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LGPD and intellectual property in startups: challenges of legal governance in the era of open innovation.

LGPD and intellectual property in startups: legal governance challenges in the open innovation era

Jakeline Maria Andrade Azevedo Malvestiti - Specialist in Digital Law, Compliance and LGPD from the International University Center (UNINTER). Specialist in Data Science and Artificial Intelligence from the International University Center (UNINTER). Bachelor of Laws from UNESC.

Summary

This scientific article investigates, with analytical and critical depth, the complex and tense relationship between the General Data Protection Law (LGPD) and the protection of Intellectual Property (IP) in the dynamic ecosystem of *Startups* and Open Innovation. In a globalized market where personal data is monetized like the "new oil" and disruptive technologies are developed collaboratively, the monumental challenge arises of balancing the privacy of data subjects with the need for free information flow for technological development. The study analyzes the hybrid legal nature of data, the validity and effectiveness of electronic contracts in uncertain environments, and the compliance risks that can hinder business *scalability*.

A robust corporate governance model is proposed that integrates *Privacy by Design* into the strategic management of intellectual assets as a competitive differentiator.

Keywords: LGPD (Brazilian General Data Protection Law). Startups. Intellectual Property. Open Innovation. Corporate Governance. Electronic Contracts.

Abstract

This scientific article investigates, with analytical depth and critical perspective, the complex and tense relationship between the General Data Protection Law (LGPD) and Intellectual Property (IP) protection within the dynamic Startup and Open Innovation ecosystem. In a globalized market where personal data is monetized as the "new oil" and disruptive technologies are collaboratively developed, a monumental challenge arises to balance data subjects' privacy with the need for free information flow for technological development. The study analyzes the hybrid legal nature of data, the validity and efficacy of electronic contracts in environments of uncertainty, and compliance risks that can compromise business scalability. A robust corporate governance model integrating *Privacy by Design* into the strategic management of intellectual assets as a competitive differential is proposed.

Keywords: LGPD. Startups. Intellectual Property. Open Innovation. Corporate Governance. Electronic Contracts.

1. Introduction

The contemporary digital economy, marked by the dizzying speed of change.

Technological advancements and the dematerialization of corporate assets are essentially driven by two factors.

Interdependent fuels: access to big data and the capacity for innovation.

continuous. At the epicenter of this new economic dynamic are *startups*, nascent companies.

Technology-based companies seeking to develop repeatable, scalable, and disruptive business models.

under conditions of extreme market uncertainty. Frequently, economic viability and

The operational efficiency of these companies intrinsically depends on the collection, processing, enrichment, and mining large volumes of personal data for training artificial intelligence algorithms.

Artificial intelligence, service personalization, and the creation of added value. However, this model clashes...

directly confronting the need for rigorous protection of its intangible assets through

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classic Intellectual Property (IP) mechanisms.

The entry into force of the General Data Protection Law (Law No. 13.709/2018) in Brazil, heavily inspired by the European Union's General Data Protection Regulation (GDPR), It imposed a new ethical, legal, and operational paradigm on the sector. It's not just about a not a regulatory norm, but a cultural shift that questions the indiscriminate monetization of Privacy. The central dilemma is: how to innovate and extract economic value from data. without violating the fundamental personality rights of the data subjects? The LGPD does not prohibit innovation, but it establishes strict regulatory "rails" along which it must travel, transforming the Data protection has gone from being a secondary issue in Information Technology to a central agenda item. Business strategy and long-term corporate survival.

The concept of Open Innovation, theorized by Professor Henry Chesbrough, where companies break down their internal silos and actively collaborate with partners. external entities, universities, research institutes, and even competitors, are working to accelerate the development of solutions, it adds an extra layer of legal complexity to this already challenging scenario. When A *startup* shares its *dataset* (database) with a large corporate partner to co-create a product, or when using third-party APIs (*Application Programming Interfaces*) to Integrating functionalities raises critical governance questions: Who is the legal controller of the... Data? Who is the technical operator? What happens to the ownership of the intellectual property generated from it? What happens to this shared data? The lack of clarity regarding these responsibilities can create liabilities. millionaires.

This article aims to explore these dialectical tensions, analyzing the modules of "Startups and Open Innovation" and "Electronic Contracts" from the perspective of advanced legal governance. and interdisciplinary. The methodology addresses the hermeneutical analysis of current legislation, the doctrine specialized in Digital Law and the practical application of regulatory frameworks in high-tech environments Technological volatility and *Growth Hacking*. The aim is to demonstrate that compliance with the LGPD (Brazilian General Data Protection Law) It should not be seen as a bureaucratic obstacle, but as a seal of quality . Assurance) which values the company's intangible assets and attracts qualified investors.

