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“DIGITALIZATION AS A FACTOR OF GLOBAL ECONOMY GROWTH”

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INTRODUCTION

Actuality of theme. Economic growth is impossible without using of information and communication technologies, because they are covering increasingly various spheres of economic activities and creating new opportunities for socio-economic development. Globalization, transformation of consumer behavior, mobility, availability of information are the trends of our time. Digital technologies are radically reshaping the global economic system. The formation of an effective digital economy will open significant opportunities for the creation and development of business, it will help to increase investment flows, accumulation of human and financial resources of the world. Over the past few decades, global industries not only have faced technological changes that have led to opportunities such as greater flexibility, reactivity and product individualization, but also have presented diverse challenges such as rapid technological change, increased complexity and changing customer preferences and legal requirements. This has led to challenging situations in a corporate context: manifold new technological opportunities are perceived, but people are uncertain how to use and implement them simultaneously in terms of product and service offers.

As a result of this new embedded usage of digital technologies, companies can achieve success in terms of experiencing optimized resource utilization, reduced costs, increased employee productivity and work efficiency, optimized supply chains, increased customer loyalty and satisfaction, to name but a few. However, as argued above, the increasing number of opportunities driven by digitalization also put pressure on companies “to critically reflect their current strategy” and “to systematically and early identify new business opportunities” and requires “managers to significantly adapt one or more aspects of their business models” or even design completely new ones. In one of the latest surveys on digitalization, executives reported that their CEOs “are more involved in digital efforts than ever before” but at the same time they say that “their companies must address key organizational issues before the digital can have a truly transformative impact on their business.”

The first focused digitalization definition was presented by Maxwell and MacCain, who considered digitalization as the transformation of analogue signals into

digital pieces. The aforementioned description was therefore supported by Hagberg et al., Parviainen et al. and Eling and Lehmann. Whereas Machekhina described digitalization in a broader way, characterizing it as all information types to the digital language. Should be noted that digitalization is the most significant on-going transformation of contemporary society and encompasses several domains of daily life, such as: the social, the economic, and the organizational domain, in order to create and harvest value. Eling and Lehmann also presented a very similar debate about the concept of digitalization, with the difference that, in the end, they present a middle ground conceptualization, between the broad and the narrow.

Purpose and tasks of research. The purpose of the master's thesis is the research of innovative approaches to digitization of global economy.

Based on the research purpose, set in the work the following tasks:

- to research the theories of international economic development;
- to analyze the conceptualization of digitalization and its influence on economy;
- to describe the organizational effects of global economy digitalization;
- to analyze of trends in the data-driven digital economy;
- to define the regional and international approaches to regulating cross-border data flows
- to estimate the digitalization process in Ecuador;
- to develop the ways of improvement the digitalization process in Ecuador.

The research object is the digitalization process and its influence on economy.

The subject of research is a set of theoretical and practical aspects of digitization global economy.

Research Methods. Methodological principles of the master's thesis are the provisions of economic theory, research papers of domestic and foreign scientists, economists that related with innovative approaches to digitization of global economy. In this paper are used the following methods: logical and theoretical, classification, system analysis and synthesis; statistical and economic-mathematical methods; methods of prediction.

Scientific novelty of the results is in detection of problems and disadvantages of global economy digitization and development ways of improvement the digitalization process in Ecuador.

Positions presented for protection. All scientific results that are contained in the master's thesis and submitted to the protection are obtained by the author personally.

The structure and scope of thesis. Master thesis total volume is 61 pages, consists the introduction, three chapters, conclusions, lists of used literature of 50 titles. Master's thesis is illustrated with 28 figures that are posted at 28 pages.

CHAPTER 1 THEORETICAL AND METHODOLOGICAL ASPECTS OF DIGITALIZATION

1.1. Theories of International economic development

The purpose of this project is to discover how the development of international theory has evolved and entered the international development of the economy. The main objective is to detail how economic development has its dependence, modernization and sustainability. The concept of development is a concept that can be based on two opinions that can be used in a descriptive and normative way that can be developed depending on the media and social changes as technology advances with an approach to the development of life or in the process of modernity. We can also define the economic development strategy as an orientation of political and social relations in a society that is visualized to change to obtain its own objectives. When speaking of development, we also speak of individual, public or global satisfaction such as ethnic roots, social class, gender and age whose purpose is economic persecution. Theories of economic development suggest modernization, dependency and globalization.

Modernization – can be defined as a systematic, evolutionary, transformative and sustainable process. The theory of modernization supports changes in social and political development based on the individual objectives of the ethnic groups that seek a change in globalization and the dependence on their ethnic origins with evolutionary stages of the peoples. Although the modernization theory had different approaches, it was not based on the systematization approach for economic development because it was based on modernization analysis. One of the problems where modernization most affected occurred in Latin America since they were based on theories influenced by Marxist theory. Taking into account modernization from another point of view, modernization was the starting point of empowerment in Western countries. Instead of sustaining economic development, modernization was an influence in third world countries such as the premature increase in consumption standards with very little acceptance in productivity levels, we also found the impact of a migratory crisis due to the search for new ones. economic levels.

Within modernization we find structuralism that focuses on governability and exhausts the passive freedom of movement of individuals who seek to achieve levels of economic growth, as opposed to capitalist rationality that seeks the development and underdevelopment of peoples. Modernization can achieve social sustainability if it approaches society and respects the cultures of each ethnic group. Modernization processes can achieve rapid and structured learning if it reaches the levels of demand for goods and services. The modernization processes in the public system do not always mean that it is weakening because they can understand the movement of justice, defense and external relations, creating an environment of progress and continuous improvement of economic activities and in a continuous way of social relations and capitalists in order to develop strong ties in order to cultivate a highly effective and progressive society.

Dependency theory can be defined as industrial development, domestic development and the generation of aggregate demand in order to increase people's wages to improve the lifestyle. With this theory of dependency, the workers began to blame third world countries and the capitalist ideology of multinational companies and the governments that support the ideology of monopoly companies. With this background, it is seeking to change the ideology through globalization that gives an opportunity to inclusive and protective development of the roots of different countries. The lack of information and a weakness of the ideology of dependency means that there is an inequality of thoughts between socialism and capitalism that each seeks its individual and not group interests in society.

The theory of dependence had flaws in the structure because some people sought insatiable interests with the penetration of imports in order to avoid the increase of new foreign capital, weakening the social and global economy. Based on dependency and local conflicts, nationalism arises that seeks to protect the interests of interdependent economic relations and arises as protection from the tendency of markets to stabilize market powers and establish relations of dependence on weak and strong economies. With the passage of time, new policies emerge, such as the industrialization that arises in third world countries, which emerged as a model of imports that considers that each country must exploit its own lands and explore its comparative advantages.

The crisis worsened in the nineties with the disagreements and ruptures of the popular sectors to associate themselves with the economic and socio-cultural processes linked to globalization. As global financial markets created a new uneven scenario, new aid proposals from first world countries began to emerge, creating the IMF, which is in charge of intermediating loans as a last resort for countries that seek to stabilize and open economic development. and direct its economic independence. This type of aid only applies to countries that apply democratization, considering that this type of aid only perpetuates the option of independence and subsistence under the protection of the transnational capital ideology. The theory of dependence on competitive products seeks a standard change so that products are standard and thus motivate producers to create changes and innovations in the final product that goes out to the final consumer.

This means how competitiveness influences when innovating and developing new innovative products that manage to get out of the local economy and can cross borders to be able to make themselves known and thus can expand to new cultures. Dysfunctional neo-institutionalism also arises that some institutions do not reach the optimal levels that impede the optimal development of some companies due to the development of self-protection and self-development systems. In other words, globalization is deepening relations of dependency and development between peoples through processes that lead to looting and exploitation of natural, human and economic resources that leave traces that can remain throughout life.

One of the solutions may be that there is a capitalism that breaks with the currently known stereotypes, we must break with the schemes that hinder the creation of transnational companies that allows the change of governance strategies under a new development scheme that enables and invites the society to participate in cultural exchanges and facilitate the development of the masses. One of the important points is the technological changes that allow the development and break the barriers of dependence on raw material states and use technology as the main communication between societies that seek change in the ideology of socialism and the construction of new orientations and progress of the Third World nations to raise the limits of

development between nations with a high level of superiority and nations with scarce resources to avoid the exploitation of natural, economic and human resources.

Globalization theory emphasizes the development of technology, economy and politics of the countries and ethnic groups participating in global development, however some countries developed the market movement with regulated policies and advanced technologies. Taking the point of private investment, it is the one that maintains functional and fundamental development, with the private sector being the main actor in the development of the global economy. It also emphasizes that private investment in poor countries emphasizes growth and taking advantage of the parties that wish to prosper by falling into the wealth trap.

The collapse of the social economy arises from the implosion of the economy that is based on development rules centered on the state of the nation based on industrialization, which led to the process of an economy of qualitative transformation of economic development processes located in different parts of the world giving rise to an economics of globalization processes. The economies that have a national or local ideology gave way to ideas of globalization by processes driven by mass competition promoting the privatization of many business sectors, public in areas such as education, care of the environment and knowledge of different cultures Worldwide. The concept of globalization began to be used for academic purposes; however, this concept must be reviewed from the foundations with processes that characterize the development of world capitalism and contemporary societies.

These models challenge capitalism's concepts of penetration in order to fit in with globalization that meets capitalism. To maintain their advantages, you cancel the developments and opportunities that helped them reach the high levels that they currently have. All this happens in contrast to countries with low development, which must stimulate sectors with greater development to obtain the greatest effectiveness of economic development. But the implementation of these objectives gave disappointing results because there is beginning to be greater economic and social inequality and low economic growth and local economic instability.

Sustainable development. Economic ecology studies local markets, medium-scale markets and the international division of labor, sustainable and friendly to the

global environment. From the point of global sustainable development, this raises concern about the great expansion of mega companies that hinders environmental stability due to the high contagion of companies and natural resources. In recent years there have been several debates among economists who suggest environmental pollution as a matter of concern, defining as sustainability an intertemporal and distributional distribution of resources. As part they see sustainability as a desirable path of development. A broader concept implies that sustainability focuses on components such as efficiency and equity.

A sustainable path is an efficient path that does not decrease in the usefulness of the time, potential and optimism that results between a position between people with greater economic power and people of less economic power. Development is the condition of satisfaction of the needs of the population through the rational use of environmentally friendly natural resources. A friendlier way is to admire the use of resources in a more rational way. Sustainable development is the new model proposed to lift growth limits, which meets present needs without affecting the future economy.

The new development aims to equalize human and environmental well-being in order to identify the sustainability of society to build public and private organizations that will respond to the accusations of society and social needs. Paradigm-based sustainability considers economic growth based on equity in such a way as to conserve natural resources for the good of future generations by generating benefits in a continuous growth cycle. The processes of mercantile globalization devastate the environment and the biosphere and do not enter into the accounting of their costs, considered in economics as a strong impact on sustainability.

At this stage we have 2 generations. The first was a structure that was insufficient in labor and tax processes. The second generation is a process that promotes changes in institutions that are based on education, training and innovation, but organizations are neglected in productive development processes such as support programs for small and medium-sized enterprises and the proper use of resources. natural resources, because they consider that productive development is a natural consequence of structural reforms.

The impact of the financial crisis on poverty and inequality in society is increasing in the same proportion that the global crisis took hold and became more frequent. It is of consideration and general terms to strengthen the sustainability of individual and social capacities because it can be a threat to human development and human security. As a general point of view, it is necessary to strengthen individual and institutional capacities to strengthen the demand of the poor and their needs. In some aspects, the theory of sustainable development has failed in health areas, deforestation that annihilates a large part of the jungle where people of cultures of each nationality live. We also find climate changes with acid rains that affect daily life that brings consequences and secondary effects to the population in general.

It is to be considered that for an economic cycle to be sustainable, insurance, fiscal balance, improvement of public spending, regulation of capital income, stabilization funds and export and import control are required. It is advisable to create a body for government decision-making that informs society and protects human rights, sustainable development, social in an important performance of civil society. This means that we need information exchange between people, companies and governments in order to establish a supportive sustainability role.

The implementation of the processes of globalization brought with it several negative factors for the environment without the existence of a social power to control environmental devastation. Economic and social development includes the balance of all political and social actors. This means that the new governments must respond to the capacity for political and social development that promote the economic development of the participants, through an increase in the participation of the contributions of economic activities.

It is its main function is to consider that the state should coordinate exchange activities and activate the economic development of society. It is the state to balance the exchange activity and mobilize economic development to parties that do not affect social development and take care of the environment and the resources coming from each state. What we can say is that there is evidence that economic developments reduce levels of corruption and associate variations between nations with historical and cultural traditions.

Thanks to the growth of digital technologies, the GDP per capita of the USA grew close to 50% in approximately 25 years, this represents an accelerated growth, if compared to what was generated during the Industrial Revolution, this represents a great advance that is taking place in society. Thanks to the Digital Revolution, it also gives us an idea that the global economy will continue to change from how we know it until now. The digital economy has brought several positive aspects to society such as improving the quality of life and the increase in world economic activity. The invention of the Internet is the strongest point of the Digital Revolution, since it has made it possible for the world to be interconnected, and in addition it has made possible the impulse of globalization. The GDP generated by the Internet in some countries exceeds several sectors among which are agriculture, education and supply services. Digital technologies and the Internet not only help in the economy of technology sectors, but also help all economic sectors to grow.

Expanding a country's digital economy is only possible if it has a well-developed digital ecosystem. The development of the digital economy depends on three factors: digital infrastructures, human capital and institutional quality. While infrastructures are already well developed in several advanced countries, in most there is still much room for improvement so that the potential growth of the digital economy is not limited. The biggest limitation at the moment is the availability of mobile radio frequency. It is necessary to improve this limitation in order to meet the growing increase in mobile data traffic and thus facilitate competition within the technology industry. To improve this, a greater investment in infrastructure must be made.

