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Public policies and evolution of information technologies

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Abstract: The free development of peoples is directly related to public policies. This requires a serious, sequential and sustainable commitment of state management. For their part, the referred public policies must address the different aspects that imply the development factors, in which interdisciplinarity must be considered. However, it should be noted that it is essential that public policies should also include the promotion of the use and implementation of information technologies in their various evolutionary stages (such as: new technologies, intelligent technologies, smarter technologies, future technologies). Regardless of the level of development of the people, the presence of information technologies is of vital importance, because people cannot live disconnected from the global reality, which is manifested in accordance with information technologies. In this sense, it is clear that the commitment of state management is twofold. That is, with the development of the people and with information technologies.

Keywords: public policies, new technologies, smart technologies, smarter technologies, future technologies

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PRELIMINARY QUESTION

First of all, the undersigned is infinitely and indelibly grateful for the generosity of the renowned Russian jurist, Dr. Larisa Sannikova, Chief Editor of this prestigious Russian journal, Law & Digital Technologies, of the State Academic University of Humanities, for inviting me to join as a guest editor. A kind gesture that I, moreover, assume with immense honor and responsibility.

INTRODUCTION

The development of the peoples of the world advances in an unequal way, without counting the cases in which there is no advance but backward movement. What is directly related to state development are the budgets or factors of development. Thus, as such, we can consider: a correct and responsible state policy, a reduced public sector, austere, meritocratic, far from corruption, waste and subtraction of public resources, management and policies oriented towards the population and especially those who have less, respecting the separation of powers, democracy, fundamental rights, freedom of the press, transparency and access to public information and accountability, governance, electronic government, among others.

However, it should be noted that it is vitally important that the policies of the state are oriented towards a population that is in tune with what is happening in the world. That is, in the scenario of information technologies (IT), in its various evolutionary stages.

EVOLUTION OF IT

In this respect, it is to be seen that the world turns and develops in the light of new technologies, intelligent technologies, more intelligent technologies and future technologies, it is impossible to ignore it.

For this, it becomes essential to address each of them:

1. New technologies, are the set of technologies that allow the acquisition, production, storage, processing, communication, recording, and presentation of information in the form of voice, images, and data contained in signals of an acoustic, optical or electromagnetic nature. ICTs include electronics as the basic technology that supports the development of communications, information technology and audiovisuals. From a basic services perspective, ICTs provide information, and communication services (Villarroel Ortega 2006).

2. Smart technologies, are those that facilitate the development of systems and solutions, such as products or services, with greater autonomy, adaptation to their environment and/or effectiveness (efficiency and efficacy) in problem solving. Focused on Artificial Intelligence (AI), they include other related technologies and satellites, such as: IoT and IIoT (the industrial IOT), blockchain, data science and engineering, autonomous systems, biometrics, bioinformatics, virtual and augmented reality, and quite a few more. Its spectacular progress is also due to the very journey of the technologies that support it physically (electronic devices, in particular) and computationally (especially high-performance computing). The introduction of Intelligent Technologies into society and the productive fabric is an unstoppable phenomenon, but there is great uncertainty about how to deal with it and what its real consequences will be. Depending on how organizations act, this will be a scenario of opportunities or threats. Investing in Intelligent Technologies and in human resources capable of using them, cooperating with them, and innovating from them may be costly, but not doing so will be much more so. Even in the face of automation, the bet must be on innovation a strategy that the authors call "Innomatization". This is what will define a company's competitiveness in the medium and long term, and also what will alleviate the impact of technological unemployment, as Keynes called it in 1930 (Barro and Rouhiainen 2020).

