

Remote Work and Technology. A Brief History and Evolutions in E.U and Romania

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Abstract

The paper below searches for the basics of the work at distance in the few successive decades life-time of the information technology. The reader will here meet dates and data arranged and correlated notions and evolutions introduced as simultaneously working and a relationship between technological issues and their corresponding moments in and intervals of time that could appear interesting even for those who know well this area or have enough read about so far. The work at distance issue will also meet its law and organizing stuff at both the EU's and its member countries' levels, here including Romania's. It will be here related about the Covid-19 interval as well. It will be equally interesting not only about effective developments in time at past, present and future, but also about perceptions about distance working from employees and employers, e.g. it is this way of giving birth to the concept of "hybrid working", i.e. more or less between the classical way and distance working.

Key words: remote work, work from home, telework, , COVID-19, European Union, Romania

J.E.L. classification: J81, J21, J24, O52

1. Introduction

Actually *remote work* issue isn't too new in practice and literature, but it became increasingly popular in time with the help of the technology's advancing, e.g. the PC's , the Internet and the public *wifi*. Currently (as much as all people in the possession of laptop or smart-phone connected to the Internet) some of the today employees might prove able to contact their colleagues at distance and even do their work at home, in the Coffee-bar or elsewhere quite similarly to those times in which they were compulsorily sharing the employer's location in such an aim (Messenger J.et. al 2017,2019) .

But things have not always been like this if we remember computers of the sixties, when each related employee was supposed to travel to the computer's place or to send those magnetic bands to by ordinary mail in order to access specific information and/or, conversely, to make his/her work public.

In 1975 the first personal and portable computer was made the way the employees' work could finally be ever made transferable out of office. That was an IBM-5100, enough different from the today *laptops*, but certainly in their order of becoming. And it is ever-since that companies endeavoured to renew and make PCs increasingly performing. It is this way that then Adam Osborne offered in April 1981 what is also today recognized as the first laptop of all time, i.e. really portable -- this was even called *Osborne I*. It weighted 24 ½ kilograms, had a 5-inch display, a pretty narrow monitor and no storage space. Despite such handicaps, as seen today, and a high market price its sales made about US\$ 1 million at that time. And in the aftermath of this more than 24 kilograms computer of 1975, in 1989 came up the next laptop made by NEC and weighting as low as 5 pounds (i.e. 2.26 kilograms)— this is taken as the first electronic notebook ever. In 1992 it was about the primary series of *touch-pad* laptops on market, launched by Olivetti, and a decade later, in 2002, Toshiba was making the thinnest laptop ever created, only 3/4 inches (1.9 centimetres).

Apart from laptops, the *tablets* seemed to have met a similar story between 1972 – when their first ideas about – and 2002 – when Microsoft, under Bill Gates, introduced the *Windows XP Tablet*. In 2010 Apple (Steve Job) also introduced the *I-Pad*.

Back to 1983, its 1st of January is the official day of the *Internet's* birth. Actually the internet has revolutionized the communication as a mechanism of data dissemination and also increased the collaboration between people at different locations/regions (Leiner B.M. et. al.,1997). Just some restricted computer networks with no standard communication working between had been before that. Dozens of scientists, engineers, computer programmers and other related professionals worked on this project the way the *information highway* was coming to be built in its today image (Hogeback, J.2016).

Then, the computer scientist Tim Berners-Lee invented the *World Wide Web* in 1990. This often sees itself mixed up with the Internet itself, but in reality the *web* identifies to a way of accessing data by *web-sites* and *hyperlinks*, i.e. *online*. The web isn't the same with the Internet, but helped the Internet to have its popularity together with a vast information tissue that the public sees only at this time, as never before. The other thing that the web done meanwhile was connecting people from all over the world through the *e-mail* and related visual tools.

The first accessing of the Internet *wireless* network was made possible in 1991, as part of the 2nd generation (2G) of mobile phones. In the following years, 1994-1995, other companies like American Express, IBM and AT&T started proceeding to allowing their employees to work in other locations than the employer's head-quarter. In 1999 the Internet users went up to 400 millions (Monica D. et al , 2020). In the years 2000 the Internet-wireless and broadband were acting like two pieces for freeing the employees from a given physical location, as their work place. Then the 2001-2006 interval was the one of higher Internet speeds, as part of the 3rd(3G) and 4th (4G) generations.