In conclusion, in order to maximize the potential of digitization, a long-term commitment to the digital economy must be made in which the expansion of its infrastructure is not hindered and policies and regulations are modernized, so that there is more interest in investing in and innovating in the digital environment.

1.2. Conceptualization of digitalization and its influence on economy

Digitization can be said to have become an engine to accelerate economic processes between companies, governments and consumers, generating more jobs and greater opportunities. However, digitization between nations is uneven because the

economies that are more developed make better use of the tools of technology to obtain greater economic benefits, although they can go in the same percentage with emerging economies regarding the issue of job creation. It means that the strongest economies do not generate or greatly decrease the employment rate because their objective is to reduce the use of labor and to help themselves only with technological programs. This causes emerging markets to benefit in terms of imports and exports at the back of developed economies.

Companies that carry out teleworking



Fig. 1.1. Companies that carry out teleworking

Source: [https://marketing4ecommerce.net/cuales-redes-sociales-con-mas-usuarios-mundo-ranking/]

The digital economy moves beyond having acquired goods such as devices to connect to the different global networks, it is simply a modern industrial revolution. In order to appreciate the complexities of the current transaction system we have to look beyond current modern methods. The transactions are essential but also the experiences have to be of better quality. Over time you can see how technology has been introduced in our lives as for example sectors such as travel and entertainment capture their share of headlines. The show and the shared parts of the digital economy also attract a lot of attention although only be it out of curiosity. The digital economy goes beyond the

traditional businesses of the new generations. Economics is a movement of collective commitment at all levels of the economy scale. We can apply several examples from a single ecosystem. It may be that technology is in a childhood process, as it grows, so will the level at which users, both as individuals and companies, interact with each other and the platforms that exist and grow within the networks.

Regardless of whether we use or are apple users or not, they offer a good model regarding a broader digital economy and how it can continue to evolve. If we have an iPhone, we enter the Apple ecosystem and have access to all the tools that iCloud, iTunes, I message and their other proprietary programs and applications make available on that platform. Beyond that we also have access to the multitude of companies and their products and services through the applications they create for the Apple platform. We can also search in the Google Chrome browser. We can make purchases through applications such as Amazon, Wal-Mart. We can access content services such as Netflix, YouTube. We can use ride-sharing apps like Uber. This is simply about interconnectivity features. Consumer activities are easily done by applications simply seeking market share.

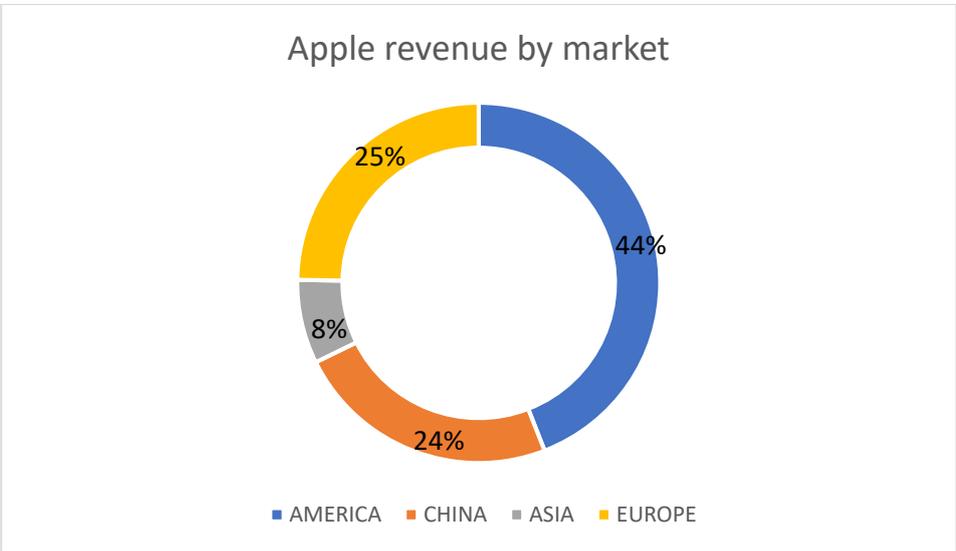


Fig. 1.2. Apple revenue by market

Source: [https://www.counterpointresearch.com/apple-leads-100-billion-smartphone-market-share/]

With the examples mentioned above it is to have a very clear idea that it is simply a global ecosystem. Considering the facets of the digital economy it moves beyond

making simple things easier to use or interconnectivity than it does with the Apple example. It's about data and analytics where we have been and who we connect with and what we plan to do when we connect there, reaches beyond our daily lives, shaping the environments in which we live, work and play. Eight separate areas tend to see the progress of technologies changing faster. When the digital economy moves forward, one of these platforms often serves as a catalyst.

Automation. The completion of a process with minimal human involvement. Automation is not simply a function for machinery or industrial sectors, the application includes multiple disciplines, including marketing channels, artificial technology and technologies. *Advanced Analytics.* The automated use of data to help organizations better analyze, predict, decision-making, marketing, advertising, risk management, and strategies. *Digitization.* Conversion of information in a digital format, this means that for the digital economy it is a greater access to more levels of data and information.



Fig. 1.3. Digital around the world

Source:[<https://marketing4ecommerce.net/cuales-redes-sociales-con-mas-usuarios-mundo-ranking/>]

Hyperconnectivity. When the capacity of a network exceeds the demands that are imposed on it, in a digital world it will always be between user and user. *Use of*

data. The use of data obtained by an organization to determine and take advantage of strategies in future transactions to provide a better channel of information. This includes better customer experience, better marketing and sales efforts, and understanding market conditions. *Social networks*. In a digital economy, social networks play a crucial role not only in person-to-person connections but also for organizations to use them for advertising, find new customers and can build customer loyalty, an important point for small and medium-sized companies that they can boost their brand through social media.

According to the digital analysis report developed by We Are Social and Hootsuite, in January 2021 there were 4.2 billion active users globally: 10.5% more than in January 2020. Of those, 588 million belong to Europe.

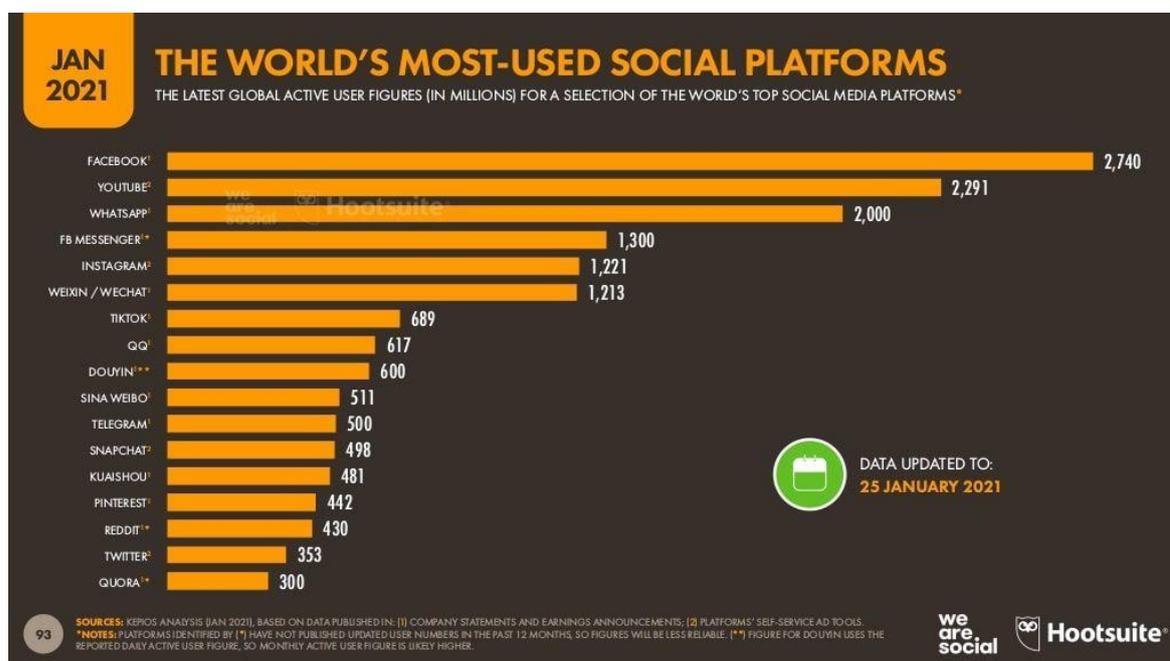


Fig. 1.4. The world most-used social platforms

Source:[<https://marketing4ecommerce.net/cuales-redes-sociales-con-mas-usuarios-mundo-ranking/>]

The future of the digital economy is very open, but it is necessary for the digital economy to expand to all parts of the world where the internet has not yet reached in order to establish itself and continue with global growth. This means that with the development drive we have to promote the growth of investment in infrastructure from different nations with the help of private investment. This issue also addresses

industrialized nations with regard to not making investments in digital platforms, that is, greater investment in digital infrastructure.

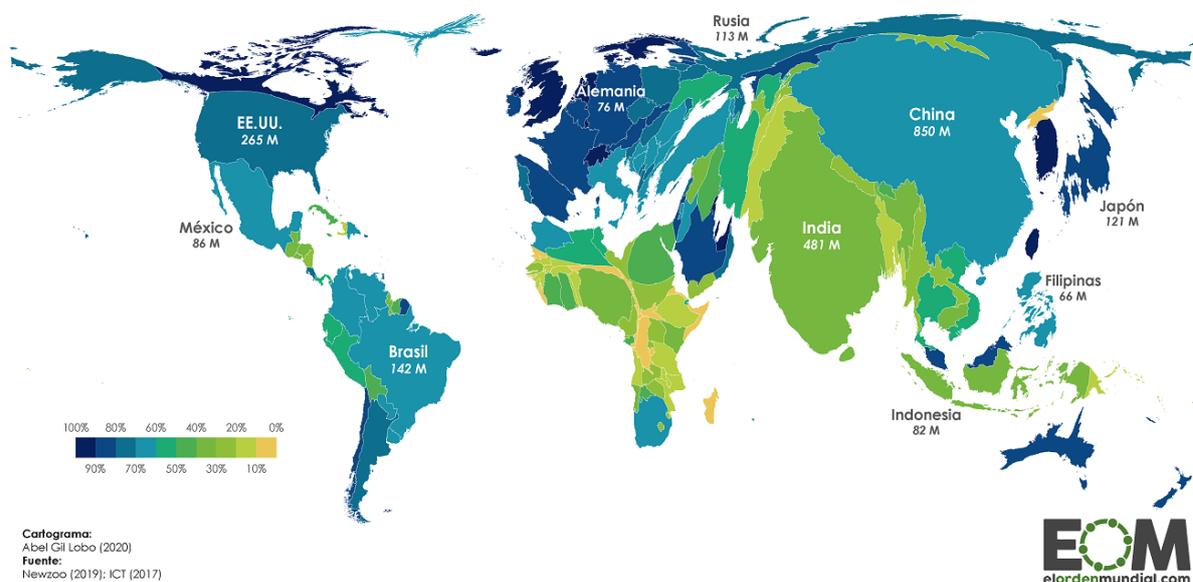


Fig. 1.5. Internet population in the world

Source: [<https://elordenmundial.com/>]

We have to take as an example country such as Japan and Germany that decided to invest more in technological platforms and infrastructures to remain technological giants that help simplify work and promote economic growth with different perspectives from the traditional economy. Another example to follow is from the USA in Silicon Valley where the greatest investments and innovations are reflected with companies that are recognized worldwide, providing clear help to future economies to improve them. One of the vital aspects for the digital economy worldwide is the professional retraining of a large part of the manufacturing workforce. This is a wake-up call for other nations that implies that if they do not continue to update their economy by creating new ways of reaching the consumer through platforms and economic infrastructure, they may run the risk of being left behind with a traditional economic model that has no fruit in the future.

1.3. Organizational effects of global economy digitalization

The proposal of technology in education is a proposal that some educational institutions launched in more than two decades, through proposals for innovation in public and private institutions such as political and social projects that come from the students themselves as it is the case of Facebook that arose from the idea of students who wanted to create their own and internal social network for the university. It is an option that some universities force their teachers and students to use the use of information technologies so that it has a strong impact on the community and society, thus a model of entrepreneurship of students with races in education and strength. to be able to compete with large companies globally.

