

Technological innovation and regulatory experimentation: challenges of the “uberization of the economy”*

Inovação tecnológica e o experimentalismo regulatório: desafios da “uberização da economia”

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ABSTRACT

This article aims to address the effects of technological advances that, in the contemporary postmodern scenario, have caused significant changes in social habits and practices. As a result of these transformations, this study also intends to address the role of state regulation as a means of providing security and further increasing the diffusion of new technologies today, highlighting, in the end, the main challenges imposed by the phenomenon usually called uberization of the economy.

KEYWORDS

technology — experimentalism — regulation — “uberization” — economy

RESUMO

O presente artigo tem por objetivo abordar os efeitos dos avanços tecnológicos que, no cenário contemporâneo pós-moderno, têm provocado significativas mudanças nos hábitos e práticas sociais. Como consequência dessas transformações, este estudo pretende ainda tratar o papel da regulação estatal como meio de conferir segurança e incrementar ainda mais a difusão de novas tecnologias na atualidade, destacando, ao final, os principais desafios impostos pelo fenômeno usualmente denominado uberização da economia.

PALAVRAS-CHAVE

Tecnologia — experimentalismo — regulação — “uberização” — economia

Introduction

Currently, we are witnessing an increasingly intense search for ephemeral consumption, the *liquid-modern*,¹ with emphasis on concepts such as immediacy, ease, agility and satisfaction of desires in the here and now. There is an

¹ BAUMAN, Zygmunt. *Vida para consumo: a transformação das pessoas em mercadorias*. Tradução de Carlos Alberto Medeiros. Rio de Janeiro: Jorge Zahar Ed., 2008.

attendant gulf with durable, resistant environments. The liquid-modern society is highly globalized² and connected in a networked³ environment defined as post-modernity.⁴

Current interrelationships revolve around smartphones and virtual spaces online. The digital universe characterized by broad expansion and use of the most diverse applications has revolutionized, among other fields, communication, the supply of goods, provision of services, and forms of work. Examples of these applications include: Uber, Netflix, Spotify, Airbnb, and WhatsApp.

Many activities are already and will be even more influenced by other innovative technologies, considered disruptive,⁵ such as: the internet, artificial intelligence, robotics, blockchain, smartcontracts. In short, this is an irreversible scenario, owing to the significant and diverse benefits generated for society in general.

² Regarding the global legal space, note the following study: CASSESE, Sabino. *La globalización jurídica*. Madrid: Marcial Pons Ediciones Jurídicas y Sociales, S.A., 2006.

³ About the interconnected web, see: CASTELLS, Manuel. Para o Estado-rede: globalização econômica e instituições políticas na era da informação. In: PEREIRA, Luiz Carlos Bresser; WILHEIM, Jorge; SOLA, Lourdes. *Sociedade e Estado em transformação*. São Paulo: Editora Unesp, 1999.

⁴ On the post-modern state, see: CHEVALLIER, Jacques. *O Estado pós-moderno*. Belo Horizonte: Fórum, 2009.

⁵ On disruption in the area of Law, Bruno Feigelson points out: "To understand disruption in the area of Law, in other words, Disruptive Law, it is important to note the expression refers to the legal reflections of a period of very intense changes in societies. If the revolution industrial era was a milestone for the end of feudalism and the beginning of the first industrial era, the creation of the internet is an end of the first industrial eras and the beginning of the information age or post-industrial era 4.0. Such transformations affect human society in economic, social and even bio-psychological terms and, thus, give rise to deep reflections in all areas of Law. With the emergence of the internet, at the height of the cold war and, above all, the World Wide Web, in 1992, through scientist Tim Berners-Lee, human habits have been significantly altered. However, it was with the spread of internet access and development of key technological devices — with special emphasis on the proliferation of the use of smartphones — that these changes in everyday life started to substantially impact traditional economic models". FEIGELSON, Bruno. *Sandbox: o futuro da regulação*. Jota. Available at: <https://www.jota.info/opiniao-e-analise/colunas/regulacao-e-novas-tecnologias/sandbox-o-futuro-da-regulacao-15012018>. Accessed on: 28 June 2022.

Patently, this poses immense difficulties for the State, to monitor this abrupt transformation, arising from the fourth industrial revolution⁶ and “Uberization of the economy” — an expression used throughout this study.⁷

It is important in this context to understand at least the uncertainties, risks and complexities that accompany these transformations, so learning experiences can be extracted, and, step by step, positive effects can be channelled to maximize the health of markets, consumers, workers and the environment.

Even though the State is unable to “predict the future, naturally uncertain”,⁸ it is clearly important to raise awareness, with attention focused on: technological development; greater sensitivity to transformations in social roles and new work relationships;⁹ to absorb the effects of changes in production sectors; deal with paths that generate outcomes dissociated from tradition and problems arising from the abandonment of the idea of “paternalism”;¹⁰ accept that individuals

⁶ According to Klaus Schwab, the first industrial revolution (1760-1840) was related to mechanical production (construction of railways and steam engines); the second industrial revolution (late 19th century and early 20th century) made mass production possible through electricity and the assembly line; and the third industrial revolution (1960-90), the digital or computer, was driven by semiconductor, mainframe computing, personal sharing, and the internet. The fourth industrial revolution, which began at the turn of this century, would be characterized by a more ubiquitous and mobile internet, smaller and more powerful sensors, artificial intelligence and automatic learning (or machine learning). Unlike the previous ones, the fourth industrial revolution entails the fusion of new technologies and the interaction between physical, digital and biological domains. In Germany, industry 4.0 is being discussed, with the creation of “smart factories”, with cooperation between physical and virtual systems. SCHWAB, Klaus. *A Quarta Revolução Industrial*. São Paulo: Edipro, 2017, p. 15-17.

⁷ The expression “uberization of the economy”, normally used to refer to the greater expansion of activities developed through digital platforms and inserted into the shared economy, will be explored further in this article. Still, it is necessary to highlight the relationship between the fourth industrial revolution and the phenomenon of the shared economy. New technologies allow sharing by individuals and organization of goods, physical assets and services, usually through applications (e.g. Uber) or other digital platforms. Klaus Schwab, *A Quarta Revolução Industrial*, op. cit., p. 145-147.

⁸ According to Egon Bockman: “Perhaps the great advantage of making predictions lies in the absolute lack of responsibility of the prophet. Predicting means anticipating what has not yet happened. It requires the exercise of divination; the art of predicting the future, which is naturally uncertain”. MOREIRA, Egon Bockman. *Cinco cogitações irresponsáveis sobre o futuro da advocacia*. Available at: <https://www.gazetadopovo.com.br/justica/columnistas/egon-bockmann-moreira/cinco-cogitacoes-irresponsaveis-sobre-o-futuro-da-advocacia>. Accessed on: 28 Jun. 2022.

