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Data Property: Unwelcome Guest in the House of IP

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1. Introduction

With the incessant growth of the ‘data-driven economy’1 have come calls for the introduction of a novel property right in data. Apparently in response to demands from the automotive industry,2 and encouraged by a number of German lawyers and scholars,3 the European Commission has in its 2017 Communication on ‘Building a European data economy’ tentatively advanced the idea of creating at EU level a ‘data producer’s right’ that would protect industrial data against the world.4 The movement for ‘data property’ (in German Dateneigentum) has its champion in European Commissioner Günther Oettinger, who until 2016 led the directorate general that is responsible for the Communication, DG Connect. An op-ed published by Mr. Oettinger in the Frankfurter Allgemeine Zeitung reveals some of the thinking and the powerful forces behind this revolutionary legal concept. Data, writes Oettinger, are the “gold of the future”, principally in the automotive sector where modern sensor-equipped cars automatically generate and collect large amounts of data – on traffic and road conditions, engine performance, etc.5 These machine-generated sensor data have enormous value, for example, for developing self-driving automobiles. But – writes Oettinger – it is as yet unclear who owns these data: the automobile manufacturer; the car owner; the producer of the sensor equipment; or no one at all? What we need, concludes the Commissioner, are rules at EU level that establish data ownership.

Apparenty inspiring this call for protecting industrial data is the fear – common to other recent policy initiatives – that valuable European assets are being misappropriated by large American companies. The specter of Google ‘stealing’ European news has already led to an ongoing EU initiative towards a neighbouring right for news publishers, following comparable rules previously introduced in Germany and Spain.6 The sui generis database producer’s right introduced in Europe in 1996 was similarly inspired by European fears of dominance by the US database industry.7 Although the contours of the ‘data producer’s right’ being contemplated by the European Commission are sketchy, as are its economic underpinnings, such a right would most likely bring the protection of industrial data in the EU to a much higher level than the – much-maligned and still

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4 The German automobile association ADAC has conducted tests showing that modern automobiles produce, process, store and forward vast amounts of machine-generated data; available at https://www.adac.de/infotestrat/fahrerassistenzsysteme/daten_im_auto/default.aspx.
policy and legal framework conditions for the data economy are put in place in time, its value will increase to EUR 643 billion by 2020, representing 3.17% of the overall EU GDP. Studies by the OECD and the European Commission present similarly mind-boggling figures. The rapidly increasing value of machine-generated data is attributed to a variety of factors: the rise of ‘smart manufacturing’, which involves real-time exchanges of massive amounts of data between machines; the exponential growth of ‘Big Data’ (i.e. extracting information by way of sophisticated large-scale data analysis); and the promise of the Internet of Things, the magical world where machines quasi-independently communicate and exchange data directly with other machines, such as the ‘intelligent’ energy meter that sends usage data to the energy company, or the axiomatic refrigerator that automatically orders milk and coffee from the online supermarket. As in Commissioner Oettinger’s op-ed, many of the examples used in the literature are taken from the automotive sector, where data have become essential input and valuable output in manufacturing and navigation. The specter of Google’s self-driving car potentially out-competing the European car industry is never far away.

Having thus demonstrated that data have tremendous and increasing value, proponents go on to point out that current legal regimes, such as traditional civil-law based property right and existing intellectual property regimes, do not, or do not adequately, protect these data. Admittedly, non-property regimes such as contracts and trade secret protection might occasionally do the job, as would technical protection measures that create de facto ownership positions. However, these regimes do not create rights erga omnes, so valuable data are at risk of being misappropriated and a market for using and trading (i.e. licensing) raw data will not develop. Ergo, what is needed is a novel property right that protects industrial data as such. As the European Commission tentatively suggests in its Communication, as one of six policy options put forward in its ‘Building a European data economy’, ‘[T]he novelty of the idea is not so much in the legal situation and giving more choice to the data producer, by opening up the possibility for users to utilise their data and thereby contribute to unlocking machine-generated data’. In light of these radical contentions, it is surprising to see how little economic evidence is brought forward in support of a property right in data. According to standard economic analysis, there are two main justifications for the creation of a new IP right: (1) solving the public good problem by creating an economic incentive for the production of data; and (2) facilitating the utilization and trade of data. As to the first rationale, Prof. Kerber, a leading German economist, sees “no evidence that there are generally too few incentives for producing and analyzing data in the digital economy”. Indeed, much machine data production occurs (nearly) automatically, often as a by-product of industrial production or services, and it is hard to see why a legal incentive in the form of a data property right would enhance it.

