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**REGULATION OF DIGITAL PLATFORMS
AS INFRASTRUCTURES FOR SERVICES
OF GENERAL INTEREST**

The Friedrich-Ebert-Stiftung

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PREFACE

The regulation of large digital platforms continues to gain momentum. In Germany, the legislator has recently updated the competition law framework with the 10th amendment of the Act against Restraints of Competition. In order to better address the specific characteristics of digital platforms, the revised rules of competition law include "intermediation power" and "cross-market significance" of platforms as new categories in for the legal assessment. In addition, further provisions regarding the of abuse of market power have been introduced. At the same time, platform regulation is undergoing a fundamental change at the European level. The legislative proposals for the Digital Markets Act and the Digital Services Act of December 2020 are the first steps towards a hybrid between competition law and ex-ante regulation under which significantly stricter rules of conduct will be imposed on large digital platforms.

The reform projects at the national and the European level are undoubtedly important steps towards a modernisation of the legal framework for the platform economy. But are they sufficient? What is striking is that the current regulatory approaches are predominantly conceived from a competition law perspective. The main aim is to limit the market power of the platforms and to ensure a workable competition. But platform power is more than a competition problem: large digital platforms have become indispensable digital infrastructures for our society. They are extending their reach into more and more areas of life in which social participation, democracy and the basic supply of the population with essential services are at stake. A market-dominant internet search engine, for example, can control the access of billions of people to worldwide knowledge and has become indispensable for the formation of public opinion and political decision-making in modern democracies. Access to dominant social media platforms is also indispensable for the democratic participation of citizens. Online retail platforms are increasingly developing into central infrastructures for commerce and the supply of essential goods.

With their services, large digital platforms are increasingly becoming part of an "essential digital service" and are also extending their reach into more and more areas of services of general interest. If we take this idea further, it quickly be-

comes clear that a discussion about digital platforms in terms of competition policy is too narrow. Considering the infrastructural power wielded by digital platforms, we should also discuss the following questions: What responsibility does the state have for services of general interest in the "platform society"? How can fair access to the new fundamental infrastructures of the digital society and participation of all citizens be ensured? What type of non-competition related obligations should be imposed on platforms? Which regulatory approaches are appropriate for the infrastructural function of platforms?

In order to discuss these questions in terms of legal policy, the Friedrich-Ebert-Stiftung asked Prof. Dr. Christoph Busch from the University of Osnabrück to explore new approaches to platform regulation that go beyond competition law and address the infrastructural power of platforms. The results are presented in this report.

We wish you an insightful read!

ROBERT PHILIPPS

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SUMMARY

Digital platforms such as Amazon, Google or Facebook have become central actors in the digital transformation of the economy and society. Online marketplaces, search engines and social networks are an integral part of our everyday lives. At the same time, criticism of the economic power and societal influence of the "super-platforms" is growing (Ezrachi/Stucke 2016: 149). Calls for taming or even breaking up the large digital conglomerates are becoming louder and louder on both sides of the Atlantic (Teachout 2020; Pasquale 2018).

So far, the rise of digital platforms is primarily discussed as a problem of competition policy in the current political debate. "Platform power" is equated with "market power". From this perspective, the solution is sought in a reform of the competition law framework. Both the recent reform of the German Act against Restraints of Competition of January 2021 and the European Commission's proposal for a Digital Markets Act (DMA), unveiled in December 2020, follow this pattern and focus on issues of competition policy. The Commission's proposal for a Digital Services Act (DSA), which was also published in December 2020, focuses on risks related to freedom of expression and social discourse. In terms of enforcement, the DSA heavily relies on a model of regulated self-regulation and self-supervision of platform operators. At the national level, the German State Media Treaty, which came into force in November 2020, complements the reform of competition law with an update of the media law framework which focusses on safeguarding diversity of media and public opinion.