⁹ “Far beyond the usual debates about automation and job replacement, the increase in digitalization in general, and AI in particular, is already starting to have a major impact on existing employment models: from reduction and monitoring of transaction costs and the remodeling of information asymmetries to increased job polarization, the impacts will be profound.” ADAMS-PRASSL, Jeremias. *Gestão algorítmica e o futuro do trabalho*. In: CARELLI, Rodrigo de Lacerda; CAVALCANTI, Tiago Muniz; FONSECA, Vanessa Patriota da. (Org.). *Futuro do trabalho: os efeitos da revolução digital na sociedade*. Brasília: ESMPU, 2020. p. 87.

¹⁰ State paternalism (the “Nanny State”), caused by excessive state intervention in the economy and the infantilization of society, through a significant reduction in the autonomy of individuals.

become responsible for planning and directing their own biography; provide greater openness to the decision-making structure; promote self-restraint; avoid rigid and authoritarian action, giving space to experimentation,¹¹ flexibility, negotiation and collaboration.

It is essential, then, to reach an equilibrium, to support the needs of a differentiated and complex postmodern society, avoiding hermetic spaces, whether exclusively *laissez-faire* or excessive surveillance, or, authoritarian interventionism.

Thus, our guiding objective is to evaluate, in particular, the role of state regulation, to mitigate uncertainties and risks arising from the uberization of the economy, identifying challenges and debates which have arisen. In the initial section we reflect on this issue, to understand the contemporary transformative environment in which we find ourselves. We explore how contemporary life, marked by new paradigms embedded in the technological revolution, is opposed to established tradition and its practices.

In the following section, we address the need for the State to value regulatory experimentation, whose legal premises must be extracted from consensus and collaboration, encouraging deference to the environment of technologies and innovative practices, and their immediate import.

In the final section, through an investigative approach, we will explore some challenges in the legal area surrounding *uberization* of the economy, such as the area of labor relations, given new meanings with the omnipresent use of new technologies.¹²

OLIVEIRA, Rafael Carvalho Rezende. *Novo perfil da regulação estatal: administração pública de resultados e Análise de Impacto Regulatório*. São Paulo: Método, 2015. p. 180-181.

¹¹ For Paulo Modesto: “Experimentation operates on a small scale and aims to favor factual and incremental learning, the discovery of relevant variables and the collection of information before general regulatory decisions or generalization of successful practices. Experimentation involves controlled analysis of errors and successes, discovering the right dose of normative discipline, which requires a ‘necessity test’ and assessment of regulatory impact (prospective and retrospective). In the public sector this assessment can also be accompanied by the suspension of certain regulatory requirements and, occasionally, even legal requirements (if the law allows), for a certain period of time and for a limited set of services, governed by alternative norms (such as the mechanism called ‘right to challenge’, provided for in Portuguese law by Decree-Law no. 126/2019)”. MODESTO, Paulo. *Direito administrativo da experimentação: uma introdução*. *Consultor Jurídico* (Conjur). Available at: <https://www.conjur.com.br/2021-out-14/interesse-publico-direito-administrativo-experimentacao-introducao>. Accessed on: 28 June 2022.

¹² According to Vitor Filgueiras and Ricardo Antunes: “In this second decade of the 21st century, there have been increasing allusions and analyzes regarding major transformations in the organization and nature of work relationships associated with use of new technologies, particularly information and communication, which are even more accentuated with the

The methodological approach is based on theoretical reflection on selected references and public information made available, considering, notably, research on primary sources such as doctrine, legislation, jurisprudence and data disseminated through specialized media.

1. Reflections on technological innovation and its repercussions in the current scenario

Domenico De Masi's reflections are prescient when situating an understanding of the profound and rapid transformations occurring:

No matter how quickly industrialization processes emerged, no matter how difficult and traumatic the effects of "cathedrals of the desert", they were still transformations that required decades, preceded and accompanied by training and interventions that speed up their absorption. Almost always, then, these processes of industrialization entailed an increase in purchasing power and material well-being which, somehow, compensated and even made attractive the inconveniences of modernization. With the advent of post-industrialism, however, one of the main elements is the diffuse speed of information through the mass media and electronic radio, TV and computers, which directly called into question ways of thinking, mental schemes, traditions, ideals and social culture of millions of readers, listeners, viewers and network browsers.¹³

In the contemporary scenario, we notice an intense collapse of the analogue system — characteristic of industrialized society. So much so, we experience a new social structure in which consumption sometimes changes the very logic of its natural process, since "the human person is often the product consumed".¹⁴

proposals and advances of the so-called industry mark 4.0 (and the consequent increase in automation and artificial intelligence)". ANTUNES, Ricardo; FILGUEIRAS, Vitor. Plataformas digitais, uberização do trabalho e regulação no Capitalismo contemporâneo. *Contracampo*, Niterói, v. 39, n. 1, p. 29, abr./jul. 2020.

¹³ DE MASI, Domenico. *O futuro do trabalho: fadiga e ócio na sociedade pós-industrial*. Tradução de Yadyr A. Figueiredo. Rio de Janeiro: José Olympio, 2001. p. 133-134.

¹⁴ MARTINS, Plínio Lacerda; LIMA, Marcos Cesar de Souza; MARTINS, Guilherme Magalhães. *A relação de consumo na sociedade contemporânea*. Rio de Janeiro: Lumen Juris, 2020. p. 80.

Ulrich Beck's reflections¹⁵ are fundamental to positioning the study of current trends in society, as, in light of his perceptions, old behaviors do not solve new problems. It is necessary to seek, in this wake, a point of equilibrium so that state action is adequately positioned in view of the extent of this new reality.

The challenges presented by "post-modernity",¹⁶ especially the increase in risk, speed of information, new technologies and the complexity of interests that must be satisfied by the State, demonstrate the insufficiency of traditional models of organization, performance and control of public administration to satisfy social interests.

In line with this thought, the considerations of Anthony Giddens stand out,¹⁷ highlighting, in a similar sense, how the new world is in opposition to the context of tradition and its practices. For this author, the contemporary environment no longer provides a psychologically cozy perspective; not incapable, therefore, of organizing beliefs and social relationships.

Ulrich Beck, meanwhile, proposes a reflexive modernization that requires: transformation of the world (or discontinuity); paradigms based on detraditionalization; and a reflection on (or critique of) the bases on which society is founded.

