

# New technologies` impact on workforce and labor law

Prof. Dr. Jessica Bayón Pérez, PhD  
Nebrija University, Spain

Prof. Dr. Andrés J. Arenas Falótico, PhD  
Nebrija University, Spain

Prof. Dr. José Lominchar, PhD  
Universidad Internacional de la Rioja, Spain

## **Abstract**

If we look back, evaluating the last two centuries, the productive environments of our societies have experienced several industrial revolutions that caused great changes in production and that, in turn, generated important changes in societies at all times.

Likewise, the digital transformation that has been incorporated into the bases of companies, each one in its measure, has not yet reached its maximum potential, but it has changed the way we live and, therefore, the way we work.

Historically, automation has come from the hand of specialization, not because of the manufacture of tractors the land has been stopped, but more has been produced and that production has been managed in favor of employment and economic health. Technological transformations hand in hand with digitalization and artificial intelligence generate opportunities, but they also represent a threat to a good part of traditional jobs and professions, since changes are rapid and the impact of new technologies is much greater; thus, the change in the training and qualification of workers is necessary.

Like the looms in the 18th century and the production models at the beginning of the 20th, digital transformation is our present, but it will be much more powerful in the future, as it entails and will entail a redefinition of the labor market and the law that governs it. regulates. Globalization and technological changes have generated a need to address labor law from a global perspective; Furthermore, this right must not only be active, but also effective, solid, in accordance with international decent work standards.

**Keywords:** technologies; new technologies; work and labor law.

## **Introduction**

The loss of jobs due to automation and new technologies` deployment also leads to an increase in wage inequality in the labor market between groups of highly qualified workers and the large numbers of people trying to access jobs that require less

training (European Commission, 2019). In this regard, the European Commission manifests itself in its study on the impact of digitization on the labor market, published in February 2019, in the forum of the High-Level Conference on the Future of Work.

The impact of new technologies and their dizzying progress affect labor law severely. We act and legislate based on the needs of society, but when the corporate culture does not adapt to these changes, we find ourselves faced with temporary contracts, unusual hiring methods and precarious quality of work, that is when legal action becomes necessary. and essential legislative intervention.

In the corporate culture that starts from the generation of profits, investment in technology is evident in almost all areas of production to the detriment of certain jobs and, not for this reason, positive signs of economic and business health are lost. Human employment does not have to disappear in favor of robotics, the only thing that must be valued is whether we are capable of managing efficiently, recognizing that we are not essential in the production process; not work it disappears, in fact, jobs are lost in various specialties that are run by robots, creating different specialties; thus, employment evolves.

Considering these brief reflections, the essay collects that the new forms of work opened up by digitization could generate “winners and losers”, as well as “a deepening of the polarization of the labor market, unless adequate political responses are adopted” (Thyssen, in High Level Conference, UN, 2019).

The reflections are based on the evidence of constant technological changes and their integration into the labor market, for which it will be reflected on the basis of the values formulated by international organizations and researchers, in order to present a synthesized vision of whether the technological revolution and Labor law does or does not go hand in hand, if fundamental rights are affected and if the current higher education system is addressing the future needs of the labor market.

It will be discussed if these training needs of a labor market in constant and vertiginous change are within the governmental perspective and if the stakes of the States, specifically in Spain, are at the level of the immediate future or, on the contrary, are incongruous according to the standard of living of the population that must adapt to the advancement of new technologies.

The transformations that are taking place in the production process and the economy demand policies for education, training and the provision of income within globalization implies inclusion, hence, government policies must be oriented to address the change driven by technological evolution. (Arenas F, Bayón P 2020). In the same way, given that the impact on labor law of the technological revolution is evident, through a study of doctrine, it will be assessed whether these new technologies in the labor market

and in the rules that regulate it, are being addressed in line with their evolution or if we are lagging behind.

### **ICT: Information and Communication Technology**

The expression ICT is the acronym for Information, and Communications Technology and refers to the theories, tools and techniques used in the treatment and transmission of information, it is then where reference is made to computer science, internet and telecommunications.

A complete definition of the ICT concept can be the following: “set of technologies that allow the acquisition, production, storage, communication processing, recording and presentation of information, in the form of voice, images and data contained in signals of an acoustic nature, optical or electromagnetic” (Campuzano tome, 2000).

