Various perspectives of labor and human resources challenges and changes due to automation and artificial intelligence.

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Abstract

The constant technological changes and its impact in the labor force are causing a domino effect that can change corporate culture, laws and workers in upcoming years. The importance of Artificial Intelligence for companies is also a mayor subject that may cause conflicts among cities around the world. Seasonal workers, 24 hours contracts, and informal methods of employments are reducing the possibilities of collective agreements and job satisfaction.

Consequently, the so-called “Information Society”, labor modifications and role transformations have played a key role and have had an ascending evolution. There are different jobs that have been relegated to a substantial change in different industries due to all the information technology advances and robotics innovations. This process will increase in upcoming decades by establishing new types of jobs to sustain this changing economy. The controversy starts when this “macro” and “micro” vision collide with those people who have been dismissed due to the automation process.

Because of the facts mentioned and current market trends, we can confirm that digital changes and transformations will continue to increase.

Keywords: automation; jobs; artificial intelligence; labor market changes.

Introduction

Companies have exchanged jobs and roles usually developed by people for animals, devices and/or machines in order to maximize profits. Along centuries, new technologies have been gradually incorporated to amortize jobs and create more efficient ones. The final effect, with ups and downs during the process, has been a constant improvement in productivity and the generation of economic wealth.

Animals, water and steams suppressed humans crushing cereals, mills eliminated them, and automation chains eliminated mills. This has facilitated the creation of an exponentially growing food industry whose products became potentially cheaper. No one has protested for the disappearance of bread kneaders in the same way that
no one has complained about not having to plough the land as a consequence of tractors’ invention (Moriya, H., Fernández, M.C., Fernandini, M. & Méndez, J.C., 2018).

Analysis

Forecasts for the year 2025

Most people think their jobs are special and irreplaceable. They are considered essential and personal skills and creativity are key elements to their development and implementation, but the advent of constant technological innovation, for instance artificial intelligence (AI) systems has a greater presence in our global business workplace. How can this affect our labor relations systems? This will inevitably lead to the destruction of jobs that do not require specific, multidisciplinary training, more related to jobs that consist of physical or repetitive tasks. This circumstance is going to trigger a violation of the rights of basic training for employees who develop monotonous jobs. This job destruction by robots is closely related to Daniel Pink theory of motivation (2009), those jobs that are not suitable for cash bonuses are those which will easily be replaced by robots using Artificial Intelligence (AI), hence those with more lateral thinking (Bono, 1970) will be harder to be replaced.

However, the World Economic Forum Report (2018) states that new jobs will also be created. Will there be a pyramidal balance between destruction and creation? The answer is no. The report also confirms that 75 million jobs will be destroyed due to robots or software using AI, with the subsequent creation of 133 million jobs. This has considerable consequences in our global labor relations system. The jobs of the future will require more specific training, more preparation, new skills, competences, aptitudes and distinctive attitudes that generate added value so robots cannot be seen as a danger to job stability. The question is, which profiles will be needed?

Martín-Artiles, J. A., Godino, A. & Molina, O. (2018) assert that, among other profiles, the most demanded ones will be: Data analysts, designers, critical thinkers, social intelligence, digital marketing specialists, online leaders, multitasking personnel, as well as programmers and software developers, cybersecurity experts, artificial intelligence engineers, digitization lawyers, data scientists / Deep Learning, Digital Content Manager, Web/CRO analyst, Social Media Strategist, and Transformation & Innovation Auditor.

This abrupt transformation process in a short period of time must be managed with great caution, as this could be projected into a new era of excellent jobs and a better quality of life for all. The cutting-edge consequences of a disastrous direction and management could lead to widening gaps skill, greater disparity and more prolonged polarization. Can artificial intelligence, advanced robotics, autonomous automobiles and other new technologies spread and expand progress, success and well-being to
the world’s population? The main idea is that new technologies integration into the business sector has led to the loss of many jobs. It is true than between the number of creation and destruction there is a considerable number of people who will be impacted negatively by new needs and different demands. Some of those profiles will become obsolete. On the other hand, it is clear the comfort increase and the good acceptance level of e-services by users even before the services are provided.

Recent experiments published by Science Robotics magazine (F. Suárez-Ruiz, X. Zhou, Q.-C. Pham, 2018) show that a robots can easily assemble an IKEA chair. A new trend may begin if customers perceive that a chair assembled by a robot is fashionable and stylish.