2. Literature review. The “remote work” basics

Jack Nilles is the first book author ever using expressions like *remote work* and *teleworking* in 1975. This was the time in which he was working as a NASA engineer and so experienced some of these in a communications system context. Other notions like *telecommuting* were here used by the author as well basically as “alternatives” to classical operations in order to face the new deficit of non-renewable resources in an innovative way – i.e. *telecommuting* was here an “alternative transportation”.

Later on, in 1979 Frank Schiff writes an article in *Washington Post* underlining about the same idea: working from home might be able to help at least the overall gasoline consumption nationwide to be lowered and so saved (Schiff F., 1979) - i.e. not to be here omitted that 1979 was the year of the OPEC oil embargo –, if not about the same could come out in chain for traffic congestion, air pollution, and mental and physical stress for all. Schiff directly here refers to that time (previous) energy crisis and shows preoccupied by methods of counteracting it: one or two days a weak working from home might be one of these (Daniels, 2021). Moreover, Schiff proved himself that visionary writer in the respect of technological advance able to move from its original place to anybody's home where bringing “the functions of televisions, videophones, computer terminals, electronic files and word and data processing systems and which can be connected directly to offices and other homes”.

Then, the author equally anticipated the criticism that working from home would attract, being aware that there could be no control over how each worker would work – e.g. cutting-off individual contacts needed among colleagues; “too much distraction and rather no quiet place for work”. Finally, the 2020-2021 pandemic was coming to respond to all such theoretical issues introduced by Schiff on the very ground.

In another book, the one of Woody Leonhard, published in 1995, “*work*” is notionally assumed “*as what we do, and not as where we are doing it*”.

This author rather excludes all business success in future in the absence of the virtual environment, as infrastructure for all communications and business cooperation. However, that time was rather the one of some unsuccessful start-ups for entrepreneurs not quite yet prepared for

such strategic movements. Later on, in 2008 Sir O’Donnell’s uses similar expression “*Work is something you do, not somewhere you go*” (Hardy B. et al 2008).

The *English Dictionary* sees *tele-work* as the use of computers, smart-phones and other new technical devices (from) home by those working this way similarly to their (former) work at the office, i.e. keeping at the same in direct contact with colleagues, customers and the central office (Oxford Advanced Learner’s Dictionary). *Tele-work* is here the same with *telecommuting* – above described as a variant of work arrangements for employees that are not committed to travel to a central place of work for doing their jobs. Those persons/employees are called *telecommuters*, *teleworkers*, *home based* or *work-at-home employees* - to be also distinguished from the so called *nomad workers*, who do the same not from home, but preferring coffee bars or other locations.

Wikipedia, in its turn, reunites several expressions here related: *distance work*, *remote work*, *work-at-home (WFH)*, *mobile work*, *work-from-everywhere (WFA)*. All of these keep in common a work arrangement in which the employees do not usually travel to a central place of work in establishments that might be an office-building, a warehouse, a retail store or others. *Wikipedia* also insists on the other part of these notions, i.e. the help of diverse specific technologies like: collaborative software, local area networks, virtual private networks, conference calls, video telephony, internet access, cloud computing, voice IP (VoIP), mobile telecommunications technology, such as laptops or tablets equipped with Wi-Fi, smart-phones and desktop computers with landlines. Last, but not least, companies might have their reason to vote for the remote work, as useful and efficient since workers communicating at any distance, time and transportation costs saved and more technology and afferent devices here added to help: e.g. Zoom(a 5th mobile application in the decreasing order of downloading world-wide, i.e. 477.3 million down loadings), Web-ex, , Google Meet, What’s App etc.

Eurofund (European Foundation for the Improvement of Living and Working Conditions) also deals with *distance working* – an arrangement on work to be developed away of a pre-established place, usually the employer’s place, and so using information technology (TIC) - i.e. this last(TIC) contains the idea of technology making the workers “independent from locations, as work places”.