*3. Also, with respect to smarter technologies, t*he digital transformation of society and business continues to progress at a faster pace than anticipated a few years ago, but with a more developed approach than that adopted during the global health crisis. 2022 will see major advances in different industries, which will be supported by new digital technologies that are changing the way we live, work and communicate. Many industries have realized the need to evolve towards digital to meet the business challenges of the future, and are adopting innovative technologies that enable automation, remote working, IT diversification, and decision making based on data and analytics. Meanwhile, society is following a parallel path, pursuing faster communications and slowly looking ahead to the possibilities that the future of the metaverse will bring. Analysts at ABI Research have conducted research on the technologies that will shape 2022, and point to a number of breakthroughs in various sectors that will have a remarkable impact on our world. Stuart Carlaw, research director at ABI Research, comments that the rise of always-on 5G wearable devices, the explosion of perimeter AI adoption, the proliferation of smart manufacturing platforms, the formation of the metaverse and a growing focus on cybersecurity are just a few of the many changes on the horizon that are indicative of a more connected, more vulnerable and ultimately more technology-driven world (ITtrends 2022).

4. And, with regard to future technologies, it is worth noting that 2022 was full of new innovations and exciting technological advances that have transformed and are transforming society and the global economy. But the digital evolution does not stop for a moment, so we look, once again, to the future and put the focus on the technologies and technological innovations that will mark 2024. Some are repeating themselves (with new approaches), and new ones are emerging that will have something to say in the coming months. Thus, it is worth noting as upcoming technologies:

i) Generative AI,

ii) Cybersecurity as a central pillar,

iii) "Figital" convergence and digital twins,

iv) Quantum computing,

v) Green Tech,

vi) The importance of data,

vii) Platform Engineering,

viii) Smarter applications,

ix) Robotic Process Automation (RPA),

x) IoT and hyperconnection.

On the other hand, this is due to the fact that we are going through the Fourth Wave, as the current peak of human development; the one characterized by the embrace of artificial intelligence and the interface between nanotechnology and synthetic biology.

IT AND INTERCULTURALITY

It is also to be seen, the plausible relationship between information and communication technologies and interculturality.

Thus, we have, that humanity is ready to receive the new technological advances that pose a new demand for the pedagogical field. Society is currently immersed in postmodernism and pluriculturalism, which is gradually building a social-presential interculturality through a cultural and virtual approach. All this requires humanity to reflect on the approach of new paradigms, and should be assumed by educational institutions, taking advantage of the opportunities offered by ICT, in order to overcome this barrier present in the educational field and social reality. ICTs are playing an important role in education, representing a methodological, pedagogical, curricular and organizational rethinking in the educational field for the improvement of educational quality; they are also an elementary instrument for cultural parity, reflective and promoter of intercultural communication. Therefore, it is worth mentioning that the Internet, social networks and new technologies provide everything necessary to generate virtual learning communities in the intercultural field, with the help of many tools that favor the exchange of truthful information about pluricultural education among all members of societies (Cruz Pérez 2019).

THE ESSENTIAL INTERDISCIPLINARITY IN IT

However, in addition, the vortex of its progress involves, in turn, the totality of scenarios, that is, the sciences and disciplines of human knowledge. That is, it encompasses interdisciplinarity as a whole.

This, in as much as the problems and factors of development and realities of each people, do not begin or end in these scenarios, but are proper to interdisciplinarity. That is to say, for example, the additional intervention, as the case may be, of sociology, psychology, economics, philosophy, administration, among others.

THE WORLD OF LAW CANNOT BE ALIEN TO IT

This premise not only becomes essential, in order to: i) make a reading of the contemporary global reality, and ii) get the name of this important journal (Law and Digital Technologies) just right.

