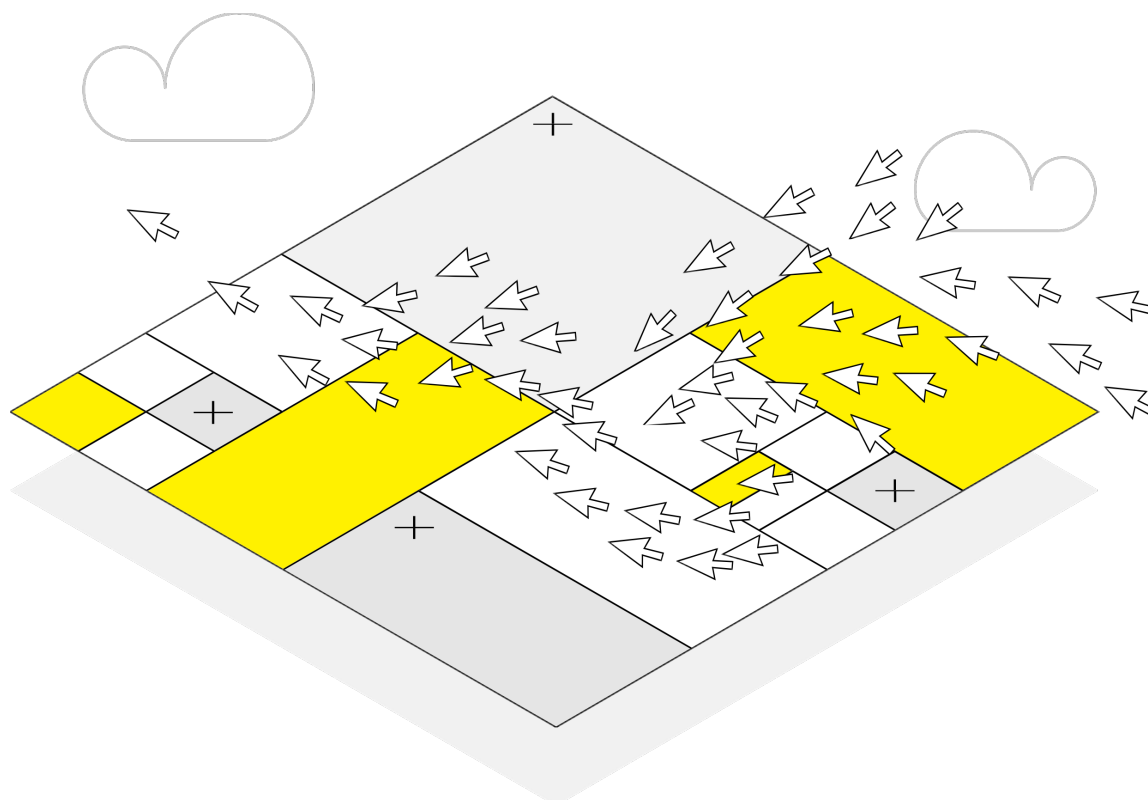


**OPEN
_FUTURE**



THE ARGUMENT AGAINST PROPERTY RIGHTS IN DATA.

Ensuring access to data though non-exclusive access rights.

OPEN FUTURE POLICY BRIEF #1

Authors: Alek Tarkowski & Francesco Vogelezang

10 December 2021

THE ISSUE IN BRIEF

25 years after the adoption of the Database Directive, there is mounting evidence that the introduction of the *sui generis* right did not lead to increased data access and use – instead, an additional intellectual property layer became one more obstacle.

Today, the European Commission, as it drafts the new Data Act, faces a fundamental choice both regarding the existing *sui generis* database rights and the introduction of a similar right to raw, machine-generated data. There is a risk that an approach that treats data as property will be further strengthened through a new data producer's right. The idea of such a new exclusive right was introduced by the European Commission in 2017. This proposed right was to be based on the same template as the *sui generis* database right.

A new property right will not secure the goals defined in the European data strategy: those of ensuring access and use of data, in a data economy built around common data spaces. Instead, they will strengthen existing monopolies in the data economy.

