

How does technology impact processes within organizations?

¿Cómo impacta la tecnología en los procesos de las organizaciones?

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Abstract— The organizational world is becoming more and more competitive in terms of its development and growth, where the main variables are technology and innovation. The global market is always in constant change and evolution, thus forcing companies to adapt to this rhythm. Currently, technology has become one of the key success factors for those organizations that seek stability or dominance within the market. Many of the companies that are incorporating these strategies within their structures have obtained excellent results and benefits in terms of the optimization of their processes, resources and time, which in turn translates into the minimization of errors in decision making, reflecting a positive impact within them. Thanks to this system of change, organizations have become more efficient in terms of achieving their tasks and objectives, since previously there were problems that directly affected the processes, where a much slower growth of these were observed, their tasks were not executed quickly, generating problems in production, which resulted in economic losses for the company and in turn the guarantee of continuing to obtain stability in the market. The success of a company today depends largely on its ability to face the different evolutions and changes that markets present, as well as to incorporate technological strategies that are avant-garde and thus meet the public's expectations.

Keywords— Technology; organization; productivity; processes; automation

Resumen— El mundo organizacional es cada vez más competitivo en cuanto a su desarrollo y crecimiento, donde las principales variables son la tecnología y la innovación. El mercado global está siempre en constante cambio y evolución, obligando así a las empresas a adaptarse a este ritmo. Actualmente, la tecnología se ha convertido en uno de los factores clave de éxito para aquellas organizaciones que buscan estabilidad o dominio dentro del mercado. Muchas de las empresas que están incorporando estas estrategias dentro de sus estructuras han obtenido excelentes resultados y beneficios en cuanto a la optimización de sus procesos, recursos y tiempo, lo que a su vez se traduce en la minimización de errores en la toma de decisiones, reflejando un impacto positivo dentro de las mismas. Gracias a este sistema de cambio, las organizaciones se han vuelto más eficientes en cuanto a la consecución de sus tareas y objetivos, ya que anteriormente existían problemas que afectaban directamente a los procesos, donde se observaba un crecimiento mucho más lento de estos, sus tareas no se ejecutaban con rapidez, generando problemas en la producción, lo que se traducía en pérdidas económicas para la empresa y a su vez la garantía de seguir obteniendo estabilidad en el mercado. El éxito de una empresa en la actualidad depende en gran medida de su capacidad para enfrentar las diferentes evoluciones y cambios que presentan los mercados, así como incorporar estrategias tecnológicas que sean vanguardistas y de esta manera cumplir con las expectativas del público.

Palabras clave— Tecnología; organización; productividad; procesos; automatización

I. INTRODUCTION

The incorporation of technology has become an excellent tool that helps organizations to create value in their operations, tasks and activities, in order to provide business benefits to consolidate in a global market [1].

In research by UAA (MX), organizations need to reorganize their organizational charts and incorporate a series of strategies that allow them to classify and look at customers first, so that all their efforts and endeavors are focused on understanding customer needs and then satisfying them [2].

The main purpose of the following literary analysis is aimed at knowing how technology has impacted the different processes within organizations, what is the importance of ICT and all that the fourth industrial revolution entails in companies, what positive aspects these tools provide to carry out their activities, tasks and functions, how organizations have had to adjust to the various changes brought about by the global market and what factors have been implemented in their processes in order to achieve success.

The COVID-19 pandemic served as a scenario of change and transformation, forcing companies to completely reinvent themselves, a large percentage of these experienced a considerable drop in their income, causing some of them to disappear from the market, the organizations that were flexible to this change, saw an opportunity for progress and development to incorporate strategies that would allow them to continue making inroads and providing better service to their customers or consumers, these tools of technological change gave them the possibility to remain in force in the midst of this crisis.

Another important event was the arrival of Industry 4.0, which represented a milestone in the organizational world, since thanks to this technological revolution, important advances and innovations were introduced that traced the path towards task automation and cost reduction.

II. MATERIALS AND METHODS

For the development of this systematic literature analysis the methodology used is qualitative-descriptive, which was based on a line of research that belongs to the organizational environment, with emphasis on taking information from different authors between the years 2015-2023 found in specialized databases such as, Scopus, Mendeley, Google academic among others.

The purpose of this research is to show the impact that technology has generated in the different scenarios and processes within organizations, as well as its importance through the different bibliographic cita-

tions, which aim to provide new bases and knowledge that will provide future research with a guide to carry out the development or execution of a work.