The reform initiatives mentioned above are important steps towards a modernisation of the regulatory framework for the platform economy. However, the current focus of the policy debate on market power and opinion power of digital platforms is too narrow and does not fully reflect the deeper sources of platform power. The current "platformisation" of the economy and society cannot be understood solely as a competition problem. The influence of the major platforms reaches much deeper into the structures of our digital society. Platforms such as Amazon, Google and Facebook, but also digital start-ups, which are often later bought up by large digital conglomerates, are extending their reach further and further into areas where social participation and the supply

of essential services to citizens is at stake. In short, digital platforms have developed into infrastructures of digital services of general interest.

Against this background, this study calls for a change of perspective in the current regulatory debate: Platform regulation is not only a question of competition policy, but also a question of infrastructure policy. In this regard, it is necessary to supplement the regulatory framework with specific regulations that address the infrastructural function of digital platforms and their increasingly important role in the area of services of general interest. This is part and parcel of the state's responsibility for services of general interest the "platform society" (van Dijck et al. 2018).

The societal and political debate on how this objective can best be achieved is still at an early stage. This study outlines some starting points for the future development of the regulatory framework:

1. Competition and media law need to be complemented by a "platform infrastructure law", which addresses digital platforms as societal infrastructures and increasingly important actors in the area of services of general interest. In this regard, The regulation of network infrastructures can serve as a model, which combines competition policy with other policy objectives such as security of supply, universal service and affordable access.
2. As part of its responsibility for infrastructures for digital services of general interest, the state must ensure general accessibility and non-discrimination with regard to the provision of infrastructure services by digital platforms. It must be ensured that services of general interest are available to all users at affordable conditions.
3. Digital infrastructure platforms that control access to services of general interest have a special responsibility for data protection. In this perspective, the introduction of a right to data collection-free and non-personalised use of digital services of general interest should be considered.
4. Considering the growing influence of digital platforms on social interactions between citizens and the exercise of fundamental rights, the responsibility of platform operators for such fundamental rights is increasing. In particular, a future platform infrastructure law should set out essential requirements for due process with regard to claims for access to infrastructure platforms.
5. The effective enforcement of platform infrastructure law requires an appropriate institutional framework. This would require either the creation of a new supervisory authority at the national level or the establishment of a new and independent division within the Federal Cartel Office.

1

INTRODUCTION

The rapid rise of digital platforms as central players in the digital transformation and one of its most important growth drivers is one of the fundamental economic and social developments of recent years (BMW 2017). Digital markets are increasingly shaped by prominent companies of the platform economy, such as Amazon, Apple, Facebook and Google. Digital intermediaries are also taking on an increasingly important role in other areas of society. According to some observers we are already living in an emerging "platform society" (van Dijck et al. 2018; Nash et al. 2017).

There is now a broad consensus in the European Union that the regulatory framework for digital platforms needs to be updated. The topic of platform regulation is also prominently discussed in the USA (Khan 2016; Wu 2018). Recently, a veritable "competition" of ideas on platform regulation has developed (Podszun 2020: 60). Numerous studies provide evidence for the need for regulation and make suggestions for adapting the legal framework (Schweitzer et al. 2018; Crémer et al. 2019; Furman et al. 2019; Lancieri and Sakowski 2020; Podszun and Marsden 2020).

It is striking that most of these studies focus on an adjustment of competition law. In particular, the focus lies on a modernisation of the rules on the abuse of market power, sometimes supplemented by proposals for the reform of merger control. The recent reform of the German Act against Restraints of Competition, which came into force in January 2021, essentially follows this approach and, in addition, takes some tentative steps towards ex ante regulation of undertakings with paramount significance for competition across markets. In a similar perspective, the EU Commission's proposal for a Digital Markets Act published in December 2020 provides for a series of prohibitions and restrictions for gatekeeper platforms.