Instead of introducing new property rights, greater access to and use of data should be achieved by introducing – in the Data Act, and in other currently debated legal acts – access rights that treat data as a commons.

In this policy brief, we present the current policy debate on access and use of data, as well as the history of proposals for property rights in data – including the *sui generis* database right. We present arguments against the introduction of new property rights, and in favor of strengthening data access rights.

STATE OF PLAY

As part of the [European Strategy for Data](#), the European Commission is currently reviewing the issue of property rights in data, and in particular the Database Directive – the law that 25 years ago introduced a new *sui generis* right protecting non-original databases.

This right, introduced in 1996, has created a blueprint for treating data as intellectual property. The objectives in introducing this right included not just harmonization and legal clarity, but also competition in data markets and ensuring access to data. Rooted in the need to fill an investment gap vis-à-vis the United States, the Database Directive aimed to incentivize the European database industry through property rights-type awards.

Not only that, but in 2017, with the Communication on “Building a European Data Economy”, the Commission outlined a new framework for data access, in particular for machine-generated data. Among the proposed measures was a new data producer’s right, which would be held by commercial users of Internet of Things (IoT) devices (and possibly introducing also other rightholders in industrial data).

The new right would expand property rights in data beyond information that is structured in databases, thus awarding producers of data with a similar *sui generis* property right. Just like the *sui generis* database right, this right was envisioned to provide greater legal protection and certainty in the data economy while increasing data access by more market actors.

The review of the Database Directive is happening as part of the drafting of the new Data Act, which is aimed at increasing data access, sharing and use in the European Union. In the 2021 [Inception Impact Assessment for the Data Act](#), the Commission is calling for a reevaluation of the *sui generis* right in light of machine-generated data in the context of IoT activities.

The key policy question is whether the goals of the European data strategy can be met by expanding property rights in data. Or whether such new rights – an extension of an approach established 25 years ago with the Database Directive and the *sui generis* database rights – will constitute a barrier to greater access and reuse of data.

If the strategic aim is to increase access to data, including maximizing data that is open and available according to the FAIR principles, then the new property right would create an additional obstacle.

ACCESS TO AND USE OF DATA IN THE EUROPEAN DATA STRATEGY

The European Commission’s vision, presented in the European Strategy for Data, assumes that data can empower business and the public sector while addressing the needs of individuals by creating economic and societal value. This is the high-level ambition of ongoing implementation of the strategy, which includes the legislative process on the new Data Act.

The overarching goal is to create a single European data space, in which “businesses have easy access to an almost infinite amount of high-quality industrial data.” Ensuring better “access to data and its responsible usage” is a key condition for releasing the potential of data. Rules for governing this space, according to the Commission, should ensure the free flow of data, respect for European rules and values, clear and trustworthy data governance mechanisms, as well as fair, practical, and clear rules for access to and use of data.

It is against this ambition that we are reviewing the concept of a property right in data, the introduction of which has been discussed in relation to the currently drafted Data Act. According to the European Strategy for Data, an evaluation of the IPR framework should be conducted “with a view to further enhance data access and use”, and within the broader context of regulating relations between various actors in the data economy by providing incentives for horizontal data sharing.

ORIGINS OF THE IDEA OF A DATA PRODUCER’S RIGHT

The data producer’s right was proposed by the Commission in the 2017 Communication on “Building a European Data Economy,” as one of several interventions at the core of addressing the issue of access to machine-generated data.

The Communication, which preceded the current Data Strategy, had a similar stated goal of ensuring access to a rapidly growing pool of industrial data – produced, for example, by IoT technologies. It aimed to remove barriers to the movement of data, address legal uncertainties, increase the availability and use of data, and foster new data business models.

This new property right was proposed as one of many possible interventions for ensuring access to machine-generated data. This right, spelled out in the Communication, would consist of a right to use and authorize the use of non-personal data, granted to the ‘data producer’: owner or long-term user of the device. The rationale behind the right is to allocate property rights more effectively by establishing control over data generated by digital devices.

The Commission also pointed to the lack of legal certainty, due to the absence of legal protection for such data. Finally, it was proposed as a market-making measure, holding that property rights will inevitably increase the use of non-personal data by turning it into a tradeable economic good.

