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## BLOCKCHAIN AS A TECHNOLOGY FOR PUBLIC REGISTRIES AND NOTARY ACTIVITIES

by **Juliana HORN MACHADO PHILIPPI**, PhD student at Universidade Federal do Paraná – UFPR, Attorney-at-Law at the Brazilian Bar Association.

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With the increasingly rapid technological advances, the evolution of electronic government to open government and digital government cannot be disregarded, with ever greater participation and influence in citizens' lives. Thus, questions arise about the impact of technologies on public functions and activities of the Public Administration and, with regard to notaries and registrars, their permanence regarding activities involving public records may be questioned, which is the problem that involves the present study. The research was carried out from the deductive method, and the methodology used was the analytical-documentary, with technical-bibliographic investigation in national and international scope, and this paper is divided into four parts. At the first moment, the provision of notarial and registry activities in the Brazilian legal regime is studied, with a presentation of general lines about such services and exposition about the public and notarial registry systems. Afterwards, the interaction of new technologies and Public Administration is discussed, with the evolution of electronic government to digital and an explanation regarding the adoption of ICTs in the provision of public services, with emphasis on the role of the State as a great promoter of technological innovations. Soon after, we move on to the study of the blockchain itself, its origin, main characteristics and applicability. In the third item, there is an explanation regarding blockchain technology, to introduce the fourth topic, which addresses digitalization and the new paradigms of public records.

Based on administrative efficiency (which is not to be confused with the idea of private efficiency), we can conclude that blockchain in the notary and registry function it does not replace the indispensable presence of notaries and registrars, but it can serve as an increase in security and quality to their activities.

## § 1 – PUBLIC REGISTRIES AND NOTARY SYSTEMS

Brazil adopts the Latin notary system, typical of civil law, and so the notary exercises public function delegated by the State,<sup>1</sup> and the notarial performance is preventive, that is, in the sense of avoiding judicialization and the consequent overload of the Judiciary.<sup>2</sup> The role of the notary (as well as that of the registrar) aims to avoid the formation of conflicts,<sup>3</sup> as well as processes and other disputes in the fulfillment, registration and execution of declarations of will and contracts expressed in public deeds.<sup>4</sup> In this way, the presence of the notary reduces the judicialization,<sup>5</sup> which deserves to be highlighted the famous phrase of Francesco Carnelutti, “tanto più notaio, tanto meno giudice”,<sup>6</sup> which, in free translation, means that the more notaries, the less judges.

In addition to the Latin system, there are two other types of notary: the Anglo-Saxon, in which formal freedom reigns and there is no authentic document nor the effectiveness of public faith, so that the notary is limited to authentication and certification, that is, it does not advise the parties, does not interpret or give legal form to the will of individuals, without changing the nature of the documents or conferring probative value; and the administrative or state-owned notary, in which the notary is a public employee, who is not impartial, as he represents the interests of the State. Instead of the independence that marks the Latin and Anglo-Saxon notary, in the administrative or state-owned notary the notary is a State employee, inserted in the hierarchical and bureaucratic structure.<sup>7</sup>

Beside notaries, there are also the registrars. And, in Brazil, there is the real estate registry, registration of titles and documents, and civil registries of natural persons and legal entities, dealt with in Law n. 6.015/73. The registrars make everyone aware of the relevant facts and legal situations, whether due to the repercussions on everyone's legal spheres, or for reasons of security and progress of the legal and economic traffic. They

<sup>1</sup> W. CENEVIVA, « *Lei dos Notários e dos Registradores Comentada* », 9. ed. São Paulo: Saraiva, 2014, p. 47; M. ZOCKUN, « *Regime Constitucional da Atividade Notarial e de Registro* », São Paulo: Malheiros, 2018, p. 39-40; 116-117; 240-241.

<sup>2</sup> A. N. F. PATRÃO, « A aplicação internacionalmente ampliada das regras de notariado latino nos negócios imobiliários », *Revista de Direito Imobiliário*, v. 82, ano 40, p. 485-551, jan.-jun. 2017, p. 491.

<sup>3</sup> L. N. LACERDA, « *Delegação da Atividade Notarial e Registral: caracterização jurídica e conveniência do atual modelo constitucional* », Porto Alegre: Núria Fabris, 2014, p. 84.