ICTs have become a very important tool in contemporary society, so much so that data on the standard of living of a population are taken into account in studies on the economic development of a country.

In more developed societies, ICTs have an important reach either in people's lifestyles or in the “know-how” of companies, given the spread of internet-based applications, electronic commerce, mobile phones. and all the platforms that allow the development of the Information Society.

Since 2008, the year of the beginning of the economic recession, ICTs have greatly increased their diffusion, because they allow companies to have a more sustainable business model and a greater capacity to create added value (Gorrin, 2011).

Undoubtedly, the constant evolution of technology has led to equally rapid changes in the world of work. Consequently, the concept of the office is also evolving, because it must be understood as a set of relationships and not as a physical space in which to carry out the work provision.

All these changes would never have been possible without the evolution of technology and, in particular, without the development and diffusion of ICT (Information and Communication Technologies).

ICTs are the “set of technologies that allow the acquisition, production, storage, treatment, communication, recording and presentation of information, in the form of voice, images and data contained in signals of an acoustic, optical or electromagnetic nature” (Campuzano tome, 2000).

Thanks to the use and implementation of ICT, the transmission of information has become much easier and cheaper, because telecommunications networks make it possible to transmit information almost immediately regardless of the distance to travel.

In this way, the role of information in society has totally changed, because it has become a determining factor in production, until it is considered a true commodity (AA., 2000).

Consequently, there has been an increase in competitiveness and an ever-increasing opening of markets, factors that companies must take into account to guarantee their survival and to be competitive in the markets.

The world of work has been revolutionized by the introduction of computer technology, which has transformed the organization of work, especially from the point of view of the production process and business management (Rubert, 2003).

In relation to labor relations, ICT and all telematics tools have streamlined work and revolutionized labor relations, so it is necessary that the legal system also continue to adapt to the new reality that it must face.

From the point of view of the company, without a doubt, the productive activity has been significantly simplified, because it has been streamlined and facilitated, but, from the point of view of the workers, it has been necessary to modify the personnel management system and that it has led to an increased potential risk of violation of fundamental rights.

In relation to work and companies and their workers, ICTs have increased the possibility for companies to produce better quality work and in shorter times. This translates into a greater amount of free time for workers, leading at the same time to a change in the relationship between clients and workers and between workers and companies. So the use of ICT can be seen as a positive change as long as it is used in a good way.

Therefore, it is important to provide workers and all users with a good and correct digital education, in order to avoid leisure in the offices or the lack of competitiveness between companies. Digital education is once again an element of growing importance for a responsible and positive use of new technologies by users, workers or companies that are and to get the most out of the use of ICTs.

As we have analyzed in the first chapter of this work, the regulation of remote work also involves the regulation of telework, in order to include in the Spanish legislation this new form of work that has found a growing diffusion in Europe in recent years (Bayón and Zerbi 2020).

### **Work and new technologies: generalities**

The sustainable development goals, which include commitments to tackle poverty, promote gender equality, decent work and protect the environment, are the highlights of the United Nations Common Agenda for the next ten years.

Decent work is a pressing need. More than 75 million young people are unemployed, temporary employment rates have reached unknown standards before the crisis, there are more than 2.5 million workers who die annually due to labor causes, discouraging data if, in addition, we delve into the figures of child labor: 155 million children. In addition to this, with salaries of 200 euros per month in internal domestic service with payroll payments of 1 month every 2 years, available 24 hours a day, seven days a week; not to mention the “classic slavery” already believed abolished and with very active foci thanks to the mafias that take advantage of desperate migrations or simply situations of impunity and abandonment. (Giménez, 2019)

The new types of work emerged from the development and application of new technologies, provide different contractual forms. Where previously there was work at home, there is now remote work. The widespread use of new information and communication technologies in the workplace is absolutely widespread and has changed the rules of the game, since computer tools are used to develop jobs that, in the past, were only performed in person; there is no area where a resource linked to new technologies is not present.

However, in the midst of these scenarios, we must question the fundamental rights of workers. The need for discipline and control of production, for example, through the schedule and geolocation, do not stop interfering in the personal life of the worker, who carries a geolocated mobile phone that accompanies him all day to facilitate his precise location, is or not within your workday. The legal systems have so far given an insufficient answer. In the Spanish case, no answer has been given to these new problems.