On the other hand, the methodology used for the preparation of the following document was based on the inquiry and extensive review of different media or sources of information, such as: articles, books, research papers, among others, with the aim of creating a comprehensive analysis with everything that concerns the technological impact within the different types of organizations, through the different information systems seeks to answer the question posed at the beginning of the work. Likewise, it is intended to explain the benefits obtained by adopting and incorporating the current technological advances in the companies. At the same time, the different contributions of the authors will help to understand the aspects that are relevant, and those that continue to be in force through the constant technological advances and developments for the improvement of the work in terms of quality, time and optimization of resources.

III. THEORETICAL FRAMEWORK

The importance of technology cannot be underestimated in business, as organizations around the world rely on it to augment strategy and drive competitive advantage and growth.

For authors of the UTE (ECU), during the last years, markets have become extremely competitive, where customers have a wide panorama of possibilities to select the service or product that best meets their needs and expectations, workers within the company must take into account that this is the most important and fundamental objective for today's markets [3].

Meanwhile, studies by the UTEQ (MX), indicate that Industry 4.0 began in Germany in 2011, describing a state economic policy that is based on technologically advanced strategies and is characterized by digitalization, process automation, and the use of information technologies in production [4].

As for ICTs, nowadays they are indispensable for the development of all types of companies or organizations, being a great support in all processes and functions carried out within a company. ICTs are essential to improve quality, control, productivity, and facilitate business communication, among other benefits [4]. The introduction of technology in your business processes does not guarantee that you will obtain these benefits. For the implementation of new technologies to yield positive results, several conditions must be met: an in-depth knowledge of the processes and tasks that occur in the entity, a well-detailed planning of ICT needs, and a gradual implementation of the technological aspects, starting with the most basic.

Before adding technical components, it is necessary to have a good understanding of the organization or company. It was found that 90% failures were not due to software or systems, but because people did not know enough about their company or business processes. Another key point to consider is that companies that are in a position to benefit from technology are those that detail the impact on their business before adding technology components.

According to the above, we can deduce that ICT is an important factor to improve the efficiency of our work, simplifying communication, supporting joint work, managing inventory, promoting our products and developing financial analysis in the market. The proper use of ICT helps entities to produce in greater quantity with a good speed, with high quality products in less time and helps to increase competitiveness.

Research by the USGP (ECU) explain that nowadays the massive use of ICTs has become widespread in organizations, enabling efficiency in management processes, according to the use of business development and communication strategies [5]. In this way, ICTs facilitate the management of functions, tasks and activities, since the different technologies are tools that help the entity to be competitive in an efficient way, having access to relevant information from anywhere and at any time, which are key elements to make teamwork more productive and to effectively promote products in the international and local market.

A. Importance of ICTs in 21st century organizations

Researchers from ULSA state that ICTs are indispensable in organizations to such an extent that they are proving to be a strategic basis for their growth, maturation and transformation, becoming critical factors for failure or success in the globalized business world [6].

Today's organizations have changed the way they work, bringing significant improvements by automating operational and administrative processes, providing updated information to make excellent decisions and generate significant competitive advantages in the business environment. Companies struggle to implement various tools and strategies to help them achieve their objectives, which is why ICTs are essential to support the collection, processing and / or analysis of information at all levels, so they should be used to achieve greater organizational capacity and market development.

In the same way, they explain that ICTs are necessary in several fields because they save time, money and help manage the flow of information of each process, especially those related to production, inven-

tory, management and others. These elements help to improve the competitiveness and productivity of the entities, since their development allows the use of data to support different management practices, reducing inventory costs and time, reducing storage time and coordinating costs.

Since the advent of technology in the markets, many companies have seen in this factor an opportunity to achieve their proposed objectives. Previously, many of the organizations or companies that had rigid structures did not allow them to see technology as a strategy for development and growth, until the recent change experienced by the markets with the arrival of the COVID-19 pandemic. The crisis generated by the COVID-19 pandemic has caused a global and rapid technological adaptation within the economic and social context in which organizations evolve and operate [7].

The entities were harmed in terms of their organizational and financial structure, the poor economic solvency caused the bankruptcy or closure of a high percentage of companies, this resulted in an increase in unemployment as a social problem, and with it a drastic reduction of consumption in each family, understood as a reduction of the family basket that directly affects people in terms of satisfying their basic needs [8]. The COVID-19 epidemic had a quite eloquent collision at the world level in terms of economic development, where the decrease in demand translates as a reduction in the equilibrium of the price and quantities offered in the markets [9].

COVID-19 is referred to as an accelerator of digital innovation, although this event was already underway before the crisis, the effects of the pandemic have inevitably accelerated its pace, external and internal processes have been redesigned to adapt and give continuity to business operations [10]. Most organizations or companies had to suspend their strategic plans in order to accommodate the crisis with new emergency strategies [11].