The 2017 proposal made an important distinction between the manufacturer of a given device, and the operator – usually a commercial company – that is the economic user. The new right, allocated to these users, would be instrumental in avoiding market lock-in scenarios since manufacturers of devices are the *de facto* owners of data that often prevent their usage by another party.

To counter the adverse effects of granting these new rights, the proposal also included the creation of exceptions that would limit them and create parallel obligations to share data. These

would, on the one hand, cover manufacturers who have a legitimate interest in using data to improve their products, and might also have a legal obligation to monitor the use of the devices. On the other hand, exceptions would allow data sharing in the public interest, both with public sector bodies and private actors.

THE DATABASE DIRECTIVE AS A BLUEPRINT FOR DATA AS PROPERTY

The 2017 proposal for a new producer's right followed a blueprint that was established 25 years ago, with the adoption of the [Database Directive](#) and the establishment of a *sui generis* database right. In both cases, similar arguments are used to justify the establishment of new IPRs in data. These can be divided into three overarching arguments:

Firstly, a new European right was presented as a harmonization measure, through which the EU could avoid a fragmented regulatory landscape caused by a variety of approaches at the Member States (MS) level.¹ Harmonization was conducted at the highest level of protection available at that time.²

Investments' protection was the second goal, and the reuse of unprotected databases was framed as parasitic behavior.³ Related to this objective was the ambition to increase the overall competitiveness of the European database industry.⁴

Finally, the new database right was meant to increase access to data by market actors.⁵ The underlying belief was that property rights were needed so that "information markets" in data could be created.⁶ These, in turn, would have facilitated the reuse of data.

As noted by Felix Reda, in 2017 the European Commission has used the same arguments when proposing the new data producer's right.⁷ Harmonization of the new right at the European level was framed as a preemptive measure, against future, uncoordinated initiatives by MS. An uncoordinated approach was presented as creating the risk of further fragmentation of the data economy and as detrimental to the operation of cross-border data services and technologies in the internal market.

Yet, the main rationale for the *sui generis* database right and the proposed producer's right is based on the same counterintuitive assumption that additional IP layers would facilitate access and use of data. The lack of these forms of protection is presented as a source of uncertainty and, therefore, framed as a gap that needs to be filled.

The 2017 Communication presented a new data producer's right as a policy that would "improve access to anonymous machine-generated data," rather than limiting said access as could be expected from an exclusive right, and furthermore "facilitate and incentivize the sharing of such data." In light of the unequal bargaining power of companies and private individuals in the internal market, a legislative intervention was deemed necessary to prevent lock-in effects. In turn, this would have solved the allocation problem that currently affects market actors as well as provided more economic incentives for companies to boost innovation and competition.

THE DATA ACT AND THE POSSIBLE EXTENSION OF THE DATABASE DIRECTIVE

The idea of property rights in machine-generated data, first raised in the 2017 Communication, is currently being explored within the scope of the proposed Data Act. Once again, property rights are considered one of the potential means for increasing access to and use of data.

The Inception Impact Assessment for the new Act considers both the existing *sui generis* right in databases, and the need to facilitate access to and use of machine-readable data. Such data, mainly generated by IoT devices, is, in most cases, not covered by the *sui generis* right. The [2018 Evaluation of the Database Directive](#) points to CJEU rulings, based on which databases that are by-products of economic undertakings – as is usually the case with machine-generated data, including IoT data – do not fulfill the threshold of substantial investment.

Therefore, the Commission is currently conducting a review of the Database Directive, with the aim of increasing legal certainty for accessing and sharing data, and in particular for ensuring that the measure does not constitute an obstacle to accessing and reusing machine-generated data.

One could assume – based on previous evidence – that a critical review of existing *sui generis* property rights will demonstrate that they pose significant restrictions to access and reuse of data. As a result, property rights would be reduced rather than extended within the overall data governance framework.

Yet, the 2017 Communication framed a new data producer's right in an exactly opposite way: as means of unlocking machine-generated data. For this reason, there is a risk that the current review will lead to the introduction of a new property right, based on the same logic.

