Data sharing as a service:

Will data services remove intellectual property rights from the picture, and at what cost?

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1 Introduction - the general digital shift from an ownership economy towards a service economy

The digital economy has undergone many radical changes over the past few decades. One of the most significant changes is arguably the move from an ownership-based economy, to a service-based model. Traditionally, up until the late '90s, digital content was purchased on a physical medium – a floppy disk, CD or DVD – by an end user. Legally, this 'purchase' covered both the ownership of the physical object, and specific rights to use the digital contents stored on the object. In that way, a citizen or company bought software, games, films, music, or any other creative work – or more accurately, they bought a contractually defined licence to use that work, along with the physical object itself.

As the Internet became more and more prevalent, and particularly as higher download speeds and volumes became viable for most users, the need for a physical carrier disappeared. Simply buying the digital content online and downloading it directly provided immense benefits for both the seller and provider. The seller could reduce marginal costs (the cost of each additional copy of the content) to nearly zero, and could more easily sell directly to its customers, thus cutting out any middle men and increasing their margins. The buyer could obtain their content more quickly and conveniently, and always received the most recent version, rather than the version that most recently was distributed on a physical medium. For software in particular, the ability for a newly purchased version to contain all the most recent updates, patches and features was economically interesting. The legal model remained largely the same: while no physical object was bought anymore, users still bought a licence to use the creative content, based on the contractually defined terms that were included with the download.

However, over the last decade, the business model behind digital content has evolved further. Rather than one-off sales of digital downloads based on a licensing model, digital content is increasingly sold as a service. This can be observed for software (cloud services), video and audio content (streaming services), gaming services (gaming subscription stores), and so forth. Again, this shift brings benefits towards both the seller and the buyer. In addition to the benefits mentioned above, the seller replaces a one-time payment by a recurring revenue stream. The buyer benefits from a broader service offering (e.g. having access to a much broader library of music, video, games, etc) and/or from a better service quality (e.g. benefiting from the vastly higher capacity and functionality of cloud services compared to locally deployed infrastructure).

The shift to services however has also changed the legal model to a large extent. Rather than obtaining a download paired with a specific licence agreement, the user concludes a service agreement. While that service agreement inevitably will include some usage rights – and therefore licensing terms – as well in order to allow lawful use of the digital content, the user's rights are principally governed by a subscription. This is not a matter of semantics, since a key characteristic of these subscriptions is that they can be terminated (either by the buyer or the user), and that termination causes all usage rights to the content to disappear. Contrary to a digital download, a digital service may no longer be available tomorrow, in which case the user loses their ability to use the content.

Moreover, in the subscription based model, content is available dynamically. This is beneficial when it implies that a customer gets more or better content; but it can also imply that key software features disappear overnight, or that songs or videos that were important to a user suddenly are no longer available.

The shift from a static download coupled with a licence to a dynamic service based on a subscription thus has clear benefits and clear risks. Given the growth rates of dynamic services (cloud software, audio-visual entertainment etc.) and the fact that their turnover already exceeds traditional equivalent sales by a wide margin, the trend in the digital economy is clear.

But what about digital data sharing, specifically by the public sector? And what about data that is distributed under an open licence? Is data sharing similarly increasingly done as-a-service by public authorities? Is the shift from a licence to a subscription agreement occurring here as well? What are the legal challenges and implications, if any? Is the shift – if it is happening – a potential problem? These are the questions that will be briefly addressed in this short analytical paper.

2 The peculiar case of data sharing: are intellectual property rights relevant to begin with?

The introductory section above highlighted a general trend from licensing agreements to service agreements. In order to assess whether this shift may be occurring for data sharing as well, it is firstly relevant to assess to what extent intellectual property rights are relevant to data. After all, if no intellectual property rights exist, licensing them is not possible either.

Intellectual property rights exist in many forms: copyrights, database rights, patents, trademarks, and others. For the topic of data sharing, copyrights and database rights are particularly relevant, and we will not extend our analysis to the others.