It has been through judicial doctrine that a response has been obtained to this confrontation between the rights of the workers and the claims of the companies, the needs for the organization of productive activities, the need for control and surveillance of both the workplace and the workers, use of email, internet, mobile phone, among others.

### **Artificial intelligence and robots at work. Vision of digital news.**

In the course of technological evolution, initially, machines helped men, who ran them completely; meanwhile, the man was enjoying his internet connection. Later, in a dizzying way, we transcended the phase of absolute dependence on the internet; now it is the machines that connect to the internet to help us. For Santos “the next phase, which is imminent, will consist of things (robots) interacting with the environment autonomously and independently of human control, with the possibility that people combine with robots to improve themselves (cyborgs)” (Santos G, 2017.p.27.)

New situations in need of regulation will arise and, for this, some steps have already been taken; highlighting, at the European level, the preparation of a report containing the recommendations for the Parliament's Commission on Civil Law rules on robotics so that robots are and continue to be at the service of human beings (Delvaux, 2015).

However, a not so friendly face of digitization is that of the double face of the leading companies in digital and robotic technologies, for example, Amazon. According to Olias, (2019) citing LinkedIn, he explains that in his study Top Alphabet List e 2019, Amazon ranks third among the best companies to work for in the US, 75% of employees would recommend their relatives and friends to work in it, but Olias proposes "Corporate Amazon", that of meeting rooms, rest places, futuristic spaces, and fruit in the office for everyone (Oliás, 2019).

The Amazon's warehouses is managed and administered by a software that automatically decides which workers to fire if it detects that they do not meet the objectives set, it is capable of measuring the pauses to go to the service, detects all activities employees make during their work day and sends alerts if it detects that they are not doing the work the way they should do.

This type of tool is already very widespread in different companies and jobs, especially in the production chains, but, in the case of Amazon, the pressure is very high and the productivity objectives are increasing, it has generated severe criticism and complaints. by its workers, who have even reduced their visits to the toilet even to avoid receiving these alerts.

In another vein, the need for professional retraining in the face of the new labor paradigm posed by new technologies poses challenges for the present and future of Spain. Given the situation we are facing with technological advances, they require professionals with specific skills and the educational system of the future must be prepared to face this new era. In Finland, for example, automated companies demand specialized professionals, but find that the training offer has not provided enough workforce with the necessary competencies and skills for that labor market. (Bayón 2019)

### **Where are we going?**

The World Economic Forum (2016) pointed out that, in about five years, the world's main economies will lose up to seven million jobs, of which two million would be recovered through new trades. The resulting balance, five million, represents around 0.3% of total jobs in the economies considered by the aforementioned instance.

For its part, the Organization for Economic Cooperation and Development (OECD, 2017), based on the levels of labor qualification, points out that the risk of automation depended largely on the characteristics of each territory, going from 40% in some Eastern European

regions, up to 4% in areas where skilled employment is the norm. Considering the risks indicated by the OECD, Spain represents a range of 20% of the population and 30% that will face significant changes in its employment model. (Grasso, 2019).

Middle-class jobs, the gap that remains between the production and technological poles, where the wage cost is below the cost of automation, are the ones that suffer the most from these consequences. More than thinking about the jobs that will survive, we will have to assess and work to determine what the work of the future will be like and the legal regulatory framework we can reach. (Grasso, 2019).

The World Economic Forum has used data from LinkedIn (2015) to identify and project the trends of the most searched profiles between 2013 - 2018; It is observed that all require a lot of training and very high technical skills. Likewise, 313 executives of multinational companies were consulted about which tasks will be the most likely required in the short term, from which it emerged that they will be data analysts, scientists and specialists in artificial intelligence, as well as experts in Big Data and transformation. digital

The need for professional recycling in the face of the new socio-labor paradigm. Present and Future in Spain. They need to recycle labor given the situation we are facing with this new socio-labor paradigm is fundamental, the technological changes in which we are immersed are profiling professionals with specific skills and the educational system of the future must be prepared to face this new era.

As professor Bayón (2019) cites, in Finland, for example, automated companies demand specialized professionals but find that the training offer has not provided enough workforce with the skills and abilities necessary for that labor market.