The *International Labour Organization (ILO)*, in this same order, defines *work from home (WFH)* as a system of work in which the worker fills his/her job tasks by reaching the information & communications technology (TIC) and concomitantly giving up the classical work place – i.e. usually again, the employer’s headquarters. It was in 1996 that ILO offered its variant of such a definition (ILO, 2021) in what was its Convention No 177(/1996)- only 10 countries meanwhile did ratify it. Then there came the Covid-19 pandemic in 2020 and 2021, when WFH came to be used in the ILO’s view together with a temporary title and some more joint commitments from both employees and employers on continuity and productivity ensured in given activity.

3. Research methodology

The methodology here used devolves from the above exposed literature on the topic area. This is searching for a brief, but comprehensive history of concepts related to distance working. A primary aspect arising from such throughout history searching was the link between this last and technology in its development. Such a link between technology and Internet, on the one hand, and changes in the work-organizing on the other seems to continuously work since the 60’ies and 70’ies and isn’t but similar today to that epoch, despite some appearance that a concept like *tele-work* looks rather newly-coming.

Then, from real-historical facts to law related issues the literature and statistics reveal either some difference between work-at-distance and/or tele-work, as technology-related, and work-at-home, an older concept not dealing with technology and with the recent pandemic, or different ruling in different states, here including the EU member States. Finally, there are the merits of the Eurostat (i.e. through LFS-labour force statistics) and Eurofound(i.e. through surveys carried out in all member countries, in several rounds during the pandemic period) to have completed all studies with statistics on both pre-pandemic years for work-at-home and the pandemic period for tele-work.

4. Findings

In July 1997 the European Commission (EC) adopted a series of political recommendations regarding the labour market and the social dimension of the information society. There were recommendations for the work at distance as one of opportunities-tools of enlarging employment in the information society. The EC started studying telework on its own activity area – i.e. a pilot project was started in 1998 through the EC’s departments called *Directorate General for Employment, Social Affairs and Equal Opportunities* and the *Directorate-General for the Information Society*.

In the year 2000 the European Council reunited in that famous session of Lisbon with its objectives for the future dynamic of the economy in Europe intended as “knowledge- based” (Lisbon Strategy,2000). That “*Lisbon Strategy/2000*” was regarding the first whole decade of the new 21st century, i.e. 2000-2010. In context, work related reports were coming to be modernized with the eyes on both the companies – i.e. their productivity and competitiveness – and individual work places – i.e. their quality. Besides, the Commission proceeded to invite the social partners for negotiations, here including the telework modality.

The *Framework Agreement on Telework* – also called the main “*EU regulation addressing telework*” – came to be reached after negotiations during the September 2001-July 2002 interval and this Framework of course regards first the work conditions of telework for those who are supposed to practice it. In its Article 2, this Act defines (in its turn) the *telework* as an arrangement in which an employee, though always able to his/her job at the employer’s places and work points, does the same regularly away of these using informatics stuff and technologies (Mandl, I., et al., 2020). Then, these last technologies providing and their maintenance here belong to the employer. As for that place of work alternative for the employer’s one, the employee’s house residence comes first, but the Act’s definition and provisions do not exclude any other alternative places able to ensure conditions for both secured and healthy work done and data protection (Filip&Company, 2017).

The terms of this European Agreement came to be achieved in 2002 among those 15 EU member States at that time. As for social partners fully participating to that social dialogue, there were ever-since the ones belonging to those countries only – nevertheless, the Agreement became applicable to all the 27 member states at this time(ILO, 2020). Status and regulation of telework (EU-OSHA, 2021) are so far of two kinds / actually, groups of EU member States:

- the ones with express provisions on telework in the Labour Code and/or other specific laws (ILO-2020b) – e.g. Belgium, Bulgaria, Czech Republic, Spain, Germany, Estonia, France, Greece, Hungary, Croatia, Italy, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovenia and Slovakia. EU-OSHA mentions specific definitions for telework in these countries: “remote” (work/Bulgaria), “telework” (Spain), “alternative workplace” (Croatia), “location independent” (Netherlands), “mobile work” (Germany).

- the ones without such express provisions/laws and/or in which telework sees itself included in regulations on different specific – e.g. referring to data protection, safety, healthcare, work time: Austria, Cyprus, Denmark, Finland, Ireland, Latvia, Sweden.