<sup>4</sup> C. F. CAMPILONGO, « *Função Social do Notariado: eficiência, confiança e imparcialidade* », São Paulo: Saraiva, 2014, p. 134.

<sup>5</sup> *Ibidem*, p. 23.

<sup>6</sup> F. CARNELUTTI, « La figura giuridica del notaro », *Revista Trimestrale di Diritto e Procedura Civile*, Milano, ano IV, 1950, pp. 927-928.

<sup>7</sup> M. JARDIM, « A ‘privatização’ do notariado em Portugal », *Revista de Direito Imobiliário*, n. 58, jan.-jun. 2005, p. 281-283; A. N. F. PATRÃO, « A aplicação internacionalmente ampliada das regras de notariado latino nos negócios imobiliários », *Revista de Direito Imobiliário*, v. 82, ano 40, jan.-jun. 2017, pp. 490-496; M. RODRIGUES, « *Tratado de Registros Públicos e Direito Notarial* », 3. ed. rev. atual. e ampl. Salvador: JusPodivm, 2021, pp. 761-769.

practice the acts listed in the legislation pertaining to public records – such as Law n. 6.015/73 (Public Records Law) –, as determined by art. 12 of Law n. 8.935/94 (Law of Notaries and Registrars).<sup>8</sup>

As for property registration, from a formal point of view, registration systems are divided into: (i) a transcription system, like the French one, with filing in folders organized by person, limiting itself to copying or transcribing the entirety of the title, without worrying about extracting only the real aspects from it; (ii) registration system, like the Brazilian<sup>9</sup> one, in which the registry entry corresponds to an extract of the title and brings only the provisions referring to real rights, which are published and have the effect of being valid before third parties; and, finally, the (iii) German<sup>10</sup> system which is the classification system, in which the record books have fields, like a pre-printed form in which only the gaps are filled in, with a rigid form of how it should be presented the title, and the inscribable rights are previously established *numerus clausus*.<sup>11</sup>

Also, from an organizational point of view, real estate registration systems can be classified as personal folio and royal folio systems. In personal folio systems, the property involved in the transaction is independent, since the organization is based on the people involved in the obligatory relationship.<sup>12</sup> It's important to say that the organizational system adopted in Brazil since Law n. 6.015/73 is the real folio, with the real estate registration, which is a true curriculum vitae of real estate. In this system, there is a registration for each property, and the records and annotations that have that property as their object are carried out in chronological order.<sup>13</sup> In other words, with Law n. 6.015/73, the personal folio (transcription) was no longer adopted, in which the registration is the core of the property registry, and from this it is

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<sup>8</sup> L. G. LOUREIRO, « *Registros Públicos: teoria e prática* », 11. ed. rev. atual. e ampl. Salvador: JusPodivm, 2021, pp. 54-55.

<sup>9</sup> In Brazilian law, the rule is that the registration is constitutive, but without remedial effectiveness, that is, the situation described in the registration remains until proof to the contrary is produced, with the possibility of rectification and annulment of the registration, with provision for an administrative procedure and also judicial in the Public Records Law itself. M. RODRIGUES, « *Tratado de Registros Públicos e Direito Notarial* », 3. ed. rev. atual. e ampl. Salvador: JusPodivm, 2021, pp. 24-26.

<sup>10</sup> In Germany, the presumption of the registered act is absolute, since the registration guarantees the correspondence between the real situation and that constant in the registration, promoting the static security of the registration and the dynamic security of the trade, since the third party in good faith acquires the good trusting in the information in the public register, acquiring the transcribed Right and without the risk of future surprises. One of the traits of German law is the protection of third parties in good faith. *Ibidem*, pp. 24-26.

<sup>11</sup> M. G. SERRA; M. H. SERRA. C. CASSETTARI. (Coord.) « *Registro de Imóveis* », 4. ed. Indaiatuba: Foco, 2020, pp. 37-38.

<sup>12</sup> *Ibidem*, p. 38.

