

A study by PwC (2018), by incorporating the perspective of the effects on consumption, sought to present a clearer picture of the global economic potential of AI technologies, exploring the consequences of the increase in the value of work and productivity beyond of the substitution of capital for employment. The study also made it possible to differentiate geographically and by sectors the relative distribution of the impacts of the diffusion of these technologies. The model concludes that North America and China are the regions that will obtain the highest percentage of economic benefits from Artificial Intelligence technologies, both in the first place due to their leadership in research, and in the case of China, due to increases in productivity, while that in the USA the impulse is provided by the remarkable disposition to innovate and the speed of diffusion of new technologies, either by way of replacement or increase.

An IMF study (Peralta-Alva & Agustin, 2018) carries out an analysis focused on the automation factors and the fall in the prices of capital goods, identifying them as the key factors that affect future growth and the evolution of inequality. The automation factor is defined as an increase in the elasticity of substitution between capital and labor. To illustrate the impact of both factors, they use a dynamic stochastic general equilibrium (DSGE) model. The model is based on two key ingredients: first, the economy produces three different goods: manufacturing, low-skill services, and high-skill services (low-skill and high-skill). Second, consumers have non-homothetic preferences for these goods, reflecting the increasing share of spending on services when income grows, characteristic of US data.

2.1 Transformation from the industrial revolution 1.0 to 4.0

According to the Dictionary of the Royal Academy of the Spanish Language (2019), the word revolution means a rapid and profound change in anything. Therefore, the revolutions that have arisen and that have been provoked throughout humanity have brought with them various iconic stages in the transformation of the world, which has especially impacted the economic, social and communicative spheres of people. History shows that to reach the 4.0 revolution, there were three stages that preceded it. Where, even before the beginning of these stages, the human being goes from being a nomad to becoming sedentary and a producer of his own inputs and products for survival. Added to this, the artisan way of making the same products. Until, many years later, the first industrial revolution appears.

For Klaus Schwab, (2016) this spanned from 1760 to more or less 1840, although its origins could be earlier. Crucial moment for man where the generation and creation of new inventions begins to emerge, such as the introduction of James Watt's steam engine in the industry of Great Britain, the construction of the railway and many other inventions that led to the creation of various factories and near them began to inhabit conglomerations of people who attended the demanding labor needs at that time. Years later, these places would be called cities. The second industrial revolution, arises between the late nineteenth and early twentieth centuries, here appear new visionaries such as Henry Ford, who promoted the generation of large-scale jobs, the so-called Fordist type. A production that was impacted by the invention of electricity, which had a profound impact on people's lives. Then came the third industrial revolution, also known as post-industrial or as the era of the computer or digital revolution. It is characterized mainly by the invention of the computer, computer science and informatics.

Accompanied by this, new digital changes that meet various needs of the people, companies and organizations of the time. "The birth of the Internet, in the second half of the 20th century, was what marked the Third Industrial Revolution, also known as the digital revolution" (Paramio and Hernando, 2019, p. 154). In the opinion of Rafael Macau (2004, p. 4), it is in the eighties, the Third Industrial Revolution, where the impact of technology is more evident for organizations, even more than was imagined and understood up to that moment by companies. Large companies, achieving a strong scope when using this technology, which ranges from reducing costs for the organization, through improving information management, to supporting the organization's own management. This industrial revolution is characterized mainly because digital media transformed forms of communication. But in a special way, due to the creation of new supports where people are generators and consumers of information, especially due to the appearance of social networks. Right now, there are moments of transition between the third and fourth industrial revolutions. The latter, which began at the beginning of the 21st century and is mainly characterized by giving life to new ways and tools to communicate through the internet, by the appearance of artificial intelligence, machine learning or machine learning, robotics, big data, blockchain, internet of things, automation and many more sciences that have been growing and possibly others that will appear in the coming years.

The so-called fourth industrial revolution is also known as industry 4.0, I4.0, digitization of production systems or reindustrialization. The term industry 4.0 was coined at the Hannover Fair in 2011 where it was described how it will revolutionize the organization of global value chains (Schwab, 2016). An Adecco study carried out in 2018 says "in reality, the fourth industrial revolution, also known as Industry 4.0, is an evolution of the digital infrastructure that we already have towards new systems" (Adecco, 2018, p. 46). This era is the passage to the knowledge and information society. Where relationships and the way of communicating change in the human being.