AGAINST PROPERTY RIGHTS IN DATA

Already in 2005, during the [First Commission Evaluation](#), the report concluded that the economic impact of the *sui generis* right on database production was unproven. The evaluation focused on assessing whether the Directive brought into place an effective legal framework that would protect a wide range of databases, therefore incentivizing beneficiaries to invest and innovate. The final conclusion was the opposite: “the new instrument has had no proven impact on the production of databases.” There was evidence that investments fell behind the 2004 pre-Directive levels and the productivity gap with the US did not decrease.

That being said, European publishers and database producers still held at the time of the evaluation that the *sui generis* right was actually beneficial in bringing more legal certainty, reducing the costs associated with the protection of databases and, ultimately, creating more business opportunities by facilitating the marketing of databases.

Ultimately, the *sui generis* right in the EU market did not have the desired effect. Its failure to do so was even more striking as other countries, for example the US, maintained higher growth

without introducing a similar right. The *sui generis* right has been described as unclear in its scope and ill-suited as a measure supporting innovation, differentiation, and growth. As such, the underlying assumption that more and more layers of IP protection meant more innovation does not appear to hold. In reality, it is even more likely to adversely affect those sectors of the economy that rely on an intensive use of data, while benefiting only a narrow group of market players.

Over a decade later, in 2017, a [round of public consultations](#) was held by the Commission to gather additional feedback. The [synopsis report](#) confirms the 2005 findings: “the positive impact of the *sui generis* right on the production of databases remains unproven.” It concludes that the right “did not increase the level of investment made in databases in the EU and the number of databases produced.” In addition, the majority of respondents, with the exception of publishers, indicated an overall decrease in legal certainty. Similarly, the exceptions to the *sui generis* right were characterized as being too restrictive with regard to data access and use for scientific and educational purposes, and other non-commercial uses.

Surprisingly, the second evaluation of the Database Directive, conducted in 2018, offers a much less critical view. While it confirms that the *sui generis* did not have the expected economic impact, it describes it as an instrument that ensures a balance between the rights of makers and users of databases, provides legal protection to database makers and improves legal clarity to users.

This is surprising, since a broad body of commentary by academics, activists and legal experts on the concept of property rights in data. The critical analysis of such rights focuses on two aspects: legal and economic arguments.

Concerning legal arguments, the scholars largely agree that the introduction of a new property right in data would ultimately lead to the disruption of the existing European IPR regimes.⁸⁹ This is because a new right in raw machine-generated data would create dangerous overlaps with copyright and *sui generis* protection, ultimately leading to competing ownership claims for the same content.¹⁰

Secondly, the new right would strongly affect freedom of expression and information as well as freedom of scientific research and services, given that it would greatly reduce overall information availability.¹¹¹² In this light, the European legislator would have to prove that a new property right would be socially and economically justifiable for information access by citizens and researchers. In addition, a new right in data would severely impact the four fundamental freedoms of the EU, specifically for freedom of services and establishment. This is because, as Bernt Hugenholtz argues, the free movement of data, one of the core tenets of the 2017 Commission Communication, is to be interpreted by the Commission in line with the EU internal market approach.¹³ This means that any restrictions to the cross-border movement of data would qualify as a restriction to provide services within the Union.

Finally, data is increasingly seen as relational and co-generated. Salomé Viljoen proposes that the relational character of data means that for any exchange of data, there are collective—even population-level—interests that cannot be reduced to individual interests.¹⁴¹⁵ A related

argument is made by the GPAI Data Governance Working Group, which recognizes that data is increasingly generated collectively by several different entities.¹⁶ These characteristics of data imply competing interests among various actors in the data economy. Exclusive property rights can therefore easily be questioned by other parties, asking for recognition of their rights in data.

Likewise, economic arguments against the new right provide a similar assessment. First, the literature suggests that, in the case of machine-generated data, new exclusive property rights would further reinforce winner-takes-all scenarios.¹⁷ This would have a lasting effect on the freedom of competition, as it would reinforce monopolization tendencies.¹⁸ In particular, smaller economic players would be strongly affected as they would have fewer access possibilities of valuable information in the context of their market activities.¹⁹ As such, property rights in data would hinder the activities of European SMEs, who are highlighted in the European data strategy as key actors, whose needs have to be addressed.

