Data portability and interoperability in the GDPR: reducing market concentration and empowering data subjects

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Abstract

This essay aims to analyze the literature about data portability and interoperability in the social network market to asses if they could be a feasible way to decrease market concentration and improve data subject power. Using what has been done in the telecommunication market as a starting point it will report the difficulties and specificity of imposing similar policies in this different market. Something has already been done in the European Union: the right to data portability is already implemented by the General Data Protection Regulation with some relevant limitations. Interoperability on the other hand is still to be enforced and we will report different suggestions and trade-offs to care about: which legal tools to use, how standardization could lead to side effects and if data portability alone could be already enough.

1. Introduction

This report provides a review of the legislative and economic literature about a very important and actual topic: how data portability and interoperability can provide a possible tool to reduce market concentration in the digital sector (especially in the social network market) and at the same time increase the control that data subjects have over their own data. It has been intensively discussed the tendency that this market has toward monopolization. This feature is embedded in social networks' market nature: it presents a lot of different characteristics well known for raising competition concerns. The most important one is the presence of very strong, both direct and indirect, network effects. Market concentration and limited competition lead to less innovation and transparency. Although Data protection regulations often pursue noble goals, they tend to accentuate the competition issue by increasing costs and creating more barriers to entry into the market. The focus of this essay concerns a very important novelty in the General Data Protection Regulation (GDPR) which could decrease its negative effect on competition by reducing network effects. The right to data portability has two interesting effects: it improves the control that data subjects have over data and at the same time reduces switching costs. Interoperability is another powerful instrument to pursue the same goal by allowing users to interact with each other from different social networks. However, in the GDPR, interoperability has only been suggested. Data portability combined with interoperability could produce a real user-centric environment in which everyone would be able to enjoy the immaterial wealth of their personal data in the data economy. However, the path to its full implementation is fraught with pitfalls and we will analyze the most relevant. The rest of the report is structured as follows: section 2 analyzes the social network market focusing on the features leading to high concentration; section 3 explain how data portability and interoperability are included in the GDPR; section 4 shows how the two policies can effectively solve the presented issues; section 5 warn about the main pitfalls in their implementation; section 6 compare the two main legal approaches to impose data portability and interoperability; section 7 concludes the report.

2. Concentration in social network market

Social networks seem to have largely replaced traditional telecommunication services providing smart ways to freely interact with other people. Today it is possible to call, video call, or text someone using very different platforms: Whatsapp, Facebook, Instagram, Telegram, Skype, and many others. They provide traditional telecommunication services (and much more) in a very user-friendly and socially interconnected context which improves the user experience. With the increase in quality and affordability of internet services these platforms have largely increased the number of users and nowadays it seems unlikely to meet someone who doesn't have at least one profile on a social network. Unfortunately, these markets have also some competition problems that prevent them from fully disclosing their ability to innovate and improve even more. Social network markets are characterized by several economic features appearing together for the first time and driving these markets towards *monopolization* by a single company.

> These features are: i) strong network effects (the more people use a product, the more appealing this product becomes for other users); ii) strong economies of scale and scope (the cost of producing more or of expanding in other sectors decreases with company's size); iii) marginal costs close to zero (the cost of servicing another consumer is close to zero); (iv) high and increasing returns to the use of data (the more data you control, the better your product); and v) low distribution costs that allow for a global reach. - *Zingales & Lancieri, 2019* [6]

Among these, the presence of *strong network effects* is the most relevant in the social network market and requires more in-depth analysis. To understand why network effects are so important in this field we have to look at what their business model is. Social networks have two different customer groups: one is composed of all the people who join to create connections with other people, and the other one is made up of all those companies interested in displaying advertisements to users in the hope of selling their advertised products or services. The social network platform simply sells targeted advertising services to the second group. They perform an intermediary function between different groups of customers. Since network effects occur when the utility that a customer derives from the consumption of a good or service in-

creases with the number of consumers purchasing the same good or service, social networks are the perfect ground for them to be strong.