But there are still things to be improved, we increasingly order online products that arrive late due to shipping bottlenecks, also there are long waiting times or backorders for some specific products. On the other hand, Wi-Fi often fails or is below our digital needs such as TV on Demand and high resolution online games.

Moving the focus to human resources, the search for a new employee involves the recruitment and selection processes. It can take a recruiter a long time to read approximate 100 CVs that are received online. Using this manual approach, the first selection by the recruiter takes considerable time. Actually the online method just creates a virtual rush-hour that lands in the eyes and hands of an employee who ends up reading them on a screen instead of using a printed piece of paper. A second round of finalists is then implemented, and the candidates are finally scheduled for individual or group testing. These tasks are always the same with few changes. Things evolve when the process is automated using artificial intelligence because they are now used as support in the Human Resources (HR) department of large companies (Human Resources Observatory, 2018). Companies that use AI in their HR processes have increased up to 300% the hiring processing time with higher quality compared to traditional recruitment methods mentioned before. The main applications of AI are oriented to market research, human resources automation, customer service, big data analysis and digital marketing. Companies must implement AI in these key areas if they want to obtain the highest return on their technological investment (Big Data Social, 2018).

Artificial intelligence applied to Human Resource Management can encompass many activities, not just scanning curriculums. Therefore, AI is able to categorize candidates according to certain parameters, evaluate their aptitudes and calculate the probability of success. Some of the solutions available on the market use artificial intelligence technology to reduce the number of candidates according to experience and relevance, then give the same personalized skills assessments to measure aptitude, personality qualities and even the probability of success in the available positions. With access to this critical data, recruiters can make contractual decisions, supported by the high security and reliability of a department that has automated the selection process.
AI recruitment methods have greater potential to improve the overall recruitment process. According to Big Data Social (2018) 96% of recruiters agree that it improves staff retention and increases access to broader talent pools. So much so that the entire pre-qualification system can be automated, saving Human Resources teams up to 14 hours per week. The lack of automation significantly reduces productivity. Forty-one percent of HR managers say that not fully automating manual processes leads to lower productivity and competitiveness (Hewitt, J., Monge, R., 2018). Actually, for small and medium-sized enterprises (SMEs) to grow, develop and succeed, they need to integrate good, talented workers with great skills, capabilities and aptitudes to reduce labor turnover and maximize profits. This will be possible if they use AI in their HR selection processes. There is an interesting academic paper from Masum, Beh, Azad & Hoque (2018) that actually proposed an intelligence human resource information system (iHRIS) using a holistic approach to help managers take appropriate decisions in HR areas.

Robots using AI are the engine of the fourth industrial revolution, even though some authors seem to disagree and think that this is more a consequence or a tail of a transformation from the previous one (Carrozza M.C., 2019). We think that, regardless of names, it is shaping urban spaces and urban life in response to economic, social, political, legal, environmental, and health opportunities and challenges. Therefore, an efficient government should facilitate and maintain a smooth flow of elements, among those data, citizen’s requests and quick government response. If those elements are integrated efficiently then we may have an efficient public service, both online and country’s infrastructure. They are the principles of an advance and well-organized e-government system, therefore the integration and ability to response quickly to citizen’s request using AI. But we still see extensive queues at hospitals, long waiting lists for government services that reflect poor administration and management. Traffic congestion, for example, shows that roads and traffic systems are still inadequate.

In conclusion, life in cities will be characterized by environmental pollution, fast and stressful life, absence of free time, fast and unhealthy eating, traffic congestion, connectivity and increased consumption, it needs robotic solutions to prevent our current way of life breakdown. Currently, we are seeing how the evolution of new technologies are facilitating human life as: Pharmaceutical vending machines, robots that provide their services in local shops, electric vehicles, robots dedicated to household cleaning, robots that serve food, automated ports, the evolution of new mobile phone technologies, massage chairs, systems to convert garages into package delivery points, virtual reality, 4D movies, laser printers and cutters, nanoscale robots, among others.
**Precariousness and “uberization”**

These new trends are boosted via the “demand-side economy” boom, according to Bria (2019), large traditional companies are being part of a second tier of corporations lead by information intermediaries such as Google, Amazon, Aliexpress, etc. They check and contrast digital platforms that are fully qualified to squeeze large rents from networks of externalities and are transformed into quasi-monopolies; this is what is called Uberification of services, or uberization of services. From health services to real state, each economic transaction becomes something similar to an auction. Each service provider offers cheaper and better services to become the intermediary between the final customer and the real service provider. It is through this process that labor costs are minimized.