There is no doubt that a reform of the existing competition law framework is necessary. But it is not sufficient. Large digital platforms control not only markets, but also central economic and societal infrastructures and they are extending their reach deep into the field of services of general interest, such as mobility, healthcare and education. The rapidly advancing "platformisation" of areas that are essential for citizens in the digital society could lead to distortions in the field of

services of general interest. Providers of services of general interest at a national and local level are becoming increasingly dependent on digital platforms. Democratic institutions are losing control over state-provided services of general interest. In addition, some digital services provided by platforms have become so indispensable to society that these services themselves could be considered as digital services of general interest. So far, this dimension of the "platformisation" of the economy and society has received too little attention in the policy debate on platform regulation.

Against this background, this study calls for a change of perspective in the current regulatory debate: Platform regulation is not only a question of competition policy, but also a question of infrastructure policy and public services. Therefore, platform regulation should not only consider digital platforms as market players and address the economic effects of limited competition, but also take into account their role as central infrastructures in the digital society. At the same time, the growing influence of digital platforms in the area of public services must be critically examined. It must be ensured that democratic institutions do not lose control over essential services of general interest to the players of the platform economy.

The present study addresses four key questions, which structure the study into four parts:

1. To what extent have digital platforms developed into infrastructures of the digital society?
2. What role do digital platforms play in the area of digital services of general interest?
3. To what extent do the regulatory strategies pursued so far at the national and European level take into account the infrastructural function of digital platforms and their role in the area of digital services of general interest?
4. How could a future regulatory framework look like that adequately takes into account the infrastructural function of digital platforms and their increasingly important role in the area of digital services of general interest?

2

DIGITAL PLATFORMS AS INFRASTRUCTURES

The starting point for a discussion about policy options for the creation of an appropriate regulatory framework for infrastructures of general interest in the digital society is a stocktaking of the structural changes linked to the rise of digital platforms as central actors in the economy and society. Therefore, the following section will provide an overview of the role of digital platforms as fundamental infrastructures of the digital society.

This analysis is based on a comprehensive, societal concept of infrastructure that encompasses both tangible and intangible foundations for social interactions. Accordingly, the concept of infrastructure used here is not limited to the material foundations of transport, communication, energy and water supply, which form the interdisciplinary core of the concept of infrastructure (Dörr 2014: 327; Peuker 2020: 238). Instead, the focus should be on the increasing importance of "infrastructural platforms" (van Dijck et al. 2018: 12), which have become essential for the fulfilment of basic needs and social participation in the digital society.

The infrastructure function of digital platforms is particularly evident in the areas of information (2.1), communication (2.2) and commerce (2.3). Increasingly, individual platforms are merging into cross-sectoral digital ecosystems (2.4). At the same time, the large digital corporations are playing an increasingly important role in building the physical infrastructures of the platform society (2.5).

2.1 INFRASTRUCTURES OF INFORMATION: SEARCH ENGINES

One of the main characteristics of the digital transformation is a dynamic development of information and communication possibilities. The internet with its rapidly growing number of websites has led to a radical expansion of information possibilities and a reduction in information costs (Schweitzer et al. 2018: 15). Access to the internet has become an essential part of the population's basic information supply (Bünnemann 2018: 1). Users confronted with the almost unmanageable wealth of information on the internet are dependent on information intermediaries to access the knowledge available

online. In this context, a key role is played by search engines such as Google or Bing that make the boundless diversity of information on the internet usable with the help of complex search algorithms (Hentsch 2015). At the same time, these algorithms control the access to information offered by other online providers.

The search engine market is characterised by a very high degree of concentration. For example, Google's market share in search services in Germany has been continuously above 70% since 2003 and around 90% since 2007 (Podszun 2020: 49). The strong market position enables Google to continuously optimise its offer. As the number of search queries grows and the data generated is analysed, Google can continue to improve and refine the quality of its search results (Krisch and Plank 2018: 23). In view of the high market concentration, Google, as the dominant search engine, has considerable infrastructural power and becomes the "gatekeeper for the internet", as the US Department of Justice points out in its antitrust suit against Google filed in October 2020 (US Department of Justice 2020: 3).