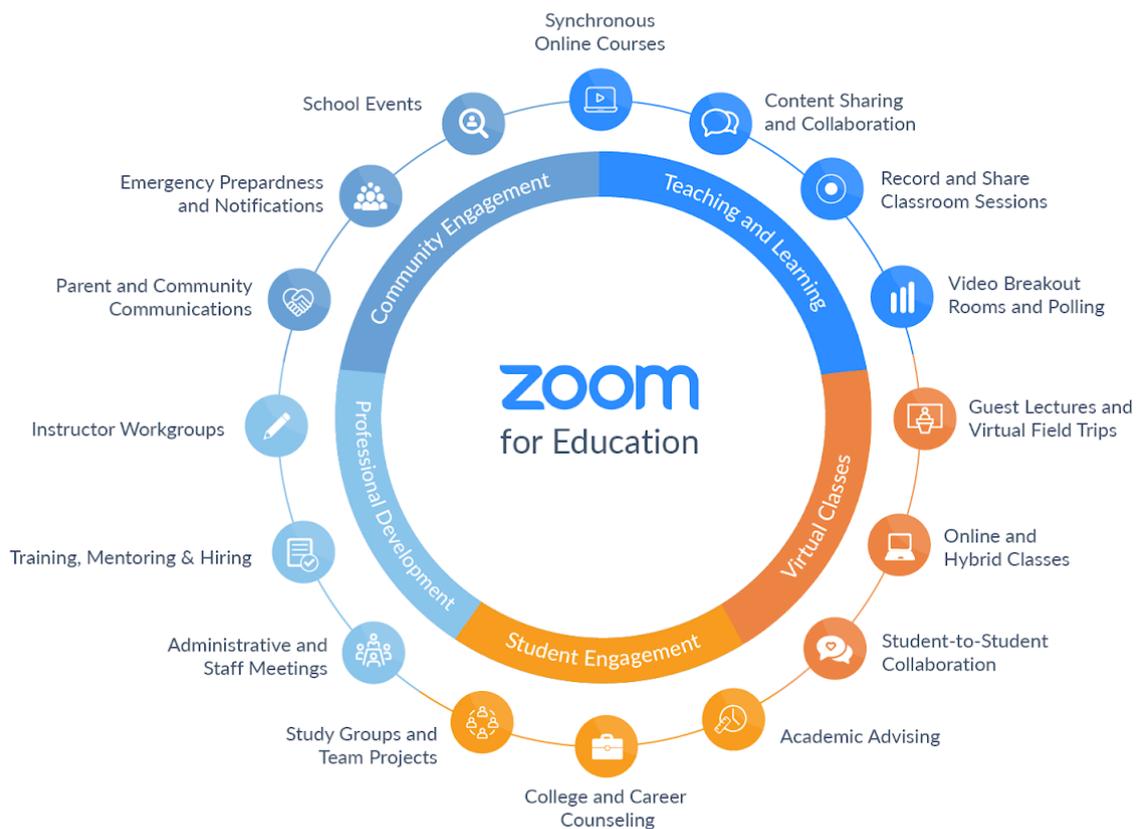


Fig. 1.6. Meeting app

Source: [<https://explore.zoom.us/>]

Innovation in medicine. In Latin America there is a strong deficit in innovation in medicine to provide better service to patients in public and private institutions. It is necessary for technology to advance more in underdeveloped countries because the

mortality rate is advancing. That is why information technologies enter to avoid the following aspects:

- Improve medical care
- Improve health systems to be efficient in time and money
- Use mobile applications to be able to schedule appointments and know the schedule of the medical appointment and avoid crowds in the hospitals.

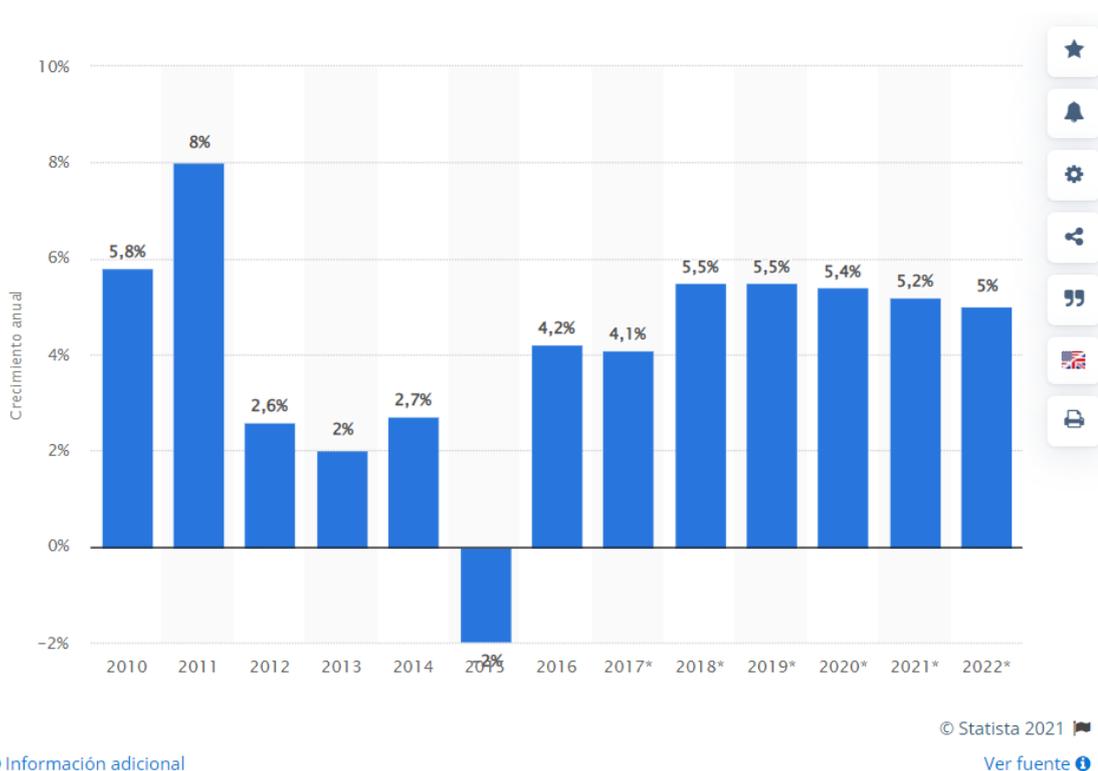


Fig. 1.7. Global medical technology market

Source:[<https://es.statista.com/estadisticas/636556/crecimiento-del-mercado-mundial-de-tecnologia-medica/>]

Faced with these problems, some countries took initiatives to improve health systems with new agreements with private companies that arrive with investment proposals to improve health systems with new technologies and innovative medical instruments, which can help curb the mortality rate from the absence of medical implements policies for structural change the process of digitization and spontaneous change is accomplished through internal processes and technological advances that promote development through applications to have greater communication in

economic sectors. The different productivity processes are promoted through international agreements through the diffusion of technologies, industrial and institutional in order to activate economic development at a global level.

Global broadband policies must be formulated at the highest level of strategic development that transform them into true state policies. Aspects should include international coordination, regulation, and development of public infrastructure. An industrial policy should consider promoting the creation of new software with the aim of innovating the final product and caring for the environment by reducing pollution processes, through the use of research on specific and scientific topics, mainly among small and medium-sized companies. This point is very relevant because it allows us to have greater communication through the use of extensions to be able to transfer information, have greater coordination and the dissemination of new technologies to help generate qualified jobs and export services.



Fig. 1.8. TSLA Streaming chart

Source:[<https://www.investing.com/equities/tesla-motors>]

Advanced robotics. With the passing of time, it has been possible to see how machinery evolve being more sophisticated and developing innovative products, being

more agile and flexible for the use of the community. With the passing of time, robotic systems have been increasing and decreasing in value due to the greater demand for their use in society. The increase and the ability of the automated systems is of great help for the different manufacturing processes with affordable prices and of great use, avoiding the failures in the different processes and reducing the production time.

Artificial intelligence. It can be defined as the behavior of machines to fulfill human activities and expressions. This can be given to fulfill daily activities such as thinking, expressions, behaviors, decision-making and the ability to manipulate things. We can see a variety of examples of artificial intelligence that impacted the world such as TESLA vehicle automation, Domotics in homes that carry out daily actions such as opening the door, closing windows, etc. We also find artificial intelligence in public roads such as traffic lights, railroad crossings, voice assistants for cell phones.

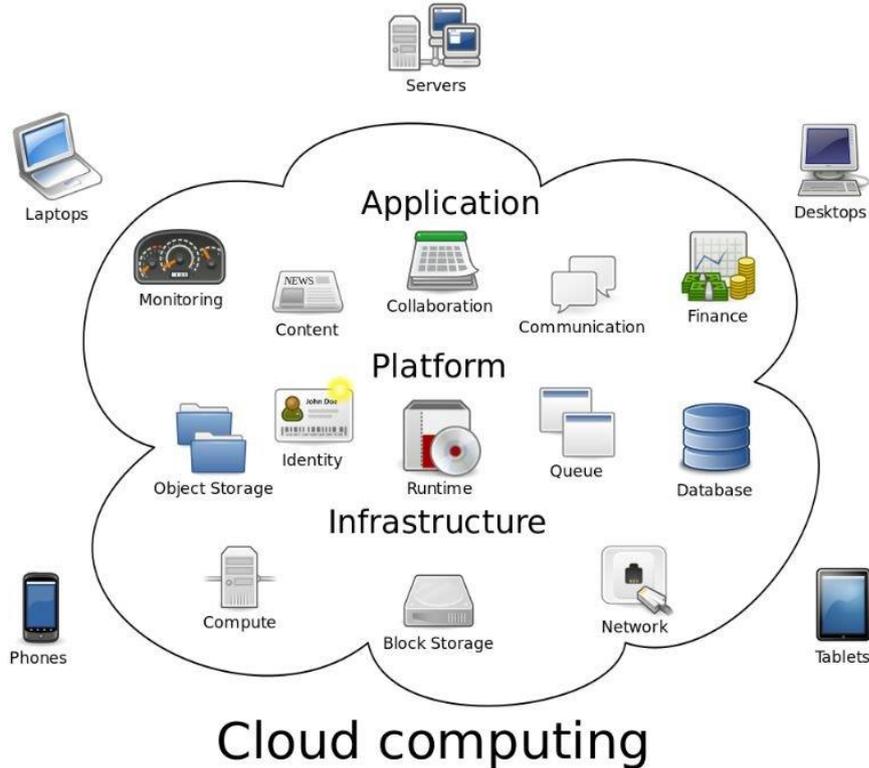


Fig. 1.9. Cloud computing
 Source:[<https://hostingpill.com>]

This issue involves the change in telecommunications, being a radical change because we can open files and have a greater storage capacity at no additional cost and with greater openness worldwide. With regard to clouds in relation to companies, they

can store more information and can archive documents that they want to share with other companies or partners. This is the case of banks that, through their mobile applications, users can verify their account statements 24 hours a day and carry out national and international transactions in less time.

Three-dimensional printing. Many companies that are dedicated to marketing and advertising need more machinery where they can expand their ideas in an original way to meet the wishes of the client and be able to compete in the market. One of the most outstanding cases that has been carried out is 3D printing where we can make exact replicas of objects that may not be restored. Also 3D printing can be used in the construction of houses reducing costs using renewable resources, friendly with the environment and with lower production costs. Also, in 3D printing it is essential for medicine with the incorporation of the production of prostheses, this makes the laboratories have economic agreements between companies that carry out robotics and companies that are dedicated to medicine.

Transport. Thanks to the digitization of the economy, the transport area has been able to enter the digital world with satisfaction, this allows companies dedicated to transport to use new technologies, this brings them several benefits, among the most important are to reduce the time for delivery. this way saves costs and optimize profits. In addition, new technologies allow the transport area to shorten times by improving routes and integrating customers throughout the process, with this in addition to shortening times, greater confidence is also achieved on the part of consumers. But there is still a lot to improve since if the vast majority of people know the transport or delivery applications, there are very few who know the rest of the applications in which technology can help them within the field of transport between them. There is freight transport that at this time there are several companies that have new digital technologies to offer a safer and more efficient service to their consumers.

Farming. Agriculture, like several other economic fields, has been innovating with new digital technologies in order to improve production and provide a better service to its consumers. Although in this field it is a bit more complicated for most agricultural producers to start using everything related to digitization, either due to ignorance or lack of access to them, it should be emphasized that in these times this

technology is of great importance already that with this, producers can reduce time in purchasing either raw material or material necessary to produce a product. With the new digital technologies, a producer could directly acquire a raw material, fertilizers or any instrument that was necessary to be able to produce a product, and would receive it directly in the place that needs it, thus saving time and money. In addition, in this area, with digitalization, an intelligent irrigation system could be installed for the fields, thereby saving valuable resources such as water, as well as saving production costs, which is beneficial for both the producer and the farmer. consumer, it would be avoiding the waste of such an important resource as water.

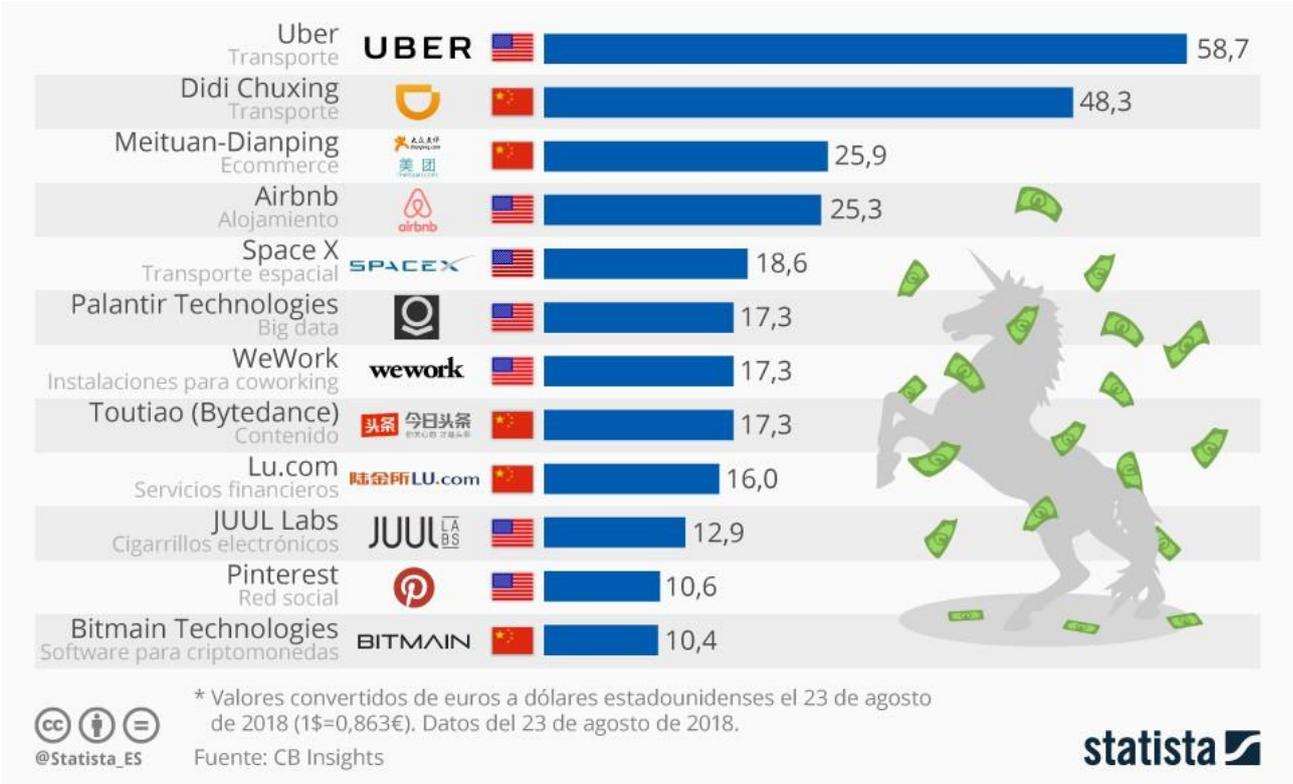


Fig. 1.10. Taxi applications worldwide

Source: [<https://www.zonamovilidad.es>]

We can see the evolution of technology in the real estate area such as solar panels that help reduce energy consumption, reduce electricity costs in bills, are friendly to the environment and greater durability in time because they can last up to 10 years. We cannot yet define the conclusion of the evolution of the digital economy because many market sectors have not been definitively developed and other market sectors are not

yet discovered. We have to understand that the evolution of technology helps us and prepares us for changes in future activities in entrepreneurship and development of economic activities.