Digital technologies have grown exponentially and their use has become globalized. Ubiquitous and continuous connectivity reaches a large part of humanity thanks to the massification of the use of smartphones and the consequent access to information, social networks and audiovisual entertainment. The acceleration of technical progress in the digital universe has made the use of devices and applications that use cloud computing, big data analytics, blockchain and artificial intelligence a daily occurrence. The technological revolution, coupled with the change in the strategies of leading companies in the use of digital technologies, has led to the rise of global platforms, resulting in an excessive concentration of economic and political power in no more than a score of corporations from two or three world powers, too small a set of companies whose market value exceeds or approaches one trillion dollars (Economic Commission 2021). The progress of technology has also been accompanied by socially negative results, such as the exclusion of a significant part of the world's population from the benefits of digitalization, mainly because their income does not allow them to have meaningful connectivity -i.e., quality access-, access to devices, fixed connection at home and the capacity for daily use. This has generated a large decrease in demand, since there is sufficient coverage that does not materialize in terms of connections and use. Other problems have also been accentuated, such as the proliferation of fake news and cyber attacks, the growing risk to privacy and personal data security, and the massive production of electronic waste. The unresolved balance between the benefits and costs of digitization is taking place in a more adverse global context than was anticipated 15 years ago. Geopolitical struggles, often centered on patents, standards and digital production, have markedly weakened actions based on multilateral decisions. The environmental crisis has reached levels of environmental emergency or, according to some analysts, environmental catastrophe. Increasing inequality in many countries and the exclusion of vulnerable population groups make it even more difficult to build social and political systems capable of adequately managing digital development (Economic Commission 2021).

However, one of the great aspects that the contemporary imaginary denies or makes invisible is the way in which digital technologies -especially the Internet- contribute to transforming and shaping our subjectivities: our ways of being, perceiving and acting; that is, the social, political, economic and cultural dimensions of technologies. In this sense, presenting them as a simple set of supposed solutions of the people omits the extremely valid question about what technologies do with us, about the way in which they relate to power. And this omission prevents us from reflecting and making decisions, takes away our sovereignty. We miss

the opportunity to expand our rights and increase the chances of their violation. In order to replace what the hegemonic technological imaginary ignores or hides, it is essential that we assume digital technologies as "environments", cultural forms, spaces in which power relations are played out. It is impossible for digital technologies to be ethically neutral, since they bring with them a world of characteristics that cannot be left uninhabited (Galimberti 2001) and that are decisively transforming the present and the future. In short, in order to develop a critical view of digital technologies -that allows us to think about their link with the exercise of rights- it is essential to build representations that integrate their multiple dimensions. That is, to think of digital technologies as: i) physical devices, applications and digital environments, ii) socially inhabited environments, which involve processes, ways of being and doing, power relations, control practices, iii) languages that make it possible to represent, know and relate to the world, iv) spaces for the construction of subjectivities, ties, knowledge and citizenship, v) spaces for the production, circulation, and consumption of digital content. Digital technologies are much more than devices: they are spaces that we inhabit, that "inhabit us", and that play a leading role in our time (Ministry of Education 2021).

THE UNIVERSITY ALIGNS ITSELF WITH IT

Moreover, the university has not been unaffected by the influence of digital technologies. Therefore, it has not declared itself a foreigner to them. This is extremely healthy.

Thus, one of the most visible characteristics of contemporary culture is the presence of technologies in multiple fields and their constant evolution, which has accelerated in recent years. One of the most evident aspects of this cultural reality is that our relationship with the media is being transformed. Today's media culture of course still includes traditional formats such as books on paper, photography, cinema, radio or television. Although all of them have digital versions, which we access through multiple media such as e-books, tablets, laptops, smartphones, digital TVs, or smart watches. These technologies, which today accompany us in many of our daily activities, are characterized by their ubiquity. And new digital applications such as social networks, video games or augmented reality, affect the forms of mediation that the media generate. This influences the way we relate to information and cultural products. If we place ourselves in the educational field, the projection of the reality described above has been producing changes and incorporations that have had an impact and therefore have generated new needs, which educational policies have assumed and whose decisions have been materialized in investments and changes in management models. There have also been changes in teaching methods, incorporating new infrastructures, digital tools and ways of working. If we confine ourselves to the university environment, there are several considerations to be made (De Pablos Pons 2018).

The incorporation of digital technologies at the university is influenced by various factors such as those mentioned above, but ultimately, in order for teaching and learning to evolve towards new forms, seeking improvement, it is the teaching staff that is the key element and the one that sets the path to follow. It is their teaching conception that must serve as a reference, but in order to seek this improvement they must have institutional support, which in turn must know how to organize their priorities (De Pablos Pons 2018, 85-86).