For Anthony Giddens, the contours of contemporaneity, marked above all by influxes of global capitalism (the international market economy), inevitably mean the end of one era and beginning of a new. Thus, we experience the discontinuity of the standards of industrial society.

As an illustration of this change in perspective, the author highlights, for example, the following aspects: (i) commodity production systems are now

¹⁵ BECK, Ulrich. A reinvenção da política. In: BECK, Ulrich; GIDDENS, Anthony; LASH, Scott. *Modernização reflexiva: política, tradição e estética na ordem social moderna*. Tradução de Maria Amélia Augusto. Oeiras, Portugal: Celta, 2000.

¹⁶ Postmodernity is marked by disbelief in metaphysical discourses, which are based on absolute, timeless and universal truths. However, there is a lack of consensus on the current stage of evolution of society and science vis-a-vis modernity or post-modernity. On the topic, see, for example: LYOTARD, Jean-François. *A condição pós-moderna*. 12. ed. Rio de Janeiro: José Olympio, 2009. Note, the observations of Gilles Lipovetsky, who states that narcissism, marked by the process of interested personalization, characterizes postmodern society: "Bureaucracy, the proliferation of images, therapeutic ideologies, the cult of consumerism, family transformations, and permissive education has engendered a personality structure of narcissism, hand in hand with increasingly barbaric and conflictual human relationships. Individuals have become more sociable and cooperative only apparently; from behind the screen of hedonism and solicitude, each cynically exploits the feelings of others and satisfies their own interests without the slightest concern for future generations". LIPOVETSKY, Gilles. *A era do vazio: ensaios sobre o individualismo contemporâneo*. Barueri: Manole, 2005. p. 49-50.

¹⁷ GIDDENS, Anthony. *As consequências da modernidade*. Tradução de Raul Fiker. São Paulo: Editora Unesp, 1991.

focused on greater emphasis on capital; (ii) the highly competitive nature in the globally built systems; (iii) constant and diffuse technological innovation; (iv) work transformation salaried in merchandise;¹⁸ (v) interference of the economy in the political system, not the contrary; (vi) intensification of social relations on a global scale; (vii) greater connection of locations, even if separated by great distances; (viii) transformation of technologies of communication, so that local events become influenced by events miles away and, as a result, global expansion of knowledge (or greater access to information); (ix) strengthening of nation-states, with reduction of sovereignty and hegemony at the individual level of the respective countries; (x) global interdependence, especially through the international division of labor; (xi) consolidation and greater influence of large corporations, which become dominant agents within the world economy.

In this context of a new era for humanity, in which new patterns and practices are established, Ulrich Beck considers that society becomes risk prone, insofar as its effects are complex, uncertain and not controllable. In other words, based on uncertainties, the paths taken by society naturally are no longer supported by tradition and known practices — there is, thus, a break with everyday situations, creating an environment surrounded by threats and dangers.

Individuals in this scenario become the actors, planners and directors of their own lives (individualization), in search of obtaining new certainties. Giddens circumscribes how social relations and their practices gain new features. Trust systems are changed to faceless commitments. Socially established relationships are increasingly maintained in abstract systems. They differ, absolutely, from the commitments that in the past were maintained exclusively through social connections between those present (face to face).

Accordingly, the bonds of trust in society are profoundly altered, beyond practices in abstract and faceless systems, since the premises formed under the aegis of this new contemporary scenario are responsible for breaking institutionalized paradigms for relationships and social interactions.

From this perspective, the author emphasizes the following circumstances: (i) kinship, although it remains important, does not appear to be the only

¹⁸ According to Ricardo Antunes: “As a result of the form of work in capitalist societies there is a de-realization of the social being. The result of the working process, the product, appears to the worker as alien and strange as to the producer, becoming a *thing*. Thus, the effective performance of the work is, in effect, worker deactivation”. ANTUNES, Ricardo. *Adeus ao trabalho?: ensaio sobre as metamorfoses e a centralidade do mundo do trabalho*. 11. ed. São Paulo: Editora Estadual de Campinas, 2006. p. 126.

organized bond nor exclusively represent the nexus of reliable social connections; (ii) the location, although it provides a feeling of intimate connection and identification, is increasingly affected and influenced by more distant practices, so that global and local become intertwined; (iii) tradition tends to no longer offer answers and complete security for the organization of practices, i.e., there is a discontinuity between past, present and future.

It is important to note in this context that the consumption environment developed in abstract systems, through faceless practices, recently intensified with the coronavirus (Covid-19) pandemic. Under government measures determining social isolation, lockdown and restrictions on movement, the most diverse technologies were disseminated, proving essential for continuity, even of traditional sectors of the Brazilian economy, such as banking, which managed to operate normally.¹⁹

In the following section we reflect on the bases of state action aimed at compatibility between the complex and uncertain environment of innovative practices and performance of economic activity with increasing legal certainty and efficiency.

2. Regulatory experimentalism as a means of increasing new technologies

These social transformations, increasingly assuming a consensual aspect, in the wake of continuous and permanent collaboration, will stimulate with more intense experimental practices aimed at innovation — an important instrument for increasing the quality of postmodern social life. Hence, compliance with legal duty, reflected, for example, in articles 218 and 219, sole paragraph of the Federal Constitution; and in article 4, inc. IV of Law no. 13,874, September 20, 2019 (Economic Freedom Law).

The advantages of this collaborative consensual approach, encouraging new practices and experimental projects within the scope of public administration

¹⁹ As a result of this scenario, there was greater development, for example, of fintechs during the pandemic, a period that saw the implementation of several innovative initiatives. According to Boaventura de Sousa Santos, “in the Brazilian context, for example, especially in large cities, the Covid-19 pandemic resulted in the appreciation of the work of delivery drivers”, adding that, due to “closed commerce and people confined indoors, electronic commerce has increased significantly.” SANTOS, Boaventura de Sousa. *O futuro começa agora: da pandemia à utopia*. São Paulo: Boitempo, 2021. p. 111.

