DIGITAL TRANSFORMATION OF THE STATE AND IMPACT ON PUBLIC SERVICES

TRANSFORMAÇÃO DIGITAL DO ESTADO E O IMPACTO NOS SERVIÇOS PÚBLICOS

TRANSFORMACIÓN DIGITAL DEL ESTADO Y EL IMPACTO EN LOS SERVICIOS PÚBLICOS

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ABSTRACT: The study aimed to establish the importance of the digital transformation of the state and the impact on public services. The methodology used was the quantitative approach under a basic type of research with a non-experimental design. The population constituted by 145 people who work in the public and private sectors. For the purposes of the sample, probabilistic sampling was used, taking the total population as a sample. For the collection of information, the survey technique was applied and a questionnaire with Likert-type scaling was used as an instrument. At the same time, the validity of the instrument was formalized through expert judgment and reliability by Cronbach's Alpha with a value of 0.87; reliability is considered high. Finally, the digital transformation acts transversally in society, eliminates the borders between products and services, shortens their life cycles and increases the expectations of citizens

KEYWORDS: Digital transformation. Public service. Citizens.

RESUMO: O estudo teve como objetivo estabelecer a importância da transformação digital do Estado e o impacto nos serviços públicos. A metodologia utilizada foi a abordagem quantitativa sob um tipo básico de pesquisa com delineamento não experimental. A população é constituída por 145 pessoas que trabalham nos setores público e privado. Para fins de amostragem, utilizou-se a amostragem probabilística, tomando-se como amostra a população total. Para a coleta de informações, foi aplicada a técnica de survey e utilizou-se como

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instrumento um questionário com escala do tipo Likert. Ao mesmo tempo, a validade do instrumento foi formalizada por meio de julgamento de especialistas e confiabilidade pelo Alfa de Cronbach com valor de 0,87; confiabilidade é considerada alta. Por fim, a transformação digital atua de forma transversal na sociedade, elimina as fronteiras entre produtos e serviços, encurta seus ciclos de vida e aumenta as expectativas dos cidadãos

PALAVRAS-CHAVE: *Transformação digital. Serviço público. Cidadãos.*

RESUMEN: *El estudio tuvo como objetivo establecer la importancia de la transformación digital del estado y el impacto en los servicios públicos. La metodología manejada fue el enfoque cuantitativo bajo una investigación de tipo básico con un diseño no experimental. La población constituida por 145 personas que laboran en el sector público y privado. Para efectos de la muestra se utilizó el muestreo probabilístico, tomando como muestra el total de la población. Para la recolección de la información se aplicó la técnica de la encuesta y como instrumento un cuestionario con escalamiento tipo Likert. Al mismo tiempo, la validez del instrumento se formalizó por medio del juicio de expertos y la confiabilidad por el Alpha de Cronbach con un valor de 0,87; considerándose alta la confiablidad. Finalmente, la transformación digital actúa transversalmente en la sociedad, elimina las fronteras entre productos y servicios, acorta los ciclos de vida de los mismos e incrementa las expectativas de los ciudadanos*

PALABRAS CLAVE: *Transformación digital. Servicio público. Ciudadanos.*

Introduction

The State as an essential entity of the country, in addition to supporting and regulating public services, has led it to modernize itself in each of its efforts, inducing the traditional state to technology, where the production scheme of this new society will be based on the development of technologies to increase information processing, achieving high economic growth with demand for energy and raw materials.

Today, the information and knowledge society is imbued with business intelligence, automation, robotics, technology, processes and the fact that people are the nerve center, hence the digital transformation according to Pihir *et al*. (2019, p. 40 apud ANDAUR GÓMEZ, 2020, p. 4, our translation) "[...] those who work in the organization need to live the transformation, they must ensure that the work environment supports innovation and change" in order to implement public policies, because citizenship faces great challenges constituting a challenge for the countries of the region. Hence, almost all public policies focus on them.

In many Latin American countries, Fairlie and Portocarrero (2020) "public administration has a deficit of policies where technologies are properly used" (p. 89, our translation). In addition, Yañez and Sánchez (2019) stated that talking about digital "implies

the development of technology, which will be treated as a discipline responsible for the technological units to which responsibility for the digital is attributed" (p. 246, our translation). In this way, several countries have developed the digital from a comprehensive public policy, installed as a country strategy and covering legal and regulatory aspects, as well as organizational, political, institutional and technological aspects. This leads to digital governance that contributes to a better State for the citizen and contributes to the competitiveness of companies and the country as a whole.

