

DATA AND THE CONCEPT OF AN INFORMATION SOCIETY AS APPLIED TO A NORM-BASED IP SYSTEM

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I. INTRODUCTION

Law is a science dedicated to studying social phenomena and interactions, and therefore, is not static. Instead, legal institutions, concepts, and standards evolve in response to everyday occurrences and emerging socio-economic paradigms. In this context, the increasing complexity of economic relations, coupled with advancements in technology and the growing valuation of intangible assets, emphasizes the need to revisit the philosophical underpinnings of legal frameworks and grasp their systematic nature. This paper delves into the nature of data by drawing on foundational concepts proposed by Nick Moore in *The Information Society*. Among the features of an information society, the repositioning of data as true commodities is a defining feature, prompting a reassessment of their inherent nature and differentiation from personal and informational data.

This paper advocates for a specific category of data known as economic-informational data. This data possesses unique characteristics, serving as catalysts for the new economy. Despite the growing number of people who argue against the protection of economic-informational data under intellectual property law, practical observations reveal a private categorization by economic agents. This categorization diverges from IP-based law to establish implicit norms for handling the matter.

As a result, there is an urgency to the idea that Intellectual Property needs to be considered as a true

ecosystem, which extends beyond copyright protection, trademark law, patents, or even trade secrets. Thus, values and regulation can also be privately attributed by economic agents and industrial sectors, fostering a set of social-based IP standards. The new standards allow for economic-informational data to operate as true intellectual assets with defined protection and ownership—permitting their transformation into commodities open to negotiation, transaction, and licensing.

II. INFORMATIONAL SOCIETY, DATA COMMODIFIED

The past few decades have been marked by a series of events that signaled a shift in the paradigm of the global economy. Previously, one of the prominent features of globalization was the expansion of large industrial and economic conglomerates into various jurisdictions, which ultimately altered the very landscape of cities. This was a striking characteristic of globalization. However, contemporary society is not characterized by physical expansion or the advancement of international personal traffic. On the contrary, the paradigm of the modern economy is that data is capable of conferring a global dimension to corporations operating from a single postal code. What matters is the flow of data—the primacy of the intangible assets.

Unsurprisingly, understanding the state of the art in data for the modern economy has ignited heated debates among academics and jurists. Additionally, as expected, the repositioning of a data-dependent society has compelled, at an unprecedented speed, the need to attribute a legal and regulatory regime to the matter. According to Nick Moore's *The Information Society*, three main characteristics define the present society: the use of information as an economic resource, the widespread use of

information, which relates to the notion of access, and finally, the development of an information sector within the economy. It is within this context that the primacy of data emerges.

It is evident that today, data is not merely a set of signals, numbers, texts, or even statistics, but rather a fundamental component in the development of industries and companies within the information economy. It would not be reasonable to conceive of it otherwise. This is particularly true when considering their potential to be contractual objects subject to negotiation and transaction, as well as their pivotal role as drivers of innovation. However, the reluctance to consider data as an integral asset of the intellectual property ecosystem has shown that academia and even common law have not addressed data contextualized within the dimensions of the information society. As a result, this discussion is far from being resolved.

III. DATA AND INFORMATION: A THIN LINE?

With the repositioning of data as a central commodity in the economy of the information society, regulators and legal practitioners have conventionally used information and data as interchangeable concepts. However, this approach, besides leading to interpretative reductionism, does not satisfactorily encompass the representation of data in the current economy. Some authors justify this trend by arguing that both concepts represent a fact, which is a certain aspect of reality. Nevertheless, it is not feasible to agree with this premise because each term carries its own weight, which must be contextualized within the framework of the information economy.

Contrary to the prevailing belief in data protection literature, the exact and statistical sciences have long been engaged in the subject, offering a technical interpretation that, in the author's view, is remarkably precise. On one hand, data possesses a primitive and fragmented significance. In simpler terms, it represents a scattered arrangement of signs awaiting standardization, which could be letters, numbers, or various symbols. Essentially, data exists in a state that precedes information. As Wacks suggests, data remains in a perpetual state of potentiality to evolve into information—a static representation of symbols that, until processed, is confined by cognition. On the other hand, information represents the processed state; it emerges as the outcome of human cognitive activity, occurring after data has been organized systematically. It is at this stage that data acquires meaning and purpose. As expressed by Doneda:

Information, on the other hand, refers to something beyond the representation contained in the data, reaching the threshold of cognition. Without alluding to its meaning or content itself, information already presupposes an initial phase of refining its content—hence, information also carries an instrumental sense, in the sense of reducing a state of uncertainty.