The effects of technological advances will vary according to the purchasing power of the most developed countries according to their economic power, providing opportunities in the face of the various problems that we currently find in society. We can see from an optimistic point of view how the digitization of the economy can become favorable points for the change of daily life, the well-being of human beings, the extraction and good use of natural resources. Companies that use digitization can become more efficient with respect to customers by providing them with greater support, better customer service, greater participation, greater acceptability of the customer's faithful judgment, with the objective that the customer can spend less and participate more. On the other hand, it is feared that the general use of technology could affect the work environment by reducing the workforce and in more extreme cases replace it. It can also unbalance the economy.

Business Aspects of the Digital Economy. The external sector of the economy is reflected in technology because products can cross world barriers by making the product known without the need for the physical presence of the product. At this point, the digital economy gave a strong boost in topics such as the exposure of services in transportation, medicine, telecommunications, entertainment, infrastructure and production. One of the best sectors that we can see that had resounding success in the business issue are the companies that were dedicated to the development of technology, being companies that generated a strong reception in the investments of the stock market, increasing the value of the shares every year and the call to new investment partners who are more interested in having the possibility of being part of a company that is dedicated to the technology and innovation market.

Investment moguls know that investing in technology guarantees great profits in short-, medium- and long-term issues because they know that technology always continues to advance according to the changes that people require and always focus on the needs of consumers and internet as a facilitator of a more inclusive trade. The internet can be considered as a market facilitating door for small and medium-sized

companies, breaking export barriers with free access to unknown markets and markets known worldwide. This means that we can reduce production costs, advertising costs, that is, it is a reduction in global costs. Until recently it could be said that only multinational companies had access to large markets and could overcome export barriers, but today all this has been changing because we have the information in all search platforms, classifying the information through filters that can be used by consumers specifically for the tastes of each. Technologies also create new opportunities in markets such as services, education, books, because thanks to social networks we can get to know new authors of books, new innovative products for the home, or entertainment articles. That is, thanks to technology we can know and use the cultures of other countries and how they take the implementation of goods or services to other levels in their daily lives.

Some companies grant the free service for the use of their applications such as social networks that allow us to communicate with the world without additional costs or calls or messaging but the strategy, they take is that of advertising where they can generate large profits with the companies that want to publicize their products. Now the objective of free applications is to have a service qualifier where the user or person who uses the application can rate how the use and operation of the application was. Thanks to these ratings, the companies that own the applications can reach other people with references that their activities are good and of high rank in the commercial activity. Another option that some applications have is the change of language in order to expand to other countries that perhaps due to the difficulty of the language it was not possible to know the specifications or the way of using the product, thus reaching the most remote corners to world level.

While it is true that economic digitization can affect the traditional workforce, it can also open up a greater number of opportunities globally. Online work can be beneficial, such as presenting new products to the world through exhibitions or the use of digital platforms without the need for the physical product, you can also make real estate sales through the internet through the visualization of plans or 3D graphics. There is also the purchase and sale of vehicles and machinery, being able to make transactions from your home and wait for your product to reach your country or

residence, avoiding travel costs to be able to know the product in a physical way. They can also increase job competition because they allow companies to lower wages and avoid transportation, housing and living expenses for families who move to other countries or cities to obtain a new job. As a result of the pandemic caused by Covid, the information and interaction platforms allowed us to be connected and carry out office work without affecting companies or institutions as a whole. Many educational institutions were able to manage and continue daily learning activities without affecting their students and teachers.

Currently there is some type of current money whose particularity is that it exists on the internet, these assets are known as cryptocurrencies. These digital assets can be considered of great benefit as investment assets, minimizing their risk and opening up to new economic systems assuming that it is the financial revolution. Due to the great reception that these currencies have worldwide, financial transactions can be carried out more frequently. We have several benefits that have managed to build cryptocurrencies worldwide such as internationality since we can make transactions in any part of the world, it has security because if you buy a cryptocurrency, it is exclusively owned and it also has anonymity because your identity is protected, as well as transactions

[AD]

Top Cryptocurrencies »

Name	Symbol	Price (USD)	Market Cap	Vol (24H)	Total Vol	Chg (24H)	Chg (7D)
 Bitcoin	BTC	57,115.1	\$1.08T	\$36.64B	30.10%	-0.81%	-0.70%
 Ethereum	ETH	4,576.92	\$541.54B	\$27.22B	22.36%	-3.12%	+6.84%
 Binance Coin	BNB	623.83	\$103.97B	\$2.78B	2.28%	+0.10%	+5.10%
 Tether	USDT	1.0007	\$73.60B	\$79.84B	65.59%	-0.02%	+0.03%
 Solana	SOL	229.869	\$69.23B	\$3.49B	2.86%	+8.75%	+9.09%
 Cardano	ADA	1.5438	\$51.30B	\$1.64B	1.35%	-0.61%	-7.14%
 XRP	XRP	0.98343	\$46.40B	\$2.55B	2.10%	-2.41%	-4.56%
 USD Coin	USDC	0.9996	\$38.89B	\$4.80B	3.94%	+0.05%	0%
 Polkadot	DOT	36.52	\$36.01B	\$1.22B	1.00%	-5.44%	-4.86%
 Dogecoin	DOGE	0.208133	\$27.54B	\$967.22M	0.79%	-2.93%	-3.39%

Fig. 1.11. Top cryptocurrencies

Source: [<https://www.investing.com>]

They are carried out without having intermediaries, the transactions carried out with these assets are carried out in a faster way than a traditional bank transaction.

Cryptocurrencies are gaining more market on the internet for every second that passes due to their high benefits in the market. The fundamental thing about cryptocurrencies is that we can review what happened on a day-to-day basis through pages that allow us to go public. and see the list of the main currencies that are in the market, as detailed in the following graphs.

Global value chains. Economic development value chains show that economic activities have a great boost in companies, this means that large companies can subcontract to companies that are considered lower in order to reduce expenses and generate profits through strategic alliances market, such as companies that want to launch a new product but do not know how to launch or reach the minds of customers, they use companies dedicated to advertising and digital marketing to impart the movement and development of the customer acquisition with the new star product, then here comes the use of the value chain where two companies benefit the first one can reduce costs in advertising and digital marketing because it does not specialize in that customer acquisition factor and the second part is benefits from the acquisition of the use of advertising service and also finds benefit because other companies says can get their services.

We can also see the primary factor in the digitization of the use of platforms in tourism because large hotel chains can be made known through the internet exposing their services and in turn help in the economic contribution of each country because worldwide many people want to discover new frontiers of tourism and this makes Internet users know the cultures of other countries and cities, promoting and activating the economy in each region worldwide. We also find the digitization in clothing with the theme of innovation in the fashion of different cultures that makes it a large-scale social movement such as the fashion of Japan or the fashion of Europe, this helps the growth of small companies that carry out contracts with globally recognized brands. As in the examples mentioned above, we can say that the machinery also enters to produce the different garments and new innovations at the time of finishing with the finest finishes in accordance with the standards established worldwide, that is, to improve quality control with materials. more sophisticated premiums and less environmental pollutants.

Conclusions to chapter 1

The theory of digitization has positive and negative aspects since its inception because it cannot be defined largely by books on the advances of technology in the economy, rather we must take into account that digitization is based on the good use of technology tools and how we can implement it in different market areas and how this should influence worldwide. It is very important to take into account that globalization forces us people by the natural gift to look for new options to get ahead, build innovative products or create new businesses or business projects based on technology because technology and the economy are together and We must consider both areas when taking advantage of market opportunities.

Digitization opens the doors to be able to take advantage of the markets in a better way and discover those market segments that are not yet exploited but we always have to consider that it is the only way to start business because practically our entire life is currently based in technology and technology is involved in all areas such as medicine, transportation, education, telecommunications, etc. Thanks to technology and digitization, we can see what the daily life of other cultures is like without having to travel to another country to know the culture in a physical way, thanks to technology we can discover and learn from other cultures or at least be clearer the information and knowledge of the diversity of culture that exists in our world.

We can say that when making investments in companies we always have to bear in mind that one of the safest investments is in companies that are dedicated to technology because it is an engine that always advances as the years go by and that it will never stop and this allows us to participate in technology companies. Currencies as a source of investment are being changed because nowadays new easy-access monetary transactions begin to appear, greater profitability, there is no danger that these new currencies called cryptocurrencies will be robbed or duplicated, it is the new era in digital currency and One of the most important is Bitcoin, which allows us to carry out purchase and sale transactions and at the same time allows us to generate profits through investment.

CHAPTER 2. DIGITALIZATION AS A GLOBAL TREND AND GROWTH FACTOR OF THE MODERN ECONOMY

2.1. Analysis of trends in the data-driven digital economy

The digital economy continues to expand at an impressive rate to use, collect, send and store massive information that machines can achieve. This information comes from fingerprints and information that people leave when using mobile devices and computers in personal and business activities that they leave in different applications. The consequences of data collection come from and depend on the type of information used: private, public, governmental or non-governmental personal. An entirely new data value chain has emerged to collect information, compile new data for analysis, and modernize data.



Fig. 2.1. Evolution of internet traffic in certain years gigabytes per second

Source: [https://unctad.org/system/files/official-document/der2019_overview_es.pdf]

Digital platforms are the second most used worldwide based on business models that have changed and evolved differently from the traditional economy. The process is reflected in that 7 out of 10 companies use data-driven digital platforms. Digital platforms are used for clients to interact online and to meet in trading meetings. They can be distinguished between transaction platforms and innovation platforms. Transaction platforms consist of operations between two or more people online that

facilitates transactions and information exchange. Some examples include Amazon, Alibaba, Facebook. Innovation platforms are those that allow users to create environments for the development of applications such as Android and Linux.

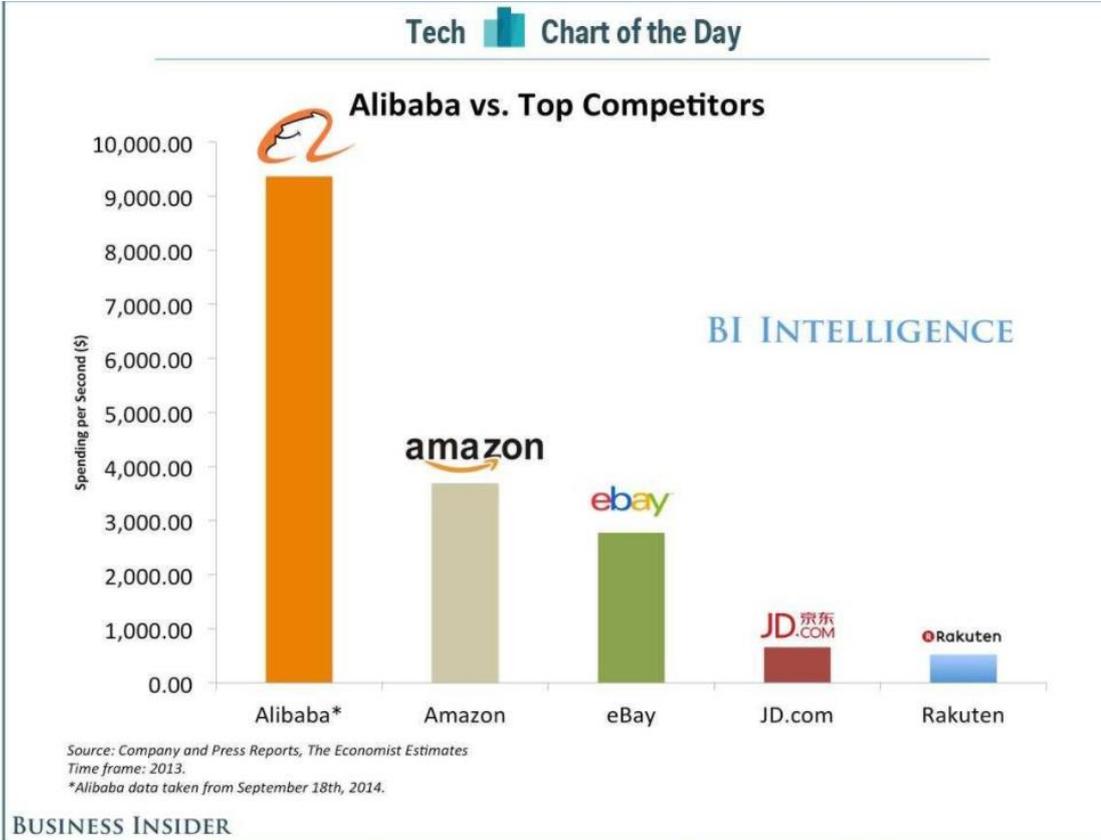


Fig. 2.2. Innovation platforms and development of applications

Source: [https://pulsosocial.com/2014/09/23/infografia-7-datos-que-comprueban-el-poder-del-retargeting/]

Platform-centric companies have many advantages related to the traditional economy because they operate as intermediaries and infrastructure, because the collection of information in the database and the interaction of customers in applications is related. The growth of digital platforms is related. with the collection of data and the interest they generate so that they can analyze the client and monetize their use. The expansion of the digital economy creates many economic opportunities because digital data can be used for development purposes to assist social purposes as required by the community. Therefore, they can help solve economic and social problems and turn them into strong factors that improve productivity and innovation.