As to the second argument, Prof. Kerber observes: “Although it cannot be ruled out that the market for trading and licensing data can suffer from market failure problems, and empirically data markets are still developing and need more scrutiny, it seems that so far data producers and data holders have sufficient possibilities for commercializing their data. The potentially most important market failure problem that the first buyer might resell data seems to be solvable through either contractual and technical restrictions or through the strategy of selling services based upon these data.” Prof. Kerber concludes: “there are no convincing economic argu-

controversial – database right. Whereas database right protects data on the double condition that the data are structured in a ‘database’ and the database is the result of ‘substantial investment’, the novel right would directly protect machine-generated data without any material prerequisite.

As this article argues, introducing such an all-encompassing property right in data would seriously compromise the system of intellectual property law that currently exists in Europe. It would also contravene fundamental freedoms enshrined in the European Convention on Human Rights and the EU Charter, distort freedom of competition and freedom of services in the EU, restrict scientific freedoms and generally undercut the promise of big data for European economy and society. In sum, it would be a very bad idea.

This article starts (in Section 2) by briefly examining the background and stated aims of the proposed new right: why would there be a need for creating a property right in industrial data? And what would be its subject matter and scope? Section 3 looks at existing intellectual property regimes, inquires to what extent these extend to data, and speculates how a data property right in data might affect these regimes. Section 4 thereafter scrutinizes the data right from the broader perspective of fundamental rights and freedoms. Section 5 concludes.

Although creating a property right in data surely has additional ramifications outside these fields, in particular for the right of informational privacy (personal data protection), the focus of this article will be on the law of intellectual property. We will therefore not examine whether the law of data protection might already imply a property right in personal data. Nor shall we query whether the civil law concept of private property might be extended – or already extends – to (recorded) industrial data, and thus offer alterative protection to data sets. We shall also avoid discussing other doctrines in potential support of ‘data property’, such as criminal law, or trade secret law, and stay away from the contract and consumer law related issues of ‘trading’ personal data for services, which have become moot in the light of the proposed EU Digital Content Directive.

Finally, a general caveat is in order. Whereas the European Commission has now posited the issue of ‘data property’ as worthy of serious discussion, the policy arguments advanced in favor of introducing such a right are underdeveloped, and its contours remain sketchy at best. Critiquing a right of data property is therefore taking aim at a moving target.

2. Quid data property?

The arguments advanced by proponents of introducing a right of ‘data property’ can be roughly summarized as follows: (1) it is evident that data have economic value. For example, according to the European Commission, “the value of the EU data economy was estimated at EUR 257 billion in 2014, or 1.85% of EU GDP. This increased to EUR 272 billion in 2015, or 1.87% of EU GDP (year-on-year growth of 5.6%). The same estimate predicts that, if currently-

19 Source: German Commission for the Study of the Legal Situation and Access to Data (Maandblad voor Vermogensrecht 20-26. [2012])
20 European Commission, ‘Building A European Data Economy’ (n. 4), 2.
ments for the introduction of such a new IPR.\footnote{Kerber (n. 21), 989. See also Donner (n. 10), 625; Drexler (n. 13), 30 ff., 66.} A more recent, and more elaborate study by the Joint Research Centre of the European Commission is somewhat less skeptical,\footnote{European Commission, Joint Research Centre (N. Duch-Brown, B. Martins & F. Mueller-Langer), ‘The economics of ownership, access and trade in digital data’, JRC Digital Economy Working Paper 2017-01.} recognizing that legal uncertainty regarding data ownership rights might negatively affect the efficiency of data markets. However, this study also concludes that there are, at present, no compelling economic arguments to advise regulatory intervention.