Within this framework, information arises from the application of human intellectual activity to structure and logically organize the basic components comprising databases. It is important to note that this paper does not delve into the systematization of data conducted by artificial intelligence. Nevertheless, it's worth acknowledging that such systematization serves a particular purpose, particularly within the commercial realm of the information economy.

Consequently, it is clear that distinguishing between data and information serves not only a theoretical function

but also an objective one. Viewing these concepts as having distinct characteristics and significance is crucial, particularly when reinterpreting this issue in the context of property rights and the significance of safeguarding them for economic endeavors. Furthermore, this paper advocates for the concept of economic-informational data—a specific category whose attributes and characteristics resemble those of a true commodity in contemporary society. Such data is capable of being negotiated, transacted, owned, and protected within the intellectual property ecosystem. Before delving into the theoretical foundations of economic-informational data and its relationship with IP, it is necessary to briefly revisit and present an overview of existing data informational categories.

IV. PERSONAL DATA, FACTUAL DATA

Undoubtedly, the subject of the greatest global debate revolves around what is commonly referred to as “personal data.” This category of data has driven advancements in data protection regulations and even led to the creation of entire departments within companies that focus on handling personal data to ensure privacy. Personal data is a category that encompasses data that has an *objective* connection to the data subject, such as biometrics, legal names, financial information, addresses, and tax identification numbers. The significance of this category lies in the degree of association between specific data components and a natural person. Consequently, the principle of personality prevails, meaning that the way data is aggregated directly serves to identify an individual or its actions.

It is noteworthy that even when considering “personal data,” we are not dealing with the technical concept of data, as that would not have the capability to

establish an objective link between the raw data and the natural person. Even if the individual in question is not the “author” of the information in terms of its conception, they are the rightful owner of its elements. Their connection to the data is too close for it to be otherwise. When the subject of the data is a legal entity, the information becomes an attribute of personality.

In another domain, we encounter “factual data,” distinguished by its ontological basis, which refers to a sequence of events inherent to and characteristic of an existing reality—a fact. As articulated by Austin in *Philosophical Papers*, “fact” originally denoted “something in the world,” implying that past actions or ongoing events indeed constitute “something in the world.” Put differently, factual data encompasses any series of occurrences existing in the material realm. Furthermore, this type of data is marked by the absence of subjectivity—it lacks the characteristics inherent to personality rights.

While personal data arises from a direct association with the data subject, factual data exists because it is inherently present in the material world, irrespective of human involvement. It is precisely because factual data represents a mere encoded reflection of reality that the concept of ownership becomes compromised. Similar to ideas, factual data belongs to the public domain. Indeed, there exists a domain where both categories intersect: personal factual data. These data elements, originating from a combination that collectively can identify an individual, play a pivotal role in challenging the right to privacy.

In civil law, personality rights are delineated to safeguard the individuality of each person. Despite variations across jurisdictions, these rights commonly pertain to upholding the physical, psychological, and moral integrity of the individual. In common law, personality rights are similarly recognized and closely linked to the

concept of the ‘passing off’ tort. Passing off involves preventing another trader from associating their product with that of another trader if it causes or is likely to cause damage to the other trader’s business. The significance of this associative link also extends to personal data regulations. However, this delineation is merely illustrative because, despite having better defined the notion of ownership when identifying personal informational data, fundamental rights to privacy prevail. For factual informational data, intellectual property, whether specifically copyright or within the ecosystem context, cannot be invoked. This is because, despite the existence of property rights, the requirements of originality for copyright are absent, and the barrier of confidentiality obligations expressly prohibits the use of this data for economic purposes.