<sup>13</sup> D. A. P. ERPEN; J. P. L. PAIVA. « Panorama Histórico do Registro de Imóveis no Brasil », *Revista de Direito Imobiliário*. São Paulo, n. 43, pp. 42-46, jan.-abr. 1998.

that the constitution, deconstitution and declaration of rights occur.<sup>14</sup>

## § 2 – THE DEVELOPMENT OF INFORMATION AND COMMUNICATION TECHNOLOGIES (ICTS) AND DIGITAL GOVERNMENT

We live in a time of great and rapid technological evolution, which increases the traffic and storage of information and data, especially with the development of information and communication technologies, called by Klaus Schwab as Fourth Industrial Revolution, with a fusion of new technologies and interaction between the physical, digital and biological domains, which is marked by a much faster and wider diffusion of emerging technologies and generalized innovations.<sup>15</sup> In this context, Manuel Castells speaks of the information era and informational society,<sup>16</sup> with emphasis on the “role of technology in the process of social transformation”.<sup>17</sup>

Thus, sooner or later, due to technological developments, which will make analogue means and processes obsolete, the digitization of Public Administration is inevitable.<sup>18</sup> It is said that is in course the “digital transformation” of Public Administration, whose evolution began with electronic government, marked by the merely instrumental use of technologies (only to increase the administrative routine, or else on sites for simple visitation), followed by open government, marked by for transparency, participation and collaboration. In turn, the digital government demonstrates a technological maturation within the scope of Public Administration and can even be pointed out as a more evolved system.<sup>19</sup>

Faced with the insufficiency of the electronic government model, one cannot fail to talk about open, innovative government that promotes popular participation, and which makes it possible to talk about digital government.<sup>20</sup> Regarding the theme, Irène

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<sup>14</sup> L. E. RICHTER, « A trajetória do título no registro de imóveis: considerações gerais », *Revista de Direito Imobiliário*. v. 56, jan.-jun. 2004, p. 52.

<sup>15</sup> K. SCHWAB, « *A quarta revolução industrial* », São Paulo: Edipro, 2016, pp. 15-16; E. GABARDO; R. C. KOBUS, « Quarta Revolução Industrial: *Blockchain e Smart Contracts* como Instrumentos da Administração Pública Inteligente. », *in*: J. RODRÍGUEZ-ARANA; C. DELPIAZZO; J. A. SILVA FILHO; R. VALIM; M. RODRÍGUEZ. (Org.). *Control Administrativo de la Administración*. v. 2. São Paulo: Imprensa Oficial de São Paulo, 2019, pp. 492-495.

<sup>16</sup> M. CASTELLS, « *A Sociedade em Rede* », 19. ed. rev. e atual. Rio de Janeiro: Paz e Terra, 2018, pp. 77-81.

<sup>17</sup> M. CASTELLS, « *O Poder da Comunicação* », 4. ed. Rio de Janeiro: Paz e Terra, 2019. p. 70.

<sup>18</sup> J. REYNA; E. GABARDO; F. S. SANTOS, « Electronic Government, Digital Invisibility and Fundamental Social Rights », *Seqüência*, Florianópolis, n. 85, ago. 2020, p. 35.

<sup>19</sup> A. C. A. VIANA, « Transformação digital na administração pública: do governo eletrônico ao governo digital », *Revista Eurolatinoamericana de Derecho Administrativo*, Santa Fe, vol. 8, n. 1, ene. /jun. 2021, pp. 130-132.

<sup>20</sup> J. G. CORVALÁN, « Administración Pública digital e inteligente: transformaciones en la era de la inteligencia artificial », *Revista de Direito Econômico e Socioambiental*. Curitiba, n. 8, n. 2, mai.-ago. 2017, p. 45.



Boudahana and William Gilles also speak of “gouvernance ouverte”, or open administration, with concrete applications in the digital society of the 21st century, based on the transformation of the conception of administrations and their functioning, and the renewal of relationships between managers and the administration of public servants. Relationships are less vertical, providing better integration between citizens, public servants, users, companies and civil society in the public decision-making process.<sup>21</sup>

The digital government, (which, as said, presupposes an open government) is considered the most evolved model in the digital transformation of Public Administration, representing a paradigm shift, with the use of ICTs for the provision of public services themselves, consubstantiating social rights, in order to encourage and promote access, participation and control by society.<sup>22</sup> Therefore, the digital government must not lose sight of the fact that Public Administration must adapt to social demands and the current technological context, otherwise it will not respond to the demands of contemporary society.<sup>23</sup>