This article will, however, not further engage in economic analysis of a possible data property right, but focus instead on its consequences for the existing system of intellectual property. In order to do so, it is important to gain some preliminary understanding of what such a right might entail. Drawing from the sketch presented in the Staff Working Paper that underlies the European Commission’s recent Communication,\footnote{European Commission, Staff Working Document (n. 4), 33. Note that applying this distinction in practice will not be easy. For example, much machine data generated by automobiles is related to a person, and will therefore qualify as ‘personal data’; see ADAC Study (n. 5).} which seems to be largely based on the work of Prof. Herbert Zech,\footnote{Ibidem.} one must assume that features of a data producer’s right to be roughly as follows. The right would create a right in rem (i.e. a property right enforceable against the world in respect of “non-personal or anonymised machine-generated data”). It would encompass “the exclusive right to utilise certain data, including the right to licence its use. This would include a set of rights enforceable against any party independent of contractual relations thus preventing further use of data by third parties who have no right to use the data, including the right to claim damages for its use or use of the data”.\footnote{European Commission, Staff Working Document (n. 4), 35.} Whereas the Commission remains vague on the issue of initial ownership, according to Prof. Zech, the right would initially vest in “the economically responsible operator of equipment that generates the data (data producer)”.\footnote{Ibidem.} As the European Commission concedes, thus allocating the right might be highly problematic in practice, since data-generating machines are often owned and operated – and corresponding investments done – by numerous different actors.\footnote{European Commission, Staff Working Document (n. 4).}

In view of its stated aims, the right would have to be fully transferable.\footnote{European Commission, Staff Working Document (n. 4).} As to the term of protection, the Commission is silent, but according to Prof. Zech “[a] short term of protection would probably qualify as a right of intellectual property.” The scope of the new right would in particular include use by carrying out statistical analyses, but not the re-creation of the same data by independent measurement.\footnote{Ibidem.} The Commission seems to embrace this distinction, perhaps in the hope that such a limitation might prevent undue information monopolies.\footnote{Ibidem.} We shall examine the distinction between syntactic and semantic data in the following section.

In sum, both in terms of its intended subject matter (data, an immaterial good) and its scope of protection (reproduction and use of data by third parties), the proposed data producer’s right would probably qualify as a right of intellectual property.

24 Kerber (n. 21), 989. See also Donner (n. 10), 625; Drexler (n. 13), 30 ff., 66.
26 European Commission, Staff Working Document (n. 4).
27 Zech, ‘Information as a tradable commodity’ (n. 19), 74-76.
28 European Commission, Staff Working Document (n. 4).
29 Zech, ‘Information as a tradable commodity’ (n. 19), 75.
30 European Commission, Staff Working Document (n. 4), 35.
31 Zech, ‘Information as a tradable commodity’ (n. 19), 76.
32 Ibidem.
33 European Commission, Staff Working Document (n. 4), 33. Note that applying this distinction in practice will not be easy. For example, much machine data generated by automobiles is related to a person, and will therefore qualify as ‘personal data’; see ADAC Study (n. 5).
34 Zech, ‘Information as a tradable commodity’ (n. 19), 74.
35 Zech, ‘Information as a tradable commodity’ (n. 19), 76.

\section*{3. Data in the system of intellectual property}

Before further scrutinizing the proposed data right and its possible impact on the system of intellectual property law, we first need to examine how existing legal regimes in the EU deal with machine-generated data. This section will focus on relevant laws of intellectual property, and not discuss other possibly relevant legal mechanisms, such as tangible property, contract and trade secrecy. While the focus of this section will be on the two IP regimes most closely associated with protecting data structures, copyright law and sui generis database rights, we shall also make a brief excursion into the field of neighboring rights.

\subsection*{3.1 Copyright in data}

Is there copyright in data? The textbook answer is a resounding no. As U.S. Supreme Court Justice Warren Brandeis famously stated in his dissent in the INS case, “[t]he general rule of law is, that the noblest of human productions - knowledge, truths ascertained, conceptions and ideas - after voluntary communication to others, are free as the air to common use.”\footnote{Brandeis, diss. opinion, International News Service v. Associated Press, 248 U.S. 215 (1918).} This axiom reflects what is called the idea/expression dichotomy: the dividing line between, as European copyright scholars prefer to say, protected form and unprotected content.\footnote{P.B. Hugenholtz, ‘Works of Literature, Science and Art’, in: P.B. Hugenholtz, A.A. Quaedvlieg & D.J.G. Visscher (eds.), Idea/expression dichotomy in intellectual property law, amstel, 2007, 37.} The rule is generally codified in the U.S. Copyright Act (S. 102 (b)), as well as in the TRIPs Agreement (art. 9(2)) and the WIPO Copyright Treaty (art. 2). In EU law we find a similar rule, albeit limited to computer software, in the Computer Programs Directive (art. 1(2)). Although these provisions do not expressly mention ‘data’, it is generally assumed, and uncontroversial – either on the basis of the ‘dichotomy’ or by way of direct application of copyright’s requirement of authorship and creativity – that there cannot be copyright in data per se.\footnote{European Commission, Staff Working Document (n. 4).}