It was the same technological evolving since 2002 so far that influenced the telework towards its extension and so to an increased workers’ mobility. Currently, the *European Economic and Social Council* (CESE 2021) uses the telework word for employees who work at distance/out of their enterprise establishment and use technology of information and communications (TIC). In the CESE’s view really identifying the place of work and TIC used are the two important pillars of telework and this is why each nation’s law and practice are supposed to have their own saying about (Trindade, C.M., 2021).

In Romania, firstly the *Labour Code* (Law number 53 /2003) regulates the *work-at-home* category – i.e. the employee’s residence, instead of the employer’s one - in its Articles 108, 109 and 110. The Code provides that working-at-home employees are not discriminated, as compared to the others, have the right of settling their own work schedule, but are required to submit to the employer’s checking on according to individual contracts (Labour code-Individual work contract, Cap.9-Work at home).

On the other hand, the employer is committed to ensure materials, raw materials and their transportation needed, the same for afferent finished products both senses. However, work-at-home in the Romanian Labour Code of 2003's provisions limit to manual work with physical and easily identifiable finished products and materials and cannot conceptually extend to a technological complexity related the information society.

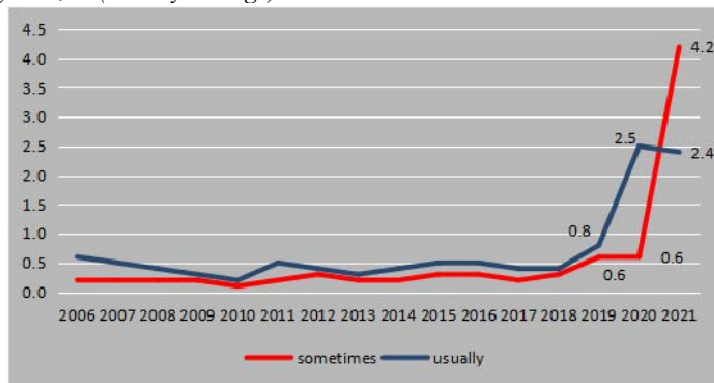
Telework then came to be defined by *Law in Romania in 2018* – i.e. Law No 81, Article 2: “*a type of work organizing in which the employee, regularly and voluntarily fills his/her job tasks in other places than the ones managed by the employer, at least once a month and using the information and communications technology*”. So, two legal aspects became obvious in Romania about telework: the difference from the earlier Labour Code provisions for work-at-home and the EU vision approached – telework means work done home, but compulsorily using TIC.

As in detail, telework legally assumes the ordinary individual employment contract – the one for every worker – accompanied by an addendum always containing provisions like: the one that nominated employee works in telework conditions in dates of... besides the dates in which he/she works at the employer’s place(s), as well, the exact place for telework and time in which the employer might be supposed to check on this, modalities of accounting the hours worked as telework, the employer’s commitment for all materials needed by telework and their transportation to the telework place, the same for ensuring data protection, here including personal data, the same for letting know the telework employee about all changes occurring in the collective employment contract – when the case -, the same for helping the employee against all perspectives of isolation from his/her colleagues and finally the same for the employer’s commitment about all costs supported by this type of work. And this list of employer’s commitments then are followed or accompanied by corresponding commitments on the employee’s side (Haiduc C., Iordăchescu & Asociates, 2021).

Law No 296/2020 provides a new possibility of funding costs of utilities for the teleworker’s place by the employer – e.g. power, heating, pipe water, data subscription and even office furniture and equipment within the limit of a monthly ceiling of 400 RoN (R&S, 2022). The Emergency Government Ordinance No 36 / 2021 wipes out the previous provision on “*telework done at least once a month*” the way that all precision remaining on this aspect is the systematic, constant and not accidental or up hazard use of telework. On the contrary, telework isn’t imposed to fill the whole or the most of the work hours either(R&S,2022).