The emergence of this new model of society also marks changes in economic and social regimes, with a clear tendency to simplify complex information management processes, as citizens demand to be heard and attended to. To avoid, according to the IDB/OAS (2020) "new social and power inequalities" (p. 67, our translation).

It is important to reflect on the impact that the growing demand for technology will have on economic models. The first and second industrial revolutions brought with them profound changes that have not yet been completely overcome, so it can be inferred that this new industrial change will have repercussions in the major economic centers: the United States of America (USA), Japan, China, Germany and Great Britain, exporting its consequences to other countries dependent on the technology they generate. The growth of the population dedicated to the technology industry will define the definitive course that the economy and the generation of jobs of the new millennium will follow.

Currently, the boom in the development of new technologies is shaping a series of structural changes, at the economic, labor, social, educational and political levels. In short, a new way of understanding culture is taking shape, with information appearing as a key element of this type of society. But are we really taking advantage of all the potential offered by new technologies to achieve true well-being in this new model of society?

It was in the 1970s when we started talking about the information society. Information appears as the standard bearer of a series of changes that would configure new social standards, motivated by the rise of the service sector. It is no longer a question of developing tangible goods, as they have been developing until now in an industrial society. It will be used to produce goods related to education, health, information, environment, leisure, and that make up what has been widely called post-industrial society.

Today, in Western society where we are imbued, information as an accessible element, which can be possessed, which gives power, which gives knowledge. Information has become a cult, a myth, something that bestows authority, advantage, superiority, and dominance;

However, information is not considered informative, simply because it is possessed, or can be assimilated by a subject. There has been a change in the concept of information.

One of the first people to develop a concept of the information society was the economist Fritz Machlup. The phrase was first used in his 1962 book *The Production and Distribution of Knowledge in the United States*, where he concluded that the number of jobs based on the manipulation and management of information is greater than those that are related to some kind of physical exertion.

Although there is no universally accepted concept of what is called the Information Society, most authors agree that around 1970 a change began in the way societies function. This change basically refers to the fact that the means of generating wealth are gradually shifting from industrial sectors to service sectors. In other words, it is assumed that, in modern societies, most jobs will no longer be associated with factories making tangible products, but with the generation, storage and processing of all kinds of information.

On the other hand, the Senate Transport and Telecommunications Commission, with the support of the Economic Commission for Latin America and the Caribbean (ECLAC), the Association of Telecommunications Companies (Chile Telcos) and the Chilean Chamber of Digital Infrastructure, developed the Digital Transformation Strategy for Chile, involving the public, business, academic and society sectors, diagnosing the challenges and opportunities resulting from rapid technological change, inducing the empowerment of society in general.

In Chile, the national digital development policy was promoted in 1999, proposing: in the Digital Agenda Chile 2004-2006, the Strategy for the Digital Development of Chile 2007-2012, and thus incorporating then the Digital Agenda Imagina Chile 2013-2020 and the Digital 2020. These transformations seek new accelerated perspectives of digital transformation, which highlight the Digital Country Foundation and its Plan a Digital Country 2021, documents referring to the Digital Strategy 2035 and the Committee on Transport and Telecommunications of the Senate, where the State participates, private sector and civil society actors, emphasizing the information and communication technology (ICT) sector and a digitally enabled society.

As of Law No. 21,180 regarding the Digital Transformation of the State, of 11 November 2019, which led to various administrative acts, such as resolutions, offices or others, being generated and issued electronically, avoiding paper, which is related to the bodies of the Administration State, that is, when an administrative procedure is initiated and must require information that is in the hands of other public services. In the same sense, it establishes a series of principles related to electronic media, namely: updating, technological neutrality, functional

equivalence, fidelity, interoperability and cooperation, finally, the Digital Documental System was created that will depend on the National Archive.

The transformations, as proposed by the National Congress of Chile (2021) Law No. 18,845, on Micro Copies and Micro Recording of Documents, which granted validity to copies that had been made through a procedure established by law, but focused on microform technology. This technology today has become obsolete. That is why Gutiérrez (2020) "The law changes the paradigm, granting legal validity to those original documents in paper format that are scanned according to the procedure established in the law, promoting the use of other types of technologies according with current times" (p. 12, our translation).