To better understand what Stiegler refers to with hyperindustrial society, in the review of the book "La société hyper-industrielle" by the author Pierre Veltz, which Eguzki Urteaga (2017, p. 188) mentions that it is caused by the processes of economic globalization, territorial forms of the knowledge economy, new industrialization and business strategies, which causes the super-industrial society as a representation of a new productive capitalism that society lives. Making a socio-historical review, the human being is the center of change and the transformation process experienced and now with greater force in the digital transformation. Technologies almost oblige, or in a more subtle way, invite companies to readjust their work dynamics and that implies a series of changes and adaptations. Digital transformation should be seen as a stage of business development for the company, but also for employees. For Javier Neira (cited in Portafolio, 2019) digital transformation is not only talking about technology, its meaning is broader, it is understanding the client and always improving the user experience, using technology as an ally, so that the processes attraction, retention, remuneration and development evolve and achieve their objective. New technologies are changing the dynamics of production, service and consumption processes, which makes the nature of business change as well. There are manufacturing processes in the industry that have already been automated and others that can also be automated to improve their efficiency (González-Filgueira & Rodríguez, 2018, p. 2). What has been addressed so far is a

referential framework that allows a retrospective of what happened and that is aligned with the subject under study in this article, intelligent automation in communication management.

2.2 The power of automation in organizations

Advances in technical developments in computer hardware and software have allowed automation to be introduced in practically all aspects of human-machine systems (Parasuraman, Sheridan, & Wickens, 2000, p. 286). This science not only replaces physical matter, but also causes changes in the activities carried out by human beings. The technological development of which we are part is linked to the automation that for Parasuraman et al., (2000, p. 287) refers to the total or partial replacement of a function, previously carried out by the human being, being able to vary the level of application, that is, if the process is light or highly automated. To better understand the concept of automation, the Royal Academy of Exact, Physical and Natural Sciences (RACEFyN) of Spain starts from the definition of the automatic, understood as the set of methods and procedures for the replacement of the operator in physical and mental tasks before Vialy programmed, therefore, automation is understood to be the application of automation to the control of industrial processes and which has evolved in many fields of science. The Dictionary of the Royal Spanish Academy (2019), derives it from the verb automate the same one that has two meanings: on the one hand, "converting certain movements into automatic or undeleased movements", and, on the other, "applying the automatic to a process or to a device".

The definition of the Oxford English Dictionary (1860) is also rescued, when it refers that automation is the action or process of introducing automatic equipment or devices in a factory or another process or facility, or also as the act of doing something through of a system, device, etc. automatically. In addition, since the 1950s it was related to mechanical or electronic devices and allowed the substitution of people's work, which has remained until today. For Parasuraman et al., (2000, p. 287) automation refers to the total or partial replacement of a function, previously performed by the human being, being able to vary the level of application, that is, if the process is light or highly automated. In another research Parasuraman and Riley (1997, p. 231) define automation as a concept that can change over time, under the conception that automation comes from a machine (generally a computer) and where the assignments of functions from human to machine they will transfer and change over time.

For Macau (2004, p. 2) one of the first milestones that marked the history of automation is that "as of 1960, computing is introduced in organizations with the aim of automating repetitive administrative tasks (accounting, billing and payroll, mainly) "transforming the organizational processes of companies from that time to the present. The next big step, which takes place at the end of the seventies, according to Rafael Macau (2004, p. 3) is the appearance of the concept of "Management Information System (MIS), an integrated information system that, based on a design global, includes both bureaucratic work automation systems and management information systems of the different managerial levels "within an organization. For Gerardo Tunal (2005, p. 196), automation has two origins that date back to the 1980s. The first when the statesman from the United States Census Bureau, Herman Hollerith, had created a computer that was capable of classifying punched cards, duplicated and compared, being able to encode population data to

generate census statistics and the second milestone, when in 1994 Howard H. Aiken, from Harvard University, created the first fully automatic and electronic calculator, the Automatic Sequence Control Calculator (ASCC for its acronym in English, Automatic Sequence Controlled Calculator), with which it was possible to carry out continuous operations previously programmed. Inventions that at the time were highly valued due to the conditions in which they developed and technological advances, the former has even been considered a precomputer. Pablo Míguez points out Coriat's work "The workshop and the robot" where the passage from Fordism to post-Fordism is analyzed, focusing above all on the appearance of new means of work, such as microelectronics and computing, which would have led to a new wave of innovations, in the so-called "era of automation"... and what would be the first stage of automation "(Míguez, 2008, p. 3).

What is evident is an automation that has been perfected and improved over the years to become intelligent and self-sufficient technologies through technological systems and equipment.