In this context, in Brazil was recently edited the Law n. 14.149/2021, the Digital Government Law, with principles, rules and instruments for increasing the efficiency of public administration, especially through reducing bureaucracy, innovation, digital transformation and citizen participation. The law is clear in targeting efficiency, which “is a concept repeated like a mantra. Search everywhere. Of course, in the context of digital transformation, the word would not fail to be used”.<sup>24</sup> However, limiting the concept of digital government to the pursuit of efficiency may limit its potential, under penalty of restricting it to an electronic government, not a digital one.<sup>25</sup>

Even in the reality of digital government, it must be considered that the Public Administration has to adapt to social demands and the current technological context, otherwise it will not correspond to the demands of contemporary society.<sup>26</sup> Thus, from the point of view of efficiency, the use of ICTs by Public Administration, in the context of digital government, should not only aim at

<sup>21</sup> I. BOUHADANA; W. GILLES, « De l’Esprit des Gouvernements Ouverts », *International Journal of Open Governments*. v. 4, 2017. pp. 1-22 :

[<http://ojs.imodev.org/index.php/RIGO/article/view/187/307>], pp. 4-6.

<sup>22</sup> J. S. S. CRISTÓVAM; L. B. SAIKALI; T. P. SOUSA, « Governo Digital na Implementação de Serviços Públicos para a Concretização de Direitos Sociais no Brasil », *Sequência*, Florianópolis, n. 84, abr. 2020, p. 217.

<sup>23</sup> J. REYNA; E. GABARDO; F. S. SANTOS, « Electronic Government, Digital Invisibility and Fundamental Social Rights », *Sequência*, Florianópolis, n. 85, ago. 2020, p. 43.

<sup>24</sup> A. C. A. VIANA; B. M. BERTOTTI, « O governo digital à luz da concepção de eficiência social », in: G. R. ANDRADE; L. B. SAIKALI (Org.), *Eficiência, subsidiariedade, interesse público e novas tecnologias*. Curitiba: Íthala, 2021, p. 22.

<sup>25</sup> *Ibidem*, p. 25-26; J. H. M. PHILIPPI. « Novas tecnologias, governo digital e a busca pela eficiência », in: G. R. ANDRADE; L. B. SAIKALI (Org.), *Eficiência, subsidiariedade, interesse público e novas tecnologias*. Curitiba: Íthala, 2021, pp. 206-209.

<sup>26</sup> J. REYNA; E. GABARDO; F. S. SANTOS, « Electronic Government, Digital Invisibility and Fundamental Social Rights », *Sequência*, Florianópolis, n. 85, ago. 2020, p. 43.

reducing costs or speed, but also at realizing fundamental rights, to satisfy the desires and needs of society, bearing in mind the public interest that must permeate administrative action.<sup>27</sup>

### § 3 – THE BLOCKCHAIN TECHNOLOGY

In blockchain technology there is a protocol composed of a set of rules, with storage of blocks in computers (nodes) of the network, in a distributed network. The blocks are linked together by hashes (encrypted codes), and in each block there is a mention of the previous hash, so that the recorded information is immutable,<sup>28</sup> with a temporal record (timestamp, or time stamp). The hash of each block is like a unique fingerprint,<sup>29</sup> that is, the encryption of the set of information and transactions existing in that block.<sup>30</sup> It has a protocol composed of a set of rules, with calculations distributed across several computers and cryptography, which ensures the integrity of the information, without the need to go through a trusted third party.<sup>31</sup> And, due to the typical trust of a blockchain, the data can only be modified, and that the state of the blockchain can only be updated, to change new data by consensus of more than 50% (fifty percent) of the network users.<sup>32</sup>

In this way, blockchain goes beyond internet platforms, and can be considered as a truly disruptive technology.<sup>33</sup> In this sense, for Melanie Swan, blockchain is an information technology, whose decentralization has led to a revolutionary new computing paradigm, in addition to being the economic layer that the web never had. For that author, blockchain is initially disruptive, but over time it has led to the development of an ecosystem that encompasses old practices as well as innovation.<sup>34</sup>

There are different types of blockchain networks, depending on their architecture: they can be public (non-permissioned) or

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<sup>27</sup> J. H. M. PHILIPPI, « *Blockchain e Atividades Notariais e de Registro* », Rio de Janeiro: Lumen Juris, 2022, p. 139.