Although there is an economic prohibition, one could argue that signaling the economic purpose tends to associate a characteristic too closely with the profit bias of this branch of law. This is indeed a sensitive issue for intellectual property (“IP”) practitioners, who often find themselves in ideological conflicts with other disciplines that prioritize protection and even with antitrust law. However, intellectual property, as a system of rights, has a philosophical background, and the history of IP is fundamentally an economic narrative. This is evident whether we analyze it from the perspective of Roman civil law or English common law, as skillfully elucidated by Drahos in *A Philosophy of Intellectual Property*:

What happens in our story is that a Roman law category is used by English juristic hands to fashion a practical solution to a practical problem. A person with ideas has in a broad sense asset. In order that the person may make a living in a market society those intangible assets have somehow to be recognized as property rights so that they can be commercially

exploited . . . The English common law, renowned for its pragmatism, ventured deep into metaphysical territory and added the abstract objects of intellectual property to the list of incorporeal things. By doing so it extended its reach over material objects. Artists, authors, and inventors have to turn their intangible assets into material ones in order to survive economically in the world. Once the law recognized property in abstract objects, the significance of the materiality which governed property relations in the physical world grew stronger and not weaker.

Based on these foundations, the significance of these data types for the information economy is also acknowledged. However, due to their inherently existential nature, intellectual property cannot be regarded as a distinct species of economic-informational data, where data intersects with intellectual property.

V. ECONOMIC-INFORMATIONAL DATA AND INTELLECTUAL PROPERTY: A NORM-BASED IP SYSTEM.

A. *Setting the Foundations*

Upon initial inspection, it may seem that the term “economic” as applied to economic-informational data suggests a narrow focus on its monetary or financial aspects. However, this interpretation is far from accurate. Initially, economic-informational data sets distinguished themselves from others by having a strictly utilitarian nature in the information society, meaning they served the development of sectors within the information economy. Let’s consider data collected by a governmental institution to analyze the percentage of diabetes in a particular population and age group. This data, although public, may incentivize the healthcare system to plan economic

activities in that specific region. In this relationship, we have both the economic and informational components, but beyond a mere redefinition of commercial strategy, this utilization does not fuel the cycle of the information economy. From this, we extract two primary guiding principles: (i) the foundation of economic-informational data is related among private agents and (ii) is a direct utility for the innovation of other industries operating within the information economy.

In another scenario, let's consider the exchange between a participant in a private clinical study and a medical research company. On one side, we have the clinical study participant, whose currency of exchange is their medical information. This, however, is incapable of establishing an objective link with their individuality, such as blood type, pre-existing conditions, age, climate of residence, eating habits, etc. The sole focus of the company in question was to profile diabetes in a specific audience by analyzing physiological and environmental variables. The sum of the data from the various participants in this specific study will compose a database. However, such a database is still considered mere informational data. Nonetheless, the private aspect attributed to the relationship here allows interoperability with other economic agents. It becomes a potential vector.

The paradigm shift occurs when a player in the information economy, through prior cognitive work, realizes the need for a data bank to design their development strategy for the remote medicine market. Among their initial inquiries, the player observes that decision making based solely on market understanding and individual knowledge is insufficient, requiring a dataset to delineate the disease patterns associated with diabetes patients for the development of an automated protocol. As a result, that potential vector becomes part of a necessary innovation cycle. In other words, it functions as a

movement through which the company necessarily identifies an informational need and uses external sources to supply it, ultimately enabling the development of its own internal innovation. Alternatively, it resembles the procedures of technology transfer, which are, in the words of Lawton-Smith: “the movements made by companies to use external sources of innovation as the ‘externalization of innovation.’ New product development is a complex and expensive process, and no firm can develop all the technologies it wishes to acquire and remain competitive.”

Here, we reach the third and final fundamental characteristic of economic-informational data: they serve as external sources of supply that drive internal innovation within the cyclical chain of the information economy. From this perspective, it’s evident that their value extends beyond monetary terms and into the very fabric of the information society—hence, their “economic” value. Hasty conclusions might erroneously associate this type of data with know-how or trade secrets. However, this paper argues that such categorization is inaccurate and incompatible with the purpose of economic-informational data.