— for the purposes of innovation —, can be attested in a study by Diogo de Figueiredo Moreira Neto, from the following perspectives or advantages: (i) creative and operational potential of the entities present in the social constellation (collaboration); (ii) creative and operational potential of social entities (cooperation); (iii) reduction of costs for both the State and society (economics); (iv) simplification of the machine that manages the State (rationality); (v) reinforcement of the machine that regulates the State (publicization); (vi) renewal of modalities that provide services under the responsibility of the State (modernization); (viii) meeting the demands repressed after the failure of formatting the Welfare State and Socialist mono-class states (efficiency); (viii) rationalization of the attribution of powers to the State (subsidiarity); (ix) rationalization of the attribution of powers within the State (subsidiarity).²⁰

Imbued with this experimentalist spirit,²¹ the practice of state regulation must be based on proportional and balanced criteria, so the appropriate architecture is shaped with a view to making the incentive²² for innovation and competitiveness compatible with legal security. Thus, the primacy of “same risk, same regulation”,²³ in the search for regulatory balance, due to the risks inherent to economic activity.²⁴

²⁰ MOREIRA NETO, Diogo de Figueiredo. O futuro das cláusulas exorbitantes nos contratos administrativos. *Revista de Direito da Associação dos Procuradores do Novo Estado do Rio de Janeiro*, Rio de Janeiro, v. XVII, p. 14, 2006.

²¹ In this sense, we observe the use of modern regulatory techniques by federal agencies government controlled autonomous entities, such as *Banco Central do Brasil* and *Superintendência de Seguros Privados*. For example, Sandbox, PIX, Open Banking and Open Insurance, are based on: (i) experimentalism, dynamism and “regulation as you go”, promoting the encouragement of innovation and competitiveness, but with a careful eye on the health of the corresponding systems; and (ii) encouraging democratic regulation with the participation of the sector and society itself. VIANNA, Eduardo Araújo Bruzzi. Regulação financeira proporcional: ‘same risk, same regulation’. *Jota*. Available at: <https://www.jota.info/opiniao-e-analise/artigos/regulacao-financeira-proporcional-same-risk-same-regulation-17092021>. Accessed on: 30 June 2022.

²² According to Richard Thaler and Cass R. Sunstein, among the basic principles of effective architecture, incentives should be programmed by “sensible architects”, when designing systems. THALER, Richard H.; SUNSTEIN, Cass R. *Nudge: o empurrão para a escolha certa: aprimore suas decisões sobre saúde, riqueza e felicidade*. Tradução de Marcello Lino. Rio de Janeiro: Elsevier, 2009.

²³ Eduardo Araújo Bruzzi Vianna, Regulação financeira proporcional, *op. cit.*

²⁴ According to José Vicente Santos de Mendonça: “New Governance allows regulated entities to experiment with different ways of meeting the goals proposed by the Public Authority, including and especially those based on their expertise. It is recursive: it learns from results, and uses them to correct directions and propose new ones. It is regulation focused on results, not processes”. MENDONÇA, José Vicente Santos de. *Direito constitucional econômico: a intervenção do Estado na economia à luz da razão pública e do pragmatismo*. Belo Horizonte: Fórum, 2014. p. 436.

However, proportional regulation, based on the reduction of barriers and requirements for entry into certain markets, should not only promote the desired incentive for innovation and competitiveness, but also the security of markets as a reflection, ultimately, of the need to ensure equitable treatment for market players²⁵ — as the primacy of material constitutional equality, in which *unequals* are necessarily treated unequally, to the extent of their inequalities.

According to Sérgio Guerra:

The regulatory function represents the search for balance and regularity in the functioning of a subsystem, through rules, mostly elaborated with a high degree of technicality and complexity, rules that must be observed in certain situations (economic activity or public service), even if asymmetrically, aiming to minimally affect the fundamental rights and guarantees of citizens. Adding the aspects highlighted above to the postulate of efficiency, the function of state regulation must, as a legal basis, achieve the greatest satisfaction of the substantive public interest with the least possible sacrifice of other constitutionally protected interests and, secondarily, with the least expenditure of public resources. To achieve its objectives, the regulatory function must pursue the systemic balance of regulated sectors, and, to this end, take advantage of prospects, to move away from current and unsustainable decisions. The basis of its choices must be technical preponderance (not political), so as to reduce itself to pure discretion (opportunity and convenience). The regulation function must be characterized as a function of the State and not of government. Whomever is concerned about systemic effects and, therefore, prospects, is worried about the polls.²⁶

²⁵ In this regard, Augusto Coutinho Filho observes: “Another negative issue to be considered concerns existence of differentiated regimes for participants who provide the same type of service (considering the situations in which such services can be included within regulated activities), which could result in unjustified differentiated treatment, as companies that incur a larger regulatory cost are at a disadvantage in relation to ones that operate on the margins”. COUTINHO FILHO, Augusto. Regulação *sandbox* como instrumento regulatório no mercado de capitais: principais características e prática internacional. *Revista Digital de Direito Administrativo*, v. 5, n. 2, p. 274, 2018. Available at: www.revistas.usp.br/rdda. Accessed on: 30 June 2022.

²⁶ GUERRA, Sergio. Regulação Estatal e novas tecnologias. *Interesse Público*, Belo Horizonte, ano 18, n. 100, p. 201-214, nov./dez. 2016. p. 205.

This is undoubtedly a challenge posed by experimentation,²⁷ which must be internalized by the regulatory State. The reduction of barriers and experimentalism should be carried out with a careful eye on combating systems based on asymmetries between market players, which generate disproportionality or even regulatory expropriation.²⁸

Regulatory disconnection, in this context, is as a point of attention in the normative treatment of disruptive technologies, with regard to the transposition of a model of normative acts from analogue to virtual systems. If this occurs in a way disconnected from the understanding of the new technology, there is a systemically relevant regulatory disconnect, capable of sustaining a “negative externality, both a complete paralysis of technological sectoral development, and an anarchy of rules that brings with it individual and systemic risks”.²⁹

The challenge to innovation cannot be attributed solely to the risks of asymmetric customization, a disproportionate or expropriating regulatory framework aimed at the practice of experimentalism, but also to the fear that public officials still have of the risks and insecurities involved in the use of new technologies.

According to an assessment by the Inter-American Development Bank (IDB), carried out with the Federal Audit Court (TCU), “Brazil is one of the countries with the highest potential for innovation”, but, on the other hand, “solutions have not been able to reach the public sector”. One of the reasons for this finding was that the “perception of risk in relation to control bodies is identified as an obstacle for public officials in innovation purchases”.³⁰

²⁷ On the topic, Paulo Modesto notes: “Legal-administrative experimentation is always a breach of uniformity and recognition of the regulatory environment as a decisive factor in the design of new services, of singular impact and public value. It is the understanding that innovation is not simply synonymous with computerization but also requires learning from the regulator. Experimentation can receive direct support from the legislator or derive from decisions by managers, who employ regulatory spaces delegated to the Administration for testing special normative microsystems. Paulo Modesto, *Direito administrativo da experimentação*, op. cit.