The ethical limits of data monetization will be discussed in detail, along with the crucial distinction... between personal data and trade secrets, and the essential contractual clauses to mitigate risks in Open innovation partnerships and *corporate venture capital*. The research also focuses on the importance of intellectual property as a mechanism for market defense and attracting investment Venture Capital , discussing how to protect algorithms and software that process data. Personal data without infringing on users' rights. The central thesis defended is that governance Data management and IP management must go hand in hand, integrated into the *startup*'s core business from "Day One". "Zero" of the operation.

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Furthermore, the role of the lawyer specializing in startups is discussed, who should act not as a risk blocker ("the no department"), but as an architect of legal solutions.

Creative strategies that enable the business (*Legal Enabler*). The legal professional needs to understand... technology, monetization models (SaaS, B2B, B2C) and digital product lifecycle for

To offer consulting services that are truly strategic and aligned with business objectives.

Legal compliance thus becomes a sustainable competitive advantage in a market.

saturated with technically similar solutions, but legally vulnerable to sanctions from the Authority.

National Data Protection Authority (ANPD).

Finally, the introduction contextualizes the current state of the Brazilian innovation ecosystem. which has matured significantly in the last decade and has come to demand greater professionalization in Management. The era of "growth at all costs" has given way to the era of growth.

Sustainable and governed (*Sustainable Growth*). In this new economic landscape, *startups* that do not Those that have a solid data protection and intellectual property structure are doomed to failure, loss of market value, or unpayable legal liabilities. This work aims to provide A sound legal roadmap for navigating these turbulent waters of disruptive innovation with confidence. and ethics.

2. Personal data as an asset and the limits of intellectual property.

In the frenetic and competitive environment of *startups*, data is frequently, and erroneously treated as the sole property of the company, being classified in the *Pitch Decks* as the main asset of the business (*Data-Driven Business*). However, there is an ontological distinction. and a fundamental legal right that must be respected under the aegis of the Federal Constitution and the LGPD: data Personal rights are projections of human personality, fundamental rights that are inalienable and non-negotiable. While intellectual property pertains to intangible assets resulting from human ingenuity, Personal data is not a *commodity* and is subject to economic appropriation and exclusivity. In the classic sense, it cannot be sold as if it were just any fixed asset.

Conceptual and practical confusion arises when companies attempt to protect databases. Raw materials containing personal customer information under the cover of trade secrets . or claiming copyright over the compilation. The LGPD and contemporary legal doctrine Digital tools make it clear that the data owner (the individual) does not lose "ownership" or control. about your information when you consent to its use by a technology company. Therefore, a *Startup* It does not "own" its users' data in the sense of ownership; it merely holds custody of it. temporary, revocable and strictly purposeful regarding them for legitimate, informed purposes and consented.

The Intellectual Property strategy in data-driven *startups* should therefore be...

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surgical and technical: the focus of legal protection should not be the raw data itself (which belongs to the The owner), but the algorithm, the source code, the database architecture, and the analytics methodology *that* transforms that raw data into market intelligence (*insight*). It's the processing, the enrichment, curation, and organization of data that generates protectable intellectual value, not the Personal information in isolation. The *know-how* of how to extract value from the data is the real asset. The company's intangible assets must be protected by trade secrets and software copyrights.

However, the technical challenge of anonymization arises, which is vital for Data Science. In order to... a database can be commercially exploited with greater freedom and less risk.

Due to regulatory requirements, the *startup* must apply robust anonymization techniques (such as *K-anonymity* or differential privacy) that irreversibly disconnects information from the individual. If the Even if the process is reversible with reasonable effort, the data continues to be considered personal and subject to

All the safeguards and requirements of the LGPD (Brazilian General Data Protection Law). The boundary between anonymized data (outside the LGPD) and data.

Pseudonymization (within the LGPD) is tenuous and technically complex, requiring constant review.

legal and technical audit.

The monetization of data also encounters insurmountable ethical and legal limits in principle. of purpose and necessity. A *startup* cannot collect data for purpose A (e.g., providing...) a delivery service) and subsequently decide to sell that data or use it for a purpose. B (e.g., third-party AI training) without new specific consent or an adequate legal basis. This restriction directly impacts the company's *valuation*, as "dirty" databases (collected) Non-compliant or vitiated by consent are considered toxic liabilities in legal proceedings. Mergers and acquisitions (M&A) could jeopardize the founders' *exit*.