Whereas data as such are thus excluded from copyright protection, copyright’s treatment of data compilations is more complex. The Berne Convention protects “collections of literary or artistic works such as encyclopaedias and anthologies” (art. 2(5)), but does not mention collections of mere data, and expressly denies copyright to “news of the day or to miscellaneous facts having the character of mere information” (art. 10(2)) which more broadly protects “collections of data or other material, whether in machine readable or other form, which by reason of the selection or arrangement of their contents constitute intellectual creations”. The WIPO Copyright Treaty (art. 5) contains similar language. In line with these modern conventions the EU Database Directive instructs Member States to provide copyright protection to “databases which, by reason of the selection or arrangement of their contents, constitute the author’s own intellectual creation” (art. 3(1)).

In Football Dataco and others the Court of Justice clarified that the test of ‘the author’s own intellectual creation’ (in short, originality) implies that the selection or arrangement of the data is the result of creative choices. Applying art. 3(1), 2nd sentence (“No other criteria shall be applied to determine their eligibility for that protection”), the Court held that merely investing significant amounts of skill and labour does not justify a finding of originality. In other words, the Directive’s originality standard preempts any (quasi-)copyright protection for databases that are merely based on ‘skill and labour’.\footnote{See P.B. Hugenholtz, ‘Works of Literature, Science and Art’, in: P.B. Hugenholtz, A.A. Quaedvlieg & D.J.G. Visscher (eds.), Idea/expression dichotomy in intellectual property law, amstel, 2007, 37.} This end not only the United Kingdom’s long-standing practice of according copyright protection to compilations of data based on ‘skill and labour’ (investment), but also similar doctrines in other Member States. For example, the Dutch protection of non-original writings (‘geschriftenbescherming’) that existed for over a century in the Netherlands as a vehicle for protecting non-original writings and compilations, was formally abolished in 2014 following Football Dataco.\footnote{Football Dataco also rules out copyright protection for data compilations that are generated by machines without any human intervention. This is in line with the general rule that copyright requires acts of human authorship. Note however that the U.K. Copyright, Design and Patents Act 1996 sect. 2(1) provides that copyright may subsist in the ‘pictorial, graphic or artistic work’ of a machine-generated computer program, where the ‘pictorial, graphic or artistic work’ is not the computer program but another work.}
appears to extend copyright protection to machine-created works: “in the case of a literary, dramatic, musical or artistic work which is computer-generated, the author shall be taken to be the person by whom the arrangements necessary for the creation of the work are undertaken.”41

In addition to copyright and database right, the phonographic right – one of the four neigh-

3.3 Phonogram protection


42 Football Dataco and others (n. 39).

43 The Newspaper Licensing Agency & others v Meltwater & the PRCA, High Court of Justice (Chancery Division), 26 November 2010, [2010] EWHC 3099.

44 Bundesgerichtshof (‘Federal Supreme Court’), 1 December 2010, case I ZR 196/08.

45 Fixtures Marketing Ltd v. Oy Veikkaus Ab, 9 November 2004, case C-46/02, ECR 2004 I-10396; British Horseracing (n. 45).

46 British Horseracing (n. 45), para. 31.


48 Football Dataco & Others v Stan James Plc & Others and Sporttrader GmbH & Others, Court of Appeal (Civil Division), 6 February 2013,[2013] EWCA Civ 27.


50 British Horseracing (n. 45).


53 On the other hand, the European Court has held that the geographical data in topographic map are sufficiently ‘independent’, in the sense of indicatively qualifying as a protected “database”. According to the Court, “geographical information extracted from a topographic map by a third party so that that information may be used to produce and market another map remains, following its extraction, sufficient informative value to be classified as ‘independent materials’ of ‘a database within the meaning of that provision.” Freistaat Bayern v Verlag Esterbauer GmbH, CJEU 29 October 2015, Case C-490/14.
porated in a cinematographic or other audiovisual work”. By including ‘other sounds’ and ‘a representation of sounds’ this definition apparently encompasses raw audio data stored (‘fixed’) on a digital medium.