Are we in Spain facing that same paradigm? Are we doing what we can so that our workforce of the future is able to cope with the impact of new technologies on the labor market? 40.5% of job offers in Spain require, at least, a university degree, according to the VIII Adecco Infoempleo Report (2017) on degrees with more professional opportunities.

The Degrees with high employability, which are the degrees that find more offer than graduates, are those that include general engineering, especially computer engineering and telecommunications.

And on the contrary, the degrees with low employability are those found in the Arts and Humanities, such as Geography, History, Political Science or Journalism. The career profiles of the Universia España STEM (2018) (Science, Technology, Engineering and Mathematics), among which are the sciences, are the most demanded in a labor market where technological and scientific innovation is the norm.

All these STEM profiles coincide in the practical approach of their competencies and in the value of creativity to develop their profession effectively. Universia Spain. (2019). Technical careers and certain engineering have always been the training with the best job opportunities, but with the digital age, STEM profiles are even more necessary and attractive for the job market. The types of studies that this field encompasses include all the careers necessary to develop or implement all the technological innovations that we currently have.

But the offer goes much further, Universia (2019) the training of professionals with technical excellence is being the objective of European Universities, where there are also alliances through Higher Studies and Postgraduate Centers and in consensus with business partners and entrepreneurs to create educational platforms where students become part of an ecosystem of entrepreneurs, companies, researchers and alumni from all over Europe who are exquisitely qualified at a technical level.

### **Challenges of the Future**

The former Commissioner for Employment, Social Affairs, Skills and Labor Mobility of the European Union, Marianne Thyssen, presented in mid-2018 the strengthening of the European Globalization Adjustment Fund (EGF) with the aim of ensuring that people have adequate skills and ensure modern and effective social protection, adapted to new forms of work. The premise is to protect people, over jobs. Ortega (2018), researcher at the Real Instituto El Cano affirms “Those who lose their job due to automation are not prepared for the new jobs. Not enough is being invested in upskilling or upgrading professional skills. “

To address all these problems, hand in hand with digitization, states are faced with the challenge of introducing innovation and digitization in all fields of the economy and society through:

- The design and implementation of a new plan for the deployment of digital infrastructure; that allows you to closely follow the leading powers.
- Investment to make digital technologies possible.
- Creation and implementation of programs to promote skills and talent.
- Training and retraining of workers (upskilling).
- Labor legislation in accordance with new jobs and new forms of production.
- A national strategy on artificial intelligence to sustain social security systems for jobs that disappear and are replaced by robots and that they continue to produce important economic and time contributions.

Nubler (2017), an economist at the International Labor Organization says that times of great change need collective learning so that societies and economies can transform.

The same happens with legal concepts that sooner or later transfer ideas and phenomena that appear in society to law.

### **The employer's control over remote workers**

The Spanish legislator has updated the old form of work from home, through the reform of art. 13 ET. In relation to the surveillance of the employer, in the home work contract, as previously regulated, there was no type of control or business surveillance, since the employer wanted a specific result. At that time, one of the peculiar characteristics of the form of home work was the specific reference to the "absence of supervision from the employer".

As well as to develop the power of direction, which is a requirement connected to the nature of the dependency and, therefore, in home work this form of connection between the employer and the worker is not found because it is very "diluted".

After the reform to art. 13 ET, the legislator has regulated the form of remote work, with the intention of including teleworking, giving a regulation to the new forms of work and labor relations already existing in the world of work.

In relation to this new regulation, it is necessary to specify that the characteristics of this type of employment relationship that entail changes also in the field of surveillance and control by the employer, since, especially in teleworking, technological means are used.

Then the employer "can and should reserve the possibility of monitoring in the performance of work" (Molinera, 2018)

With particular reference to the form of teleworking, control by the employer is very important, since the worker often uses means provided by the company to carry out the work service and control can be provided by technological means, always respecting the fundamental rights of workers.

In relation to the management power of the employer, the dependency relationship between employer and worker is more relevant in the field of teleworking, since there should be a protocol for the fulfillment of the work obligations of employees.

In teleworking, especially, as has been illustrated on several occasions, the use of new technologies is essential for the development of the labor provision, so new technologies become a fundamental tool for the worker and, many times, technological instruments are provided by the same employer.