The State Administration is an organizational structure that handles and uses a large amount of personal data from different sources and which, therefore, are a fundamental part of the management it performs on a daily basis. Focus on its protection against a data security approach, as it allows to delineate clear contours in the integration of services within public services, but, in addition, facilitate certain services for citizens and for the very employees of the institutions themselves. In this work, cybersecurity becomes vitally relevant so that, among other things, trust is generated in processes, especially critical ones, and people trust that their data and information are properly protected.

Along the same lines, Mergel and Haug (2019) define digital transformation through interviews with specialists, specifying three phases that mark a sequence in the digital transformation process: first, digitalization, which represents the transition from analogue services to digital ones by through a change of format in the artifacts used to provide the service and the technological channel to be able to provide it; secondly, digitization, which focuses on changes in processes, involving an innovation movement linked to technology that redefines processes not only so that they are developed in the digital environment, but also so that they are more effective and adapted to the user; Finally, digital transformation represents a movement that includes cultural, organizational and relational changes derived from the impact of technology on management.

Likewise, Lee *et al.* (2018) explain that there are several aspects to digital transformation, such as targeted socio-technical transformation with smart technologies and addressing complex problems, due to the management of: services, data governance, people and technology. In addition, they argue that in addition to the concept of efficiency and improvement of the quality of the public service, the current value of the digital transformation of the administration is to guarantee the sustainable development of society, as these authors understand the digital transformation as a milestone for solving problems.

In this way, Frennert (2019) proposes digital transformation aimed at e-health and care for the elderly or disabled, through Wellness Technology (p. 635). In other words, the digital transformation of administration can generate well-being technologies that improve the lives of citizens.

In addition to this opening, Bellon *et al.* (2019) pointed out three types of effects of the application of emerging digital technologies in public management: first, gains in efficiency and productivity that can contribute to the reduction of operating costs, the focus of public officials on essential and important tasks and the provision of faster and cheaper service; second, effectiveness and quality improvements (more accurate forecasts, real-time detection and traceability of problems, efficient allocation of resources, better decision-making, more personalized and contextualized services, and more inclusive and empowered policies and services); and, finally, greater transparency, accountability, trust and legitimacy (although these effects are more difficult to assess empirically).

In this way, technology leads to change, therefore, in the processes, policies, leadership and mental structures of people to link themselves to the digital transformation at the same time that the introduction of technology causes radical changes in the functioning of the administration and in the relations with citizens. Vial (2019) describes this process through the digital transformation cycle. The organization responds to the interruptions that are occurring in its environment through a strategic response that includes the use of technology, which feeds the interruption that originated the change and, at the same time, allows changes in value creation, in which both organizational barriers (inertia and resistance) and structural changes (organizational culture and structure, leadership, roles and skills of workers). Finally, this conglomeration of changes generates positive impacts (related to the efficiency of operations, organizational performance, social improvements and the industrial fabric) and negative impacts (security and privacy).

To understand what kind of technology we are talking about as levers of digital transformation, Bellon *et al.* (2020) point out that at the moment the four technological pillars of digital transformation are cloud computing, mobile technology, social technology and data analysis. These four pillars are in turn fueled by a series of solutions that have served as accelerators of innovation, including the internet of things, robotics, 3D printing, blockchain, artificial intelligence, augmented and virtual reality, cognitive systems and next-generation security.

In this sense, the competences of public servants in a digital administration (or in the process of digital transformation) transcend mere digital competence. First, the civil servant

requires a competence for lifelong learning that allows him to take control over his own learning and make it a tool for updating knowledge and for his development. Thus, the civil servant is a person who, thanks to his competence for lifelong learning, is developing on three levels: personal development, citizen development and professional development.

Finally, digital transformation also requires public officials to have a series of skills directly linked to technology and digital resources. Specifically, digital transformation skills require the use of devices, software, platforms and networks; information and data literacy; communication and collaboration in digital environments; digital content creation; the search and guarantee of security in digital environments; and problem solving with and about technology.

Methodology

According to Kahn, Baron and Vieyra (2018) The digital revolution can be compared to the industrial revolution. Digital transformation is a necessity due to the social dynamism in which human beings find themselves.

The study according to Hernández, Fernández and Baptista (2016) is quantitative, applied to a sample of 145 specialists belonging to different public and private sectors, where the dimensions were reflected, which resulted from the content analysis of the questionnaire with a coefficient of conbrach Alpha of 0.87.