Whether there is a threshold criterion for the phonographic right that might delimit both the substance and scope of the right, is as yet unsettled under EU law. In its 2008 Metall auf Metall decision the German Constitutional Court extended neighbouring rights protection to every single recorded note of a sound recording, because the record producer’s investment is reflected in every - even very minor - part of the recording.\(^5\) This suggests that no threshold criterion (no investment minimum) would apply. In a follow-up decision the German Constitutional Court has however held that a phonographic right of unlimited scope, as contemplated by the Federal Supreme Court, may collide with the ‘freedom of art’ that is constitutionally guaranteed in German Basic law.\(^6\) Most recently, the Bundesgerichtshof has referred questions regarding the scope and limitations of the phonographic right to the EU Court of Justice.\(^7\)

3.4 Assessment: impact of data property on the system of intellectual property law

As this section shows, both copyright and database right do not extend to data per se. Both regimes conditionally offer protection to data compilations that result from creative selection and arrangement (copyright) or substantive investment (database right). Both regimes deny protection to raw data. For copyright right, this follows from the axiom that only acts of authorship conducted by human beings are protectable. For database right, this is a consequence of the sui generis right’s categorial delimitation: only data structured in a ‘database’ qualify for protection. Moreover, the sui generis right’s substantial investment test sets an - admittedly fairly low - minimum threshold. If operating a machine that records sensor data down (for example) a digital weather station or a bicycle computer, then this will not result in a protected database. The CJEU’s ‘Fixtures’ decisions pose an additional hurdle to sui generis protection for machine-generated data by excluding ‘created’ data from protection, thus ruling out machine-generated synthetic data.

In sum, introducing a right in raw, machine-generated industrial data, as envisaged in the Commission’s Communication, would go far beyond the main intellectual property regimes presently existing in Europe in the field of data and information, copyright and database right.

Disruptive overlaps

How would this affect existing intellectual property law? In the first place, creating a new layer of rights in machine-generated data would cause broad and disruptive overlaps with copyright and sui generis right in productions made with the aid of digital machines. For example, a film shot with a digital camera would qualify not only as a work protected by copyright, but also as machine-generated (sensor) data subject to a ‘data producer’s right’. Similarly, the aggregate stock market data in a financial database would be protected both by sui generis right and a ‘data producer’s right’, since the data are recorded automatically by the computerized stock exchange.

Whereas the EU legislature has clearly intended to prevent the database right from spilling over into the realms of copyright and neighbouring rights, the ‘data producer’s right’ would lead to extensive overlaps. As a consequence, the new right might give rise to multiple competing claims of ownership in the same subject matter. To continue with our first example, while the creators of the film (e.g. the director, screenwriter, and other creators of the film) could claim authorship in the cinematographic work, the owner or operator of the camera, might claim ‘data property’ in the photographic data (i.e. the digital representation of the film), - surely, to the unpleasant surprise of the film’s producer. Similar examples might be given with regard to digital photographs or e-books. In the second example, the database producer might be confronted with ‘data property’ claims of the stock exchange, or the exchange’s computational services company.

Another consequence of this wide-ranging overlap would be that statutory limitations and exceptions under copyright, neighbouring rights or database right are ‘trumped’ by data producer’s right. For example, both copyright and database right in the EU presently allow users to copy or extract data from databases for non-commercial research purposes. Unless, the ‘data producer’s right’ would replicate all relevant existing exceptions, it would underrated these essential user freedoms.

This is especially true for data mining. Strangely, while the Commission’s Communication on ‘Building a European data economy’ ponders the introduction of an exclusive right in machine-generated data, one of the highlights of the DSM Directive proposal that is currently being debated in the European Parliament is a mandatory exception, both under copyright and database right, for text and data mining by non-commercial research organisations.\(^8\)

In line with Prof. Zech’s suggestions, the European Commission in its Staff Working Paper attempts to attenuate the all-encompassing ‘super IP right’ that would otherwise result from wholesale overlap by distinguishing syntactic from semantic data. The proposed ‘data producer’s right’ would be conceived in such a way that “only the syntactical level of information is protected, not the semantic level!”\(^9\) What is probably meant here is that the raw data would be protected only as regards its digital representation (the machine-readable bits and bytes, the ‘ones and zeros’ in the digital file), not the informational content that these data convey.

Thus, the European Commission hopes, the new right would not extend to ideas and information, and the new right would not become a ‘super IP right’.\(^10\) But would such a distinction really prevent the new right from extensively overlapping with existing rights? I do not believe so. The problem here is that digital data are commonly coded and interpreted following standardized rules and protocols. In other words, there usually will be a one-on-one relationship between the (syntactic) data substrate and the (semantic) content layer. Returning to our example of the digitally produced film, any copy of the film’s digital file (the syntactic data) might by necessity also reproduce the copyright protected work (the semantic layer). Thus, the new data right could be invoked against any digital copying (or streaming) of the digitized copyright work. For the same reason, the new right would broadly overlap with database right, even if its scope were confined to the syntactic layer. The phonographic right discussed above illustrates this point. Whereas its subject matter, like the proposed ‘data producer’s right’, is limited to the recorded signal (i.e. syntactic audio data), its scope extends into the semantic realm. Reproducing a cd recording of a musical performance will, by necessity, reproduce the underlying musical work and performance.