For Bravo, Santana, & Rodón (2014, p. 269) "the essence of the automation role is related to the extent to which technology performs activities replacing the human". For Kaber and Draper (2004) cited in (Bravo et al., 2014, p. 269) they state that whoever makes the decision to automate processes and differentiate the activities that they are going to do carried out by humans and machines is the responsibility of the organization. In this same sense, Davis (1986, p. 299) states that the general managers of organizations play an increasingly important role in decisions related to the computer support that is used within them, by their collaborators.

Automation draws public attention for the economic benefits it can provide, or at least those that are perceived (Parasuraman et al., 2000, p. 286). It has freed humans from many activities, especially those that require a lot of time and physical effort. Now it is possible to make human work more productive, which increases the demand for labor (Acemoglu & Restrepo, 2019). David Autor (2015, p. 5) argues that the interaction between the machine and the comparative advantage of the human being allows computers to replace workers in the performance of routine and codifiable tasks while expanding the comparative advantage of workers in the provision of problem solving skills, adaptability and creativity, which at no time can or at least until now have not succeeded in being substituted by the human being. These cognitive functions such as decision making, planning and creative thinking are what automation has not been able to replace (Parasuraman and Riley, 1997, p. 231).

Maintaining a more critical stance, Tunal (2005, p. 100) believes that the impact of technological change in some contemporary productive organizations has been more harmful than beneficial for some social groups, and this because computers, and with it computer networks, have allowed the development of new types of relationships and capacities, not always applied responsibly. In addition, it points out that the technological impact on automation of work processes is inevitable, therefore, senior managers must have the ability to reconfigure their way of doing management. Automation is advancing rapidly, and the challenges of replacing workers with machines in tasks that require flexibility, judgment and common sense remain many, considering that, in many cases, machines replace and complement human labor.

For Bravo et al., (2014, p. 269) who make an analysis of the relationship between automation and the usefulness of information systems, state that a system can have two roles, the

first is to produce information (computerize) and the second, automating activities replacing people, and both cases apply to any area of the organization, although they add that due to the impact of technology, the one that has grown the most is the first. The digital transformation hand in hand with automation is transforming the organizational systems of companies, making them more efficient and dynamic. One of the main reasons why processes are automated in an organization is to reduce the possibility of human error, by reducing the high physical and mental workload that is demanded (Parasuraman & Riley, 1997, p. 235). Automation has allowed organizations to evolve according to their institutional background and to deploy a variety of forms complementing or linking to each other (Tunal, 2005, p. 99).

CONCLUSION

The technological revolution in which we are immersed is changing the way of seeing and understanding the world. It moves the dynamics of communication and social interaction. Not only does it transform technological or physical aspects, it is changing deeper aspects of the human being. During this process of technological revolutions, it is the human being who has had the greatest capacity to adapt to changes and transformations and with the speed at which it grows, it will be the same man who must open his mind and engage with incalculable technological realities that even they have not yet been discovered and they portend an unimaginable future. Faced with this technological growth, organizations must have a clear vision of where to go and what is the change in corporate culture that they want to give the company by aligning its business strategy to technological, competitive, efficient and sustainable standards in such a way that they remain aligned to trends and challenges of technological change. The current reality is that digital transformation is radically changing the support or support processes of organizations. Therefore, the application of new technologies in organizations changes various fields of production and services, and organizations must be prepared for these changes. In this same sense, new technologies are a key factor in advancing the implementation of automation in the communication management of organizations; however, its momentum or stagnation may also depend on other factors internal to the organizations themselves. However, it should be clear that the value of communication allows the development of new, more participatory forms of interrelation between audiences and organizations. The automation of communication and marketing management could be considered a strong and high-value pillar for organizations, as it is a field that has emerged notably in recent years and presents a visible future and growth projection for organizations. Even regardless of the field in which they are operating. As has been seen, the state of the art of automation in communication and marketing highlights the need to generate new research. In a special way, on the role of the human being, their knowledge, their behavior in the face of the various advances in automation, the impact of automation and how the public receive these changes and the level of satisfaction they have in front of them and even know the level of interest on the part of organizations in automating certain actions within communication management, which could lead to new research from the academic field. Finally, it is considered that there are several factors that can influence the lack of success in the automation of communication management, on the one hand, the lack of a technical and real justification to automate a process, the lack of a real projection of economic investment and the lack of trained personnel to carry out the management of automated

communication. However, this does not mean that it should not be limiting to start automating communication management in organizations. On the contrary, if a correct application is achieved within organizations, it could mean and bring countless new favorable possibilities and make it more competitive and have differentiating elements that make the difference between brands. Therefore, the future projection of automation in the field of communication could be of high impact.

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