<sup>28</sup> E. M. CAMPOS. « *Criptomoedas e Blockchain: O Direito no Mundo Digital* », Rio de Janeiro: Lumen Juris, 2018, pp. 20-21.

<sup>29</sup> P. FILIPPI; A. WRIGHT, « *Blockchain and the Law: the rule of code* », Cambridge, Massachusetts: Harvard University Press, 2018, p. 22.

<sup>30</sup> E. M. CAMPOS, « *Criptomoedas e Blockchain: O Direito no Mundo Digital* », Rio de Janeiro: Lumen Juris, 2018, p. 21.

<sup>31</sup> D. TAPSCOTT; A. TAPSCOTT, A., « *Blockchain Revolution: como a tecnologia por trás do Bitcoin está mudando o dinheiro, os negócios e o mundo* », São Paulo: Senai, 2016, p. 35.

<sup>32</sup> T. REVOREDO, « Blockchain como uma arquitetura reguladora: smart contracts como ferramenta ao direito », *Revista Criptomoedas e Blockchain Descomplicadas para Advogados*. v. 01. n. 01. São Paulo: Enalaw, 2019, p. 20.

<sup>33</sup> S. B. C. D'ALEMAN, « Ventajas comparadas de blockchains privadas y blockchains públicas », in: M. BEHAR-TOUCHAIS [Direction Scientifique] *La Blockchain Saisie par le Droit*, v. 1, Paris: IRJS, 2019, p. 132; M. ATZORI, « Blockchain Technology and Decentralized Governance: is the state still necessary? », *Journal of Governance and Regulation*, v. 6, issue 1, 2017, p. 58.

<sup>34</sup> M. SWAN, « *Blockchain: blueprint for a new economy* », Sebastopol: O'Reilly, 2015. pp. 93-94.

private (permissioned) networks, depending on whether or not there is a validating central authority. Public networks do not have a central authority, with the possibility for anyone to join and function as a network node, and there is no hierarchy among network nodes.<sup>35</sup> Private networks, on the other hand, function as closed ecosystems, with control over the participants, who are part of a specific group and integrate that network with a defined purpose, so that transactions are only of interest to a group of people, who will verify the movements of the others.<sup>36</sup> In these networks there is control over access, with the possibility of granting different levels of visibility of transactions to the parties, which differentiates them from public networks.<sup>37</sup>

It should be noted that the elimination of third parties in blockchains is not peaceful, since, although they are initially designed as instruments of disintermediation. However, with regard to public records, it is not possible to effectively dispense with the third validator: based on an analysis of the use of blockchain to track babies, and the need to differentiate which digital record refers to which baby, or if the identifier was placed on the correct baby, Catherine Tucker and Christian Catalani defend the need for the presence of “trusted intermediaries”, that is, trusted intermediaries, to bridge the gap between the physical world (individuals, businesses, devices and events) and digital records in blockchain technology. They argue that, once this issue of the “bridge” between the digital and the physical is resolved, the blockchain can be used not only to guarantee the integrity of the data, but also to give the individual greater control over their data, being able to define how and with whom to share it. They bring as an example the idea that, in commercial relations, despite enabling information tracking, the blockchain cannot verify people's honesty: it is possible to track a digital influencer for an ad, but verify who is really behind the influencer, or from a buyer, requires offline verification, and it is beyond the current technological situation.<sup>38</sup> In this way, Catherine Tucker and Christian Catalani defend the presence of intermediaries as bridges to the offline world and digital records on blockchain: “as the ecosystem around blockchain technology develops, new business opportunities will emerge around intermediaries that keep digital records in sync with them offline counterparts”.<sup>39</sup>

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<sup>35</sup> K. WERBACH, « *The blockchain and the new architecture of trust* », Cambridge: MIT Press, 2018. p. 96

<sup>36</sup> T. REVOREDO, « *Blockchain: tudo o que você precisa saber* », São Paulo: The Global Strategy, 2019, p. 84-86.

<sup>37</sup> K. WERBACH, « *The blockchain and the new architecture of trust* », Cambridge: MIT Press, 2018, p. 96

<sup>38</sup> C. TUCKER; C. CATALANI, « What Blockchain Can't Do », *Blockchain: insights you need from Harvard Business Review*. Boston, Massachusetts: Harvard Business Review Press, 2019. pp. 62-64.

<sup>39</sup> *Ibidem*, p. 66.