The only way to prevent the data right from becoming an all-encompassing ‘super IP right’ would be to categorically exclude all data that (possibly) represent subject matter protected under traditional IP regimes; not just copyright, database right and neighbouring rights, but also design right and perhaps even patents. But even a non-overlapping data right would have seriously corrosive effects on the system of intellectual property, for various reasons. First, it would undermine the economic incentives that underlie IP rights. For example, the main rationale of the database right is to promote and reward investment in the building of databases from pre-existing data and other materials. This incentive is clearly undercut if a lower-tier, no-threshold right in machine-generated data were to exist in parallel. Second, and more importantly, it would compromise the general principle of intellectual property - whether utilitarian or grounded in natural law theory - that protection be reserved to creation, innovation or otherwise meritorious investment. A data right in all data produced by machines might, on occasion, protect assets of considerably economic value, but nothing of merit. This has ramifications, in particular, at the political level. With intellectual property laws under increasing fire, legislatures - at EU and national level - need powerful and convincing arguments to defend existing regimes and introduce new rights. In this volatile political climate proposing a data producer’s right with the

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54 Metall auf Metall, Federal Supreme Court, 20 November 2008, case I ZR 112/06, GRUR 2009, 403; German Constitutional Court, 31 March 2004, StGB 2004/1.7
55 Metall auf Metall III, Federal Supreme Court, 1 June 2017, case I ZR 115/16.
56 European Commission, Proposal for a Directive of the European Parliament and of the Council on Copyright in the Digital Single Market, Brussels, 14 September 2016, COM(2016) 593 final. Art. 3(3) of the proposed Directive provides: “Member States shall provide for an exception to the rights provided for in Article 2 of Directive 2001/29/EC, Articles 5(a) and 7(1) of Directive 96/9/EC and Article 11(1) of this Directive for reproductions and extractions made by research organisations in order to carry out text and data mining of works or other subject-matter to which they have lawful access for the purposes of scientific research.”
57 Zech, ‘Information as a tradable commodity’ (n. 19), 74; European Commission, Staff Working Document (n. 4), 3.
58 European Commission, Staff Working Document (n. 4), 34.
sole aim of (better) protecting the economic assets of the automotive (or any other) industry will surely backfire. Not only is such an initiative likely to fail in the legislative process, but it will also (re)ignite broader discussions on the legitimacy of intellectual property law.

No legal certainty

Another, more mundane objection against a property right in data lies in its inherent lack of legal certainty. Although it is still not fully conceptualized, it is difficult to imagine a data right sufficiently stable in terms of subject matter, scope and ownership to be admitted to the ranks of intellectual property. As to subject matter, if the right vests in data generated by machine processes, which data would it protect? All the data that the machine produces within a given time frame (e.g. an hour, a minute or a second)? Or all the data that result from a finite machine process (e.g. all the data gathered by a satellite that sensors the earth)?

Admittedly, the sui generis database right has already raised similar questions. With data in a database constantly being updated, what exactly constitutes the protected database? But in database law the definition of ‘database’ and requirement of substantial investment create at least some measure of permanency in the subject matter and scope of the right. This stability is, however, completely absent from the data producer’s right. The problem here is that industrial data generation mostly occurs in real time. The ‘velocity’ – the dynamic nature – of big data makes it impossible to identify a property right in its process of generation.

The subject matter of the right is simply too fluid. If this is to become a full-fledged right of intellectual property that is enforceable against the world, it should be possible to ascertain its subject matter – and, by implication, its scope of protection – with sufficient legal certainty.

A related problem is allocating ownership of the right. Since the right would be sparked by machine operations, no causal ownership connection with a natural person as, for instance, in copyright, exists. As Prof. Zech and the European Commission suggest, ownership might be vested in the person owning or operating the machine that generates the data. This, however, is hardly a reliable rule. As the OECD points out in its groundbreaking study on ‘big data’, multiple actors/stakeholders might claim ownership to the data, both upstream and downstream in the process of generating and processing data.60

In sum, the proposed ‘data producer’s right’ would most likely seriously affect, or even distort, existing copyright and database right, and its underlying incentives. Moreover, in the absence of clear and predictable rules circumscribing its subject matter, scope and ownership, it would lead to a ‘serious constraint on the part of the EU legislature, even without considering the adverse effect the new right might have on the free flow of information, one of the cornerstones of the emerging information society.