Google's search algorithm plays a decisive role in determining whether content can be found on the internet. Content that is only displayed on the third or fourth page of the search results hardly stands a chance of being found. According to a study cited by the EU Commission in the "Google Shopping" case, the first ten search results on page 1 of the results list receive about 95% of all clicks from Google users. The first search result on page 1 accounts for 35 % of the clicks, the first result on page 2 for just 1 % of the clicks (European Commission, 27.6.2017, Case 39740, para. 454 et seq. - Google Shopping). It is therefore no exaggeration to claim that information that is not found among the first Google search results is practically non-existent for the majority of internet users. The influence of the search engine on the output of information is all the greater, the more unspecific the user's information interest is. If users enter "news today" as a search query, for example, they place themselves entirely in the hands of the search engine algorithm and the selection and sorting services provided by the search engine (Schulz and Dankert 2017: 353).

Google's role as the operator of central informational infrastructures of the digital society goes far beyond the con-

ventional search of websites using "Google Search". For example, "Google Books" enables a full-text search in millions of books in a wide range of languages. Google claims that it has scanned more than 40 million books in over 400 languages by 2019 (Google 2019). "Google Scholar" is becoming an increasingly important resource for finding scientific publications, "Google News" brings together news from all over the world and "Google Maps" provides geographical information of all kinds. It is probably a very accurate self-description when Google claims that its corporate goal is "to organise the world's information and make it universally accessible and useful" (Google 2020). Google thus controls the access of billions of people to global knowledge and in this function has become indispensable for the formation of public opinion and political decision-making in modern democracies. The indispensability of this service, which is essential for society, also justifies the state's claim to impose certain public welfare-oriented obligations on the service provider.

2.2 INFRASTRUCTURES OF COMMUNICATION: SOCIAL MEDIA

A similar development can also be observed in digital opinion markets. There, platforms such as Facebook or Twitter are developing into essential communication infrastructures for the digital public. Through algorithmically curated news feeds and content moderation, platform operators are influencing societal discourse and the formation of public opinion (Gillespie 2018; Klonick 2018).

Digital social networks have become the central communication and information infrastructure for growing parts of society (Hofmann 2020). On average, people in Germany spend 79 minutes a day on social networks such as Facebook, Instagram and YouTube to exchange information or to consume news, pictures and videos (Statista 2020). Social networks are used particularly intensively by internet users between the ages of 16 and 19. In terms of daily usage time, YouTube was the most popular social network in this age group with an average of 150 minutes. The second highest usage time in this age group was Instagram with 72 minutes daily (Statista 2020).

In view of these figures, it is not surprising that media scholars increasingly attribute an "agenda-setting function" to social media such as Facebook, Youtube and Twitter (Schmidt et al. 2017). As curators of the digital public sphere, social media platforms can put certain topics on the agenda or bring certain aspects of a topic to the fore and thus suggest a certain interpretative framework ("framing") (Schmidt et al. 2017: 12). In addition to this central role in shaping public opinion, social media also have an increasingly important function in structuring social spaces of action. In a society in which social interaction is increasingly shifting to virtual spaces, social media platforms such as Facebook are thus developing into essential infrastructures for civic engagement and social participation. They thus create the "foundations of sociality on the internet" (Dolata 2020: 195).

This has also been underlined by the German Federal Court of Justice (BGH) in its decision on the cartel proceedings against Facebook. The BGH emphasises "that Facebook, with

its social network, provides a communication platform which, at least for a number of consumers, decides to a considerable extent on participation in social life and is of essential importance for public discourse on political, social, cultural and economic issues." (BGH, 23 June 2020, Case KVR 69/19). Therefore, the platform has a special responsibility based on fundamental rights for how it defines the conditions for platform use (Lepsius 2020).

2.3 INFRASTRUCTURES OF COMMERCE: ONLINE MARKETPLACES AND APP STORES

In the field of online commerce, digital platforms and app stores have also developed into central market infrastructures (Khan 2017: 754; Rahman 2018). This creates "proprietary markets" (Staab 2019) that are controlled by the platform operators. Large retail platforms, most prominently Amazon, serve as "product search engines" for the almost unmanageable range of products and control the interplay of supply and demand with the help of rankings and matching algorithms (Cohen 2017; Schweitzer et al. 2018). At the same time, Amazon, as a provider of fulfilment services, plays a key infrastructural role in the area of retail logistics.