Through the pandemic companies had to incorporate digital technology at a higher level through time pressure, if the adoption of this process is slow its gap will increase in the different changes that occur in the business environment [12]. The COVID-19 crisis influenced organizations in terms of supply and demand. In this way innovation and digital transformation have been important in the supply processes thus achieving to decrease the excess of products in inventories obtaining as a benefit a reduction in costs. In organizations, digitalization offers a wide range of opportunities, such as innovation in their processes, obtaining greater efficiency that translates into added value.

B. Conceptual framework

Since ancient times, people have sought to create technologies that meet their needs and improve their quality of life. This quest has given rise to great technological inventions that have come together and shaped the world we know today.

Human beings live in a world immersed in technology, from birth to death [13]. It is present in our daily life, at work, at home and in our daily life, for this reason technology is attributed to be responsible for different social transformations. Technology exists for its own sake, and as it becomes catalogued as a human dimension that encompasses the entire productive and transforming scope of the human being [14].

Technology can be called a systematic tool of knowledge, through which services and goods are produced and marketed for those who require them [15]. Organizations are not a new movement, in fact, throughout history we can find precedents or information about civilizations and the great works that they carried out, revealing how they managed to unite the efforts of a group of people in a collective way in order to achieve the accomplishment of a work together, these activities included lines of command, responsibilities and division of labor [16].

Intelligent organizations are categorized as an integrated structure, which are able to change the essence of their character, contain values, programs, systems, habits that help, support and accelerate the learning and development of the organization [17].

Organizations are cooperative methods that have rationality as a basis, in other words, they are social and open systems that are used between people as cooperation, they are also functions or activities regulated by several individuals [18]. On the other hand, since the 20th century, innovation and technology have modified humanity through the diffusion of artifacts and impact, which became part of the development of systems, companies and organizations [19].

Innovation is a fundamental material for the growth plans and strategies of nations [20]. Innovation is one of the most important and fundamental driving forces in companies, in terms of their evolution, growth and economic sustainability [21].

Productivity allows by means of a variable to calculate or quantify the progress of competitiveness in organizations [22]. Productivity is as a measure for efficiency that is used in the combination of different factors and inputs that help to develop a greater amount of services and goods [23]. Productivity comprises the execution of different practices that provide organizations with the optimal mix of resources to obtain the proposed objectives [24].

Information and communication technology is considered as a generator of change in all social aspects through innovation [25]. ICTs help us in our daily lives in terms of the activities we perform on a daily basis, such as having access to all kinds of information [26].

ICT are groups of technological activities that are linked with the manipulation, processing, presentation and transmission of data, according to the micro-processor are incorporated in the tasks and functions of computation, control and communication [27].

Automation is defined as the implementation of technology and intelligent systems to inspect the operation of machinery and production, replacing human tasks in the different activities that imply a greater effort or those that represent a danger to the well-being and health of workers [28].

Automation arises from a machine (referring to a computer) in which the functions and tasks from human to machine will be adapted and transformed over time [29]. Finally, efficiency is categorized as the administrative capacity to be able to elaborate or carry out an activity with few resources, time and energy [3].

IV. DISCUSSION

Currently, organizations or companies are immersed in a globalized world, which requires constant innovation in order to obtain stability in the market [30]. According to several authors, innovations and updates have renewed the different methods and techniques to carry out the commercial activities executed by organizations or companies, as well as the administrative transport [31]. Companies in this field must enter into the digitization of all stages of the industry, where they must be linked to the most important services and administration.

In this way, it can be stated that: The industrial revolution is called the four methods of technological revolution carried out by industry, mainly in the modern era [32]. Likewise, the concept of industrial revolution is catalogued as all those economic and social changes that lead to the change from a traditional and agricultural society to a modern and industrial society. Industry 4.0 presents a world where machines are interrelated, where they examine large amounts of data in real time [33]. Industry 4.0 is part of the digitalization trends, where its importance is increasing in the economy and life [34].

Industry 4.0 is a new path towards the digitization of processes that will lead us to an interconnected digital ecosystem, based on the connectivity of people and things, through the new tools that are already in use in many sectors [35]. The global economy is entering a new phase characterized by connectivity and digitization.

Society is currently experiencing a new technological revolution that has mainly changed the way we work, live and interact [36]. This is where digital marketing is making its presence felt and has been revolutionizing the world of marketing and history [37].

Marketing provides organizations to organize and combine products, set their prices, distribute and make excellent decisions regarding their promotions in order to provide their customers with affordable offers [38]. Marketing is categorized as an instrument within the market to help with the positioning of a brand or product [39]. Organizations dedicated to offering products and services should incorporate marketing plans and strategies that aim to know the tastes and preferences of their consumers in order to satisfy their needs through their products [40].

Finally, marketing with the passage of time has remained in a stage of constant change and development, which helps to obtain new strategies that provide organizations with specific or detailed information on the tastes and preferences of consumers, in order to create new service proposals that aim to attract new customers that today are distinguished by being more demanding, selective with respect to their demands, strengthening relationships with consumers [41].