On the other hand, technology can be a control instrument to supervise and guarantee the effectiveness of the business organization, as well as the performance of all the people who are part of an organization.

These instruments must confront the fundamental rights of workers and, also, with the use that workers make of the technological tools at their disposal.

In the first place, it is interesting to analyze how the abusive use of these technological means provided by the employer for different purposes can be considered as an economic damage. In fact, the worker has spent time complying with his work obligations, dedicating himself to other people's issues and, in addition, he has threatened the security of the same employing company because potentially they are sensitive data of the company that could have left the same and be employees for purposes other than employment.

On the other hand, the rights of workers and all those related to their privacy must be taken into account. As a consequence, controversies that are not easy to resolve arise.

Currently, technological advances allow an exhaustive control of the worker's work activity through software or spy programs that monitor compliance with the work provision and, at the same time, allow data and images to be stored and their treatment for different purposes.

The data and images are stored on media owned by the same employing company and allow the employer to analyze the profile of their workers, by examining them at their complete disposal. Today, worker control is developed with advanced tools and it is no longer possible to speak of a direct control similar to strict surveillance because it is a more discreet control system that, at the same time, is more penetrating and punctual and, especially continuous.

The control that the employer carries out is a control that extends throughout the worker's entire day, not only in relation to the working day, but to the worker's entire life, storing data related to their private and other people's lives to the fulfillment of the labor benefit.

An ethical question about the control by the employer is evidenced, since the fundamental rights of the workers must be taken into account, as well as the right of control and direction by the employer in relation to the fulfillment of the labor provision.

Certainly, the power of control of the employer is an important faculty because it allows the employer to monitor productivity and their respective individual and collective differences with respect to final productivity and, in the event of a voluntary decrease in performance by a worker, the control of this situation leads to a legitimate dismissal.

If we interfere in the role of the employee, the constant control of their activity and productivity could lead to a lack of trust with the employer and, as a consequence, workers suffer greater stress and increase psychosocial risks, in addition to the perception of an invasion of your privacy.

Another aspect to take into consideration is that, in order to protect the rights of employers and workers, it is important that the legislator update the laws regulating business control, taking into account the evolution and considerable advances in the technological field, for an effective defense of rights. in question. This aspect is vital, but at the same time it is complex to carry it out, since the law and the laws are outdated and outdated in the face of the great challenges of humanity. Consequently, the controversies that originate in the control by employers through technological means always in constant evolution pose a great legal and social challenge. They will continue their development with the inexcusable lack of adjustment to the new idiosyncrasies in the context with all the adaptations that would be necessary.

It is essential to regulate the relationship between business control and the right to privacy and intimacy of the worker, since the means of technological control can unleash an increasing risk in relation to the protection of the right to privacy of the worker. In recent years, it has once again become a central issue in labor relations, with special relevance in remote work and teleworking.

The confrontation between technology and the right to privacy, the central axis of most controversies, is continuous, and this question arises with increasing frequency with the persevering evolution of new technologies, artificial intelligence and robotics.

The objective of the legislator should be to achieve a balance between the employer's power of control through new technologies and the fundamental rights of the worker, in such a way that the means of control towards employees by the employer should never be understood as an intrusion into the private life of the worker, but as a means of control over the fulfillment of the labor obligation. It is at this same point where great resolution difficulties are encountered, given that the risk of a situation similar to "The big brother" or "Big brother" is getting closer and closer.

This type of problem is also reflected before the magistrates, because the control means store data and images, but the question that we could ask is which of the data collected can be used as evidence to justify a legitimate dismissal? With the direct effect that this supposes: If this information does not allow to be legally used as a means of proof, they will be prone to be stored to the detriment of the worker's privacy, with an illicit interference with their private life and impairing a fundamental right. In addition, the dismissal must necessarily be considered void for violation of a right with the respective consequence of the immediate reinstatement of the same and the payment of processing salaries (Molinera, 2018).

## **The power of corporate control and the fundamental rights of workers**

In light of the aforementioned, the fundamental rights of workers must be taken into account, since they are very important and, especially, when we talk about dismissal and their validity must be established.

The rights that we are going to talk about in a more in-depth way are rights that correspond to workers not only directed to the employment relationship as such, but also as citizens, in particular reference is made to the right to privacy, to the secrecy of communication, respecting their dignity and the right to privacy.