In addition, analyses of the economic impact of property rights in data confirm that there is no necessity for introducing new rights in data. This is true across two dimensions, which would justify regulatory intervention by introducing a new IP right in data: creating economic incentives for the production of data; and facilitating the use and trade of data.

First, as Wolfgang Kerber identifies, market incentives are already present in the European data economy as much machine-data production nearly occurs automatically as a byproduct of industrial production.²⁰ In a highly functional market, additional legal protection will not serve as an incentive.^{21,22} Similarly, the use and trading of data also already occurs, without the presence of property rights.²³ This finding is also confirmed by a [2017 study](#) conducted by the Commission Joint Research Centre, which concludes that, at the moment, there are no compelling arguments for new rights in data.

Finally, a new right in data would foster a scenario where the tragedy of the anticommons would take place. The latter corresponds to a situation where the numbers and relationships of property rights and right-holders are too big and complex to be successfully utilized.²⁴ Accordingly, this would result in the underproduction and underuse of information assets, which is contrary to the objectives set out in the European data strategy.

ACCESS RIGHTS TO DATA

The principle of the public domain and the [FAIR data principles](#) should constitute the foundations of the European data economy and the common data spaces at its core. These principles should be enshrined by regulation, instead of creating new property rights that will only serve to strengthen information monopolies.

Data is already being accessed and used today, without actual exclusive property rights. To strengthen this trend, data rights should be established – but not exclusive ones. These data rights should recognize the interests of different parties, while at the same time recognizing that data is a non-rivalrous resource.

Access rights are an important type of this broad category of data rights. These aim to maximize data sharing and use across a variety of private and public sector players, both via voluntary and mandatory data sharing obligations. From an economic perspective, access rights can ensure market competition and help create new markets.

Targeted measures that regulate access can reduce the centralization of power in data markets. And looking from a societal perspective, access rights can secure the ability of all members of society to benefit from data that is in the public interest, and are better suited for developing governance models that take into account the relational nature and collective interests in data.

Access rights measures include policies that ensure open access to data, such as open data rules for public data or open access requirements for research data. They also cover data portability rules – such as those introduced by the GDPR – and data interoperability rules – such as those currently debated in the Digital Markets Act. Access rights also cover specific access regimes, such as access to platform data for the purpose of research, or requirements for business to government (B2G) data sharing in the public interest.

RECOMMENDATIONS

No property rights in data. There is currently no need to introduce new property rights in data. Creating such new *sui generis* rights will not serve the goals of the Data Act and the European data strategy. This is confirmed by 25 years of evidence on the impact of the *sui generis* database right, and a growing body of legal and economic scholarship.

Instead of serving the goal of greater access and use of data in European common data spaces, the new right would reinforce monopolistic tendencies in data markets. And furthermore, it would introduce a logic of exclusive property to a resource that is collective and relational. The idea of property rights in data, introduced five years ago, should be abandoned, as it is not fit to serve as the foundation for a contemporary data economy.

Focus on access rights instead. The issue of ensuring that owners and users of IoT devices (and other sensor-equipped and data-generating devices) should have access to data that they generate can be addressed in a much more effective and—in light of the negative externalities of exclusive rights in data—more proportionate way.

The objective can instead be achieved by granting owners and users non-exclusive access and usage right to the data generated by their use of such devices. Such an approach would ensure that both the manufacturers and the users of data-generating devices have access to the data and would also allow anyone with access to share the data. As a result, a policy framework based on non-exclusive access rights would ensure that such data can be contributed to common data spaces, without any unnecessary legal friction arising from a framework based on exclusive rights.

A governance framework based on non-exclusive access rights should be developed through the Data Act, instead of introducing new property rights in data. Non-exclusive access rights should

cover both access by commercial entities (B2B), public interest access (B2G, for example, for the purpose of transparency) and access rights for individual users (for example, through data portability). A duty to provide access and use rights should be introduced with care, but should be considered in particular with regard to gatekeeper platforms and largest commercial actors - in order both to combat power asymmetries and to secure public interest.