Copyrights generally apply when a work can be deemed original, in the sense that it can be considered an individual expression of its author(s). The legal basis for copyrights internationally is principally the 1886 Berne Convention for the Protection of Literary and Artistic Works[1]; but at the EU level more specific copyright law exists, consisting of 11 directives and 2 regulations that address specific forms of original works and/or specific forms of exploitation[2]. For the purposes of the digital data economy, the main instruments are the 2011 Directive on the harmonisation of certain aspects of copyright and related rights in the information society[3] (the "InfoSoc Directive"), the 2009 Directive on the legal protection of computer programs[4] (“Software Directive”), and the 2019 Directive on copyright and

[1] Available at https://www.wipo.int/treaties/en/ip/berne/
[2] Available at https://digital-strategy.ec.europa.eu/en/policies/copyright-legislation
[3] Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32001L0029
[4] Available at https://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX:32009L0024

related rights in the Digital Single Market[5] ("DSM Directive"). In each of these legal instruments, the Directives define the rights of the copyright holders, and provide for a harmonised series of exceptions to these rights.

Database protection is somewhat more unique to the European context, not having an international source of law equivalent to the Berne Convention. The EU adopted a specific Directive on the legal protection of databases[6] ("Database Directive") in 1996, which aimed to harmonise legal protections for databases across the EU, to foster investments in a (then) nascent data market, and to safeguard the balance between the rights and interests of database producers and users. The Directive is presently under evaluation, and may be revised in the context of the anticipated Data Act; but in the meantime, it's worth considering how the current version affects data sharing.

To do so, it firstly established that databases as such could qualify for copyright protection if they, by reason of the selection or arrangement of their contents, constitute the author's own intellectual creation. In the absence of such personal originality, no copyright applies. Separately and more uniquely, it established a so-called *sui generis* right – often simply referred to as database rights – for the makers of databases, irrespective of whether they qualify for copyright. The database right is granted automatically whenever the maker had to undertake a qualitatively and/or quantitatively substantial investment in either the obtaining, verification or presentation of the contents of the database. Through the database right, makers of databases can benefit from legal protections even when there is no particular originality to their work, but there was none the less a substantial investment involved in bringing it about.

The question then arises to what extent intellectual property rights apply to digital data as such. Obviously, traditional original works – such as music and films – benefit from copyrights irrespective of whether they are rendered as digital data, and the same applies for software (including video games): any computer programme that shows sufficient originality qualifies for copyright protection.

But what about non-original digital data on which data sharing discussions normally focus? This includes measured data, observed data, metadata, and any other kind of factual data that intends to capture an objective reality, devoid of significant creativity of any author. Common examples include geographic data, statistical data, administrative registers, ecological performance data, product descriptions, component lists, economic indicators, socio-economic and demographic data, and so forth. The central question is whether these qualify for intellectual property rights, principally copyright or database rights.

With respect to copyrights, the answer is relatively straightforward: none of these examples of data show signs of originality from any author, and therefore the existence of any copyright is doubtful in most cases. A protection by database rights under the Database Directive on the other hand is more plausible. The only criterion for the applicability of database rights, as mentioned above, is that a

[5] Available at https://eur-lex.europa.eu/eli/dir/2019/790/oj
[6] Available at https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:31996L0009

qualitatively and/or quantitatively substantial investment was needed to create the database. That should mean that database rights would usually apply, since the creation of these databases usually requires significant investments from public authorities.

But the issue is not that simple, since the scope and breadth of database rights has been somewhat eroded over the past two decades. This is mainly the result of a series of decisions in 2004 from the European Court of Justice in relation to the Database Directive, specifically the cases Fixtures Marketing Ltd v. Oy Veikkaus Ab (C-46/02, 9/11/2004)[7], Fixtures Marketing Ltd v. Svenska Spel Ab (C-338/02, 9/11/2004)[8], British Horseracing Board Ltd v. William Hill (C-203/02, 9/11/2004)[9], and Fixtures Marketing Ltd v. OPAP (C-444/02, 9/11/2004)[10].

Very briefly summarised, in these decisions the Court stressed that the database right does not apply to databases that are the simple by-products of the main activity of an organisation. As a result, it could be argued that database rights would not apply broadly to any databases created by public administrations or private companies that were merely necessary for their administration, products or services to function, including e.g. most records created or kept by public administrations, or any automatically captured or machine-generated data (such as data from IoT devices), since (and to the extent that) such data is principally a by-product. If that logic is indeed accepted, then for such data sets, licensing based on copyright or database rights would not be an appropriate choice.

In this environment, are intellectual property rights still relevant for data sharing in the public sector? Given the description above, intellectual property rights – and specifically copyrights and database rights – play an important role for digital data that shows a certain level of originality from a human author, or for databases that required a substantial investment independent from the main activities of their creator. Where these requirements are not met however – and as the examples above show, this comprises a rather broad range of digital data in the public sector – intellectual property rights don't apply, and licensing intellectual property rights is therefor not legally possible.