Furthermore, trademark and patent protection should be planned from the very beginning of the journey. entrepreneurial. Many startups neglect registering their trademarks or ensuring the patentability of their products. inventions due to lack of resources or ignorance, discovering too late that they infringed. Third-party rights or that your innovation has been copied by a larger *player*. Intellectual Property It serves as a defensive moat *that* protects the *startup* from competitors, ensuring a exclusivity period to explore the market and recoup the intensive investment in research and Development (R&D).

Finally, the intersection between data and IP requires meticulous contract management and... transparent. The Terms of Use and Privacy Policy are not merely formal documents for To comply with the rules; these are adhesion contracts that define the limits of the granted data usage license. by the user to the *Startup*. Abusive, unfair, or unclear clauses may be annulled by the Judicial decisions or sanctions by the ANPD (National Data Protection Authority) compromise the entire business model. Transparency Contractual protection is therefore a non-negotiable pillar of the intellectual property and protection strategy. data in the new economy.

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3. Legal governance in open innovation

Open Innovation presupposes a bidirectional and constant flow of Knowledge and technology: from the inside out (*outbound*) and from the outside in (*inbound*) of In this collaborative model, startups frequently connect with large companies. (*Corporates*) to conduct Proofs of Concept (PoCs), co-develop minimum viable products (MVPs) or access massive distribution channels. Although strategically advantageous for the Scalability, this relationship is legally risky if there is no governance. contractual and data control that is extremely well-defined, rigorous, and auditable.

The main legal risk lies in the contamination of Intellectual Property (*IP*). (*Contamination*). When *startup* and large company developers work together on Within the same code repository (e.g., GitHub) or project, who owns the final result of the innovation? Without a clear Joint Development Agreement, *the startup* may ending up inadvertently ceding ownership of its core technology to the larger partner, or The partner may claim rights to incremental improvements made to the *startup*'s platform. The IP ownership clause should be the backbone and top priority of any partnership. open innovation.

Regarding the LGPD (Brazilian General Data Protection Law), Open Innovation requires the intensive sharing of data. This imposes the absolute necessity of defining, contractually, who is the Controller and who is the Operator. of the data, or if there is a Joint Controllership figure. Each figure has responsibilities. Civil, administrative, and criminal matters are distinct under the law. If the *startup* receives a database from a large company... For a company to test a Machine Learning solution, it must contractually guarantee that these... The data was collected lawfully at the source. Receiving illicit data "contaminates" the database. *The startup* exposes it to joint sanctions, even if it did not carry out the primary collection.

Corporate governance also requires the mandatory implementation of *Due Diligence*. Third parties (*Vendor Risk Management*). Before integrating your API with a partner or sharing Regarding user data, the *startup* must audit the maturity of information security and compliance of... Partner. Liability under the LGPD (Brazilian General Data Protection Law) is joint and several in many data breach cases; therefore, choosing a partner is crucial. Misusing an innovation partner can result in them being held legally responsible for security incidents. caused by it. Trust in the digital ecosystem must be verified technically, not just presumed, adopting a *Zero Trust architecture approach*.

Electronic contracts play a vital and structuring role in this digital ecosystem. Formalizing partnerships, signing NDAs (Non-Disclosure Agreements), and managing... MOUs (Memorandums of Understanding) occur almost exclusively in a virtual environment. legal validity of electronic signatures, integrity of digital documents, and traceability Version control (timestamping) is fundamental to ensuring the legal security of transactions.

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Legal governance must ensure that all approval and signature flows are in place.

in accordance with civil law and Provisional Measure 2.200-2/2001.

Another critical and often overlooked point is data lifecycle management after the data is removed. termination of the partnership. The contract must include clear and enforceable rules for *Data Retention* and *Safe disposal (sanitization)*. If the partnership is dissolved or the pilot project fails, what happens? What about the shared data? Should it be returned, deleted, or anonymized? The lack of Contractual provisions regarding partnership *exit* are one of the biggest causes of litigation and incidents. Security in open innovation projects is a risk, as it generates "orphan data" that becomes vulnerable to attacks.

A culture of *Compliance* and *Legal Design* should permeate the entire relationship between the parties. Complex, lengthy, and illegible legal documents ("legalese") hinder the speed of... Innovation. Modern governance uses *Visual Law* techniques and plain language (*Plain Language*) to ensure that the technical teams from both companies (developers, POs, Scrum Masters) understand the rules of the game: what can and cannot be done with the dice and with the Licensed technology. Clear communication drastically reduces the risk of unauthorized breaches. intentional actions by engineers and developers who are unaware of the law.