In Romania, it was not quite usual the work-at-home before the recent pandemic in Romania – i.e. as low as 1% of the whole people employed (of 15-64 years old). Not only, the so high majority of working people weren’t used to fill job tasks elsewhere than in the employer’s place, but recall from above that the *work-at-home* was regulated in 2002 – i.e. for some *manual activities* - and the *telework* lately, in 2018. In its turn, the Eurostat here provides data also for *frequently/usually and sometimes working-from-home*. As for “*sometimes*”, in the 2019 Romania data show about 0.6% of the total country’s employment, a weight staying constant in the next 2020, then meeting a significant rise in 2021 to 4.2%. As for “*frequently /usually*”, the percentage grows from 0.8% in 2019 to 2.5% in 2020, but then goes a little down to 2.4% in 2021, the second pandemic year (Figure no. 1).

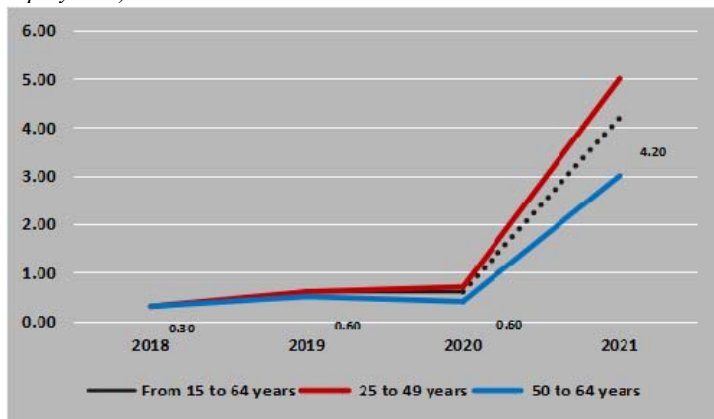
Figure no. 1. Romania-Employed persons sometimes and usually working from home as a percentage of the total employment, % (15-64 years age)



Source: Eurostat - Labour force survey 2021, EU-LFS [lfsa_ehomp]

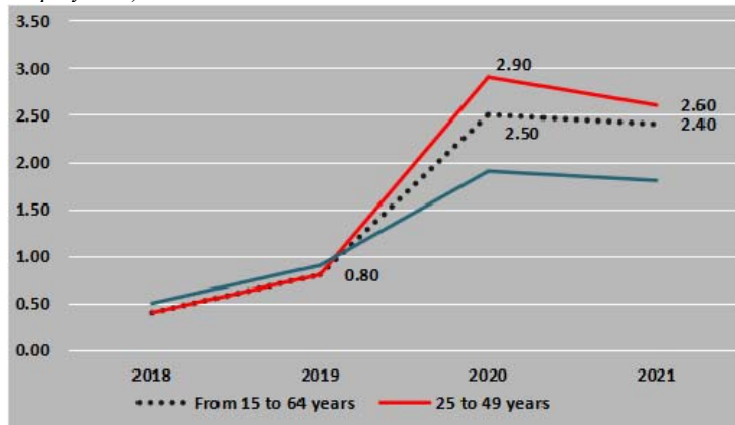
As for groups of ages in Romania, the number one was the middle one, of 25-49 years old, that worked-from-home by its 7.6% in 2021, as compared to only 1.4% in 2019. This was followed by the seniors of 50-64 years old, with respectively 4.8% in 2021, as compared to 1.4% in 2019. The youngest of 15-24 years old were working-from-home by just 4% in the 2021 end (Fig.2a,b).

Figure no. 2a. Romania- Employed persons sometimes working from home - age groups (% of the total employment)



Source: Eurostat - Labour force survey 2021, EU-LFS [lfsa_ehomp]

Figure no. 2b. Romania- Employed persons usually working from home - age groups (% of the total employment)



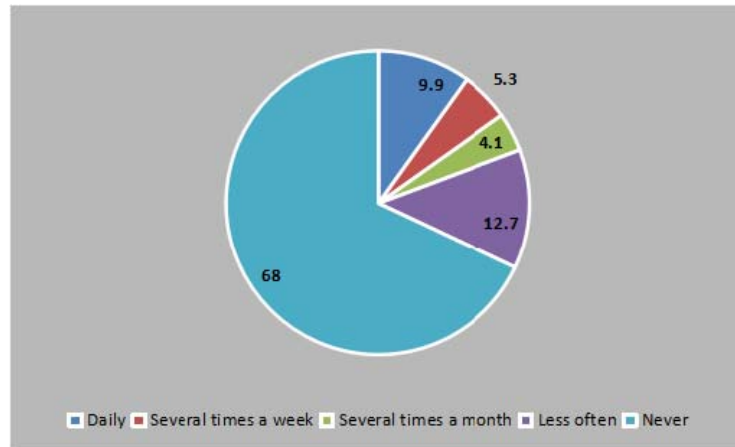
Source: Eurostat - Labour force survey 2021, EU-LFS [lfsa_ehomp]