Alphabet A 2,859.3 +38.3 (+1.36%)

Start Trading

AD | 73.81% of retail investor accounts lose money when trading CFDs with this provider.

General Chart News & Analysis Financials Technical Forum InvestingPro

Overview Profile Historical Data Options Index Component

GOOGL Overview



Fig. 2.3. Alphabet digital platform

Source: [<https://www.investing.com/equities/google-inc>]

From a business point of view, we can see that the development of the digital economy encourages greater productivity and continuous improvement in its products at lower costs. This causes value chains to be digitized, generating added value and a broader structural change. We cannot say for sure or measure the value of the digital economy because we cannot define exactly what the digital economy means and because we cannot statistically measure the digital economy due to lack of statistical information since several countries are developing and other countries advance on a large scale.

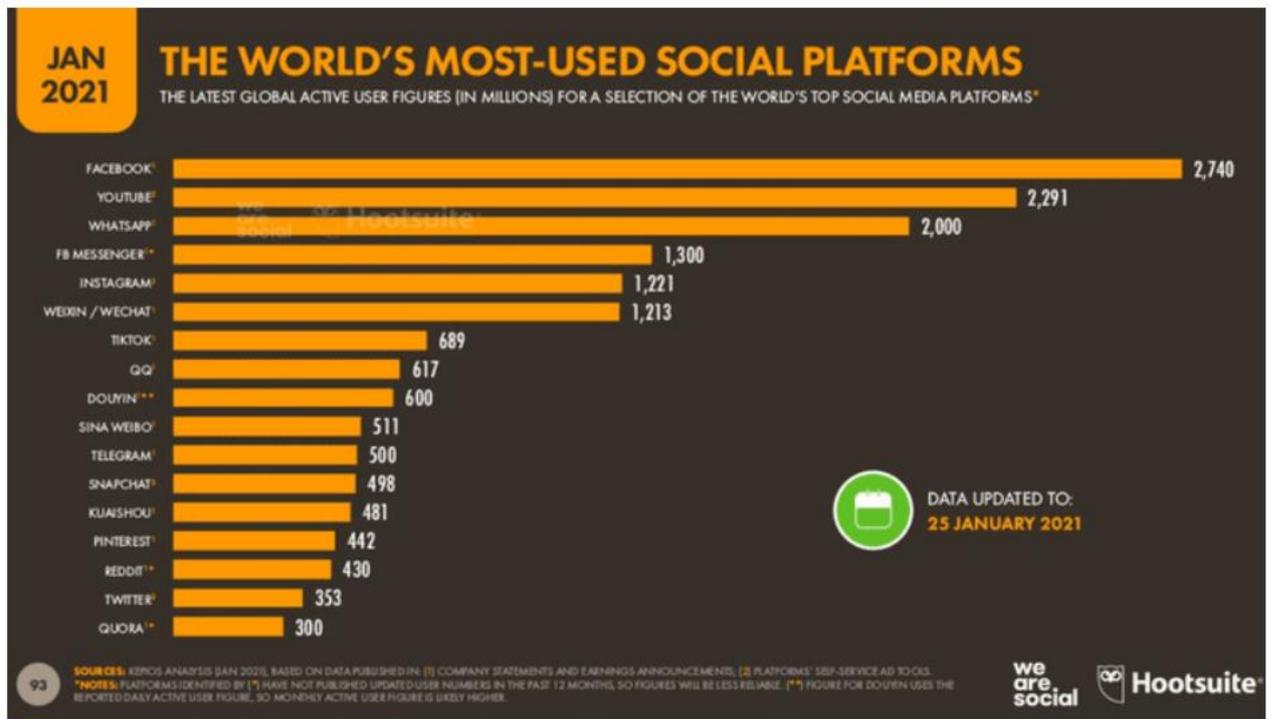


Fig. 2.4. The world most-used social platform

Source: [https://marketing4ecommerce.net/cuales-redes-sociales-con-mas-usuarios-mundo-ranking/]

Digital platforms are increasingly important in the world economy because the general value of companies is more marketable, reaching up to 7 trillion dollars, giving as a reference the importance of the integration of the database of the platforms. Some companies managed to position themselves as the strongest in the stock market such as Google, which occupies up to 90% of the market in internet searches, followed by Facebook as one of the most used companies worldwide, occupying 95 % of the market for social media platforms.

There are several factors that imply the rapid advance of these platforms. The first is due to the effects of the network, that is, the more users there are in a platform, the more valuable it becomes for other users and investors. The second is the more information there is on the platform and the faster the information access to the database, the greater the data control. Thirdly, we have that between a platform it begins to gain more customers and offer different integrated services to the platform the cost of the user will be lower begins to attract more users. As the global competition to gain territory on the internet and achieve greater number of users begins to occur

transactions between companies such as the acquisition of shares in companies such as the acquisition of LinkedIn by Microsoft and WhatsApp by Facebook. There is also the acquisition of shares between technology and telecommunications companies such as Microsoft and Alphabet acquired the shares of Nokia and Motorola.



Fig. 2.5. Meta Platforms Inc.

Source: [<https://es.investing.com/equities/facebook-inc-chart>]

Internet platforms also carried out purchase transactions or entered the advertising, marketing, industrial sector, real estate and marketing markets. At the time of converting data into digital intelligence, it has become a fundamental tool to capture value, because it allows us to capture the data and use it as market strategies, allowing us to store, capture information and we can transform it into crucial information to determine and know what customers want to obtain highly competitive and valuable advantages to face the world market and to be able to capture that market niche that has not yet been discovered and exploited.

It is necessary to have policies to be able to control the data and the digital economy so that the benefit is for all. Those responsible for controlling economic data

must consider that the process is clean and that it is of benefit to all public or private companies so that there is no output and bad information on the network and that it is based on real statistical tables and with clear information so that all users are able to review the information without any type of restrictions when requesting information. It is also important to create new paths in digitization where we can experiment and discover new paths of the economy in order to advance in a global environment where we all have the opportunities to have a better development in the social and cultural sphere and thus optimize natural resources. Of each country.

2.2. Regional and international approaches to regulating cross-border data flows

In recent years, the increase in national and international regulations for data protection has been noted, due to this it has been possible to observe the increase in the tensions that these regulations generate with the internet and the search for a global and digitized economy. To obtain this digitized economy, the transfer of data without border limits is essential. The different opinions that each nation has about the transfer of data and the connection without borders is creating a division that does not contribute to a total integration, for which several nations have decided to create organizations and mechanisms that can help create a coordinated flow and free in data transmission.

However, creating an international movement is not an easy task and reaching an agreement between nations seems to be impossible due to the lack of agreements between them. Due to the pandemic caused by covid-19, digital commerce has become essential for small businesses and large multinational companies to continue operating with relative normality, something that is common between a small business and a multinational in this digital world is the use of data and information they need to be able to provide services to their consumers.

For international negotiations the flow of data has become an essential and relevant issue, American companies such as amazon, ebay, apple are extremely dependent on the data they obtain from their consumers who are outside their country

of origin due to this. Unidos has become the exponent and the main power in including this issue in the international commercial arena.

It is an undeniable fact that in order to facilitate world trade in goods and services, it will be necessary to implement a good data flow system. Currently, many of the goods traded over the internet are kept within the network, such as cryptocurrencies and nfts. It is very likely that the use of these goods will increase due to the expansion of new technologies such as the use of artificial intelligence (AI). Every decision made by the leaders of each country about data transmission has great repercussions on the global market trade. We can observe several conditions in the system of flows of goods and services.

Due to the policies of each country, the suppliers of the goods may also be affected due to the costs generated by these policies. A clear example of the problem that these policies generate can be observed when in certain countries you cannot access a web page because it violates certain security regulations, resulting in the consumer not being able to access prices and products that cannot be available within your country, a loss is also generated for the provider due to the loss of this client. It has been proven that the attempt to generate laws that help control the flow of data has not been more successful because the data is not stored in a specific country or space.

The data is located in storage units that are located around the world since large companies move their storage units to countries where maintenance costs are lower, which makes us wonder, the data located in another country must comply with the Laws of the country of origin or of the country where your storage is located also leads us to the question that happens with the copies of this storage, since it is confirmed that companies such as Facebook, WhatsApp, Instagram, etc ... not only have a single unit storage and not a single backup unit. There are several issues to take into account, but one of the main ones is the comparison between the data of goods and services and the difference that these have with the personal data that each consumer places within their social networks.

Although personal data within social networks is not the majority in the world of the internet, there are problems to generate a good distinction between this personal data and data on goods and services. Being able to analyze this personal data has

become a very big problem for the artificial intelligences in charge of reproducing, collecting, retaining and sending this data to the servers and to the suppliers of the products or applications.

The fact that each country has its own laws to perform an optimal collection and analysis of this information much more complicates the process, making it slow and insufficient. In the end, the processes to regulate cross-border data remain weak, although these are strongly connected to international trade. The fact that most of the countries did not develop do not have the technology and infrastructure necessary to be able to provide a data protection service for customers, thus generating power to be concentrated in countries with the capacity to provide this service, without However, the results of this is that first-world companies think more about their interests than about the consumers of their products and services.

Countries such as Ecuador, Peru or Colombia have shown their displeasure in meetings with the WTO and wish to limit negotiations until they have the assurance that companies and the other countries that make up the WTO can ensure privacy and provide protection to those of its citizens. On the other hand, Brazil has focused on the issues for the elaboration of the rules and conditions but has announced that in the end the regulators themselves will find processes and situations where the control of the data flow will be inevitable and will become essential. Lately, businessmen and high-ranking politicians are finding the WTO as an old and bureaucratic association that is not making the necessary decisions to reach an agreement and thus be able to generate a free flow of data and commerce.

But why consider an organization that has been trying for years to solve the problems in international trade obsolete, since the agreements that govern this organization and that are the basis of all business carried out between countries were made and accepted in 1994 Except for several updates that have been made to these regulations, until today the WTO has not made or reacted in the best way to the alterations made in the international market due to the internet, thus making known the deficiency of this organization and more even in post-pandemic times where undeveloped countries have been most affected. It is clear that the laws are not to be changed every time a country is affected or does not have the necessary development

to adapt to new technologies, but the fact that the WTO is based on the principles of non-discrimination and fair trade between nations makes many wonder if this organization is advancing at the same rate as new technologies.

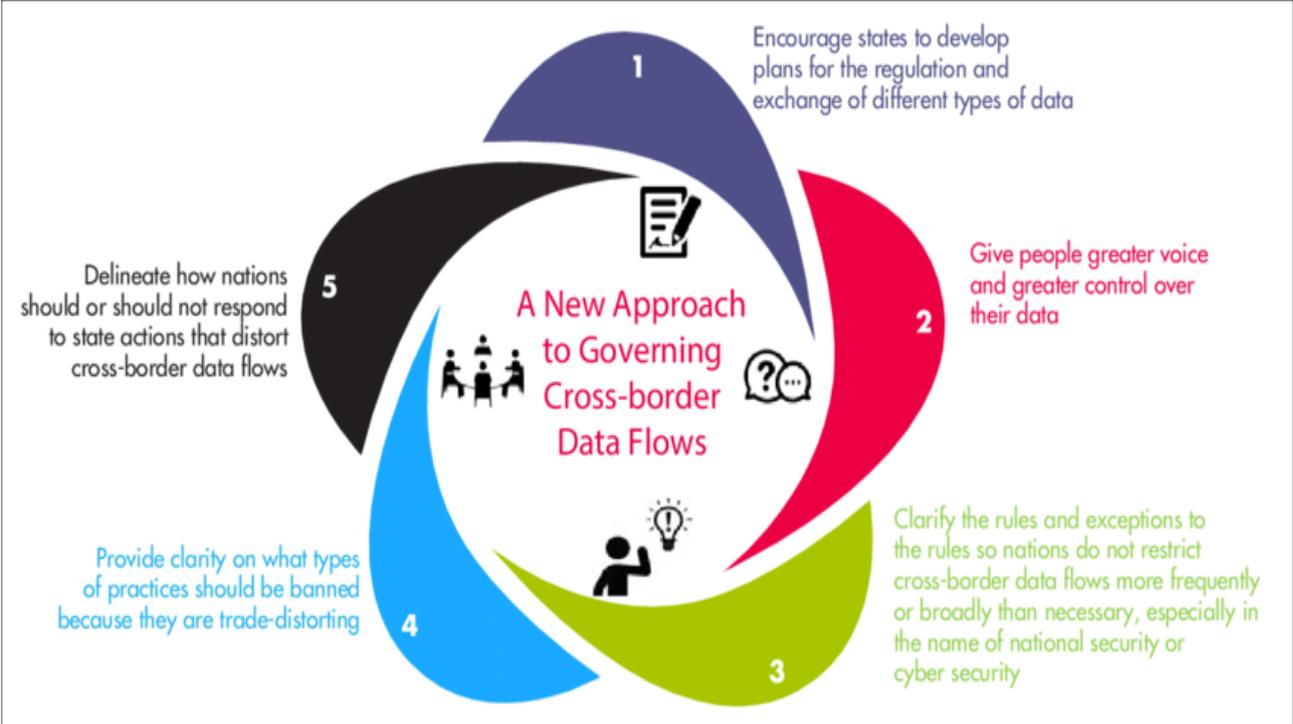


Fig. 2.6. New approach to governing cross-border data flows

Source: [https://www.researchgate.net/figure/A-New-Approach-to-Governing-Cross-Border-Data-Flows_fig3_333757894]

The distinction between commodities and services is a cornerstone of the international trading regime. The General Agreement on Tariffs and Trade (GATT) governs products in the WTO system, while the General Agreement on Trade in Services governs services (GATS). Both the GATT and the GATS contain "general exception" clauses that apply to cross-border data flows. Article XX of the GATT permits members to take "any action it thinks necessary for the protection of its vital security interests," whereas article XXI allows members to take "any action it considers necessary for the protection of its essential security interests." Article XIV of the GATS, likewise, permits members to take actions "necessary to protect public morals or maintain public order."