Data sharing as a service however, based on subscription agreements, would certainly be possible, since such agreements don't require the existence of intellectual property rights. This topic will be analysed below.

3 Is there a drive towards data-as-a-service?

Before looking at the impacts of any shift from traditional licensing to data-as-a-service, it is worth asking a much more basic question: is any such shift actually happening? Clearly, the examples mentioned in the introduction already showed that the answer is yes for traditional original content

[7] Available at http://curia.europa.eu/juris/showPdf.jsf?docid=64575&doclang=EN
[8] Available at http://curia.europa.eu/juris/document/document_print.jsf?doclang=EN&docid=48762
[9] Available at http://curia.europa.eu/juris/document/document.jsf?docid=49633&doclang=EN
[10] Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:62002CJ0444

(music, video, software, games, …), but what about less IPR-oriented digital data, including most public sector data?

At least from a policy perspective, the answer for such data is clearly also affirmative. This can be witnessed e.g. through the recently revised Open Data Directive from 2019[11], which replaced the prior Public Sector Information (PSI) Directives[12]. One of many innovations of the Open Data Directive is its emphasis on dynamic data access and application programme interfaces (APIs), focusing on the creation of flexible access and usage rights, rather than focusing on static one-off data transfers. In other words, the Directive focuses on dynamic data sharing.

Moreover, the use of APIs would be mandatory for so-called high value data sets[13], including geospatial data, earth observation and environment data, meteorological data, statistics, companies and company ownership data, and mobility data[14]. Unsurprisingly, most of these specifically named high value data sets would likely not qualify for intellectual property rights, since they all contain exclusively objective and factual data (thus disqualifying them from copyright protection), and are all generated as a by-product of a principal activity (thus disqualifying them from database rights). Given this state of play, there is indeed an increased emphasis on providing valuable data as a service, rather than merely on licensing IPR protected data.

Other instruments show the same shift. By ways of examples, dynamic data access rights have been enforced in:

- Banking, through Directive (EU) 2015/2366 on Payment services in the internal market (PSD2)[15], which mandates making account data accessible through APIs to third party payment service providers and account information service providers (with the consent of the account holder).
- Energy, through the Directive 2012/27/EU on Energy efficiency[16], which mandates the use of intelligent metering systems (e.g. smart meters) to enhance energy saving and support the development of energy networks (smart grids).
- Automotive, through the Regulation (EC) No 715/2007[17], which establish the rights to unrestricted and standardised access to vehicle repair and maintenance information to independent operators, in a non-discriminatory manner compared to the access granted to authorised dealers and repairers.

[11] Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32019L1024
[12] Available at https://digital-strategy.ec.europa.eu/en/policies/legislation-open-data
[13] Under Article 5.8 of the Open Data Directive.
[14] Listed in Annex I of the Open Data Directive.
[15] Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32015L2366
[16] Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:32012L0027
[17] Available at https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32007R0715

In all of these cases, the underlying data is in principle not protected by intellectual property rights, since it is objective and factual in nature, and generated as the by-product of a main service (respectively financial services, energy provision, and car operation for the examples above).

Thus, the answer to the central question – is the shift to services happening for data as well – is clearly yes. The emphasis in new legal and policy initiatives is universally on dynamic access to data as a service. This opens the floor for greater flexibility in defining user rights.

4 Why does a shift away from IPR matter?

The role of intellectual property rights in organising and communicating the rights and obligations in relation to data is well documented, and more importantly it is well regulated. The legislation mentioned above (such as the InfoSoc Directive, the Software Directive, the DSM Directive, and the Database Directive) in each case clarifies what the intellectual property rights entail, how they apply to specific types of data, and perhaps most importantly: what rights lawful users or the general public have. This can include important protections, such as the right to use (extracts of) the data for the purpose of illustration for teaching or scientific research, for public security, for private non-commercial purposes, for reporting and journalism, criticism and review, and so forth. When intellectual property rights do not apply, the relevant exceptions also do not apply.

This is the main reason why a move away from intellectual property rights is significant. When data is not protected by intellectual property rights, or more generally when it is offered as a service on the basis of a subscription agreement, then there is full contractual freedom, and the data provider is able to set the terms of use at their own discretion, without any mandatory consideration for the public interests, including any exceptions granted by copyright or database rights. In more explicit terms, a move towards data as a service allows data holders to erode the careful balance struck by existing intellectual property rights legislation.