In the field of labor relations, companies are developing a different and temporary economic model in which social security coverage of employed people is scarce and there is hardly any possibility of collective bargain agreements. Analyzing Uber Corporation, as an alternative to regular/formal taxis, it can be seen that they are eluding social security costs and similar cost to offer better rates to customers around the world. Therefore, “platform capitalism” seeks to turn workers into entrepreneurs with precarious working conditions, without job security and much less economic power. If we compare this situation with the Taylor theory workers, they were asked to disconnect completely from their working day once it was over. However, in the society in which we live, there is a demand for a 24-hour worker’s availability.

Today, we observe and analyze how all the changes that are happening in our labor market and the economy, the types of employment demands have changed considerably. According to Moreno, L. (2019), in Britain, the number of zero-hour contracts in the service sector has increased, there is a 20% increase in demand for freelance workers in the United States, countries such as Ireland, Spain, Greece, Portugal, Slovenia, Croatia, Italy, Bulgaria, among others, have a percentage higher than 25% of temporary contracts with 6 months maximum duration and the percentage of European women working part-time for family reasons is twice men’s percentage.

The International Labor Organization points out the precariousness of employment in the world and highlights the high level of seasonality, for example, in Spain. The labor market has been transformed into an auction market that does not give people any security. As a result, young people under the age of 30 and temporary workers cannot plan their future, start a family, buy a house or pay a mortgage. They live trapped in this trick of precariousness, which is compounded by the growing employment deficit and outdated social security policies.
Robotic advisors, the new online financial advisors?

According to Kruse, Wunderlich and Beck (2019) “The business models of financial institutions are completely digitizable” (p. 6408). So robotic advisors are getting closer and are likely to replace most human online financial advisors. This would mean cost savings in terms of salaries, social security, occupational risk prevention, and the possibility to totally eliminate a job that was usually supported by new technologies. Financial Advisors usually worked from home, now this may be no longer needed.

The advantage that has been found with the robotic advisors using AI is that these robots generate their services through the application of algorithms, an agglutination of commonly followed rules to select investments that are right backed by risk tolerance and time reach. As a result, it can be confirmed that the cost of having this business support will be much less expensive than the labor relations used by hiring experts in the field. Of course, there is a number of drawbacks at the same time, although it is worth asking whether there are enough drawbacks not to use them, obviously not, but it is an interesting subject to be analyzed. Here are some of them:

- Dehumanization: People, in general, do not like talking to a robot, such as telephone conversations with tele operators that become long, tired and often ineffective. Webpages, like Aliexpress, use an online customer service robot to answer some common and repetitive questions, it seems that a frequent questions is “talk to a human” since it is already preprogrammed.
- Lack of more varied explanations of what robots are capable of dealing with, although it has been proven that robots can already learn to think.
- Limitation of the algorithm. If a person intends to sell call options in an existing portfolio or buy individual shares, most robot advisors will not be able to help achieve the objectives, since their scope of action is limited by an investment algorithm.
- The lack of a social environment to generate a brainstorming, meetings, etc.

It should be noted that, despite all the disadvantages, technology continues to evolve through trial and error, allowing them to develop improvements that can make up for these flaws and can collaborate productively with organizations.

Digitization, labor relations and labor law

Labor markets are immersed in a series of profound transformations resulting from the new technologies introduction, ranging from the use of robots, AI, to the extension of online platforms that mediate between supply and demand. Labor market is in constant and permanent adjustments due to changes in legislation, the economic context, the political and social environment, etc.
The current times is characterized by an exponential economic growth as a consequence of the so-called digitalization process and its impact on the service sector, the major sector of employment in western societies. Digitization is understood as the application of digital technologies in all the processes of an organization, including the relationship with its groups of interest.