2.3. Estimation the digitalization process in Ecuador

Ecuador is a country located in the American continent and maintains borders with countries such as Colombia and Peru. Ecuador is considered a third world country, due to not having an appropriate development compared to its neighboring countries, not only in infrastructure, health and safety. Lately, a growing gap has also been observed in the technological and development field for new technologies. Adapting to new technologies has always been a conflict in Ecuador, but why has the problem gotten so much bigger in recent decades. In order to make an accurate conclusion on whether the country is ready for complete digitization. In the first place, Ecuador has proven to be a country that does not have enough technology to achieve digitization, but that does not mean that it is not in process.

In recent years several projects have been started to make the dream of a digitized country come true. Universities such as the experimental technology research university (YACHAY), located in the northern part of the country, is a clear example that Ecuadorian society is interested in generating new technologies so that they are part of the era of digitization. This university has launched projects such as electric and autonomous cars, they have also been part of the realization of software that is now part of the financial system of Ecuador. And not only is this university, in the same way we have the San Francisco de Quito University that helps its students with web development programs and applications.

The Ecuadorian government has realized that digitization is an important part for the connection not only commercial but also in education, health and infrastructure and has decided to implement internet connection programs for people who live far from urban areas and also for people with limited resources who, due to their income, do not have the monetary capacity to be able to acquire the internet. In the same way, the Ecuadorian government is generating projects so that each student from public schools throughout Ecuador can access their own computer.

A right that is considered in the constitution of the Republic of Ecuador is access to information and communication technologies (ICT), for this reason the government of Former President Rafael Correa began the initiative through the ministry of telecommunications and society of the information to promote the development of

society by offering cutting-edge technological services, through training, internet and equipment. A clear example of the evolution in the country can be measured with the data from 2006 where only 6 out of 100 Ecuadorians had access to high quality internet; and totally different for the year 2012 where 60 out of 100 Ecuadorians had internet access.

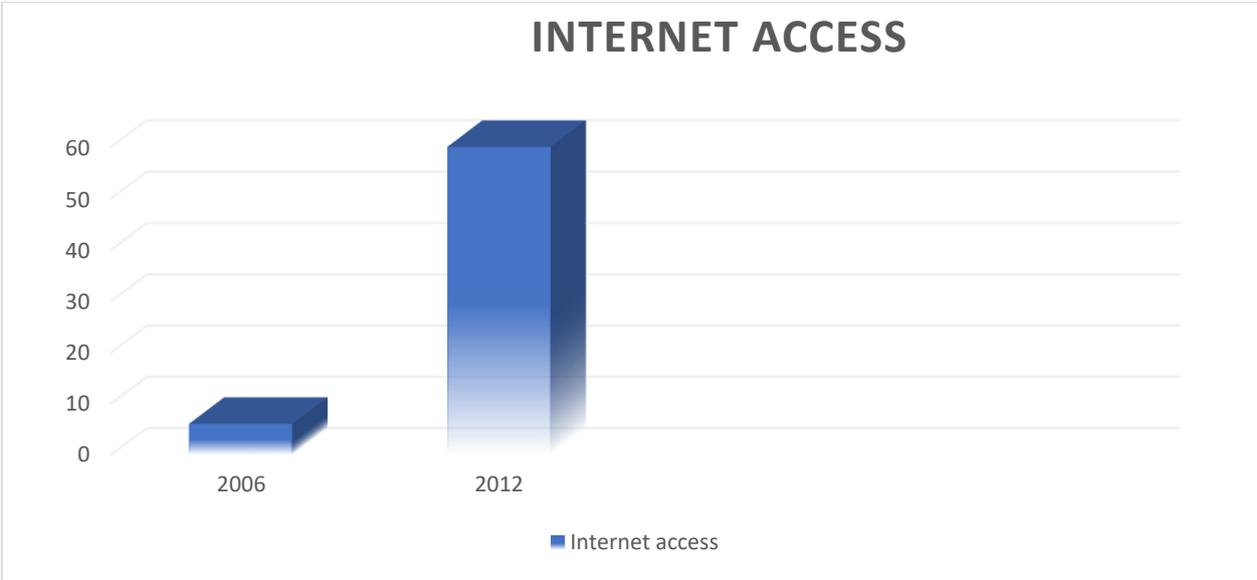


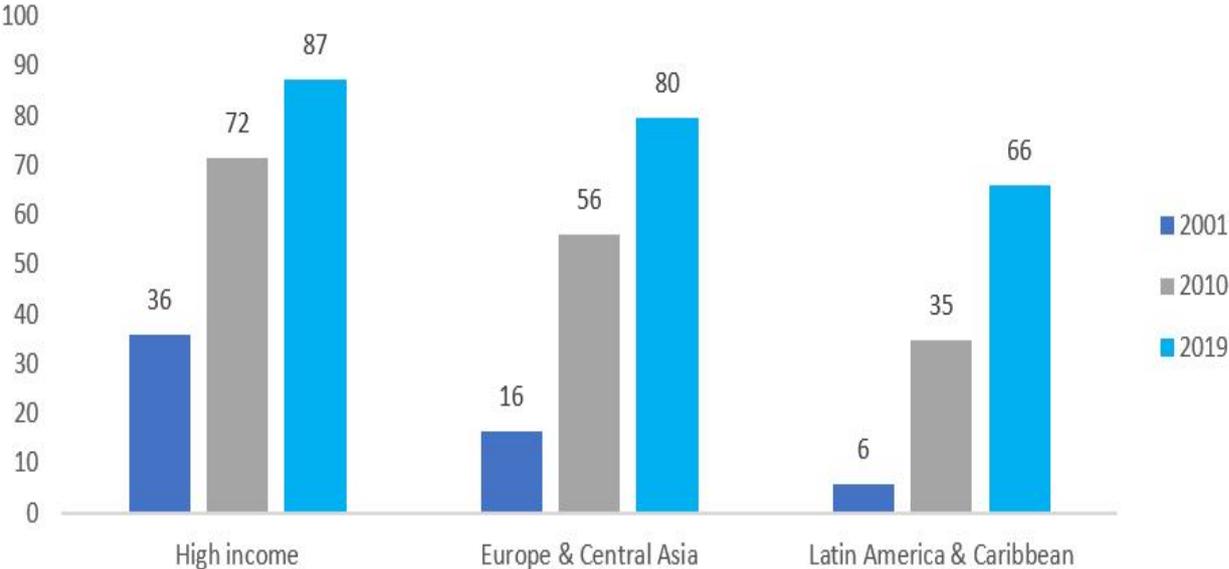
Fig. 2.7. Internet access in Ecuador

Source: [<https://www.telecomunicaciones.gob.ec/ecuador-continua-creciendo-en-tecnologia/>]

Clearly in the last 4 years before the covid-19 pandemic, Ecuador has surpassed its position in network availability and better telephony performance, thanks to recent state policies such as: the implementation of optical vibrations around the country, Maintain a constant update with teachers on new technologies and send mobile classrooms to provide training in the farthest places in this country, at the same time the government's decisions to send its students and experts to carry out training in countries like China, Qatar or Saudi Arabia have increased the level of knowledge about new technologies in the country.

Despite this, not only Ecuador is a country that is not ready for digitization, on the other hand, the entire region and countries of Latin America and the Caribbean are still struggling to close the digital gaps. The covid-19 pandemic caused development in this region to increase but at the same time it became uneven for low-income

families, thus resulting in the region still far behind the economies considered first world with more than a third families across the region who remain disconnected.



Source: Author's calculations based on WB-WDI dataset.

Fig. 2.8. Latin America and Caribbean digitization time scale investments

Source: [https://blogs.worldbank.org/ppps/latin-america-and-caribbeans-digitization-time-scale-investments]

Costs throughout the region are relatively high compared to people's incomes and for this reason many people choose not to hire digital services that many do not use at the end of the month. We know that Ecuador has an average price to acquire 1GB of mobile data at \$ 6.93, placing it as the 3 most expensive country to acquire internet in all of South America, only behind countries such as Guyana and Bolivia. That is why we have to take into account that an average Ecuadorian earns around \$ 440 US dollars and if he wants to acquire an internet plan he will have to invest around a third of this salary. The question posed by Ecuadorian citizens and by the authorities of this country is how we can close this gap in prices and access knowing that in Chile the price for 1 GB of mobile data is \$ 0.71 and where the minimum salary is \$ 600 US dollars. The solution is simple it is time to invest more money to help eliminate this difference. Associations such as the international financial corporation could take the

initiative to help countries like Ecuador, Bolivia or Peru obtain the necessary capital to continue investing in the infrastructure necessary to provide services to society.

The benefits of economic digitization start as the main point in the digital ecosystem, obtaining benefits for public and private companies, and for users who want to be known worldwide. If we talk about the digital economy, we must take into account that it needs a political and legal structure to take care of the personal data of each user, thus being transparent, safe and personal transactions. In order to have a law that is reliable, it is necessary for the government to take the personal data protection bill as a measure, which must be an official document for the National Assembly of Ecuador to make a decision and in turn this law can be debatable.

This law must be focused and must take as reference international organizations, because these organizations have more experience since they have economic models of first-rate countries such as the United States and Europe. These regulations allow the country to reactivate its economy, and to have international agreements with other countries, which is a factor that benefits the economy and society of Ecuador, making us known internationally in culture and in turn importing information This allows us to minimize time because we have models that large companies have already applied previously and have produced successful results.



Fuente: Ministerio del Trabajo
 Elaborado por: Departamento de Economía y Comercio Exterior de la CCO

Fig. 2.9. Evolution of telework, number of people

Source: [https://criteriosdigital.com/datos/deptoeconomicoycomercio/el-teletrabajo-crecio-en-el-ecuador-durante-la-pandemia/]

There are several proposals that are debatable in Latin America with the aim of carrying out a digital transformation that benefits microenterprise projects to encourage competitiveness in times when technology is a tool that allows us to reactivate the economy and at the same time help the development of society. It can be said that in the world we are in the fourth industrial revolution, the digital one, we must promote modern commercial and industrial policies integrating technology in each productive link. The regional competitiveness agenda should include practical recommendations focused on economic recovery anchored in good practices of solidarity and regional cooperation.



Fig. 2.10. Proposals for digitization for small and medium-sized enterprises
Source: [<https://www.123rf.com/>]

Public-private partnerships allow for a digital transformation to support entrepreneurs who need to boost their businesses and also digitize the economy. These platforms are in charge of managing public and private dialogues with the aim of increasing the economy of each country according to each website. With the digitization in Ecuador we provide support for millions of entrepreneurs and promote

local investments that may in the future be carried out internationally. Digitalization promotes and generates millions of jobs that translates into social economic well-being and group economic development.

According to the UN, Ecuador ranks 74th in the government digitization index, this world list includes 193 countries around the world, with Denmark being the country with the highest digitization. These data focus on the quality of digital services and the number of telecommunications networks. According to the UN, this study seeks to identify the strengths, challenges and opportunities, as well as policies and strategies of governments around the digitization of services. Ecuador with this participation better than 22% in the level of digital development, however there are still digital gaps that are persistent. With the Covid19 crisis, the role of digital government has been highlighted not only by seeing from a conventional point of view in the provision of public services, but also by new innovative mechanisms to manage the crisis, such as telemedicine, teleworking, virtual education and the tracking of patients with covid.

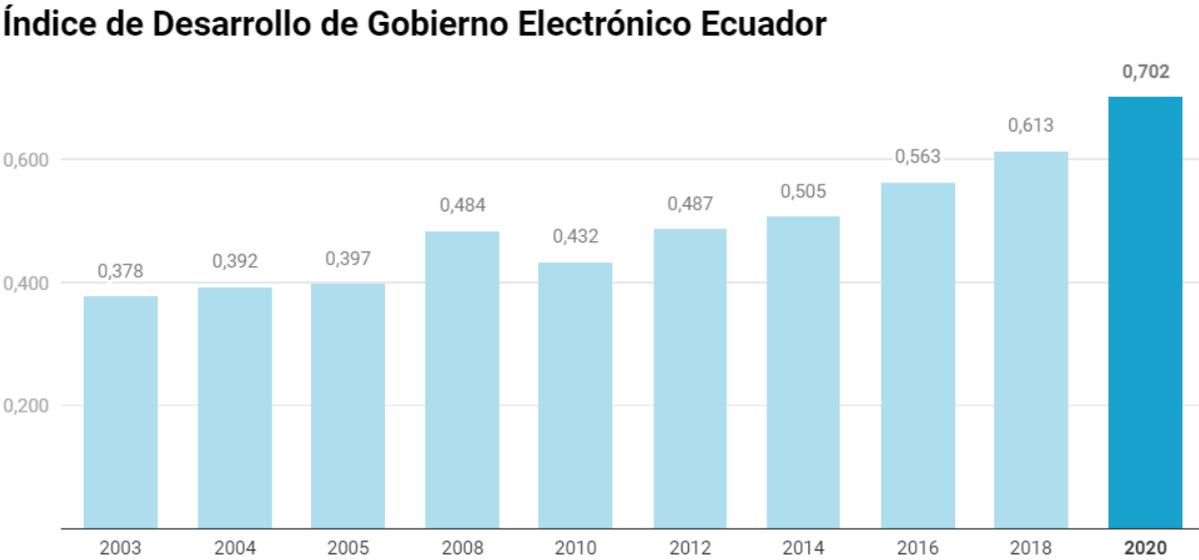


Gráfico: Nelson Dávalos • Fuente: Índice de Desarrollo del Gobierno Electrónico (ONU) • [Descargar los datos](#) • Creado con [Datawrapper](#)

Fig. 2.11. E-government development index, Ecuador

Source: [https://www.primicias.ec/noticias/tecnologia/onu-ecuador-indice-digitalizacion-gubernamental/]

Compared with Latin American countries, Uruguay is the country that obtained the highest digitization index score, and Ecuador is ranked 10. This means that Ecuador should continue to work on digital economic factors that promote and encourage digitalization. society to focus on new technological tools, because we are in the digital age and it frequently has many changes, which we must train people and accustomed to using the digitalization model. In Ecuador there is a digital gap that is evident, it must be covered in order to incorporate and consolidate economic digitization in all its areas. Ecuador has a lot of potential to export but due to lack of information and not having an established digital economy, transactions or obesity and commercial relationships become very extensive in terms of investments, so it is crucial to invest in digital technology and propose training for the community and thus have an efficient database and a general computing culture to enhance its use and strengthen the ecosystem of Ecuador.