²⁸ For Rafael Vêras de Freitas: “Regulation that has expropriation consequences is the antithesis of regulation, because it is devoid of any legitimacy — be it economic, social, procedural, or behavioral. In fact, if the regulation of a certain activity is only justified to achieve a result, if this result is undesirable, or illegal, there is no sense talking about the legitimate exercise of the regulatory function”. FREITAS, Rafael Vêras de. *Expropriações normativas*. Dissertação (mestrado em direito regulatório) — Escola de Direito, Fundação Getúlio Vargas, Rio de Janeiro, 2019. p. 122. Available at: <https://direitorio.fgv.br/egressos/rafael-veras-de-freitas>. Accessed on: 30 June 2022.

²⁹ REIS, Guilherme Alberge. O sandbox regulatório como alternativa para regular tecnologias disruptivas desenvolvidas por fintechs. *Revista de Direito Público da Economia*, Belo Horizonte, ano 18, n. 72, p. 95-110, out./dez. 2020. p. 101-102.

³⁰ PAIVA, Letícia. Gestores públicos temem tomar riscos em compras de inovação, diz estudo

Risk aversion³¹ and the “fear” of the new, which often prevails among public officials, may also be considered from the perspective of a negative externality, which, according to Rafael Oliveira and Erick Halpern, ends up curtailing “any heterodox solution from a public agent with an innovative persuasion”. In this context, incentives remain “conservative and formalistic behaviors in Public Administration, even if not coincident with the best service to the public interest”.³²

It is important to point out, at the same time, that legal pragmatism³³ has acquired greater relevance in the contemporary practice within the public administration. The influence of legal pragmatism can be seen, for example, in art. 22 of The Law of Introduction to Brazilian Law (LINDB), included by Law nº 13,655/2018, which requires consideration of the real obstacles and difficulties faced by the manager when interpreting standards for public management.³⁴

do BID. *Jota*. Available at: <https://www.jota.info/tributos-e-empresas/regulacao/gestores-publicos-temem-tomar-riscos-em-compras-de-inovacao-diz-estudo-do-bid-29092021>. Accessed on: 1 July 2022.

³¹ For Paulo Modesto: “Risk aversion, natural to human behavior, finds reinforcement in public administrators, who move in a multiport control environment. The control of public managers is affected by the complexity of bodies dispersed across different powers, which often diverge from each other and adopt particular logics of understanding the current legislation itself. The expectation of strict control action, the risk of severe punishment in case of the slightest error, encourages caution, maintenance of routines and discourages experimentalism. The ‘pen blackout’ is the first response to the worsening risk for administrative decision-making, but has severe social and economic costs. Perhaps the creation of norms of consented breach of uniformity and the application of experimental mechanisms normatively authorized, on a temporary and limited basis, is the key to encouraging innovation in the modes of operation of the public manager”. Paulo Modesto, *Direito administrativo da experimentação*, op. cit.

³² OLIVEIRA, Rafael Carvalho Rezende; HALPERN, Erick. O mito do “quanto mais controle, melhor” na Administração Pública. *Zênite Fácil*, categoria Doutrina, 7 out. 2020. Available at: <http://www.zenitefacil.com.br>. Accessed on: 1 July 2022.

³³ For a better understanding of legal pragmatism and how it can be considered a suitable instrument in the process of interpreting the legal system, see: RDA — *Revista de Direito Administrativo*, Rio de Janeiro, v. 256, p. 129-163, jan./abr. 2011; OLIVEIRA, Rafael Carvalho Rezende. Análise de Impacto Regulatório e pragmatismo jurídico: levando as consequências regulatórias a sério. *Quaestio Iuris*, Rio de Janeiro, v. 14, n. 1, p. 463-480, 2021.

³⁴ According to Eduardo Jordão, the principle of reality, portrayed in art. 22 of LINDB, deserves a prominent place precisely because one of its main objectives is to “generate empathy, on the part of the controller, with the situation and the vicissitudes of the manager”. It must be admitted that “clearly underlying the device is the reasoning that there are a considerable number of well-intentioned managers”, who, sometimes, “may even adopt measures that do not correspond to those preferred by controllers”; however, if the measures are reasonable, “they deserve some protection by the law”. JORDÃO, Eduardo. Art. 22 da LINDB — acabou o romance: reforço do pragmatismo no direito público brasileiro. *Revista de Direito Administrativo*. p. 73. Available at: <https://doi.org/10.12660/rda.v0.2018.77650>. Accessed on: 1 July 2022.

This scenario can be seen as an embodiment of reality,³⁵ so that social coexistence must necessarily take into account what actually occurred, occurs or may occur.

It is necessary to recognize that the reality of public management can be affected by diverse factors, unpredictable or not, but with effects that cannot be calculated. Therefore, it is advisable to conduct tests and experiments with the aim of incorporating experiences that are truly innovative, to generate greater efficiency and achieve better results.

The intensification of State experimentation, aimed at accommodating balanced attitudes and a flexible regulatory institutional framework, due to the volatile and increasingly innovative scenario, is expressed by Paulo Modesto:

In the complex and dynamic society in which we live, adapting regulation to new Service delivery models are inevitably incremental, that is, carried out by small and successive changes, but equally pragmatic, supported by diagnosis and observation of concrete experiences. Experimentalism can be encouraged and controlled, as in sandbox programs, or result from the application of flexible general standards based on analysis of evidence and empirical and statistical studies. *Simplifying today is also experimenting with new regulations and selecting cases of controlled regulatory differentiation as a blueprint for new regulatory reforms.* The Public Administration cannot love the past, as Belchior opines, because the new always comes and appearances are no longer deceiving.³⁶

In this context, in an effort to accommodate this universe of innovation, Law no. 14,129, March 29, 2021 (Government Law Digital) was passed. Art. 44 encourage public entities to promote the creation of “innovation laboratories, open to the participation and collaboration of society for the development

³⁵ According to Diogo de Figueiredo Moreira Neto: “The principle of reality prescribes coherence between reality and law: as a discipline of interpersonal behaviors, which present themselves as real facts of social coexistence, it must be consistent with what actually occurred, occurs or may occur. Thus, in a manifestation of will, the subject must be real, as real must necessarily be: the reason for acting, the object of the action and its result”. MOREIRA NETO, Diogo de Figueiredo. O direito administrativo do século XXI: um instrumento de realização da democracia substantiva. A&C — *Revista de Direito Administrativo e Constitucional*, Belo Horizonte, ano 11, n. 45, p. 13-37, jul./set. 2011. p. 22.