Banks have been gradually closing branches due to customers’ preferences to use their mobile phone applications. This has excluded excellent workers, but instead it has opened the needs for computer experts in areas such as: programming, web usability, cyber security, and a series of new legal contracts and consultants to make these “apps” work. Correspondingly banks have less expenses and could hand over these savings to its customers in the form of “no commissions” accounts. In Spain, for example, there are low cost/online versions of big banks such as OpenBank (from Santander Group) and ImaginBank (from Caixa Bank Group).

According to Molina, O. & Pastor, A. (2018) digitization entails a deconstruction of labor relationships, introducing new figures and mechanisms. Specifically, we can appreciate three important negative points:

- A growing polarization between those who enjoy a certain stability and protection, and those workers who carry out activities as independent workers on platforms (teleworking) that represent greater job insecurity given all the developments that we are seeing.

- Increasing casualization of work, which implies greater risks and uncertainty for the worker. Many employees do not reach the minimum wage with their main job and are forced to search other means to maintain their living standards.

- Ascending labor relation individualization insofar as the extension of digital platforms entails division and fragmentation of work processes and its massive outsourcing to groups of self-employed workers and freelancers (p.23).

Beyond digitization all these consequences, due to the different nature of the labor activities and employment, it is important to add how the use of these platforms in a context of scarce regulation entails and allows less money for taxes, as well as less protection for the worker. According to an evaluation of the European Commission’s digital strategy, the European trade union confederation warned about the risks of digitization and growth in the number of ‘crowdworkers’ for the current working conditions. Specifically, they affirm that as the deregulation of massive outsourcing continues, there is a high risk of a reversal effect in the existing working conditions to the ones in the nineteenth century, insofar as these workers are not protected by labor legislation and, in general, by some fundamental rights such as the right to privacy. This can be seen when crowdworkers do not have paid holidays or sick leave, nor are they covered by the social security system (European Commission, 2018).
Work in the digital age a paradigm shift in the object of labor law?

It is undeniable that the progressive automation of economic activities eliminate the relations between labor supply and demand. New technologies, e-commerce, Big Data and AI have created great business successful stories that represent the revolution from which the economy of the future has been born. It is interesting that we are initiating a flexible educational model, in which training in new digital skills, abilities and the demand for continuous learning throughout life are extended as much as possible.

It is important to highlight the focus shift from content to competencies. Learning is no longer just a question of knowledge access or theoretical content assimilation; indeed, it is about being able to acquire applicable skills in the digital world. An integral, transdisciplinary, multiskilling and very practical training.

Given that neither the training of these generations, nor experience nor adequate effective employment policies are currently adapted, it is necessary to request our labor legal system for a new legal instrument that could adapt to all the idiosyncrasies that occur in the labor sphere. This is what we can call the “viability of labor law in a digitized environment”.

Labor relations and digitalization

The constant changes that have taken place in our labor market have been supported by negotiation and social dialogue. In recent years there have been many changes in most countries through different labor law reforms. Organizations in general exploit technological platforms and, through these, great changes are transforming traditional labor relations. What are the workers like in these companies? There is a predominance of employees who carry out activities alone, with less social contact, either from home or another comfortable place. This form of employment has spread mainly in the service sector. The advancement of this new labor framework is leading to weak collective bargaining, if any. A good example of this is the Amazon’s mechanical Turk platform. The presence of new technologies has led to a transformation of production processes due to all the innovations incorporated. This is a clear attempt to reduce labor costs. In addition, companies look to outsource independent workers and freelancers that can provide greater flexibility. It also reduces the size of companies through the decrease of jobs and causes fragmentation of the units or departments involved. This complex process generates a series of setbacks and weaknesses in the collective bargaining capacity that under normal conditions would make possible to improve people’s working conditions and guarantee safe and quality employment (Álvarez, D., 2018).
We must also consider the high level of self-employed workers that prevent collective bargaining agreements. In the same way, the considerable and constant increase in self-employment leads to worse working conditions, greater lack of protection and, generally, a job quality decrease. Likewise, the development of crowdsourcing entails a qualitative improvement in terms of the outsourcing of self-employed workers, either one or the other observe independent workers without a real contractual relationship between the parties.

So far there has been no response from the sphere of collective autonomy to the situation of platform workers. This contrasts with the experience of other European countries, including the Nordic countries, where collective agreements have been developed at sectoral level through which attempts have been made to resolve the problem of non-coverage in this type of workers.