In relation to this issue, a very old debate that was current in the 70s of the last century seems to re-green, in relation to the validity of fundamental rights in the workplace and in productive units. In those years “a maxim was coined that made a fortune, according to which the Constitution cannot stand at the door of the factories, but rather it must be guaranteed that workers retain their fundamental rights of citizenship in their entirety even if they are integrated into a business organization that, of course, it also has its demands for discipline and control” (López, 2018).

The legislator in the face of technological advances has not yet given an effective response, either because technologies have evolved very quickly or because the debate on this issue is becoming more difficult and complex every day. In our legal system there are no rules that regulate the use of email for purposes other than labor or corporate networks for union communications that continue to be regulated by the Workers’ Statute according to the old bulletin board method.

Collective bargaining for its part has not kept pace with technological advances, although it has always been much more attentive to the conditions of workers and the defense of their fundamental rights.

Only the doctrine, at times, has tried to talk about this issue, especially about the “Reconciliation of the rights of workers with the business demands of organization of productive activities and control and surveillance of both the use of business means made available of the workers, as well as of the fulfillment of the instructions of the company” (López, 2018).

In relation to the employer, their rights are recognized and regulated in art. 38 of the Spanish Constitution, which recognizes the freedom of business and the market economy, but the powers derived from these recognitions must be exercised with respect for the dignity of the employees. Then the employer, in the case in which it provides computer means to the workers, can and must establish rules for the use of these means and on the other hand, must ensure that these rules are respected by the workers. The problem arises when the tools are used for personal purposes and

employer control goes beyond the employment relationship, because business control must always be objective, necessary and proportionate. Otherwise, the evidence stored by the control media that does not respect these principles will be evidence illegally obtained and void.

## Conclusions

The future scenarios proposed by the organizations consulted foresee an increase in the impact of technologies on the employment of scientific and intellectual technicians and professionals, as well as directors and managers. On the contrary, the incidence will be reduced in accounting and administrative employees, qualified workers in the manufacturing and construction industries, operators of facilities, machinery and assemblers. Tasks related to digital technologies will increase, while more automated tasks such as administrative or manufacturing chains will be reduced.

Low-skilled and low-income jobs are the most exposed to globalization. The transformations that are taking place in the production process and the economy demand new policies for education, training and the provision of income. Policies are needed that allow the majority of the population to keep their jobs or take care of those that are born of the technological revolution; It is also necessary to assist them with dignity in the event of loss or lack of employment.

Globalization implies inclusion, therefore, it is important that government policies reduce the digital divide to avoid that a part of society is diminished by technological evolution. Labor law must accompany the peculiarities of this transformation, establishing the limits and principles that regulate, among other things, the border between labor relations and personal life.

The limitation of the time that the worker makes available to the employer is one of the challenges we face. The possibility of constant connection destroys personal and work boundaries, along with the inherent frustration of those who are not able to manage their time. It must be addressed from labor law or through the creation of institutions such as the right to disconnect or the right to rest.

The training of professionals with technical excellence is being the objective of European Universities. Universia España (2018) explains However, in Spain, there is a significant lack of experts in certain areas of information and communication technologies, and in STEM profiles, a problem that government, university and companies must work on overall, there is a recurring lack of professionals; and, in the future, there will be a lack of specializations that, to this day, we still don't even know what they are.

For this reason, government policies should tend to provide training in relation to new technologies, with a greater effort than has been carried out so far. Access to the labor market from the university is also the responsibility of the company, therefore, it is essential that the company-state binomial is guaranteed through legislative policies that contribute to the achievement of this association. We therefore understand that it is through social dialogue and negotiation that these labor reforms are sustained.