For a digital economy to be successful, the main entity must be well structured to obtain the greatest benefit from digitization, that is, the government must maintain the forefront and that regulations do not obstruct investment entrepreneurship opportunities and rather become a support for these businesses to grow and expand into a new environment. Currently there is the use of digital money in investment and daily use issues such as cryptocurrencies that allow us to carry out transactions in a faster and safer way, one of the best known cryptocurrencies is bitcoin, this cryptocurrency is very potential in the market due to its high value and the limit of bitcoin that exists in the market, this means that we can make investments in the short, medium and long term.

In today's Ecuadorian society, there is not much knowledge of electronic money and this is reflected in the fact that Ecuadorian citizens need to have more information to be able to carry out international transactions and avoid fraud. In Ecuador, as part of Latin America, the gap to be covered is high in the public and private spheres to carry out its foray into the digital economy as successes. According to the INEC, it provides important information that allows determining the evolution and current situation in technology in the different socio-economic areas.

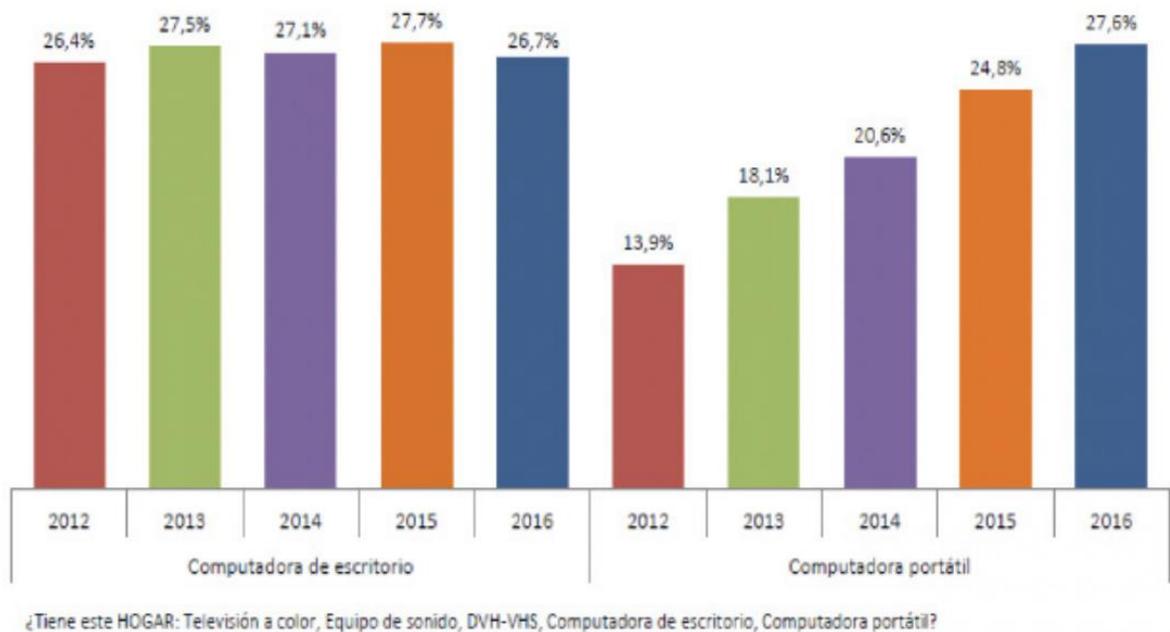


Fig. 2.12. Technological equipment of the home nationwide

Source: [https://www.3ciencias.com/wp-content/uploads/2018/08/Art_2.pdf]

With respect to people who use smartphones, a growth of 40 points in 5 years is also shown, and the trend continues to rise to 56%. Ecuador has a lot of potential to explore mainly in the field of Internet use, shopping, sales, and communication skills. Investment is key so that the use of technology reaches all spaces of society in different variants and we can also make the workforce more technical and in general to enhance its use and strengthen the digital economy in Ecuador.

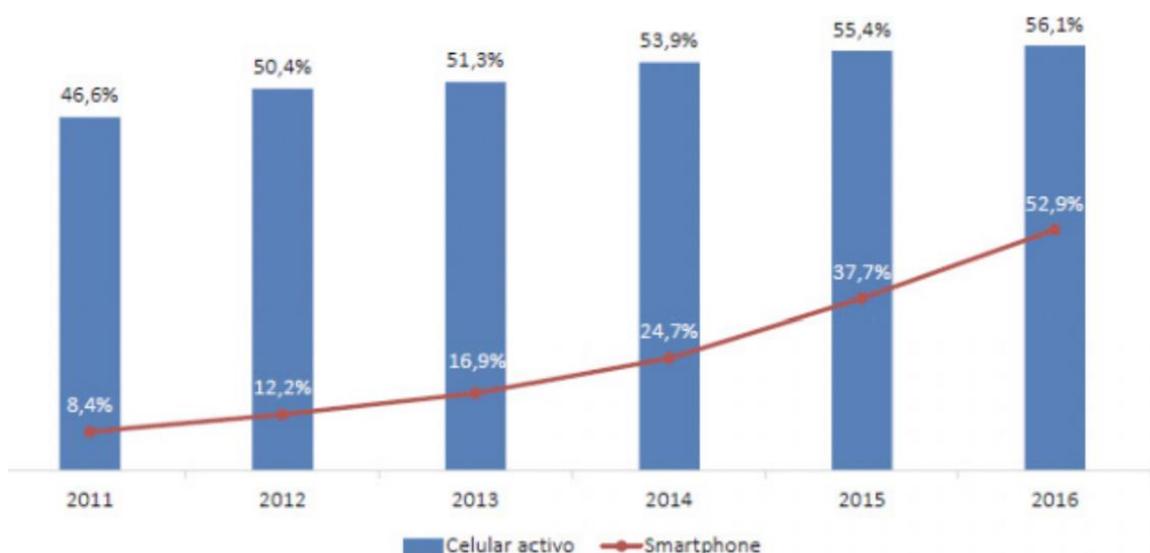


Fig. 2.13. Percentage of people who have a smartphone nationwide

Source: [https://www.3ciencias.com/wp-content/uploads/2018/08/Art_2.pdf]

The main challenge for Ecuador and for Latin America in general is to ensure that all companies take advantage of technology in organizational processes to cover the existing gap that persists with developed countries and that has not allowed a greater relationship towards a new and renewed digital economy for developing countries. Another important issue is that of digital identity because there are people who cannot use digital devices and this makes it a challenge for digital technology, because the government is in the process of digital development with the objective of minimizing and improving the quality of public service using mobile applications such as in the health area where we can make medical appointments avoiding going to the physical area where there are crowds of people. It is necessary and essential to train society to have a digital culture and focus on new paths of economic development.

Conclusions to chapter 2

Digital technology is an indispensable base in the economy because it allows us to open new markets with faster access to information and with transactions that do not occupy our time in a way that we can do other activities and at the same time have clear information from our mobile devices. With the option of data it allows us to have a greater relationship between users and companies to make transactions and better relationships in the social sphere and negotiations that allow us to expand globally. As a basis in social networks we can see that it is a door to generate income and have a greater social relationship with opportunities for micro companies or personal ventures that can go abroad by making themselves known and having opportunities with large companies. Digitization in Ecuador is a great opportunity for the community because we can import and export more information and, in turn, large companies that have strongly promoted the issue of the digital economy can be taken as a business model. The international development programs implemented by the governments of developing countries must be clear and politically stable to prevent information from being used in an unwise manner and from a possible theft of information.

For Ecuador, it is essential that there is digitalization based on international regulations that allow us to meet personal goals with the projection of new goals such as the creation of micro companies or projects that facilitate the economic development

of the country. Ecuador needs to close the digital divide so that it can continue advancing in the digital economy and not remain an underdeveloped country and neither continue to lose international trade relations with other nations. It is necessary to encourage people to use digital technology in order to improve the internal economic activities of the country, providing training on how to use technology and explain the benefits of technological tools.

The policies for digital technology to be a transparent and clear process depends on the Government and international conventions because they need a model to follow that is established where we can have information in a safe way and clear data. Proposals and commercial relations are fundamental for Ecuador because we need to activate the economy that was devastated by covid-19, leaving many people without jobs and low returns in the country's economy. Promote digital innovation through the investments that private companies must make and as the main axis the Government with the aim of empowering Ecuador in the digital economy. Thanks to the digital economy, many people can undertake and make investments and thus make the culture of Ecuador known with proposals and investments from abroad that also greatly influences investments and inclusion in social development. The objective of the trainings is to provide information to people for technology not only to use it for social networks but also so that they can use applications for use in medicine, digital work, education, and in new ventures that allow us to go out and improve economic activity.

CHAPTER 3. INNOVATIVE APPROACHES TO DIGITALIZATION OF GLOBAL ECONOMY

3.1. Ways of improvement the digitalization process in Ecuador

The society of Ecuador worldwide is constantly evolving and we have to be prepared for these daily changes with the dizzying technological advances. Our country has been growing in technological fields that improve our quality of life and make use of virtual platforms and care of the database implemented by the government after the pandemic. These benefits are very welcome for Ecuadorians who are from vertiginous to progress in technology and economy. The government of Ecuador implemented strategies to massify the use of technology, expand communication and go to the areas of production companies. In this context, the Ecuadorian Ministry of Telecommunications raises the first digital agenda of Ecuador.

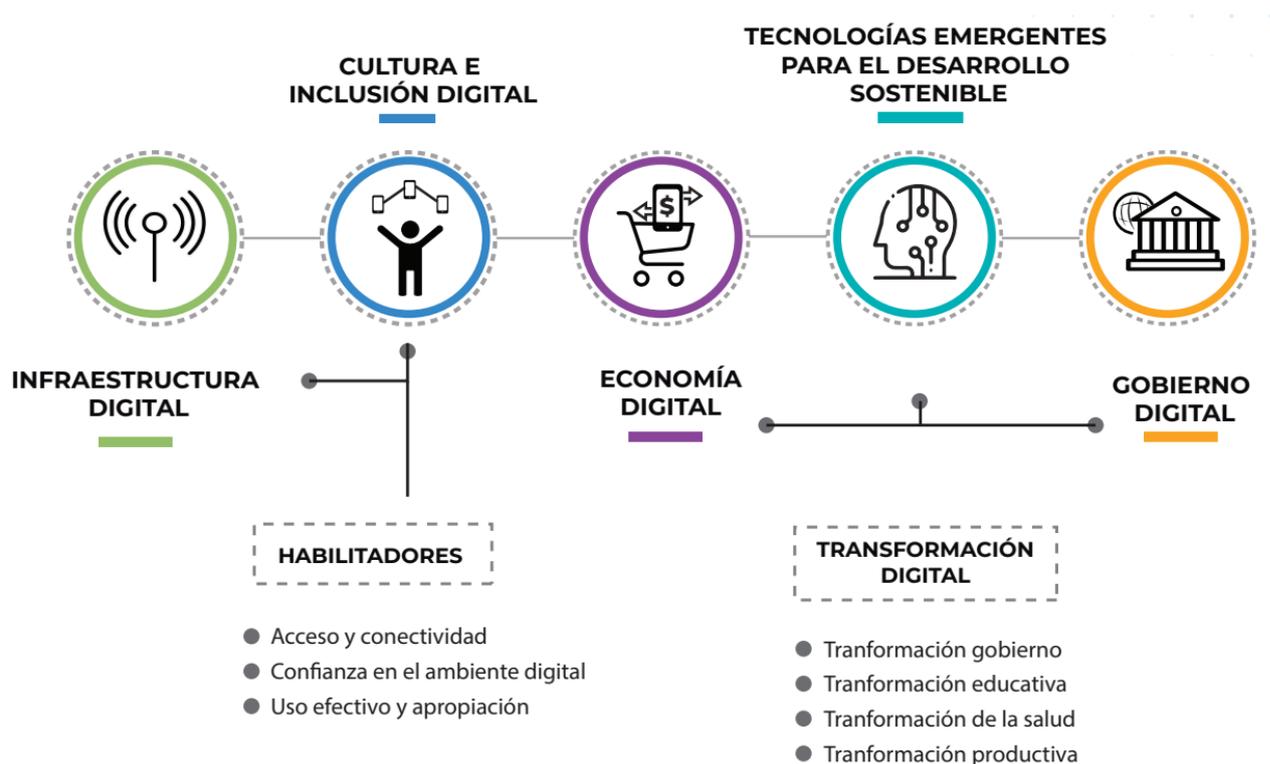


Fig. 3.1. Ecuador's digital agenda scheme

Source: [<https://www.telecomunicaciones.gob.ec/wp-content/uploads/2021/05/Agenda-Digital-del-Ecuador-2021-2022-222-comprimido.pdf>]

The Digital Agenda of Ecuador creates paths towards digitization by setting strategies for the actors to promote this project from the homes, education, social and

economic sectors of the state. The main axes of the digital Agenda of Ecuador are defined through the improvement of connectivity, efficiency of the administration through the work of the digital government, under certain parameters established by experts and by the ministry of telecommunications and the society of information can be built the new telecommunications system for Ecuador that will provide skills, knowledge and computer skills for the aggrandizement of Ecuador.