However, digital technology must also be understood as a transformative factor in society, for example to bring people together for growth and inclusion. Thus, Latin America and the Caribbean will continue to face three mutually reinforcing challenges: low growth, limited fiscal space and citizen dissatisfaction. Expanding digital connectivity offers the possibility of making progress on these three fronts. A few examples serve to illustrate this potential. Most of the region's fast-growing unicorns operate from digital platforms. Digital government programs have drastically reduced the cost of tax compliance, as well as the time and cost of obtaining official identification, in addition to streamlining and reducing the cost of government procurement. Digital connectivity made service delivery in areas such as education and health more effective, efficient and resilient to shocks, for example, enabling digitally connected students to continue their studies during the COVID-19 pandemic. There are many ways in which the pandemic accelerated the digitization of the economy. The resulting changes in consumption habits and service delivery appear to be permanent. Digital commerce and digital finance grew dramatically and show no signs of slowing down.

However, the full potential of connectivity in the region for growth and inclusion remains untapped. Latin America and the Caribbean has already made significant progress in terms of installing the necessary hardware: cables, towers and exchanges for basic digital communication. While broadband coverage in Haiti and most of Central America is well below 50 percent, while Brazil, Chile, Dominica, and St. Lucia it is over

75 percent. Even so, three crucial challenges remain: i) hard-to-reach locations still lack basic coverage and quality remains low, particularly in the least profitable segments of the market (rural and peri-urban areas with low population density, low socioeconomic levels, or challenging geography), where private providers have less incentive to invest, ii) the region faces a set of challenges related to reducing the "usage gap" of existing infrastructure: actual access is much lower than the current physical infrastructure could support, iii) critical investments in "software" are needed. This critical software includes digital and traditional human capital skills, managerial capabilities, availability of financing, efficient state protocols and capabilities, and a favorable regulatory structure. Broadband alone is not a miracle solution, and iv) finally, the successful introduction of any technology into a society requires an iterative process of experimentation and evaluation to determine what works and what should be abandoned. The developing world has already experienced firsthand a large number of unfulfilled digital promises, particularly in the field of education. Hence, an active knowledge agenda is an essential complement to government intervention and any subsequent scaling up (Beylis et al. 2023).

Unclear, the legal perspective must be approached from these prisms, in an unavoidable, inseparable and unavoidable manner. The same applies to the pending agenda.

MACRO PROPOSAL OF PUBLIC POLICIES

In the present point, the promotion of the use and implementation of information technologies becomes very urgent and unavoidable.

However, the above must be assumed in the light of a strategy. This is because it is not a question of implementing the three evolutionary stages of information technologies together and simultaneously. That is, i) new technologies, ii) intelligent technologies, iii) more intelligent technologies and iv) future technologies.

Therefore, we consider that since each country has its own level of development, which is different from that of the others. The right thing to do would be for each country to implement the evolutionary stages of the aforementioned information technologies, but in accordance with its own reality and economic resources.

In this way, there will be a sustained and progressive advance in the use and implementation of information technologies. The same that can generate in turn the free development of the peoples.

CONCLUSION

Having said that, we are very pleased to make a brief reference to the contents of this issue, which includes important works by renowned professors from China and Brazil. Thus we have: i) as first article: "The Legal Framework of the Internet under the UN System", authored by Dr. Yu Zhang and Douglas de Castro, ii) then, "The control of greenhouse gas emissions generated by the use of cryptocurrencies", authored by Dr. Lucas Fagundes Isolani and Dr. Deilton Ribeiro Brasil, iii) then, "Data governance: Proposal for a conceptual framework for brazilian public administration", authored by Drs. Priscila Caneparo dos Anjos and Rodrigo Teixeira da Silva, iv) finally, the review authored by the undersigned on the Mega World Congresses of the Interdisciplinary School of Fundamental Rights PraeEminentia Iustitia, in particular the IV World Mega Congress "From immigrants and digital natives, to ecosystems, super applications, hyper-automation and quantum computing. towards the new era of fundamental rights".

We leave, then, to the consideration of the avid reader public, the content of the present delivery, in the certainty of the usefulness of the sharp edges of comparative law, which the referred works embrace.

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