## Bibliography

1. AA., V. (2000). *Medios de comunicación y sociedad de información a control y transformación*. Valladolid: Ed. Condejo social de la Universidad de Valladolid.
2. Arenas Falótico, A., & Bayón Pérez J. (2020). Breves reflexiones acerca del impacto de las nuevas tecnologías en el trabajo y el derecho laboral. *Revista Ethos*, 12(1), 52-64. Recuperado a partir de <http://ojs.udelistmo.edu/ojs/index.php/Ethos/article/view/Breves%20reflexiones%20acerca%20del%20impacto%20de%20las%20nuevas%20tecnolog%C3%ADas%20en%20el%20trabajo%20y%20el%20derecho%20laboral>
3. Bayón Pérez, J. & Zerbi, A. (2020). "El Teletrabajo: Avances Y Retos Dentro De La Sociedad Actual". *Revista Internacional y Comparada de Relaciones Laborales Y Derecho Del Empleo Volumen 8, núm. 3, julio-septiembre de 2020 (ISSN: 2282-2313)*.
4. Bayón Pérez, J. (2019) ¿Cuáles serán los perfiles laborales más demandados? Cadena Ser. 4 de diciembre de 2019 En: [https://cadenaser.com/ser/2019/12/04/economia/1575443922\\_807341.html](https://cadenaser.com/ser/2019/12/04/economia/1575443922_807341.html)
5. Boe. Convenio Colectivo (2018). Convenio Colectivo Grupo Telefónica. En: [https://www.boe.es/diario\\_boe/txt.php?id=BOE-A-2019-16313](https://www.boe.es/diario_boe/txt.php?id=BOE-A-2019-16313)
6. Boe. Convenio Colectivo. (2018) Convenio colectivo Grupo Vodafone. En: <https://www.boe.es/boe/dias/2016/10/07/pdfs/BOE-A-2016-9226.pdf>
7. Campuzano Tomé, H. (2000). *Vida privada y datos personales*. Madrid: Ed. tecnos.
8. Comisaria de Empleo, Asuntos Sociales, Capacidades y Movilidad Laboral de la Unión Europea, Marianne Thyssen (2018) Evolución Social Y Del Mundo Europa: Confirman Las Tendencias Positivas, Pero Ponen En Relieve Ciertos Desafíos, En Particular Los Que Entrañan La Automatización Y La Digitalización [https://ec.europa.eu/commission/presscorner/detail/es/IP\\_18\\_4395](https://ec.europa.eu/commission/presscorner/detail/es/IP_18_4395)
9. Comisión Europea. (2019) Proyecto de informe con recomendaciones destinadas a la Comisión sobre normas de derecho Civil sobre robótica (2015/2103(INL)).Comisión de Asuntos Jurídicos. UE. Índice de Economía y Sociedad Digital. 2019 En <https://ec.europa.eu/digital-single-market/desi>.

10. Delvaux, M. (2015) Proyecto de informe con recomendaciones destinadas a la Comisión sobre normas de derecho Civil sobre robótica (2015/2103(INL)). Comisión de Asuntos Jurídicos. UE.
11. Ferrarotti, F. (2014). Technical Change and Social Revolution. *Academicus, Special Issue, 2014*. DOI: <https://dx.medra.org/10.7336/academicus.2014.special.02>
12. Foro Económico Mundial (2016) Los Trabajos Que Podrían Desaparecer Por Cuenta De La Cuarta Revolución Industrial. <https://www.dinero.com/actualidad/articulo/informe-sobre-el-futuro-de-los-trabajos-del-foro-economico-mundial-/218267>
13. Foro Económico Mundial y datos de LinkedIn (2015) Las Tendencias De Los Perfiles Más Buscados Entre 2013-2018; Encuesta De Linkedin. [https://business.linkedin.com/content/dam/business/talent-solutions/regional/es-es/c/pdfs/Job%20Switchers%20Global%20Report%20v4%207-03-2015\\_es\\_LatAm\\_FINAL\\_Reviewed.pdf](https://business.linkedin.com/content/dam/business/talent-solutions/regional/es-es/c/pdfs/Job%20Switchers%20Global%20Report%20v4%207-03-2015_es_LatAm_FINAL_Reviewed.pdf)
14. Giménez Lorenzo, C. (2019). La esclavitud Moderna aun encadena a 40 millones de personas según la ONU. 22 de Agosto 2019 en <https://www.publico.es/internacional/esclavitud-siglo-xxi-esclavitud-moderna-encadena-40-millones-personas-siglo-xxi.html>
15. Gorrín, A. H. (2011). <https://economyatic.com/concepto-de-tic/>. Obtenido de <https://economyatic.com/concepto-de-tic/>
16. Grasso, D. (2019). El Futuro del Empleo ya pasó. 15 noviembre 2019. EL País En: [https://elpais.com/economia/2019/11/14/actualidad/1573733788\\_614786.html](https://elpais.com/economia/2019/11/14/actualidad/1573733788_614786.html)
17. López, F. D. (21 de 09 de 2018). <http://blog.centrogarrigues.com/las-nuevas-tecnologias-y-los-derechos-laborales-blg/>. Obtenido de <http://blog.centrogarrigues.com/las-nuevas-tecnologias-y-los-derechos-laborales-blg/>: <http://blog.centrogarrigues.com/las-nuevas-tecnologias-y-los-derechos-laborales-blg/>
18. Molinera, F. J. (2018). <https://gie.es/blog/contrato-trabajo-domicilio-vs-trabajo-distancia/>. Obtenido de <https://gie.es/blog/contrato-trabajo-domicilio-vs-trabajo-distancia/>: <https://gie.es/blog/contrato-trabajo-domicilio-vs-trabajo-distancia/>
19. Nübler (2017). Capabilities, productive transformation and development: A new perspective on industrial policies. (Plaza y Valdés Editores)
20. Olías, L (2019). Mañana Tu Jefe Puede Ser Una APP, 1 de enero de 2019. Sección de Tecnología, [eldiario.es](http://eldiario.es). En: [https://www.eldiario.es/tecnologia/Manana-jefe-puede-app\\_0\\_852514929.html](https://www.eldiario.es/tecnologia/Manana-jefe-puede-app_0_852514929.html)