> We can distinguish two different network effects: direct and indirect. We talk about direct network effects when a product or service becomes more valuable as the number of users grows, while we talk about indirect network effects when the increasing number of users of a good leads to more complementary products or services that raises the value of the network. - *Katz & Shapiro, 1985* [5]

> In multi-sided businesses like this, the 'indirectness' of the network effect does not relate to the complementarity of products but to the connection between the different sides of the platform. - *Inge Graef, 2015* [4]

As a company's network grows, these network effects increase rapidly, making it more difficult for other companies to grow, even if they become more appealing. These features brought to the actual situation in which Facebook dominates the market and it is almost impossible for entrepreneurs with new good ideas for another social network to be successful in conquering a position in the market. In this setting, data protection regulations worsen the situation by increasing costs and creating more barriers to entry into the market.

> Large firms may have more technical and financial resources to comply with regulations and where regulations require consent for personal data processing, large firms can more easily obtain consent from individual consumers. - *Campbell et al., 2015* [2]

Specifically, the GDPR has data minimization as a key principle: firms must limit the personal data that they process. In a very recent paper, the effect of the GDPR on competition has been evaluated showing a potential *tradeoff between privacy regulation and market concentration*.

> Despite data minimization successes, the GDPR had the unintended consequence of increasing the industry's relative concentration. We show that this tradeoff between data minimization and concentration is not mechanical: some niche categories become less concentrated. However, relative concentration increases in the top

> web technology vendor categories that represent most of the industry. The increase in concentration is highest among the web technology vendors that process personal data, which the GDPR targets. - *Johnson et al., 2021* [3]

3. Data portability and interoperability in the GDPR

Despite privacy regulations being very likely to increase market concentration, the new General Data Protection Regulation contains a very important novelty that could lead to higher competition: the right to data portability. The GDPR is a regulation in EU law on data protection and privacy that has been adopted on 14 April 2016 and became enforceable beginning 25 May 2018. The right to data portability in the GDPR constitutes the first case in which a policy of this kind has been implemented.

> No field of law has experimented before with anything resembling to personal data portability. - *Paul De Hert et al., 2018* [8]

The *right to data portability*, contained in *article 20* of the GDPR, allows data subjects to obtain data that a data controller holds on them and to reuse them for their purposes: for personal use or to transfer them to another data controller. From the textual analysis of article 20, we can understand how the EU structured this right. First of all, we have to know which data can be obtained.

> ...in the final approved version, only data concerning specifically the data subject can be "ported" and only if he/she has provided them. - *Paul De Hert et al., 2018* [8]

The data that we have *directly provided*, however, are not the only relevant ones. The interaction with other people, comments, or reposts, for example, are fundamental in social networks, but they involve third data subjects who didn't choose to transfer their data on the new platform. This means that, unless there is consent from third interested parties, the object of data portability should be reduced only to data concerning exclusively the data subject. Another important issue concern how data is to be transferred. The minimization of switching costs is essential for the effectiveness of this policy, which means that it must not only be free but also not be time-consuming and easy to execute. In this sense, the final version of article 20 improved with respect to the proposal. While in the proposal for the GDPR the right consisted in

obtaining a copy of data and, at certain conditions, transmitting it to another data controller, in the final version

> it has been reformulated so as to also allow individuals to "have the personal data t*ransmitted directly* from one controller to another, where technically feasible". - *Paul De Hert et al., 2018* [8]

With respect to the format in which data has to be provided the GDPR refers only to *"machine-readable" format*. The final version has less restrictive standards than the proposal in which the format had to be "electronic", "structured" and "commonly used" format that "allows for further uses". Another remarkable change is that in the final version there is no reference to the withdrawal of data from the previous platform while in the proposal, data has to be deleted when transferred to a new provider. To conclude, the right to data portability can be summed up in *three different rights*

> i) The right to receive (without hindrance from the data controller) data concerning data subject which he/she has provided;
> ii) the right to transmit (without hindrance from the data controller) those data to another controller;
> iii) the right to have the personal data transmitted directly from one controller to another. - *Paul De Hert et al., 2018* [8]

While the right to data portability is explicitly expressed and structured, for the implementation of *interoperability* we can only see the basics and guess a direction towards it. Some of the characteristics of the right to data portability that we have highlighted show a direction. With these provisions, the EU wants to lay the foundations on which interoperability could be built in the future. Before going further into what GDPR says about interoperability we have to define it.

> Interoperability can be defined as 'the ability to transfer and render useful data and other information across systems, applications or components. - *Palfrey & Gasser, 2012* [7]

Interoperability is different from simple data portability because it would enable users to connect irrespective of their social network provider.