#### § 4 – THE USE OF BLOCKCHAIN IN PUBLIC REGISTRIES AND NOTARY ACTIVITIES

There are some initiatives regarding the use of blockchain in public records in Brazil, such as: a pilot project in the real estate registry offices of Pelotas and Morro Redondo, which was part of the “Records in Chain” project, of the University of British Columbia and the CNPq UFSM Ged/A Group – Documentos Digitais, with the Ubitquity blockchain platform;<sup>40</sup> and, in the civil registry, Cartório Azevêdo Bastos pioneered the use of blockchain for document authentication,<sup>41</sup> in partnership with the startup OriginalMY, including the possibility of notary authentication with blockchain certification.

But the “icing on the cake” of the use of blockchain in notarial activities in Brazil consists of the e-Notariado, a platform managed by the Colégio Notarial do Brasil – Conselho Federal, implemented in the first half of 2019. However, it was in the context of the pandemic that passed to be more widespread, with the edition of Provision n. 100, of May 26, 2020, of the Conselho Nacional de Justiça (CNJ), with the modernization and unification of electronic notarial acts by all notary offices in the country. The use of e-Notariado became mandatory with the edition of Provimento n. 100 of the Conselho Nacional de Justiça, which added legal certainty and equality to electronic notarial activities, since, before its edition, there were several provisions of the States regarding electronic notarial acts, which compromised legal certainty.<sup>42</sup>

Since november 2020, started the integration of the e-Notariado system to the authentication of documents with registration in a blockchain network exclusive to Brazilian notaries, Notarchain.<sup>43</sup> The authentication of duly verified copies of digitalized

<sup>40</sup> D. FLORES; C. LACOMBE; V. LEMIEUX, « *Registro de transações imobiliárias em Blockchain no Brasil (RCPLAC-01) – Estudo de Caso 1* »:

[[https://www.researchgate.net/publication/322665300\\_Registro\\_de\\_transacoes\\_imobiliaras\\_em\\_Blockchain\\_no\\_Brasil\\_RCPLAC-01\\_-\\_Estudo\\_de\\_Caso\\_1](https://www.researchgate.net/publication/322665300_Registro_de_transacoes_imobiliaras_em_Blockchain_no_Brasil_RCPLAC-01_-_Estudo_de_Caso_1)].

<sup>41</sup> CARTÓRIO AZEVEDO BASTOS, « *Blockchain* »:

[<http://blockchain.azevedobastos.not.br/>].

<sup>42</sup> R. S. FÉLIX; M. M. KARAM; L. M. KARAM, « Cartórios do Futuro: uma análise dos provimentos que implementaram os serviços eletrônicos nas serventias extrajudiciais », *in*: T. TEIXEIRA; J. R. STINGHEN; A. C. LIMA; M. M. KARAM; M. A. E. JABUR, *LGPD e Cartórios: implementação e questões práticas*. São Paulo: Saraiva Educação, 2021, p. 82.

<sup>43</sup> Notarchain, is a private blockchain for notaries, developed by Colégio Notarial do Brasil – Conselho Federal, based on the Hyperledger Fabric blockchain platform, and consists of an exclusive permissioned network for notaries, in which each notary office works as a node of this network and stores the e-Notariado blocks. The authentication is possible due to a connection with the system of Central Nacional de Autenticação Digital (CENAD) of Colégio Notarial do Brasil – Conselho Federal (CNB/CF). COLÉGIO NOTARIAL DO BRASIL. « *Notarchain – Instalação técnica* », [<https://colegionotarialdobrasil.freshdesk.com/support/solutions/articles/4300059225-1-notarchain-instalacao-tecnica>]; R. S. FÉLIX; M. M. KARAM; L. M. KARAM, « Cartórios do Futuro: uma análise dos provimentos que implementaram os serviços eletrônicos nas serventias extrajudiciais », *in*: T. TEIXEIRA; J. R. STINGHEN; A. C. LIMA; M. M. KARAM; M. A. E. JABUR, *LGPD e Cartórios: implementação e questões práticas*. São Paulo: Saraiva Educação, 2021, p. 84.