³⁶ MODESTO, Paulo. Simplificação administrativa e experimentação. *Consultor Jurídico (Conjur)*. Available at: <https://www.conjur.com.br/2022-abr-28/interesse-publico-simplificacao-administrativa-experimentacao>. Accessed on: 1 July 2022.

and experimentation of innovative concepts, tools and methods for public management, and the provision of public services". The guidelines for such laboratories, provided for in art. 45 of the Digital Government Law, are those raised in this study, for example: collaboration between the State and society; technology experimentation; focus on society and the citizen; promoting social participation; fostering innovation; public policies guided by data and evidence, supporting the decision making and improving public management; diffusion of knowledge.

Mention should also be made of the Legal Framework for startups and innovative entrepreneurship, typified by Supplementary Law no. 182, June 1, 2021, an important milestone, with the central objective of providing legal security and fostering businesses environments, especially those formatted in an innovative ecosystem.

Encouraging experimentation and, consequently, obtaining evidence from the use of new technologies can, in fact, be a effective way of mitigating risks and challenges that arise in relation to the uberization of the economy, as will be discussed.

3. Challenges of the "uberization of the economy"

In its broadest sense, Uberization of the economy has been consolidated to provide expansion of economic activity through digital platforms, making access by users increasingly simple, agile and dynamic, in the consumption of varied goods and services.³⁷

Intensification of economic penetration, especially by large companies, many with transnational operations, has resulted in significant debate, especially in the legal field, which reveals challenges due to the complexity and uncertainties involved.

³⁷ According to Renan Bernardi Kalil: "The development of economic activities on platforms that facilitate the exchange of various products and services between people or between people and companies is one of the most visible technological innovations in the digital world. The numerous names given to this phenomenon vary depending on the perspective adopted: sharing economy, peer economy, collaborative economy, collaborative consumption, gig economy, disruptive economy, capitalism platform, excess access economy, access economy, on-demand economy, virtual economy, uberization, platform economy and crowd-based capitalism." KALIL, Renan Bernardi. *A regulação do trabalho via plataformas digitais*. São Paulo: Blucher, 2020, p. 68.

The Supreme Court (STF), ruling on Extraordinary Appeal (RE) no. 1.054.110/SP³⁸ and the Action for Non-compliance with Precept Fundamental (ADPF) no. 449/DF,³⁹ declared the unconstitutionality of municipal laws⁴⁰ that prohibited the paid transport of passengers by private drivers registered on digital platforms (or “applications”). In such judgments it was recognized that the Municipal councils, declared unconstitutional, had established disproportionate limitations, with the ordinary legislator failing to operate a margin of discretion in suppressing opportunities for the private sector.

The STF, in deference to freedom of economic activity, based its decision on the following constitutional principles: freedom of initiative (arts. 1, item IV and 170), competition (art. 173, § 4) and profession (art. 5, inc. XIII); full employment (art. 170, VIII); consumer protection (arts. 5, XXXII and 170, V).

In summary, there was recognition of the legal impossibility of establishing obstacles to exploring the provision of innovative services in the individual passenger transport sector through applications — a area that, traditionally, was the preserve of the taxi service.

Regarding the effects of these decisions handed down by the STF, it appears that the activities included in this broad concept of “uberization of the economy”, generally formatted in light of highly technological business models, find support in the constitution. In this sense, Minister Luis Roberto Barroso, rapporteur of the aforementioned RE no. 1.054.110/SP, notes that the prohibition of these activities as “an attempt to contain the change process is obviously not the way to go”, as “it would be like trying to stop the wind with your hands”.

It is important to consider, on the other hand, that a scenario of innovation and its attendant risks, uncertainties and technical complexities, invariably hinder the timely effectiveness of regulatory function — attributed to the Legislative Branch, due to democratic legitimacy; and to the Executive, by institutional

³⁸ BRASIL. Supremo Tribunal Federal (STF). *Recurso Extraordinário (RE) nº 1.054.110/São Paulo*. Plenary. Rapporteur: Minister Luís Roberto Barroso. Judged on: 9/5/2019. Publication of the Judgment on 1/6/2020.

³⁹ BRASIL. Supremo Tribunal Federal (STF). *Ação de Descumprimento de Preceito Fundamental (ADPF) nº 449/Distrito Federal*. Plenary. Rapporteur: minister Luiz Fux. Judged on: 8/5/2019. Publication of the Judgment 2/9/2019.

⁴⁰ The São Paulo City Council filed RE no. 1.054.110/SP against the previously rendered decision by the Court of Justice of São Paulo, through which it declared Municipal Law no. 16.279/2015. The Social Liberal Party moved for ADPF no. 449/DF, to declare the unconstitutionality of the Fortaleza municipal law no. 10.553/2016.

capacity. Naturally, this function is essential, mainly for the achievement and maintenance of the desired stabilization of social relations in general.

As a consequence of the regulatory deficit, solutions to conflicts often arise from instability in the approach to new technologies⁴¹ (for example: regulatory, tax and labor issues). They are transferred for consideration by the Judiciary,⁴² who assume a leading role in the constitutional engineering of Powers.⁴³

The challenges arising in the field of the technology — of great complexity — are not limited to the relationship between taxis and private drivers registered on digital passenger transport platforms (e.g., Uber, 99 or Cabify). Among other issues that have no definitive answer, we can highlight uncertainties in the relationship between telecommunication operators and service companies

⁴¹ According to a publication on the Jota website: “Today the context continues to be one of instability and lack of standardization of approach in the face of the arrival of alternatives to traditional models, whether communication, or transport, urban or road, among other innovations”. JOTA. *Decisões conflitantes geram insegurança a empresas inovadoras e afetam consumidores. Posicionamentos judiciais contrários à inovação podem privar pessoas de novas soluções, muitas vezes mais econômicas*. Available at: <https://www.jota.info/coberturas-especiais/regulacao-inovacao/decisoes-conflitantes-geram-inseguranca-a-empresas-inovadoras-e-afetam-consumidores-09052022>. Accessed on: 1 July 2022.