4. Data property and the free flow of information

The exclusion of data per se from the scope of existing intellectual property regimes is not merely ontological. Although old-school author’s right scholars might argue that data are not copyright works, because data are not ‘created’, this is at best a partial explanation for this exclusion.61 Rather, IP law’s abhorrence of protecting data reflects implicit or explicit information policies not to protect data. These policies are, in turn, informed by a variety of public interest values and concerns. In the first place, of course, freedom of expression and information – the fundamental freedom enshrined in the European Convention on Human Rights (art. 10 ECHR), and the EU Charter (art. 11).

As case law and doctrine regarding the Convention teach, this fundamental freedom is to be interpreted broadly. Article 10 ECHR is phrased in media-neutral terms and thus applies to old and new means of communication (‘in every form’). At the very least, the communication of facts, news, knowledge and scientific information. It also, undoubtedly, extends to syntactic data; the scope of article 10 is not limited to (semantic) speech, but extends to the means used for communication purposes. To what extent the article’s protection extends to other speech has been a matter of some controversy. However, the European Court of Human Rights has made it clear that information of a commercial nature is indeed protected, albeit to a lesser degree than political speech.62

Article 10 ECHR prevents states from creating restrictions to the free flow of information unless such restrictions “are prescribed by law and are necessary in a democratic society [...] for the protection of the [...] rights of others”. From this perspective data and information must flow freely, unimpeded by property rights or other state-created restrictions, unless a compelling societal need for protection (“necessary in a democratic society”) can be established. Freedom of expression and information, in other words, makes intellectual property rights in data the exception to the default rule of freedom.63

This brings us back to the question of expediency. The EU legislature would bear the burden of proving that a property right in machine-generated data is a socially and economically justified and non-discriminatory interference in the fundamental freedom of European citizens to freely access and reutilize machine-generated data. In light of the abundant praise in political literature of ‘big data’64 and big data mining as drivers of progress and prosperity, and the absence of convincing evidence supporting a property right in machine-generated data, this burden of proof would be difficult to surmount.

In particular, freedom of expression and information militates strongly against any new right of intellectual property that would restrict scientists’ access to data - a freedom that the EU legislature expressly wishes to preserve as regards ‘text and data mining’ by non-commercial research institutions. Note that this freedom finds additional support in art. 13 of the EU Charter (“The arts and scientific research shall be free of constraint. Academic freedom shall be respected”). Another area where a data right would patently conflict with freedom of expression and information is journalism, where mining data has become an essential tool for investigative reporting.65

A second over-arching policy consideration underlying intellectual property law’s reluctance to protect data per se is freedom of competition (enshrined in art. 16 of the EU Charter as the “freedom to conduct a business”). This economic freedom traditionally sets limits to intellectual property rights and is one of the rationales underlying the idea/expression dichotomy. As the literature on the economic potential of ‘big data’ demonstrates, machine-generated data are both input and output to innovative manufacturing processes and value-added services, and thus a major driver of economic growth. This calls for measures promoting access to data and freedom to data mining rather than commodification of data by creating property rights in data. Unless equipped with wide-ranging exceptions and safety valves, introducing a new property right in data might create undesirable data monopolies that could impede, rather than foster, competition in this rapidly evolving European ‘data market’ place.66 At the global level, introducing data property rights in the EU might well lead to anti-competitive distortions as well, in cases where European data users are obliged to purchase licenses for usage of data freely available to their competitors in the United States.

63 See (for copyright) Ashby Donald and Others v France, European Court of Human Rights 10 January 2013, No. 36769/08; ECLI:2013:0110JUD00367690.
Finally, a novel data right would also create new barriers to the freedom of services, one of the four freedoms of the EU Internal Market. In its Communication on ‘Building A European Data Economy’, the European Commission interprets this freedom, together with the freedom of establishment, as implying a “principle of free movement of data within the ELP”.[67] It is hard to see how a novel property right in machine-generated data would square with this freedom.