This issue has been examined by the European Court of Justice, specifically in the 2015 case of Ryanair v PR Aviation (Case C - 30/14)[18]. Simplifying the matter significantly, the case fundamentally revolved around a company's access to Ryanair flight data, which it then used to create a website that allowed consumers to search for flights. Ryanair shared the data based on its own bespoke terms and conditions, which prohibited the use of automated systems or software to extract data from the site for commercial purposes ('screen scraping').

Ryanair's claims that the use of its data infringed copyright law and the database right were quickly dismissed by the Court of Justice. As might have been expected, this data qualified neither for copyright protection (not being in any way original), nor for database rights (since it was a by-product of Ryanair's principal activities). However, the Court also affirmed that Ryanair was therefore free to lay down contractual limitations on its database's use by third parties. Contractual freedom prevailed,

[18] Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A62014CJ0030

and there was no need to consider the exceptions created by the Database Directive, as the database in question simply was not eligible for copyrights or database rights. In basic terms, in such cases the data sharing party to a large extent writes its own laws contractually.

This ruling is not the only example of the importance of intellectual property rights as a safeguard of the public interest. In a well documented case, the 2012 UsedSoft GmbH v Oracle International Corp. ruling (Case C-128/11)[19], the Court of Justice ruled that owners of software licences had the right to resell these licences to third parties, regardless of whether they were purchased in a physical form or downloaded from the Internet. While the ruling related specifically to software, the logic reasonably should apply to any copyright licence, including for e.g. digital data: once lawfully bought, the owner of the licence may resell their licence, thus increasing the economic value of the data. Conditions apply, of course, including notably the requirement that the buyer of the 'second-hand' licence must meet the requirements imposed by the licence (e.g. a company cannot buy a licence that allows private use by individual citizens only). None the less, flexibility exists when copyright licences are used.

Inversely, when digital data is made available purely on the basis of a subscription agreement, the data holder is again free to impose any constraints, including the non-transferability of the data itself, based on the general principle of contractual freedom. In these cases, a shift to data-as-a-service removes a protection that existed on the basis of intellectual property rights. This is the main reason why a shift away from an intellectual property rights based approach matters.

5 Conclusions and key points of attention

Clearly, a shift to data-as-a-service has benefits as described in the introduction, but data receivers should be aware of their greater dependence on the contractual terms offered by the data holder. Especially when intellectual property rights don't apply, and/or when the subscription agreement defines usage rights and limitations without reference to any intellectual property rights, the receiver should understand that the removal of intellectual property rights from the equation also removes the balancing act that the legislator and courts have attempted to put into place.

Based on the observations above, it is clear that data-as-a-service – in the form of APIs, web services and dynamic online market places – is increasingly the dominant paradigm for data sharing, in the same way that it has taken audio-visual media and software distribution by storm. This trend is generally beneficial, since it increases flexibility and usability of the data, both for the data provider and for the data user.

None the less, there is also an increasing dependence on contractual provisions, which no longer need to satisfy the protections created in intellectual property rights legislation. Contractual freedom becomes a mixed blessing then, which admittedly allows parties to implement a legal framework that optimally satisfies their needs and expectations; but which in return also erodes some of the

[19] Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:62011CJ0128

assurances created by intellectual property rights, in terms of exceptions for lawful use and transferability in particular.

This need not be a fundamental problem, of course; but parties relying on dynamic data services on the basis of subscription agreements should do well to take a few recommendations to heart. Firstly, it is worth verifying if and whether the terms offered have been independently created by the data provider, or whether they follow any best practice templates that were drafted with the objective of being balanced.

Secondly, they should assess whether the terms have defined usage rights that sufficiently cover their expected usage. As explained above, exceptions for e.g. educational use, private use or criticism do not apply when intellectual property rights are inapplicable; and transferability of usage rights to a third party is also not ensured. If these are relevant, the aspiring user should verify that the terms allow such use.

Finally, the user of a subscription service should determine the stability of the agreement, in terms of their right to retain data and to continue to use it if the service becomes unavailable. One of the merits of buying a copy of a data set and the related licence is that the data remained available and usable as long as the licence was valid. In a subscription service, data may become unavailable on very short notice. If retention or historic access to data is relevant, a user should do well to verify that this is also legally permissible.

It is possible that some of these concerns are temporary. As noted above, the shift to dynamic data-as-a-service is real and increasingly supported by existing and emerging legislation. As this legislation evolves and matures, these issues will be settled in a more systematic and balanced manner. In the meantime however, a subscriber should beware.

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