The European trade union has persevered in the need to develop legal mechanisms to regulate this situations at community level, given its extension in all member countries. The transnational dimension in the regulation of collective rights is a particularly important element in this regard. By definition, digital platforms can operate in several countries without the need for physical presence in any of them. It is, therefore, a business model that overcomes national barriers and requires treatment at the same level.

**Conclusions**

More and more workers are entering the world of android/robots creation, innovation and AI. It has been proven that being an expert in robotics and artificial intelligence applied to automation gadgets is one of the most sought-after professions for the technology industry and in the near future may be one of the professions with the greatest demand in different work environments of the world. According to all the information presented, we can consider that new technologies, their evolution, the impulse and development of artificial intelligence, etc. have a dominant influence on the relations between employers and workers, giving rise to much more flexible labor relations.

Entrepreneurs, freelancers, interested personnel, and large and SMEs can affirm that AI and the exponential development of robotics is needed to improve business productivity, organizational results, and competitiveness in a market of constant changes, transdisciplinary issues and worldwide asymmetric competition. Also, that it allows the optimization work teams and the enhancement of human talent, achieving organizational and productive improvements. In addition, automation, robotics and AI, present an opportunity for people who are part of it to grow professionally, that is
to say, that they dedicate most of their time to make important decisions and eliminate repetitive tasks or bureaucratic processes.

In contrast, we have found that all of these improvements have major disadvantages. The appearance and transformation of new technologies have caused and will cause alterations in the ways organizations work. This allows people to perform multiple tasks, to work outside the office and not regular working hours. In addition, they generate the need to rely on more flexible working relationships. Furthermore, there are 24-hour contracts, weak working interactions, search for collaborations with freelance personnel, and the uberization of workers.

To be able to continue supporting us in all these mechanisms in a gradual way, a great cultural change must take place. The progressive establishment of new technologies and artificial intelligence in companies represents a qualitative techno-organizational impulse with an unlimited range of consequences for human resources policies and new law regulations that affect the work environment.

Artificial Intelligence is the most disruptive of all new technologies and entails a series of far-reaching organizational and legal consequences for those companies that choose to use them as the operational epicenter for most of their production processes, functions and tasks developed by workers.

The robotization of the world’s jobs using AI is coming in due time. Throughout the years, robots have developed tasks in factories, however, the difference between the new robots using AI and the old ones lies in the fact that those that are coming will affect our lives in a much more direct and palpable way, when these are implanted in the majority of the workplaces.

Are we going to lose our jobs because of robots? There is no doubt that robotics development raise questions, from jobs sustainability to social welfare system maintenance.

This is the opinion of an Israeli mathematician and university professor Moshe Vardi (2016) “By 2045 machines will be able to do a very significant fraction of the work that humans can do. (...) If machines are capable of doing almost any work humans can do, what will humans do?” It is clear that humankind, to be sustainable, must reach an equilibrium between the use of robots with AI and the tasks to be performed by workers in the near future.

According to Fernandez, C. (2018) in 2027 most of the workforce is expected to be self-employed. Being ‘small’ will no longer be a synonymous of having fewer options. Today we see how many small companies are operating internationally and large companies, rethinking how to make the leap.
In addition, the “war for talent” will be between Cities around the world. The majority of workers will be freelancers, they will want to be able to carry out their work with freedom of schedule and without having to go daily to a demarcated work center, and such scenarios will allow people to choose where to work with total freedom. And this freedom to decide which city to live in will become vital for both of them. Faced with this prediction hundreds of cities are preparing, not to receive the technological giants and their legion of workers, but rather, moving away from this, to receive the employees that will work remotely and only want a place where they can be happy, pay less taxes, have good internet connection and work independently to different companies.

Finally, it is clear that humans will prevail since the only reason for robot with AI to exist is profit maximization, increase comfort and expedite procedures in all business areas. However, employees must start to give more value to their current jobs and develop more their emotional and personal skills, such as: positive thinking, criticism in all senses, assertiveness, creativity, communicative and social skills, giving rise to a new and different series of products and services that people will demand, to increase, together with AI and robots, the economy and the well-being of our future world. It is clear that this paradigm will shift the current concept we have of the information and the knowledgeable society to a new redefined concept that is still to be known. Also, this innovative approach will also trigger new labor legislation and human resources policies and procedures that can fit better with it.

Bibliography


Statements and Documents