5. Conclusion

This article makes the case against introducing a data property right. As we have seen, there are abundant reasons to reject this idea. A ‘data producer’s right’ in machine-generated data would ride roughshod over the existing system of intellectual property. It would violate one of the IP system’s main maxims that data per se are “free as the air for common use”, and that only creative, innovative or other meritorious investment is protected. It would corrode IP’s mechanism of incentives by creating an underlayer of rights that automatically protects all data produced with the aid of machines. This parallel layer of rights would, most likely, extensively overlap with other IP regimes, and thus create undue impediments for the exploitation of existing rights, such as copyright and database right, and endanger user freedoms guaranteed under these regimes. These legal uncertainty, since the ‘velocity’ of real-time data generation makes it difficult, or even impossible, to circumscribe its subject matter, scope of protection and ownership. More generally, a property right in machine-generated data would contravene freedom of expression and information, and pose new obstacles to freedom of competition, freedom of services and the ‘free flow of data’.

The great promise of big data - for the economy, for science, for society at large - is that this resource may be freely exploited. Introducing a ‘data right’ preventing unauthorized access to big data would directly contradict this. Indeed, it is hard to understand how the proposed new right would square with the text and data mining proposed by the European legislature in the current EU copyright reform package.

If, as the European Commission rightly believes, “big data, cloud services and the Internet of Things are central to the EU’s competitiveness”[68], one would have expected supporters of a novel data producer’s right to present powerful and convincing arguments in support of this revolutionary proposition. So far, the case for a property right in machine-generated data has yet to be made. As Prof. Drexl and others have pointed out, the existing toolkit of trade secret protection, contract and technological protection measures offers data producers ample means of securing de jure or de facto exclusivity.[69] Rather than wasting time and effort on inventing a data producer’s right, the focus of the European Commission’s possible interventions should be on fostering access to big data.[70]

Fortunately, the possible introduction of a ‘data producer’s right’ is only one of several policy options currently being contemplated by the Commission in its ‘European Data Economy’ initiative. As this article has shown, there are innumerable reasons for the European Commission not to go down this road. If nothing else, Europe’s experience with the sui generis database right should give reason for extreme caution. In 2005, less than ten years after it was introduced at EU level, the European Commission published its first review of the Database Directive, a remarkably self-critical assessment. According to the Commission, “[t]he economic impact of the ‘sui generis’ right on database production is unknown. Unintended to stimulate the production of databases, the new instrument has had no significant impact on the production of databases”. The Commission’s report also suggests that the sui generis right has not helped the European industry to overcome its productivity gap vis-à-vis the United States.[71]

It points to several other deficiencies of the sui generis right, such as its uncertain contours, and its proximity to a property right in data that might negatively affect innovation and growth. The report juxtaposes the legal situation in the EU with that in the United States, where since the Supreme Court’s landmark Feist decision[72] no legal protection for ‘sweat of the brow’ based databases exists. Nevertheless, as the Commission wryly observes, “there has been a considerable growth in database production in the US, whereas, in the EU, the introduction of ‘sui generis’ protection appears to have had the opposite effect.”[73]

The 2005 evaluation report concludes by offering four possible ways forward: (1) repeal the whole Directive; (2) withdraw the sui generis right, (3) amend the sui generis to clarify its scope, and (4) maintain the status quo. Despite these harsh conclusions, the database right has yet to be amended or repealed. The problem is that removing (parts of) a directive is, politically and legislatively, even more complex than substantive harmonization. Repealing the database right would require a new directive not only rescinding major parts of the existing Directive, but also - absurdly - instructing Member States to abolish sui generis database protection. Unsurprisingly, the only option that has so far materialized from the Commission’s assessment is no: 4: “do nothing”.[74]

The lessons of the EU’s database experiment[75] are not to be forgotten. Introducing a novel right of intellectual property should never be done in the spur of the moment. Any new right should be contemplated only after conducting thorough economic, evidence-based research that demonstrates a real need for the right and predicts its consequences for information markets and society at large. Assuming a convincing case in support of the right might indeed be made, this should then be followed by systematic legal analysis of the new right’s contours and scope, and of its impact on the existing system of intellectual property. The two-tiered structure of the Union does not allow for legal experimentation at the EU level. Like the database right, a ‘data producer’s right’ would be here to stay - a most unwelcome guest in the house of European intellectual property.

67 European Commission, ‘Building A European Data Economy’ (n. 4), 7.
68 DSM Strategy p. 34.
69 Drexl (n. 13), 66.
70 See Drexl (n. 13), 41 f.; Max Planck Institute Position Statement (n. 66); see also European Commission, Staff Working Document (n. 4), 36 ff.