And now it is the moment to observe the difference of results between the above EU-Labour Force Survey (Eurostat) and the other data source here used, i.e. Eurofound Survey - with a common Eurofound-ILO report (Ahrendt, D. et al., 2020).

The impact of the pandemic appears much more surprised by *Eurofound* through the multitude of questions in the questionnaires addressed to workers in the EU

For Romania, in this survey context, 68% of the respondents of April-May 2020 had never worked-from-home and the rest of 32% had done it in diverse forms: i.e. from daily to a few times a week or even less often (Fig. 3).

Figure no. 3. Romania- Frequency of working from home before the outbreak-Romania (%) April/May 2020



Source: Eurofound (2020)

Actually, Eurofound, in its Survey, took the location issue of work done in its larger sense – i.e. home, for work-at-home, but not only: the employer’s diverse establishments and/or working points, other places accepted by the employer and adequate to the specific of work or of relationships with customers. Throughout the survey’s three rounds deployed, the same employees worked either at home, or in other locations/ headquarters/ work points, therefore the percentages do not add up to 100%.

In Romania the working-at-home employees started by their 19% in the lockdown of 2020, April-May, and then percentage rose to 30.8% in June-July. Then 55.1% of the Romanian employees continued their work in their employers’ places and/or in other places at the employer’s option or at the one of customers (Fig. 4).

Figure no.4. Location of work during the Covid-19 pandemic (%) 2020 June/July 2020

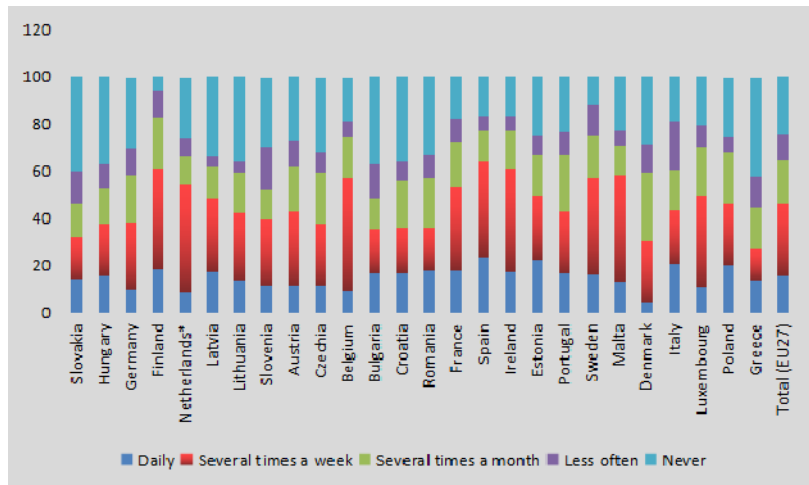


Source: Eurofound, 2021

While the work-from-home incidence actually seems to have slightly decreased towards the end of pandemic the preference for this kind of work arrangement maintained for the near future. The same survey found employee respondents preferring about equally working from home and at the employer’s place when no restrictions.

The 3rd round of the survey (February - March 2021) revealed in most EU member States the alternative of several days a week working-from-home as the most popular to employees (Nivakoski, S., et al.,2021).