documents, and of hybrid documents, is carried out at CENAD – Central Notarial de Autenticação Digital, module of the e-Notariado platform for the authentication of documents. It is possible to perform various electronic notary acts (including electronic travel authorization for children and adolescents), as well as electronic signatures of documents with the notarized certificate, as well as digital signatures for vehicle transfers, among others.<sup>44</sup>

As for the Brazilian registry system, Law n. 11.977 instituted the electronic registration system, lacking regulation. Thus, Provisional Measure n. 1.085/2021, which gave rise to Law n. 14.382/2022, which provides for the “Sistema Eletrônico de Registros Públicos” (SERP – Electronic System of Public Registries), with a view to integrating, facilitating and reducing bureaucracy in registration acts. The SERP will allow the exchange and sharing of data, including allowing citizens to request, consult and update acts such as birth certificates, marriage and property registration, all in one place (the SERP). It must be regulated by the Internal Affairs Department of Justice by January 31, 2023 and, due to the challenges for the functioning of the SERP in an integrated manner, in November 2022 the Corregedoria of Conselho Nacional de Justiça created a working group about the SERP to plan the regulation and discipline of its implementation and functioning.<sup>45</sup> With the modernization of public records through the future implementation of the SERP, it is understood that it is possible to use blockchain to increase security and efficiency, as is already happening in e-Notariado.

At the international level, there are projects and examples of digitization and use of technologies such as blockchain for notary activities and public records in Estonia, Dubai, United Arab Emirates, Sweden, and other countries. Also noteworthy is the initiative of the Cook County Recorder of Deeds, in Illinois, which used blockchain technology to improve the system, but kept the official record.<sup>46</sup> However, in none of these situations was there an effective replacement of the official public records system by blockchain,<sup>47</sup> which reinforces the indispensability of the presence of notaries and registrars, and the potential of blockchain not to replace them, but rather to collaborate with the safety and efficiency of its activities.

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<sup>44</sup> E-NOTARIADO, « *Cidadão ou Empresa* », [https://www.e-notariado.org.br/customer].

<sup>45</sup> CONSELHO NACIONAL DE JUSTIÇA, « *Corregedoria cria GT sobre Sistema Eletrônico de Registros Públicos para planejar seu funcionamento* », [https://www.cnj.jus.br/corregedoria-cria-gt-sobre-sistema-eletronico-de-registros-publicos-para-planejar-seu-funcionamento/].

<sup>46</sup> J. H. M. PHILIPPI, « *Blockchain e Atividades Notariais e de Registro* », Rio de Janeiro: Lumen Juris, 2022, pp. 126-134.

<sup>47</sup> F. P. N. GONZÁLEZ, « *O futuro do Registro de Imóveis em tempos de globalização e novas tecnologias* », *Boletim IRIB em Revista*. São Paulo, n. 362, p. 226-248, dez. 2020, p. 233.

New technologies, such as the blockchain, can offer alternatives to the traditional means of exercising State functions, and notary and registration activities do not pass unscathed by the digital transformation, nor should they have that claim. However, it is neither possible nor advisable to simply replace notarial and registry activities, as a public function, as well as the figures of notaries and registrars, by blockchain technology, even though there seems to be a certain similarity between their activities and the characteristics of the blockchain. This is because, in Brazil, the Latin notary and the rights registration system are adopted, and the outstanding characteristics are public faith and publicity, which lead to the guarantee of legal security, which emphasizes the need for the presence of notary figures and registrars in acts within their competence. Extrajudicial services are, therefore, important for society, especially for conflict prevention and the search for social peace.

In Brazil, e-Notariado platform, with Notarchain, represents the materialization of the necessary and urgent symbiosis between technologies and notarial and registry activities, with the possibility of performing notarial acts without the need for physical presence at the office, including the use of authentication of documents in blockchain (Notarchain, the notary's private network). For the public registries, the hope is that SERP (Sistema Eletrônico de Registros Públicos) will follow the same path. It should also be noted that there will be no elimination of the figure of the notary or the registrar, precisely because Brazil adopted the Latin notary and the system of registration of rights. Incidentally, as seen, there was no replacement of notaries and registrars in other international initiatives with the use of blockchain in notary and registration activities.

The whole context of blockchain integration, as one of the tools of this new technological reality, despite the typical mishaps of a notably unequal country like Brazil, blockchain, as a tool resulting from the new technological reality, seems to contribute to increasing efficiency in providing the respective notary and registration activities.

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