> Data portability permits users to move their profile to another social network, but does not allow users to reach someone that is not on the same social network. - *Inge Graef, 2015* [4]

We can understand that the EU is moving toward interoperability implementation from *different clues*: the absence of any reference to data withdrawal from the previous platform, the right to have the personal data transmitted directly from one controller to another and the interpretation that the Article 29 Working Party (WP29) has given on the format of data in the proposal for the GDPR.

> the three format requirements at Article 20 are supposed to facilitate the interoperability of the data format provided by the data controller. In other words, "interoperability" is the expected result, while structure, common use and machine-readability are the indicated means. - *Paul De Hert et al., 2018* [8]

4. Data portability and interoperability as a potential remedy

An important market in which something similar to data portability and interoperability has been already successfully applied is the telecommunication one. This analogy is very relevant for different reasons: social networks largely replaced the services provided by *traditional telecommunications*, it has been subject to very similar network effects and the results of these policies are already visible to all. Everyone today, regardless of the telecommunication provider to which they are subscribed, can call or send messages to everyone else. It is also possible to change providers without changing the number, without paying additional costs and the providers must fulfill your request within a maximum of 24 hours. Number portability and interoperability have greatly increased the service quality and competition in the market, thus leading to lower prices and both higher quantity and quality. It has been implemented by way of regulation on a EU level in January 1998 in one of the Directives of the regulatory framework that formed the basis for the liberalization of the telecommunication market in the European Union. From this experience, we can see how data portability and interoperability can successfully deal with network effects and improve both competition and the control that customers have over their data (in this case the telephone number). The *final setting* that these policies are willing to achieve is one in which from any different social network you could interact with other people using any other different social network. Furthermore, in this setting, every customer would have the possibility to easily switch from one social network to another without losing his personal data. This would in practice reduce switching

costs to a minimum and increase the probability of a new innovative social network being successful. The GDPR could be a very appropriate vector for these policies because it applies to both EU firms and non-EU firms that target EU residents. GDPR fines can reach 4% of a firm's annual global revenue. Given that fines apply to global revenue rather than revenue from the EU, the GDPR incentivize global firms that serve EU residents to abide by its principles. Because of the global relevance of its enforcement every particular implementation, such as the right to data portability, can seriously affect the social network market.

5 pitfalls in the implementation

Unfortunately, implementing what has been done in the telecommunications market in that of social networks is much more insidious.

> The peculiarity of interoperability between networks is that a user can utilize the network of a provider with which he or she does not have a *contractual relationship*. For public communications networks, this is not problematic, since the relationship between the user and the third-party provider stops as soon as the phone call ends. The user pays his or her own provider for the call and the providers arrange amongst themselves for payment for the use of the networks. - *Inge Graef, 2015* [4]

Very different is the case of our concern, in which a user could post something on a friend's profile and the legal relationship operating between the user and the provider would not end after the uploading. Another important difference is embedded in the different object between number portability and data portability. The object of data portability between social networks is *personal data*, a special type of data from which data protection concerns arise. Personal data is defined by the General Data Protection regulation as

> any information relating to an identified or identifiable natural person (data subject) - *GDPR* [1]

and the identification can take place

> directly or indirectly, in particular by reference to an identifier such as a name, an identification number, location data, unique

> identifier or to one or more factors specific to the physical, physiological, genetic, mental, economic, cultural or social or gender identity of that person - *GDPR* [1]

This type of data is subject to privacy rules as it is sensitive data. Complete data portability can not take place for different reasons. As already said, it is not possible to port pictures, posts and interactions involving other people without their *consent*. However, they are fundamental: for example, an Instagram profile is usually full of pictures with friends and it seems costly to leave a complete profile built over time for a new empty one on a different social network. There is another category of important data for which data portability can not apply because not directly provided by the data subject: *inferred or predicted personal data*. It is very relevant for the user experience to have an environment that already knows your tastes and can provide you with fitting suggestions and services. Let's think about a YouTube account: it's amazing how much it knows your tastes better than you do and presents you with exactly the videos you want to see. It is only an example but there is plenty of others: Facebook and Twitter showing you posts that you are interested in or Amazon providing you accurate advertisements. Different is the situation for *observed data*: the data that the provider obtained directly from the data subjects (cookies, GPS, simple combination of raw data, etc). There are two interpretations about the possibility for these data to be ported:

> restrictive interpretation includes only "received data" in the definition of "data provided to the controller"; while the extensive one includes both "received" and "observed" data. - *Paul De Hert et al., 2018* [8]

Finally, *standardization* issues must also be considered. A certain standardization is required to make both data portability and interoperability effective. If we want data to be easily portable we have to standardize the format and if we want platforms to communicate we have to impose standards on the structure of a social network. In this context, a trade-off arises: too few standards could render policies ineffective, while many of them could limit the capacity for innovation. If we imposed too standardized structures for social networks, a new and innovative social network would run into big problems and would not be created until the legislation changes to allow it. It is clear that this would be very costly for a newcomer. It is easy for me to think that, with too standardized regulations, social networks such as TikTok or Snapchat may

have not been created. Data portability and interoperability are appealing not only to increase the power of the data subject but also to foster innovation. It would not be a great result if the positive effects on innovation were eliminated by the same policy that wanted to increase them.

6 Two different ways to impose interoperability

There are two possible ways to impose data portability and interoperability: through regulation or competition law. Both of them have pros and cons. Competition law does not require a legislative process. For this reason, it could be more easily used, but it can only be imposed ex-post in specific situations while the regulation would apply to all cases ex-ante. For the right to data portability the decision has already been made. It was imposed, despite all the limitations and pitfalls we have seen, by the GDPR. However, interoperability between social networks is still only a good idea and it makes sense to analyze the two different paths. The first way to impose interoperability lay on the *competition authority* power. If it were possible to achieve full interoperability in the social network market through the action of the competition authority, this would be the best choice because Article 102 TFEU already gives them the power to intervene. It would not require a European legislation procedure with all the related political difficulties and uncertainty. Unfortunately, this is not the case. Competition authority can only intervene ex-post (except for merger reviews), on a specific case and after having established that the company at issue is abusing its dominant position. Therefore, only if the competition authority determines that the social network provider has already denied interoperability with other social networks by abusing its dominant position in the market, the authority could apply interoperability in the specific case.

> For enabling effective interaction between all social networking sites, interconnection requirements should be imposed in general on all social networks and in all situations. If interconnection obligations would be applied solely to the dominant social network provider, interoperability would only be available between the largest social network and the other networking sites in the market. No interconnection would exist among the latter non-dominant social networks.

> Therefore, 'real' interoperability can only be established when all social network providers are obliged to participate in the process. - *Inge Graef, 2015* [4]

Therefore competition authority intervention is excluded as a feasible way to achieve complete interoperability in the social network market. The *regulatory path*, despite being the most difficult and long, seems to be the only way forward. As we saw, it has been used to obtain interoperability in the EU telecommunication market and for data portability with the GDPR. So if carefully designed to tackle all the important pitfalls it could obtain the desired result. The last major concern is that interoperability must be implemented using legislation such as the GDPR, with a *broad territorial scope*: social network providers offering their services to users in the European Union will always be subject to the provisions of the GDPR regardless of where they are established.

> If regulation for ensuring interoperability between social networks would be adopted, measures have to be established for ensuring the extraterritorial application of the interconnection requirement. If this is not taken into account, the regulatory intervention will be rendered useless as social network providers can avoid application of the regulation by establishing themselves outside the European Union. - *Inge Graef, 2015* [4]

7. Conclusions

Data portability and interoperability have already shown themselves to be effective solutions to tackle network effects issues in the telecommunication market. At the same time, they are a powerful mean to increase data subjects' control over their data. The European Union seems to be already moving towards a very user-centric environment with data portability and interoperability implemented. GDPR already introduced the right to data portability, while interoperability is still to be imposed. Some basic means and different clues evident in the GDPR make it reasonable to think that actions for interoperability implementation will be taken in the future. The path is however insidious, complete data portability and interoperability can't be achieved. It is only feasible to find an optimal compromise in different trade-offs. The EU has already tried to find this optimal compromise dealing with data portability. This right has probably improved the situation but the effects could be

little because of the different limitations like data involving other users can't be ported without their consent, and inferred and predicted data are not subject to the provisions. Interoperability is, in my opinion, another good step in the right direction but only if carefully implemented balancing the standardization requirements and using the appropriate tool: a regulation with a broad scope like the GDPR would be the best way to impose it.

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