21. Ortega, Klein, (2018) Quienes pierden su trabajo por la automatización no están preparados para los nuevos empleos. No se está invirtiendo lo suficiente en el upskilling o mejora de las cualificaciones profesionales." <https://www.conacento.info/index.php/2020/04/26/por-un-pacto-para-limitar-excesos-de-la-automatizacion-ante-la-crisis/>
22. Organización para la Cooperación y el Desarrollo Económicos OCDE (2017), *The Next Production Revolution: Implications for Governments and Business*, OECD Publishing, París, <http://dx.doi.org/10.1787/9789264271036-en>
23. Pérez, J. B., & Falótico, A. J. A. (2019). Various perspectives of labor and human resources challenges and changes due to automation and artificial intelligence. *Academicus*, (20), 106.
24. Rubert, M. B. (2003). *Las relaciones laborales y el uso de las tecnologías informáticas*. Valencia: LAN HERREMANAK.
25. Santos Gonzales, (2017) MJ. Regulación legal de la Robótica, revista jurídica. Pp.27
26. Thyssen, M. (2019). Discurso en la Conferencia de Alto Nivel, NNUU. Segunda Conferencia de Alto nivel de las Naciones Unidas sobre Cooperación Sur-Sur <https://www.un.org/pga/73/es/2019/03/21/second-high-level-united-nations-conference-on-south-south-cooperation-2/>
27. VIII Informe Infoempleo Adecco (2017) Titulaciones con más salidas profesionales. Madrid, 12 de septiembre de.- [https://cdn.infoempleo.com/infoempleo/documentacion/ndp/Titulaciones\\_mas\\_salidas\\_profesionales.pdf](https://cdn.infoempleo.com/infoempleo/documentacion/ndp/Titulaciones_mas_salidas_profesionales.pdf)
28. Universia España (2019) Las Carreras más demandadas en España, 25 de marzo de 2019 En: <https://noticias.universia.es/educacion/reportaje/2019/03/25/1164584/5/especial-orientacion-como-elegir-carrera-ideal/carreras-demandadas-espana.html>
29. Universia España. (2019). El Máster Líder En Europa En Tecnologías Digitales Para Emprendedores Abre Sus Puertas A Nuevos Estudiantes. 10 de diciembre de 2019. En: <https://noticias.universia.es/ciencia-tecnologia/noticia/2019/12/04/1167354/primer-programa-master-europa-emprendedores-base-tecnologica-abre-puertas-nuevos-estudiantes.html>
30. Universia España (2018). Que es una carrera STEM y por qué genera perfiles tan demandados. 3 Septiembre 2018. En: <https://noticias.universia.es/educacion/noticia/2018/09/03/1161338/carrera-stem-genera-perfiles-tan-demandados.html>
31. Vasmatics, G. (2010). The revolution of communication and its effect on our life. *Academicus International Scientific Journal*, 1(01), 100-108.