⁴² According to a publication on the Jota website: “As technology advances, it encounters resistance from multiple sides. Dominant economic agents fear losing space in the market. The Public Administration fears losing regulatory protagonism. Or simply there is a legislative mismatch, since the new technologies emerge in a matter of minutes, while laws take years to be created’, argues Maluf Beto Vasconcelos. A partner at XVV Advogados, former Secretary of Legal Affairs of the Presidency of Republic and former National Secretary of Justice, he explains that the regulatory function is essentially an attribution of the Legislative Branch and the Executive Branch. ‘Whether due to democratic legitimacy or institutional capacity, it is expected to be at the vanguard of planning, research in the construction of modern regulatory models, faced with the challenges that technological innovation imposes,’ he says. ‘The Judiciary, however, has been an important protagonist in the course of the so-called new Industrial Revolution, by removing inertia, unjustified resistance or regulations that impede new technological models. Judicial interference is justified in these cases, but it is expected there will be rapid absorption of protagonism with modern studies by regulators, to guarantee relevant constitutional values, such as free initiative, the defense of competition, consumer rights and democratic access to social rights’, says Vasconcelos, who also works on relevant cases involving regulation and technology in the STF”. JOTA. *Como o Judiciário deve se portar diante da disrupção. Até que a regulação seja feita pelo legislativo, ideal é que a Justiça se autocontenha, dizem especialistas*. Available at: <https://www.jota.info/coberturas-especiais/regulacao-inovacao/judiciario-portar-disrupcao-14032022>. Accessed on: 4 July 2022.

⁴³ According to Georges Abboud and Rafael Tomaz de Oliveira: “Certainly, we dedicate ourselves a lot to talking about the risks of a juristocracy in terms of constitutional interpretation, whose conceptual framework is given by judicial activism. However, we also need to remain vigilant regarding changes in our constitutional engineering of separation of powers. The Supreme Court, in these new jurisprudence trends that it has adopted, is not just making an interpretative change. It is changing the ‘machine’, turning the gears that move the government in a democracy”. ABBOUD, Georges; OLIVEIRA, Rafael Tomaz de. *O Supremo Tribunal Federal e a Nova Separação de Poderes. Entre a interpretação da Constituição e as modificações na engenharia constitucional*. *Revista de Processo*, v. 233, p. 12, Jul. 2014.

(WhatsApp, Facebook, Google, etc.); TV (open and closed) and the various streaming services (Netflix and others);⁴⁴ rentals via platforms (Airbnb) and its prohibition by residential condominiums.⁴⁵

Regarding employment relationships, significant uncertainties and risks need to be examined, as such relationships are gaining new meaning and undergoing profound changes.⁴⁶

In this context, we find debate on the existence of precariousness or absence of labor rights, which, according to Ricardo Antunes, can be viewed from the following perspective:

This is a hegemony of “financial logic” which, in addition to its economic dimension, touches all areas of social life, giving new content to ways of working and living, sustained by volatility, ephemerality and unlimited disposability. Its short-term logic encourages “permanent innovation” in the field of technology, new financial products and provision, making men and women obsolete and disposable. These are times of structural unemployment, of temporary work, through (new and) precarious forms of contract, where outsourcing, informality, precariousness, materiality and immateriality are vital mechanisms, both for the preservation and expansion of its logic.⁴⁷

Some issues that make labor relations precarious can be highlighted in terms of uberization of the economy, such as: the disposability of the work of

⁴⁴ On this topic, see: Sergio Guerra, *Regulação estatal e novas tecnologias*, op. cit.

⁴⁵ GIMENES, Erick. *Discussão sobre Airbnb em condomínios deve se alongar mesmo após decisões do STJ. Controvérsias sobre direito à propriedade deve levar o tema ao STF em breve. Jota*. Available at: <https://www.jota.info/justica/airbnb-condominio-decisoes-do-stj-29122021>. Accessed on: 4 July 2022.

⁴⁶ For Teresa Coelho: “It can be said that the evolution began with labor 1.0, from the 19th century and the Industrial Revolution, associated with the emergence of industrial society, which led to changes in production and in the organization of work itself. Then we have labor 2.0, from the 20th century, with the emergence of mass production and the advent of the Welfare State. Then there is labor 3.0, from the 1970s onwards, with globalization and the emergence of computer work and information technology; lastly there is labor 4.0, related to digitalization, work on platforms, the collaborative economy, integrated work, which leads to a change in values and new social commitments. This type of work will be more digital, flexible and interconnected. Obviously, we are talking about the future and, therefore, it is worth being a little cautious, as the specificities of this world of work are not yet clear”. COELHO, Teresa. *Revolução 4.0. Revista do Tribunal Regional do Trabalho da 15ª Região*, n. 56, p. 29, 2020.

⁴⁷ ANTUNES, Ricardo. *O privilégio da servidão: o novo proletariado de serviços na era digital*. São Paulo: Boitempo, 2018. p. 173-174.

men and women whose employability is based on a tenuous contract, without guarantee of basic rights; the strong presence of informality, outsourcing and immateriality (consubstantiated in the view of some authors, especially with the Labor Reform, implemented by Law no. 13,467/2017);⁴⁸ the transfer of the burden of various risks to workers, such as paying for social security, incurring expenses for tools essential for work, taking out insurance and paying taxes, unpaid down time.⁴⁹

Even in the wake of the intense debate surrounding precarious labor relations, all over the world,⁵⁰ questions have arisen on the recognition of employment relationships of workers registered in companies that operate through digital platforms.⁵¹

In the Superior Labor Court (TST) alone, there are currently 342 cases concerning recognition of employment relationships through platforms, such as Uber, 99, Cabify, Ifood, Loggi and Rappi. According to data in published

⁴⁸ For Giovanni Alves: "In Brazil, the logic of hypermodernity was normatively substantiated in 2017, within the scope of labor legislation, with the Outsourcing Law and the Labor Reform of the Temer government. It implemented once and for all, hypermodern work, understood as flexible work (a euphemism for work precarious)". ALVES, Giovanni. *A Era do trabalho hipermoderno — governo Temer e reforma trabalhista no Brasil*. In: MURADAS, Daniela (Coord.). *Manipulações capitalistas e o direito do trabalho*. Belo Horizonte: RTM, 2018. p. 73-74.

⁴⁹ According to Murilo Carvalho Sampaio Oliveira: "App-based work has thus shown itself to be intensely precarious, associated with technology and evident worker hypo-sufficiency. One of the factors of economic success of service or work platforms is that they operate in a clear zone of deregulation, under the apparent form of a communication platform, imputing its workers to be autonomous partners. This situation is further aggravated by the transfer of activity risks to workers, particularly in the case of transport applications, as they are responsible for acquisition and maintenance of vehicle, fuel expenses, taxes, accident insurance, and more, suffering the risks and economic cost of downtime. OLIVEIRA, Murilo Carvalho Sampaio. *Formas de contratação do trabalhador na prestação de serviços sob plataformas digitais*. In: CARELLI, Rodrigo de Lacerda; CAVALCANTI, Tiago Muniz; FONSECA, Vanessa Patriota da (Org.). *Futuro do trabalho: os efeitos da revolução digital na sociedade*. Brasília: ESMPU, 2020. p. 168.