From an economic perspective, the "platformisation" of online trade leads to a rather ambivalent change in the market structure (Busch 2019). On the one hand, trading platforms such as Amazon reduce transaction costs and thus increase the efficiency of the exchange of goods. On the other hand, the platform operators take over the "customer interface" by interposing themselves between suppliers and consumers and coordinating the interplay of supply and demand. The control of market activities by means of algorithmic systems shows "elements of a centrally planned economy" (Podszun 2017: 34; see also Schirrmacher 2013, who warns of a "digital planned economy" in the information economy). In this new technologically supported centrally planned economy, the platform operators also assume the role of a "private legislator" (Schweitzer 2019: 1) who sets the rules for participation in the marketplace.

Similarly, the app stores of Apple and Google occupy a central position in the market for smartphone apps (Autoreit Consument & Markt 2019). Here, too, the core issue is the control of digital infrastructures. For example, Apple does not allow any app stores other than its own Apple App Store on devices with the iOS operating system (iPhones, iPads). The distribution of apps for iOS devices is therefore only possible via Apple's app store. Sideload, i.e. downloading apps by circumventing the Apple app store, is prevented by Apple with legal and technical means (Geradin and Katsifis 2020: 8). Even with Google's Android operating system, a "sideload" of apps is only possible with considerable technical difficulties (Autoreit Consument & Markt 2019: 46 f.). This creates a competitive bottleneck problem, i.e. access to the market for apps on mobile devices is controlled by Apple and Google. The role as gatekeeper for access to iOS devices gives Apple a position of power and enables it, for example, to charge a commission of 30% for in-app purchases, which critics call the "Apple Tax". The admissibility of this business model under competition law is currently the subject of a le-

gal dispute between the game developer Epic Games and Apple, the outcome of which is being closely followed by industry observers (see Geradin and Katsifis 2020).

In addition to the competition law problems briefly outlined here, which arise from the gatekeeper position of on-line retail platforms and app stores, the large online marketplaces also have a special responsibility arising from their infrastructural role. For example, a platform such as Amazon, which forms a central infrastructure for the import of goods into the European single market, bears a special responsibility in the area of product safety and liability (Busch 2019b; 2021). In the USA, some courts have already drawn the consequence from this and held Amazon liable under product liability rules for defective products offered by third parties via the Amazon Marketplace (see for example *Bolger v. Amazon.com, LLC* (2020) 53 Cal. App. 5th 431). In the urgently needed reform of the over 35-year-old European Product Liability Directive (85/374/EEC), the European legislator should follow this example and also hold operators of online marketplaces responsible.

2.4 NETWORKS OF INFRASTRUCTURES: DIGITAL ECOSYSTEMS AND CONGLOMERATE POWER

The information, communication and commerce infrastructures described here do not stand unconnected beside each other. Instead, the individual platforms are increasingly being merged into cross-market digital ecosystems (Monopolies Commission 2020: 35; Hein et al. 2020). As a result, it is no longer possible to say exactly to which sector some large digital companies belong. For example, in addition to a retail platform (Amazon Marketplace), Amazon offers streaming services for videos (Amazon Video), music (Amazon Music) and computer games (Amazon Luna), a platform for eBooks with an associated eBook reader (Amazon Kindle) and a delivery service for food (Amazon Fresh). Many of these offerings are bundled under the umbrella of the customer loyalty programme "Amazon Prime".

The digital ecosystem of Google and the Google parent company Alphabet also comprises a vast number of services (including Google Search, Google Mail, Google Drive, Google Docs, Google Calendar, Google Translate). The better-known products within the Google ecosystem also include the Chrome web browser, the Android smartphone operating system, the YouTube video platform and the Google Maps online mapping service. In addition, there is a range of hardware devices (including Pixel Phone, Google Home, Google Chromecast). Google also plays a central role in the field of online advertising (Google Ads, AdSense) and cloud computing (Google Cloud).