According to the results issued, basic elements are concluded: technologies: satisfaction and participation, civil servants: roles and competences and processes: reengineering and processes. The results agree that the digital transformation in public administration is composed of actions that will lead to the improvement and modernization of processes, emphasizing in three aspects reengineering, computerization and policies; Another highlight is public servants and technology.

Figure 1 – Elements of digital transformation
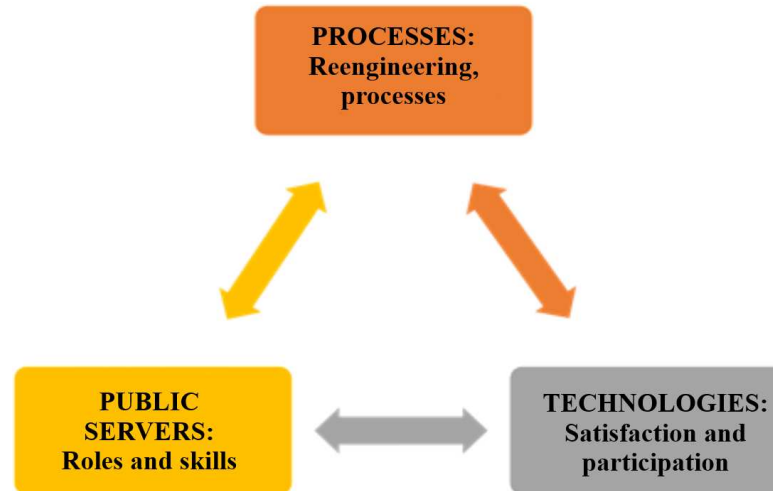
Source: Devised by the authors

As for public servants, they emphasized participation, as a factor that affects the understanding of the importance and urgency of digital initiatives, motivating people to manage ICT (MUNUERA GOMEZ, 2016). They also agree that it is necessary to develop permanent computer security awareness programs, confidence in digital and digital skills.

On the other hand, to achieve digital transformation, what people think about services is analyzed and based on their experience how it can be improved, hence the need for decision-making, emphasizing innovation.

Likewise, the optimization of processes implies simplifying the process of public service procedures, that is, seeking that the entire procedure is carried out electronically, in addition to good and easy usability, in this way slow processes would be avoided by encouraging to productivity and efficiency. For public administration to become a preferred channel for citizens, with organizations and internally, the key is to generate a more satisfying and productive user experience through the re-engineering and computerization of its processes.

The development of these five competencies, which depend on both formal learning processes and informal learning, is flexible and adjusts to the different roles present in public administration, allowing precise performance and development profiles to be configured for each unit of administration and each job. The five competences can be articulated through a series of functions that are put into operation in the different personal and professional situations in which the civil servant finds himself. Thus, skills are developed through their use, as well as through formal learning processes, representing dynamic knowledge adjusted to the environment and problems that arise throughout personal and professional life (Figure 1).

In fact, only a digitally competent public administration and civil servants will be able to face the challenges that technology and digital transformation represent for society as a whole. For this, it is necessary to understand what digital transformation means and how to bring it to the reality of public administration through a framework of digital competences for public servants that contemplates the elements that came to light with this research. We agree, therefore, with the conclusion of Katz (2009) "Digital skills for public administration are essential for the country's modernization process at all levels, so they should be a priority in the training system of public servants" (p. 88, our translation).

Conclusions

The continued growth in the use of digital technologies has led to profound changes in the way we act and communicate with citizens in order to achieve society's integration and participation through the interconnection of billions of people, machines and products. The digital transformation works transversally in society, eliminating the borders between products and services, shortening their life cycles and increasing citizens' expectations. It is up to having info-literacy actions for citizens and public servants, in order to encourage access and participation.

The digital transformation in public administration is made up of a set of actions aimed at improving and modernizing processes, which include procedures and policies, reengineering and computerization of each one of them. In this case, ICT occupy a preponderant space for the transmission of data, interaction with citizens according to the satisfaction of their needs and expectations. On the other hand, civil servants assume functions and responsibilities, but need to be trained to innovate and develop digital skills according to needs.

Digital Transformation is a very popular concept today, but in the context of State Administration, it must be understood that it is not the mere use of new technologies within various public service processes, but also, as in other institutions, it requires an organizational change, often motivated by the dictates of certain regulations that allow this to occur in accordance with the respective legal framework.

The axes proposed for the digital transformation constitute a roadmap to guide actions and adapt to the changes that, based on the adaptation of processes, technology and public servants, are necessary.

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