavior of the user can prove to be inappropriate or intentionally aggressive. The

drafter can turn to his advantage messages received and can modify the metadata as the content. The recipient can claim to have never read a message and discover it "accidentally" in their spam box, he can also accuse the drafter of a lack of clarity and do so before a number of recipients who are witnesses, willingly or without choice…

Beyond the traditional acceptance of spam, these are some of the inappropriate forms of e-mail use which we look closely at in the body of this study.

1.6. Other forms of electronic communication, other flaws

Other related forms of electronic communication have emerged in parallel with the development of electronic mail, relying in particular on the staggering progress in mobile and portable devices such as computers or smartphones.

1.6.1. *Instant messaging*

Instant messaging (*chat, SMS, or live chat)* is (mainly) a textual and interactive real-time means of communication. It is available by means of specific software, web pages, or, and above all, on mobile phones. This type of messaging has actually been in the market since the early days of mobile telephony, above all to communicate and make the best usage of mobile phones without having to face high phone conversation costs.

Connected Internet surfers can exchange short text messages or smileys, photos, and videos (and sometimes connect webcams in real time) interactively and continually.

These instant messaging services use either mobile operating services or specific platforms that combine the use of telephone networks and the Internet. Many of these platforms are free and are comparable to social networks in the sense that messages are exchanged between "contacts" as much in a telephonic sense as a social one.

The SMS is similar to e-mail in the majority of its features, it really is a remote communication tool, asynchronous, almost instantaneous and interactive, textual, mobile, and ubiquitous.

In practice, chat differs slightly from e-mail in the sense that it is mainly used in a conversational way with very short text messages and on mobile platforms.

In general, chat is used in a 1 – 1 way, that is one sender and one receiver and reciprocally, within the framework of a private conversation. However, in the case of social networks it occurs that the user's "wall", that is, the flow of public notifications linked to his profile, are used in chat mode, through the comments that build up in a chain of short messages, even pictures, smileys, videos, photos, or links to web pages or other content. These chains are no longer under the control of the owner of the "wall" but instead under the control of the community of contacts or "friends" who subscribe to it.

The main digressions, aside from addiction, are linked to problems associated with privacy, online harassment whether that is individual or within a community targeting an individual.

1.6.2. *Micro-blogging*

Microblogging platforms are used to transmit short messages which are sent out to the entire community connected to the service. They are generally used to convey concise information, which usually refer to longer articles (e.g. on a blog) or to websites.

In this way, these platforms are a median between blogs and SMS.

The users of the service connect to a flow aggregator which allows them to follow a discussion thread sent by contacts of their choice.

New platforms have come to light which allow the transmission of photos and videos instead of text messages. They tend to replace micro-blogging, even SMS among the youngest users.

The most well-known micro-blogging platform is Twitter. The main failing of this type of tool is information overload.

1.6.3. *Social networks*

Social networks have, as much professionally as personally, become the inevitable new digital communication platforms. These networks, based on the creation of communities of contacts or friends, allow each and every one of us to "post", e.g. to publish a mass of information, links, columns, photographs, or videos whether these are of a professional or private nature.

It is a way of exhibiting, communicating and gathering around themes, opinions and common interests, shared by a community with different circumstances and profiles.

We see just as often individuals who reveal their mood of the day, their artistic creations, photos of the latest baby, or the Christmas tree, or groups, associations, businesses, shops, developing pages to model their brand or their work with the aim of alerting, communicating or exchanging with members, users of certain products or services.

Computer platforms, in particular mobile phones, allow subscription to data streams generated by social networks. They are, therefore, continually drip-fed successive publications about the communities to which the users are subscribed.

A myriad of different social networks exists, varyingly open, and varyingly exclusive according to the aims of their creators and their moderators. Nonetheless, the best known are still Facebook, more for private individual use, or LinkedIn and Viadeo for networks of professional contacts.

The main flaws in these are linked to the protection of privacy, and to the trading of personal data, to online harassment and more generally, to the problem of cybersecurity.

1.7. Conclusion

The electronic communication tools are now becoming part of our daily lives where they take up a dominant place. Who has not turned the car around after realizing they have left their mobile phone at home? How many professionals or ordinary travelers no longer opt for hotels which do not provide a Wi-Fi service?

So small and yet so inhibiting, these new tools have fundamentally modified our way of being and of perceiving our world, by profoundly altering the traditional boundaries that constitute time and space. In doing so, ICTs have changed the way we live day to day and in particular the way we operate in the various micro-roles we have at home, in the office, with our colleagues, our supervisors, etc.

We dedicate the following chapters to the study of these roles and boundaries as well as the way electronic communications has changed our perception and utilization of these.