4. Startups and compliance as a competitive advantage

In the current stage of maturity of the global and national entrepreneurship ecosystem, the Legal compliance has definitively ceased to be viewed as a mere cost center. or a "necessary evil" to become a high-value strategic asset and a competitive advantage. Decisive. Startups that are born and grow in compliance with the LGPD (Brazilian General Data Protection Law) and with a solid structure. Intellectual Property firms are worth more on the market, attract investment faster, and win over... Gaining the trust of large corporate clients (*Enterprise*) much more easily than those that operate informally or on an improvised basis.

Venture capital investors and *private equity* funds are becoming increasingly sophisticated. demanding and averse to unmapped regulatory risks. During the legal *due diligence* process. For an investment round (Series A, B, etc.), the first question asked to the founders is... It's no longer just "how much do you grow?", but "how do you protect your data and your technology?". absence of data mapping , lack of a robust privacy policy

The lack of software registrations with the INPI (Brazilian National Institute of Industrial Property) can significantly reduce the company's *valuation*. or even abort the financial contribution (*deal breaker*), as they represent hidden liabilities.

The implementation of the *Privacy by Design concept*, advocated by Ann Cavoukian, since The product ideation phase is the practical manifestation of this competitive advantage. When designing a software, application or platform that is born collecting the minimum necessary data (*data minimization*) and with robust security standards by default (*Privacy by Default*), the *Startup*

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It saves future resources on re-engineering and emergency safety fixes. Furthermore,

She can use privacy as a sales and marketing argument to win over users.

increasingly aware and demanding of their digital rights.

The protection of Intellectual Property also acts as a powerful lever for business and expansion. A *startup* that has filed patents or properly licensed software. Registered trademarks signal to the market that you possess proprietary, unique, and defensible technology. This facilitates... internationalization of the company, since international IP treaties (such as the Berne Convention and The Treaty of Madrid) allows for extending protection to other countries, guaranteeing legal certainty. necessary to export Brazilian innovation to competitive global markets such as the United States

The United States and Europe.

Labor and corporate compliance in *startups* also falls under this umbrella of integrated governance. Flexible hiring models (freelance, *vesting*, *stock options*) are common in sector-specific, but legally risky if not well-structured. Legal governance ensures that the *Vesting* agreement (stock purchase option for key employees) is valid and does not generate hidden labor liabilities, aligning the interests of the team with those of the founders and investors. In the long term, creating a sustainable "ownership" culture (*partnership*).

Professional crisis and incident management in security is another competitive advantage. Crucial. Prepared *startups* have incident response plans . tested, simulated and validated. When a data breach or attack occurs *Ransomware* (and the statistical question is *when*, not *if*), the company that reacts quickly, notifies the Authorities and stakeholders act transparently and mitigate damage, emerging from the crisis with a strong reputation. Preserved or even strengthened. Cyber and organizational resilience is a direct result of governance. prior consideration and investment in prevention.

Finally, legal compliance creates an organizational culture of ethical excellence. When The founders *have* prioritized ethics, information security, and respect for the law since the beginning. Initially, this permeates the entire team, attracting high-performing talent seeking to work in Professional, serious environments with a clear purpose. Legal governance, therefore, is not just... It's about avoiding fines from the ANPD (Brazilian National Data Protection Authority); it's about building a solid, enduring company admired by the market. Capable of leading digital transformation with social and corporate responsibility.

5. Final considerations

A detailed and multidisciplinary analysis of the intersection between the General Data Protection Law (LGPD), Intellectual Property management and the Open Innovation ecosystem reveal a scenario of profound and increasing legal, technical, and operational complexity. The boundaries between what is lawful and what is not. Illegality, public and private, proprietary and common (*Creative Commons*), are constantly...

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Tested, challenged, and redefined by the exponential speed of technological evolution. *Startups*,

as primary drivers and agents of transformation of this innovation, they are at the epicenter of

a "perfect regulatory storm," where the ability to navigate with legal certainty becomes...

if the ability to develop efficient code is as vital to the survival of the business

or to win new customers. Compliance *is* not a final destination, but a journey.

Continuous adaptation, vigilance, and improvement.

From a corporate governance perspective, it is imperative to conclude that data protection...

Personal matters and intellectual property management are not isolated, watertight, or mutually exclusive disciplines.

but inseparable sides of the same coin in the knowledge economy. A strategy of

Intellectual property that ignores the precepts of the LGPD (Brazilian General Data Protection Law) is reckless, short-sighted, and unsustainable in the long term.