⁵⁰ On the topic, see: EL ECONOMISTA. *Tribunal suizo considera que los conductores de Uber deben ser considerados empleados*. Available at: <https://www.economista.com.mx/rss/feed.xml>. Accessed on: 7 July 2022. JOTA. *Para professora da Califórnia, aplicativos criaram 'economia imoral de trabalho'*. Available at: <https://www.jota.info/tributos-e-empresas/trabalho/para-professora-da-california-aplicativos-criaram-economia-imoral-de-trabalho-29042022>. Accessed on: 7 July 2022.

⁵¹ Rodrigo Carelli warns: "Myths invade society in all their aspects, and it could not be any different in relation to labor law. Platform companies, which can be considered digital designs of ideological conceptions — such as free markets and equal hiring of men and women, understood as companies in competition —, act in the real world to implement these ideas in a way that is far from ideal and the legal system. We try to alter reality through form, change things in name. All attempts in this direction have always been in vain, as history shows us. Platforms present a new way of organizing work, but they do not have the ability to change the reality of things". CARELLI, Rodrigo de Lacerda. *O trabalho em plataformas e o vínculo de emprego: desfazendo mitos e mostrando a nudez do rei*. In: Rodrigo de Lacerda Carelli, Tiago Muniz Cavalcanti e Vanessa Patriota da Fonseca, *Futuro do trabalho*, op. cit., p. 81.

research, there are 16,149 actions in the justice system, of which: 5,000 are pending; 4,398 were resolved through agreement; 3,000 driver requests were denied; 149 were judged valid; 1,799 partially valid; and others pertaining to procedural issues.⁵²

Despite the intense discussions, gaining more and more attention, thus far it is not possible to verify a uniform trend regarding the recognition of the existence (or otherwise) of an employment relationship.⁵³ This discussion seems to be far from over.

According to Paula Freitas de Almeida:

The convergence between expulsion from the formal job market, expansion of the service sector and creation of digital platforms has definitively changed the material bases of modern society and work and established new relationships. How the innovations of the Digital Revolution will be assimilated by international and national political society is still open; an alternative are regulatory frameworks linked to the Digital Revolution to reformulate the protection of a labor from non-employment relationships, with deteriorating and continued loss of income for the poorest, loss of quality in the general terms of hiring the workforce. Employment is no longer a key category. However, this

⁵² VALOR ECONÔMICO. *TST pode julgar vínculo entre Uber e motorista em repetitivo*. Available at: <https://valor.globo.com/legislacao/noticia/2022/10/06/tst-comeca-a-julgar-vinculo-de-emprego-entre-uber-e-motoristas.ghtml>. Accessed on: 9 Oct. 2022.

⁵³ On the lack of uniformity regarding the recognition of the employment relationship of workers and application companies, see the following news: JOTA. *MPT entra com ação para que UBER, 99, Rappi e Lalamove reconheçam vínculo trabalhista*. Embora tenha sido protocolados em São Paulo, processos têm âmbito nacional. Available at: <https://www.jota.info/tributos-e-empresas/trabalho/mpt-entra-com-acao-para-que-uber-99-rappi-e-lalamove-reconhecam-vinculo-trabalhista-08112021>. Accessed on: 7 July 2022; JOTA. *TRT2 julga que não há vínculo empregatício de entregadores com a Loggi*. Em dezembro do ano retrasado, juíza de primeira instância tinha obrigado empresa a contratar entregadores. Available at: <https://www.jota.info/tributos-e-empresas/trabalho/trt2-julga-que-nao-ha-vinculo-empregaticio-de-entregadores-com-a-loggi-18082021>. Accessed on: 7 July 2022; JOTA. *TRT15 não homologa acordo entre Uber e motorista e reconhece vínculo empregatício*. Para tribunal, empresa tentou impedir formação de jurisprudência ao fazer acordo com motorista um dia antes do julgamento. Available at: <https://www.jota.info/tributos-e-empresas/trabalho/trt15-nao-homologa-acordo-entre-uber-e-motorista-e-reconhece-vinculo-empregaticio-28042021>. Accessed on: 7 July 2022; JOTA. *Uber ganha ação trabalhista no Distrito Federal*. Justiça do Trabalho tem encarado de formas diferentes relação entre empresa e motoristas. Available at: <https://www.jota.info/justica/uber-ganha-acao-trabalhista-no-distrito-federal-19042017>. Accessed on: 7 July 2022; JOTA. *Justiça de SP reconhece vínculo de emprego na Uber*. Na primeira decisão da capital paulista, juiz citou lucro da empresa e subordinação do motorista. Available at: <https://www.jota.info/tributos-e-empresas/trabalho/justica-de-sp-reconhece-vinculo-de-emprego-na-uber-13042017>. Accessed on: 7 July 2022.

does not prevent protection of a helpless society by institutions, in lieu of other alternatives, to improve their condition.⁵⁴

Due to the extreme relevance of the topic for the national economy and, undoubtedly, for thousands of workers operating in the universe of new technologies, this is a challenging scenario not only for the Judiciary, but also for the Legislative and Executive Powers in the enactment of stable and balanced regulatory frameworks, potentially customized with input obtained from experimentation in the current reality.

Conclusion

Due to the profound changes caused, above all, by the intense and continuous process of technological innovation, it is inevitable that the State should be prepared not only to accompany them closely, but to obtain the necessary experiences to customize balanced regulatory frameworks for economic activity and provision of public services.

To maintain equilibrium, it is necessary to pay close attention to the prevention and composition of antinomies arising from the technicality and complexity of social relationships.

It is necessary to consider the fact that digital demand provides renewal of classic models of providing public services and carrying out economic activity. As a consequence, difficulties are evidently created for the State vis-a-vis the new challenges posed by technology, technicality and innovation.

The role of state regulation in the context of postmodernity is challenging, especially in the field of activities provided through new disruptive technologies. The search for a balance between the necessary technological development and the protection of fundamental rights, including those of consumers and workers, is no easy task.

In summary, the intensification of the “uberization of the economy” and, in particular, its effects on labor relations, addressed in this study, create circumstances which are extremely challenging to the balance of state regulation.

⁵⁴ ALMEIDA, Paula Freitas de. *Revolução digital: a demanda social pela regulação do trabalho*. In: Rodrigo de Lacerda Carelli, Tiago Muniz Cavalcanti e Vanessa Patriota da Fonseca, *Futuro do trabalho*, op. cit., p. 414.

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