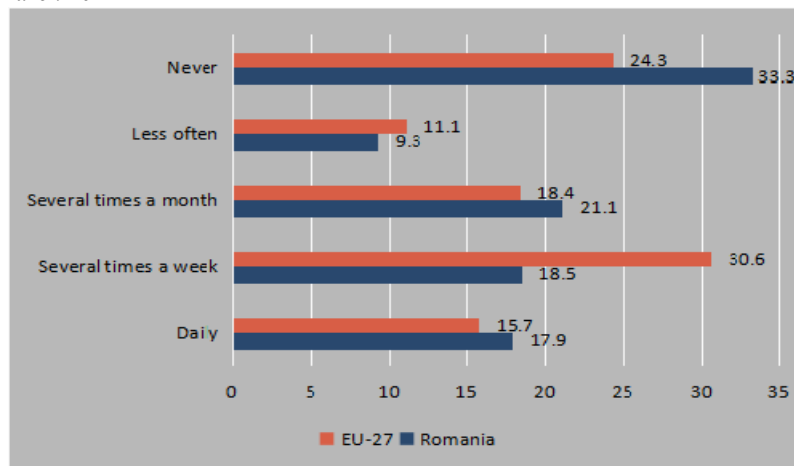
Figure no.5. EU-Work from home preference by country (% of respondents)
 February/March 2021



Source: Eurofound , 2021

As taken by individual categories of employees interviewed, in Romania the highest weight belongs to those who refuse the work-from-home (33.3%), but taking into account all the employees’ options in the survey those preferring work-from-home in the total were many more, if not even double (66.8%). 17% of the interviewees said they were preferring working-at-home everyday, 18.5% of them were preferring a few times a week, 21.1% a few times a month and finally 9.3% were preferring rarer than these(fig.6)

Figure no.6. Work from home preference, Romania, (% of respondents)
 February/March 2021



Source: Eurofound , 2021

The workers' preference to *work from home extended* even after the lifting of the restrictions and the approaching end of the Pandemic. Other studies from all over indicate for the future rather a *hybrid system of work organization*. This might be a new formula backing more flexibility and performance resources, while the opposite alternative – the one of fully remote work – is still suspected for problems related to spoiling the inter-human relationships, to then individual isolation and even to health related problems.

5. Conclusions

A historical review, as above, of concomitant technology evolving, including the Internet, and the employees' work elsewhere than at the employer's place (*telework*) proves able to help to both these aspects' well understanding. In other words, none of *telework* issues would be possible in the absence of technology and Internet. The research in the area finds some 60'ies and 70'ies precedents for the present *technology-telework* deepened connection, as well as in that epoch there were voices that foresaw such today facts obvious at a blink of an eye. Among other things, the new *telework* helps to reduce the non-renewable energy resources' consumption.

Despite appearances and the popular perception, *telework*, in its multiple forms, is actually older than computers and the Internet, all the more than the recent Covid-19 pandemic crisis. This last didn't do here, but – thanks to its needs of physical contact reduced and of social distancing -- making the *technology-telework* (as new work organizing and management) connection transparent, useful and quickly to be implemented by all world States. The pandemic speeded up technology and digitization at least indirectly.

The quickly events in the area then look to have taken the afferent law enacted by very surprise – i.e. numerous law ruling differentiations in different countries, here including the EU member countries. For instance, *telework* is ruled by the specific “Labour Code” in some countries, while in others by other kinds of laws – i.e. Romania is an example for the latter case. Then, a similar difference for how old such rule on *telework* is, and then for making the difference between *telework* and *work at home*, as differently founded than by technology involving - i.e. in Romania again, work-at-home is ruled by an older law enacted in 2002 and *telework* by another one or 2018. And then for how many workers frequently used work-at-home and other systems of using other work places than the employer's headquarters previously to the pandemic event – i.e. this is rather not too much for EU member countries and for Romania even less than 1% of its working staff.

The aspect pushed by the pandemic in this respect is just this: the statistical measuring methodology on such workers' number and percentage during the crisis and in its aftermath. There was an International Labour Organization (ILO)'s methodology proposal advanced in 2020, certainly, for a unitary statistic practice, but then there were not all States able to take it over. So, we're staying far from a unitary view on such work organizing, from reaching a pertinent and quick-efficient conclusion on the reality of the latest years world-wide. But in exchange, the Eurofound reached the merit of having approached this distance-work reality through its successive surveys developed in the EU member countries during the pandemic. Thus, different nuances of how employees worked, more or less from home, during the pandemic and before it were highlighted – e.g. how performing actually was the workers' activity off the employer's headquarters; whether the same workers' perspective preferences have been changed in such a respect with this experience, etc.

These Eurofound's surveys' results rather conclude that the preference for continuing to work from home under a hybrid format appears more and suitable for majority.

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