In the long term, it attempts to protect assets built on shaky foundations of illegality in collection and processing.

of data. Similarly, a privacy policy that ignores the strategic need for

Protecting a company's trade secrets, algorithms, and copyrights is naive and suicidal.

commercially. Effective legal governance is that which manages to orchestrate harmoniously.

These two universes create a virtuous cycle where protecting the individual strengthens the reputation of...

Brand protection and technology safeguards the economic viability of the business.

Open Innovation, while essential for technological acceleration and competitiveness

nationally, it introduces severe risks of legal contamination and leakage of information that does not

These factors may be underestimated by managers. The promiscuity of data, codes, and knowledge among

Partner companies require a sophisticated and customized contractual architecture that goes far beyond

of the standardized models (*templates*) available on the internet. The *Startup* and Innovation Lawyer

needs to act as a true legal engineer, designing firewall clauses .

legal), joint/subsidiary liability and ownership of inventions that are

dynamic enough to keep up with the pace of agile projects (*Scrum/Kanban*), yet robust enough

sufficient to withstand judicial scrutiny, M&A audits, or regulatory oversight.

national.

It is also observed, based on global regulatory evolution, that the concept of *Privacy by*

Design must evolve into a broader concept of *Compliance by Design* and *Ethics by Design* .

Legal and ethical compliance must be incorporated into the software architecture itself, in the choice of...

cloud provider, in the user interface (UX/UI) to ensure transparency and in the model of

Monetization of services. *Startups* that try to "screw in" compliance only at the final stage of...

Product development teams face prohibitive refactoring costs, lost *time-to-market* , and...

Risks of market rejection. Legal expertise must be present at the decision-making table.

Strategic from the initial *brainstorming stage*, acting in a preventive, consultative, and educational manner, and not only in a reactive and corrective manner after the incident.

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The sovereignty of the data subject, categorically reaffirmed by the LGPD (Brazilian General Data Protection Law) and the Constitution.

Federal (after Constitutional Amendment No. 115/2022), imposes a profound cultural change and irreversible in technology companies. The business model based on predatory extraction, The obscure and non-consensual use of personal data (the so-called "surveillance capitalism") is on its way out. counted and facing global resistance. The future belongs to *startups* that know how to establish a A relationship of radical transparency, trust, and loyalty with its users, treating personal data in a non-discriminatory manner. not as a free and inexhaustible commodity, but as a valuable asset entrusted under strict Responsibility and duty of care. Data ethics *will* be the key differentiator of The market in the next decade will be shaping the market, separating the companies that will survive and thrive from those that don't. They will perish under the weight of administrative sanctions and public discredit.

Furthermore, continuing legal education and digital literacy for entrepreneurs, Developers and managers are fundamental to the sector's growth. Lack of knowledge The absence of a law does not excuse its fulfillment (article 3 of the LINDB), and in the hyper-connected digital world, the Legal ignorance is fatal and costly. Accelerators, incubators, technology parks, and funds of Investments have the educational and social role of disseminating a culture of data protection and Intellectual property among its investments. A legally literate and active *startup* ecosystem. Compliance creates a stronger, more resilient, predictable, and attractive ecosystem for foreign capital. raising the level of competitiveness of the country in the global technological innovation landscape.

It is important to highlight the judicialization of issues involving data protection and violations. Intellectual property rights in software are expected to grow exponentially in the coming years. The Brazilian judiciary is being called upon to decide on complex technological frontiers. such as the responsibility of algorithms, the ownership of works created by AI, and the limits of digital consent. In this context, the production of digital evidence, the carrying out of expert analyses in Source code and the involvement of specialized lawyers (*Lawtechs*) will be crucial for the The outcome of disputes. Documented preventive governance (principle of *Accountability*) will be the The main tool for companies to defend themselves in court, demonstrating good faith and diligence in management. of the data.

Finally, it is concluded that the law should not be viewed antagonistically as a brake on... Innovation, but also its guiding principle, its ethical compass, and its safety net. The LGPD and the laws Intellectual Property laws provide the legal certainty and predictability necessary for... investors provide venture capital and entrepreneurs take calculated risks in Creating something new. Harmony between disruptive innovation and legal certainty is not only possible, but strictly necessary for sustainable economic development. The ongoing challenge for The challenge for legal and technology professionals is to build bridges of dialogue where today there are walls of... misunderstanding, developing hybrid solutions that are, at the same time, technologically

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Bold, economically viable, and legally sound, ensuring progress.

Technology should ultimately serve human well-being and the dignity of the human person.

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