From a business perspective, the development of digital ecosystems has a number of advantages. In addition to economies of scale, ecosystems create economies of scope resulting from cross-market growth strategies and the development of conglomerate structures (Furman et al. 2019: 32). The cross-market collection and analysis of user data plays a central role here (Crémer et al. 2019: 33). By offering customers a wide range of different services in different markets,

digital companies are able to collect and aggregate a large amount of data about their customers and use it to create detailed customer profiles (Schweitzer et al. 2018: 26). These data profiles in turn make it possible to target advertising and offer personalised services.

By linking the different offers, the interoperability of services within the ecosystem is ensured (for example, between different products and services from Apple) while at the same time the ecosystem is sealed off towards the outside. From the customer's point of view, there is no need to leave the "walled garden" as more and more goods and services can be obtained within the ecosystem (Staab 2019: 39). At the same time, this strategy increases the costs of switching between different ecosystems. This can lead to anti-competitive lock-in effects that make it difficult for new competitors to enter the market. Such a lock-in strategy is particularly effective if the decision for a product (such as an Apple smartphone) almost inevitably leads to further decisions for subsequent products (e.g. iCloud, iTunes, Apple Watch) (Podszun 2020: 18). From a competition policy perspective, this can lead to platforms transferring their market power to other markets and thus creating almost uncontested ecosystems as a result (Monopolies Commission 2020: 31).

2.5 PHYSICAL INFRASTRUCTURES OF THE PLATFORM SOCIETY

The central role of large digital companies as providers of essential infrastructures for information, commerce and communication is not limited to the virtual world of digital platforms. Rather, the power of digital corporations is amplified by the control exercised over key physical infrastructures of the digital society. This material aspect of infrastructural power is easily lost sight of when we use terms such as "data cloud" and "virtual reality" and has so far received rather little attention in the platform policy debate.

The fact is, however, that Amazon not only operates one of the world's largest e-commerce platforms, but with Amazon Web Services (AWS) also holds more than thirty percent of the global market for cloud computing services. Amazon's data centres represent an essential part of the world's digital infrastructure (Staab 2019: 192). The second and third position in the ranking of the largest cloud computing providers are held by Microsoft and Google, who also operate numerous large data centres (Dignan 2020). In view of the considerable market concentration in the market for large data centres, not much remains of the much-invoked decentralisation of the internet. At the infrastructure level, centralised structures dominate, controlled by a handful of companies. This creates systemic risks that the decentralised structure of the internet was originally intended to prevent. Another important component of the physical infrastructure of the digital society, which also receives little attention in the public debate, is submarine cables, which form the physical backbone of the internet (Voelsen 2019). Large digital companies such as Google and Facebook are also increasingly active as investors in this field (Fitzgerald 2018).

The infrastructural power of the large digital corporations is not only derived from the control of central infrastructures,

such as submarine cables and data centres, but also affects the decentralised physical infrastructures of the digital society: smartphones, digital assistants and wearables. Here, the degree of concentration is even higher. Apple and Google, for example, with iOS and Android, have a duopoly worldwide in the area of smartphone operating systems (Statista 2020a). Via the respective app stores, they control access to an almost global network of sensors. The data collected in this network can be used in very different ways, be it for navigation services with real-time traffic jam forecasts or for determining infection risks using COVID-19 tracing apps. The above examples show that control over smartphone operating systems and the associated application programming interfaces (APIs) are an important source of infrastructural power in the platform society.