Digital infrastructure, its objective is to promote the access and use of telecommunications through promotions in digital infrastructure, with the aim of having greater coverage in rural and marginal areas by entering new technologies. Ecuador and thanks to the support of MINTEL are promoting the telecommunications sector to implement connectivity solutions at the national level, taking into account rural and urban areas that have zero connectivity. Among the main mobile operators in Ecuador, they proposed solutions to optimize investments in mobile services, an incentive proposal that invites to optimize investments and focus on populations that lack coverage. This initiative is called Connecting Communities, whose objective is to make an agreement with the main cities of each province where it provides technical advice, develops solutions and manages the provision of services. This initiative allows the deployment and installation, socialize the project and benefit the communities of each province. Another initiative is the neighborhood internet, which is a management model that supports the sale of internet in small stores to generate WiFi connectivity in rural areas, thus promoting the development of small businesses that need internet and motivating microentrepreneurs. This initiative encourages the access and use of telecommunications, for example by updating and adjusting the rate regulations for the use of the internet, especially in priority areas. They implement mechanisms to harmonize and coordinate actions reducing processing, costs and other aspects that affect the economic development of networks. They form sectoral committees that allow a permanent dialogue for the recovery of telecommunication services and manage emergencies according to the rates proposed in the project granted by the Ministry of Telecommunications of Ecuador.

Meta / Compromiso	Responsable
Incrementar al 98% la cobertura móvil, a 2022	MINTEL Operadoras Móviles
Alcanzar el 80% de cobertura móvil de tecnologías 4G, a 2022	MINTEL Operadoras Móviles
Cobertura a 219 de 221 cantones con fibra óptica troncal, a 2022	MINTEL Operadoras de Telecomunicaciones
Aumentar a 50% las conexiones de los hogares con fibra óptica, a 2022	MINTEL Operadoras de Telecomunicaciones
Instalar 4.817 puntos WiFi externos , a 2021	MINTEL
Dotar a 20 nuevas parroquias rurales con el Sistema Móvil Avanzado, a 2022	MINTEL Operadoras Móviles
Publicar el Plan Nacional de Telecomunicaciones de Emergencia, a 2021	MINTEL
Conformar el Comité Sectorial Gobierno e Industria para el diálogo y accionar coordinado para recuperar servicios de telecomunicaciones en emergencias, a 2022	MINTEL COE
Incrementar al 5,60 el índice de desarrollo de tecnologías de la información y comunicación, a 2021	ARCOTEL MINTEL

Fig. 3.2. Goals and commitments of the telecommunications initiative

Source: [<https://www.telecomunicaciones.gob.ec/wp-content/uploads/2021/05/Agenda-Digital-del-Ecuador-2021-2022-222-comprimido.pdf>]

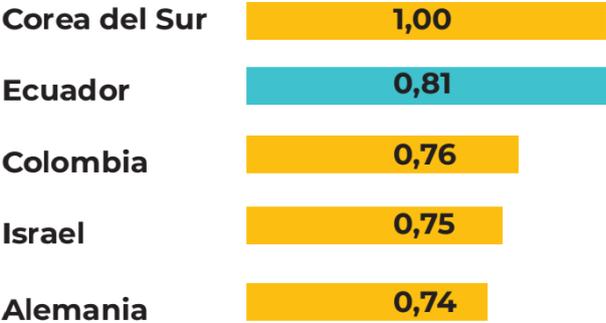
Culture and digital inclusion, the development of digital skills and competences of citizenship is implemented, such as digital literacy and explaining the benefits of the

use of digital technologies for citizens to use internet spaces such as telework, tele-education and digital health, whose general objective is to promote the change towards digitization as a reality towards the future. With this culture we can establish fundamental pillars that promote digital inclusion materials, culture and digital skills. A main issue where digital inclusion enters is teleworking, faced with the need due to the pandemic, the government of Ecuador and the ministry of telecommunications reached cooperation agreements with Microsoft, Google, Sisco and Zoom to facilitate the use of their platforms in a way free for the public sector and rural areas of the country. With these agreements, they allowed to support unemployed people and people affected by the crisis to develop new skills in order for citizens to join new jobs according to the demand of the labor market. Another inclusion is tele-education, which according to the Ministry of Education, Ecuador counts 16050 educational institutions with regular training, with 4337414 students, these numbers correspond to 76% of public educational institutions and 24% of private educational institutions. Based on these antecedents, there was discomfort with the students because some showed problems with internet access to face the home-schooling proposal, which students must enter educational content through videoconference. Digital health is implemented in the plan with the objective that citizens use the platforms of the Ministry of Health to obtain medical attention and the development of a clinical history. Digital culture and skills refer to new ways of relating in a more digital world, in which technologies became the protagonists of the day. There were virtual trainings thanks to the support of the Ministry of Telecommunications with the aim of promoting and improving teaching and learning to promote the new use of digital material that accompanies us on a daily basis.

Digital Government, the National Government through the Ministry of Telecommunications, obtained good results for its commitment to be able to advance to the digital transformation and an implementation of digital tools. The country even exceeded the goals of the previous governments that were expected in the comprehensive development plan for citizenship with positive results thanks to the application of instruments with visions towards the future that are aligned with the national objectives of a new electronic government. According to the OSI index,

Ecuador is above the world average (0.5) and regional (0.4) percentages higher than Latin American countries such as Colombia, Peru and Bolivia.

Índice de servicios en línea



ÍNDICE DE SERVICIOS EN LÍNEA

Ecuador con un índice de 0,81 supera en la medición de servicios en línea a : Colombia, Israel y Alemania

Fig. 3.3. Ecuador's online services index

Source:[<https://www.telecomunicaciones.gob.ec/>]

The OSI is based on measurement with international surveys where experts investigate the situation in each country. This survey is based on components such as government planning, government regulations, online services, access and dissemination of public information, and citizen participation in electronic platforms. The advancement of online services in Ecuador focuses on the centralization and digitization of procedures from web portals with the development of systems to improve public management. One of the main platforms of the National Government of Ecuador is the official page where we can see in its web portal all the information pertinent to projects, works and services that Ecuador offers to its citizens and they can also see their personal data that was uploaded to the database at the national level in the different ministries that collect the information in the different activities.

Based on the law of electronic commerce, signatures and data messages and Executive Decree No. 981, a ministerial agreement was issued establishing the mandatory use of electronic signature. For this purpose, the application is enabled and validated through the EC SIGNATURE, where it incorporates international standards that admit and validate approved digital certificates, which allows signing documents remotely with the same security as a physical document. This system has been implemented by private companies and citizens in general where the state was able to

save an estimated 20 million dollars, according to the statistics, 1 million documents are signed monthly with this application. Ecuadorians also have their web portal to validate and verify their authenticity and they also implemented electronic regulations that help us control and validate documentation at an international level.



Fig. 3.4. Signature EC

Source:[<https://www.telecomunicaciones.gob.ec/>]

Digital economy, whose main objective is to promote the development of industry and commerce by providing continuous improvements in productivity and competitiveness of Ecuador through digital transformation to foster foundations in the digital economy. The digital transformation is becoming more and more participatory in our lives, from communication on social networks to purchases made on different digital platforms. Every day that goes by, companies are more aware of the use of the digital economy, which is why they apply various services which allow them a continuous improvement, efficiency and increase in production, improving the quality processes of their products and services that are available in the market. they become more competitive. The digital transformation is a key point for the economic

development and productivity of the country, which allows us to close the technological gap and strengthen the capacities and qualities of businesses and also in a personal way. All this implies an increase in production, competitiveness that leads us to a digital transformation which opens up access to the database of public and private entities and society in general. Digitization allows us to strengthen the value chain of the country's electronic commerce, in the framework of joint work, the Ministry of Production suggested the national strategy of electronic commerce, allowing us to use this instrument to enhance the use of electronic commerce through the technologies of Information and communication. Digital financial inclusion and digital means of payment allow us to carry out transactions in a faster, secure way with the aim that citizens who have bank accounts feel the ease and comfort of using financial applications. Financial institutions use digital applications making their users see that the services are every day, such as transfers, savings, payments or services in a faster, more efficient and secure way. These strategic guidelines promote electronic commerce in a suitable environment for the development of electronic commerce with a more daily use. They are also supported by the updates of norms and regulations based on international models. They also establish mechanisms, tools and technology, strengthening the logistics and postal sector in electronic commerce, maintaining a safe and reliable environment in package shipping transactions in the delivery process. It is also applied in entrepreneurship and technology-based innovation that contributes to the development of the country, enhances the Ecuadorian software industry, promoting solutions through advertising campaigns.

Conclusions to chapter 3

The proposals made by the government of Ecuador through the ministry of telecommunications allow citizens and encourage participation in the use of new technological tools because it is the new economic structure where the most developed countries applied it 10 years ago. A process that takes stages, one of the main steps that allow us to change is technological literacy to be able to use in a correct way these tools that project us and open the way to new opportunities for personal development and contribute to the progress of the community especially in areas where they do not have

much coverage such as rural areas, in which many households do not have internet and it makes it difficult for them to communicate effectively in education, health and productivity development.

The programs offered by the government such as continuous training establish an effect on citizenship because it encourages micro-enterprises to develop and implement technology so that they can be viewed worldwide and this makes the economy not only benefit the people who own these businesses but also the community in general activating the economy at the national level.

With the help of technology, we can carry out procedures in a more efficient, fast and secure way as if they were daily transactions but we can do it from different mobile applications, one of the clearest examples is the implementation of bank financial services that allows us make transfers, see our savings account, pay for services such as water, electricity, internet service. We can also see the feasibility of technology in Ecuador in the provision of health services because we can schedule medical appointments, verify our medical history, which was very helpful in the Covid-19 pandemic because all citizens stayed at home, some with medical emergencies but with the application it was possible to help many Ecuadorian citizens. The importance of technology is also good in the electronic signature because many citizens carry out daily transactions at a national and international level and many times, they need a signature to authorize the legality of documents, they can do it through the application and they can also see if the. The signature is legal and can be found on the web system of the Ecuadorian government with greater security and minimizing time. The importance of the use of technology is based mainly on the activation and economic growth of citizens because it encourages the development of new market ideas and enhances the country's economy and in the future Ecuador will be among the main countries that use technology as an economic model in South America.

CONCLUSIONS

Digitization theory has positive and negative aspects since its inception because it cannot be defined largely by books on the advances of technology in the economy, rather we must take into account that digitization is based on the good use of technology tools and how we can implement it in different market areas and how this should influence worldwide. Digitization opens the doors to be able to take advantage of the markets in a better way and discover those market segments that are not yet exploited but we always have to consider that it is the only way to start business because practically our entire life is currently based in technology and technology is involved in all areas such as medicine, transportation, education, telecommunications, etc. Thanks to technology and digitization, we can see what the daily life of other cultures is like without having to travel to another country to know the culture in a physical way, thanks to technology we can discover and learn from other cultures or at least be clearer the information and knowledge of the diversity of culture that exists in our world. Currencies as a source of investment are being changed because nowadays new easy-access monetary transactions begin to appear, greater profitability, there is no danger that these new currencies called cryptocurrencies will be robbed or duplicated, it is the new era in digital currency and One of the most important is Bitcoin, which allows us to carry out purchase and sale transactions and at the same time allows us to generate profits through investment.

Digitization in Ecuador is a great opportunity for the community because we can import and export more information and, in turn, large companies that have strongly promoted the issue of the digital economy can be taken as a business model. The international development programs implemented by the governments of developing countries must be clear and politically stable to prevent information from being used in an unwise manner and from a possible theft of information. Ecuador needs to close the digital divide so that it can continue advancing in the digital economy and not remain an underdeveloped country and neither continue to lose international trade relations with other nations. It is necessary to encourage people to use digital technology in order to improve the internal economic activities of the country,

providing training on how to use technology and explain the benefits of technological tools.

The policies for digital technology to be a transparent and clear process depends on the Government and international conventions because they need a model to follow that is established where we can have information in a safe way and clear data. Proposals and commercial relations are fundamental for Ecuador because we need to activate the economy that was devastated by covid-19, leaving many people without jobs and low returns in the country's economy. Promote digital innovation through the investments that private companies must make and as the main axis the Government with the aim of empowering Ecuador in the digital economy. Thanks to the digital economy, many people can undertake and make investments and thus make the culture of Ecuador known with proposals and investments from abroad that also greatly influences investments and inclusion in social development.

With the help of technology, we can carry out procedures in a more efficient, fast and secure way as if they were daily transactions but we can do it from different mobile applications, one of the clearest examples is the implementation of bank financial services that allows us make transfers, see our savings account, pay for services such as water, electricity, internet service. We can also see the feasibility of technology in Ecuador in the provision of health services because we can schedule medical appointments, verify our medical history, which was very helpful in the Covid-19 pandemic because all citizens stayed at home, some with medical emergencies but with the application it was possible to help many Ecuadorian citizens. The importance of technology is also good in the electronic signature because many citizens carry out daily transactions at a national and international level and many times, they need a signature to authorize the legality of documents, they can do it through the application and they can also see if the. The signature is legal and can be found on the web system of the Ecuadorian government with greater security and minimizing time.

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