V. RESULTS

Next, we will present some of the most cited authors downloaded from the Scopus database. Using as reference the following articles that contribute as a basis in our research process.

Technology is cataloged as a set of skills and knowledge, thus facilitating the problems of society to be able to satisfy them in a particular area. Interpreting it in a way as a tool that gives us benefits in many aspects of our daily lives, as they have achieved greater efficiency in industrial production, among others.

Digital technology is expanding the field of data and multiplying the way organizations operate [42]. These changes place data at the center of socioeconomic life, making it a pervasive element of the relationship between economic and social actors. Every day the activities or tasks of organizations in various fields are intertwined with data from the wider ecosystem such as the internet, industrial platforms, commercial, social networks, entities and their environments in order to expand new objects to enlarge knowledge and establish new models of management and organizational practices.

In recent decades, the incorporation of new technologies in organizations has brought about continuous changes in the way of working, thanks to tools and software that significantly improve employee productivity.

Nowadays live in a world full of changes, where technology is present every day in every type of organization and in our lives, this event has generated that the markets evolve and with them create new strategies, in this way the organizational world must undergo a constant evolution in order to obtain an added value that differentiates it from the rest [43]. As time goes by, the presence of technology becomes deeper and more important in all business functions and tasks, as well as in all levels of decision making [43]. For this reason, it is essential to analyze how technology impacts organizations today and to be prepared for the events that await us in the future.

Today's business sector organizations are facing multiple changes and requirements demanded by the globalized market [44]. One of the main needs is training and technological development, which is being introduced in organizations by leaps and bounds and is used as a competitive advantage for the development of their functions and processes in the market.

Organizations were created to achieve maximum profitability by making efficient use of their limited resources, i.e., seeking ways to optimize operational activities. Companies are always in constant innovation based on technology in order to be more efficient in their tasks and processes. [45].

In this way, it can be stated that the adaptation of organizations to new technologies is an event that is working and designed to improve strategies and processes, where the company can adapt to new challenges and changes, i.e. through the integration of new technologies in internal and external processes of companies, thus giving them an added value [46]. The availability of the necessary technological tools is a fundamental factor in the business of an organization, since it reduces costs, automates processes and increases its capabilities, which together improve the processes of the organization.

On the other hand, the new technological revolution called Industry 4.0, has become a new industrial phase with horizontal and vertical incorporation in production processes, where product connectivity can support organizations in acquiring greater industrial efficiency [47]. Industry 4.0 concepts are offered to allow entities to have flexible production processes and analyze amounts of information in real time, in order to improve operational and strategic decision

making, the new industrial phase has been given thanks to the uses of ICT in the industrial environment.

Finally, the term operator 4.0 or augmented worker refers to the anthropocentric approach to production. Where machines are seen as empowering rather than replacing workers, even the world of industrialization is undergoing a complete transformation, although the focus has been on replacing humans for decades, it will always need people in factories for the foreseeable future. To reflect the increasing diversity of the market, several authors also argue that companies can achieve efficiency gains by leveraging complementary strengths in this way.

VI. CONCLUSIONS

With the passing of time, technology has played a fundamental role in the different processes carried out within organizations. Thanks to globalization and digitalization, companies can access a wide technological panorama that offers them tools that allow them to improve processes, facilitate the execution of tasks, increase production volumes, reduce time, as well as optimize resources.

Through technology it is possible to eliminate human errors that frequently occur in the development of activities, as well as to obtain a much broader and more precise control of the different organizational processes.

This tool manages to facilitate the interaction process between customers and the company, receiving instantaneously complaints and suggestions that allow continuous improvement of its shortcomings, in addition to this it manages to interconnect the areas and departments of the organization, improving communication and facilitating the exchange of information that contributes to decision making, through the availability of real-time information and the ability to analyze data. It has also generated new processes and transformed existing ones, such as e-commerce, remote work and project management.

Organizations that adopt this type of innovative technologies obtain an added value that allows them to differentiate themselves from the rest. This factor offers them a wide range of solutions, products, resources and services that directly influence their positioning, thus increasing their competitiveness and standing out in the globalized business market.

At present, all companies, regardless of their size, have technology in some of their processes or areas, reflecting the importance and necessity that this generates for all those companies that seek to succeed in the market.

Technology helps organizations to be more flexible and to adapt to the different changes and innovations that occur in the market. Every day new technologies are created or developed to satisfy or provide a solution to a need, either for the company or for customers.

In short, technology has become extremely important and fundamental because of its ability to improve communication, connections, access to information, efficiency, productivity, competitiveness and innovation in all sectors of an organization.

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