Firstly, despite being an important aspect of industrial property, it is closely associated with the development of technical standards. These standards, when cataloged and structured, become part of a company’s industrial knowledge portfolio. This inherently carries a technical nature, as protection arises from the establishment of procedural knowledge standards that confer a competitive advantage. However, the nature of economic-informational data is distinct. Unlike technical standards, this data does not aim to promote a specific technical standard. Instead, their essence transcends this objective; they are intended to generate information necessary for the development of technology itself. For instance, consider a dataset used to develop an automated protocol for diabetes

management. While it may not establish a technical standard, it plays a vital role in facilitating the creation of new and satellite technologies. Therefore, while information can indeed be protected through know-how, it's important to differentiate between this type of information and economic-informational data.

Furthermore, it is worth reflecting on trade secrets. In truth, informational data can be subject to trade secret protection. This means that various pieces of information, due to the public nature of patents or the lack of protection within the intellectual property ecosystem, may become subjects of a convention formed by various confidentiality agreements and documentation, thereby obtaining protection through trade secrets. However, the rationale behind this intellectual property instrument suggests a philosophy that characterizes the treatment of this data as the company's informational advantage. Its exploitation is strictly private, meaning that the perspective of transfer is absent.

In summary, trade secret law protects only information that can be kept secret by a company while being commercially exploited, which directly conflicts with the ability of informational economic data to serve as a supply for the information economy chain.

B. The Question Arises: Where Does Data Meet IP in the Information Society?

Intellectual property encompasses more than just copyrights, trademarks, patents, know-how, and trade secrets; it represents a complex ecosystem that demands a broader perspective. To address this perceived contradiction, we can turn to the concept of norms-based intellectual property systems, as proposed by Fauchart and von Hippel in 2008. In this framework, IP extends beyond legal statutes; it's governed by norms established by private

economic actors. These norms, akin to laws within the economic sphere, dictate the valuation and rules surrounding intangible assets, such as economic-informational data, through mutual agreements among stakeholders.

In this context, economic actors operationalize processes to (i) assign certain property rights over a dataset to third parties, not only through formal instruments but also through a moral convention, recognizing the intellectual effort invested in generating specific economic-informational data; (ii) this ownership, in turn, grants the titular agent the freedom to attribute the added economic value to their data, with this attribution being subject to free interpretation or market convention (e.g., the degree of information and practical application of that data); (iii) these databases become part of the company's portfolio, adding value to their business in the information society market; (iv) these data become transferable objects, subject to negotiation and contractual transactions to promote innovation among other companies within the information economy chain.

It is noteworthy that all transactions are governed by implicit norms that attribute to such data the status of property resulting from intellectual investment. Thus, despite the absence of legal provisions, genuine social conventions with legal force are established among these economic agents. It is precisely in understanding IP as a system, incorporating both legal guidelines and conventions dictated by the economy itself, that economic-informational data find its nature as intangible assets.

VI. CONCLUSION

This paper did not intend to exhaust the topic. In fact, the aim is to initiate a reflection on the treatment that

has been given to data by the general legal literature and by some IP practitioners. Due to the rapid repositioning of data as a commodity in the information economy, its nature has not been thoroughly explored. This could be due to the need for a quick response from common law or regulations to reconcile it with fundamental rights, or it could be due to the distancing of the topic from other areas of law—taking on its own contours. However, it is necessary to understand this subject as a genre that contains various species. These species possess their own characteristics and attributes, which, for the information economy, cannot and have not been confused. Therefore, the notion of informational economic data, a category specific to the information society, is advocated for.

As outlined, economic agents and the social dimensions of the matter have been privately regulating the mechanisms by which they attribute value, authorship, and ownership to these assets. In this regard, confining the discussion of data solely to copyright protection translates into an overly reductionist view of IP that disregards its nature as a fluid ecosystem that is responsive to the practical demands of economic relationships.

Thus, since the data lacks well-defined contours within the law-based system, economic agents do not see this as an impediment to negotiating, transacting, and transferring these data as true intangible assets. In this context, legislative gaps or even refusal in some jurisdictions to grant protection to economic-informational data have not prevented the information economy from self-regulating to promote its own norms-based IP system.

“Data isn’t ‘the new oil’ - it’s way more valuable than that.” - Jon Suarez-Davis

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