A final note on the sui generis database right.

As we have outlined above, there is a lack of evidence that the *sui generis* right for databases has achieved the objectives that were used to justify its introduction in 1996. Instead, existing empirical evidence shows that the *sui generis* database right has detrimental effects on the current policy objectives expressed in the European data strategy. Based on this, the European Commission should use the upcoming Data Act (or a stand-alone review of the 1996 Database Directive) to phase out the *sui generis* protection for databases.

The discussion about the *sui generis* database right has also clearly shown that it is very difficult to repeal new exclusive rights once they have been enacted, even in the light of empirical evidence that shows that they are not working. Right holders tend to subjectively value having exclusive rights even if those rights do not confer to them any objective benefits. And revoking rights raises complicated procedural questions related to legal certainty and other legal concepts.

In light of the experience with the *sui generis* database right, the EU lawmakers should treat any future efforts to introduce new rights – or to substantially expand existing rights – as time-bound experiments. If, after a pre-defined period of time, there is no empirical evidence that the creation of a new right contributes to achieving clearly defined societal objectives, then the new right should lapse. Treating the introduction of new rights as the experiments that they are can make an important contribution to the fitness for the purpose of the EU intellectual property framework and ensure that it can evolve with societal needs.



ABOUT OPEN FUTURE

[Open Future](#) is a European think tank that develops new approaches to an open internet that maximize societal benefits of shared data, knowledge and culture.

Dr Alek Tarkowski is the Director of Strategy at Open Future. He holds a Ph.D. in sociology from the Polish Academy of Science. He has over 15 years of experience with public interest advocacy, movement building and research into the intersection of society, culture and digital technologies.

Francesco Vogelezang is a Policy Analyst at Open Future. He holds a Master's degree in European Affairs with a specialization in Digital, New Technology & Public Policy at SciencesPo Paris. He is also a fellow at the Datasphere initiative.



This report is published under the terms of the [Creative Commons Attribution License](https://creativecommons.org/licenses/by/4.0/).

ENDNOTES:

- ¹ Benoit van Asbroek, "White Paper - Data ownership in the context of the European data economy: proposal for a new right." *Bird & Bird*, February 06, 2017. Available at: <https://www.twobirds.com/insights/2017/global/data-ownership-in-the-context-of-the-european-data-economy>.
- ² Francesco Banterle, "Data Ownership in the Data Economy: A European Dilemma." In *EU Internet Law in the Digital Era*, Springer (2020).
- ³ Herbert Zech, "Data as a tradeable commodity." In *European Contract Law and the Digital Single Market. The Implications of the Digital Revolution* (2017): 51-79.
- ⁴ Ivan Stepanov, "Introducing a property right over data in the EU: the data producer's right – an evaluation." *International Review of Law, Computers & Technology* no. 34(1), (2019): 65-86. doi: [10.1080/13600869.2019.1631621](https://doi.org/10.1080/13600869.2019.1631621).
- ⁵ Herbert Zech, "A legal framework for a data economy in the European Digital Single Market: rights to use data." *Journal of Intellectual Property Law & Practice*, no.11 (2016): 460-470. Available at: <https://ssrn.com/abstract=2873135>.
- ⁶ Herbert Zech, "Building a European Data Economy." *IIC – International Review of Intellectual Property and Competition Law* no. 48 (2017): 501–503. doi: [10.1007/s40319-017-0604-z](https://doi.org/10.1007/s40319-017-0604-z).
- ⁷ Felix Reda, "Learning from Past Mistakes. Similarities in the European Commission's Justifications of the Sui Generis Database Right and the Data Producers' Right." (2017). Available at: https://felixreda.eu/wp-content/uploads/2019/09/Reda2017_database_directive.pdf In: Lohsse, Sebastian/Schulze, Reiner/Staudemayer, Dirk (eds.). *Trading Data in the Digital Economy: Legal Concepts and Tools*. Baden-Baden, Nomos.
- ⁸ P. Bernt Hugenholtz, "Against 'Data Property.'" In *Kritika: Essays on Intellectual Property* Vol. 3 (2018): 48-71. doi:[10.4337/9781788971164.00010](https://doi.org/10.4337/9781788971164.00010).
- ⁹ Tommaso Fia, "An Alternative to Data Ownership: Managing Access to Non-Personal Data through the Commons." *Global Jurist*, vol. 21, no. 1 (2021): 181-210. doi:[10.1515/gj-2020-0034](https://doi.org/10.1515/gj-2020-0034).
- ¹⁰ Josef Drexler et al., "Data Ownership and Access to Data, Position Statement of the Max Planck Institute for Innovation and Competition of 16 August 2016 on the Current European Debate." In *Max Planck Institute for Innovation & Competition Research Paper Series* no. 16-10 (2016). doi:[10.2139/ssrn.2833165](https://doi.org/10.2139/ssrn.2833165).
- ¹¹ Francesco Mezzanotte, "Access to Data: The Role of Consent and the Licensing Scheme." In *Trading Data in the Digital Economy: Legal Concepts and Tools* (2017). Available at: https://www.academia.edu/37037356/Access_to_Data_The_Role_of_Consent_and_the_Licensing_Scheme
- ¹² Thomas Farkas, "Data created by the internet of things: the new gold without ownership?" *REVISTA LA PROPIEDAD INMATERIAL* No. 23, August 3, 2017. Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3012155
- ¹³ Christiane Wendehorst et al., "A framework paper for GPAI's work on Data Governance." The Global Partnership on Artificial Intelligence (2020). Available at: https://openfuture.eu/wp-content/uploads/2021/12/2019EC-evaluation_report_legal_protection_databases_december_2005_en.pdf
- ¹⁴ Salomé Viljoen, "A Relational Theory of Data Governance." *The Yale Law Journal* no. 121 (2021): 577. doi:[10.2139/ssrn.3727562](https://doi.org/10.2139/ssrn.3727562)
- ¹⁵ Teresa Scassa, "Data Ownership." *CIGI Papers* No. 187, Ottawa Faculty of Law Working Paper no. 2018-26 September 4, 2018. doi:[10.2139/ssrn.3251542](https://doi.org/10.2139/ssrn.3251542).
- ¹⁶ Christiane Wendehorst et al., (2020) *Ibid*.
- ¹⁷ Amrita Nanda, Astha Kappor, "Understanding Non-Personal Data Sharing: A principle-first approach." Aapti Institute, July 2021. Available at: <https://thedataeconomylab.com/2021/07/22/understanding-non-personal-data-sharing-a-principle-first-approach/>.
- ¹⁸ Gintare Surblyte, "Data as a Digital Resource." Max Planck Institute for Innovation & Competition Research Paper no. 16-12, October 6, 2016. doi:[10.2139/ssrn.2849303](https://doi.org/10.2139/ssrn.2849303).
- ¹⁹ Amrita Nanda, Ashta Kappor (2021), *Ibid*.

²⁰ Wolfgang Kerber, "A New (Intellectual) Property Right for Non-Personal Data? An Economic Analysis." *MAGKS Papers on Economics* 201637 (2016). Available at: <https://ideas.repec.org/p/mar/magkse/201637.html>

²¹ Parminder Jeet Singh, Anita Gurumurthy, "Economic Governance of Data: Balancing individualist-property approaches with a community rights framework." (2021). doi:[10.2139/ssrn.3873141](https://doi.org/10.2139/ssrn.3873141).

²² Diane Coyle, Stephanie Diepeveen, "Creating and governing social value from data." (Rochester, NY: Social Science Research Network, 2021), doi:[10.2139/ssrn.3973034](https://doi.org/10.2139/ssrn.3973034).

²³ Wolfgang Kerber, Jonas Frank, "Data Governance Regimes in the Digital Economy: The Example of Connected Cars." (2017). doi:[10.2139/ssrn.3064794](https://doi.org/10.2139/ssrn.3064794).

²⁴ Michael A. Heller, "The Tragedy of the Anticommons: Property in the Transition From Marx to Markets." *Harvard Law Review* no. 111 (1998): 621-688. Available at: <https://ssrn.com/abstract=57627>.