3

DIGITAL PLATFORMS AND SERVICES OF GENERAL INTEREST

As fundamental infrastructures of the digital society, digital platforms are playing an increasingly important role in various areas of services of general interest. While the concept of platforms as fundamental infrastructures of the digital society is increasingly used in recent social science literature and to some extent also in legal literature (Plantin 2018; Van Dijck et al. 2018; Krisch and Plank 2018; Dolata 2019; Podszun 2020), the role of digital platforms as actors of services of general interest has so far received only little attention (Schlüter 2017; Schallbruch 2020). Yet infrastructure and services of general interest are closely related on a functional level: efficient infrastructures are an essential instrument for fulfilling the state's mandate to provide services of general interest (Dörr 2014: 335; see also Hermes 1998). The German Spatial Planning Act (Raumordnungsgesetz, ROG) aptly uses the term "infrastructures of general interest" (§ 2(3)(3) ROG). This concept can be transferred to the increasingly important task of "spatial planning" in the digital space.

The digital transformation affects the functional link between infrastructure and services of general interest in several ways: Firstly, the scope of services of general interest is increasingly expanding in the direction of "digital services of general interest" (3.1). Secondly, a trend towards digitalisation can also be observed in the traditional fields of services of general interest, in which digital platforms are playing an increasingly important role (3.2). Thirdly, as digital platforms extend their activities into almost all areas of life, the question arises whether Amazon, Google and Facebook have actually become essential services in the digital society and can thus be considered as services of general interest (3.3).

3.1 SERVICES OF GENERAL INTEREST IN THE DIGITAL SOCIETY

The term "services of general interest", which is not always used uniformly in political and legal contexts, covers a broad spectrum of services on which people depend in their daily lives. In essence, it is "the provision of essential goods and services to be ensured by the public community" (Schmidt 2003: 225). Depending on the perspective, these basic services

include water and energy supply, education, culture and health care. Where the public sector does not provide these services itself the state has a responsibility to ensure that they are provided by private actors under public oversight (Schuppert 1995; Kühling 2004: 557 ff.). This means that the state must create the necessary legal and economic framework to ensure the adequate provision of basic goods and services of public interest by private actors. The state's responsibility to guarantee services of general interest can be exercised in various ways. An essential element is the state's "infrastructure responsibility" (Hermes 1998). In addition to ensuring nationwide (physical) infrastructures, this includes also the creation of an appropriate regulatory framework.

The role of the state in the digital society and the concept of services of general interest are not immutable, but open to development and subject to socio-technical change (Dörr 2014: 334). One example is the current debate about the question to which extent the state's infrastructure responsibility also includes "digital services of general interest" (Lühr 2020). The term "digital services of general interest" does not only refer to the digitalisation of administrative services, the expansion of digital infrastructures (e.g. high-speed internet access) or the much-debated question whether citizens have a "right to internet access" (von Lewinski 2011; Luch/Schulz 2009). The debate on digital services of general interest it is also about the digital transformation of classic services of general interest, for example in the areas of mobility, education and healthcare (Schallbruch 2020: 157).

In this context, digital platforms play a key role. Today, digital platforms operated by private actors provide the infrastructures through which citizens access services of general interest in many areas. The key players of the platform economy are penetrating further and further into the realm of services of general interest and thus are gaining influence over state and municipal actors. The involvement of private actors in the provision of services of general interest is certainly not a new phenomenon (Schmidt 2003). However, the "platformisation" of services of general interest brings the involvement of private actors to a new level and creates dependencies from which the public providers of services of general interest can hardly free themselves.

3.2 PLATFORMS AS ACTORS IN THE PROVISION OF SERVICES OF GENERAL INTEREST

In this section, the effects of "platformisation" in different fields of services of general interest will be illustrated using examples from the areas of mobility (3.2.1), healthcare (3.2.2) and education (3.2.3).

3.2.1 MOBILITY

One area in which the disruptive effect of digital platforms on services of general interest can be seen very clearly is the field of urban mobility services. Operators of platform-based, digital mobility services are pushing their way into the market. In this context, the recent reform of the German Passenger Transport Act (Personenbeförderungsgesetz, PBefG) will further promote this trend. The expected effects on local public transport are rather ambivalent. On the one hand, ridesharing providers and innovative pooling models will expand the choice of mobility services and can close gaps in the existing public transport network (Haucap et al. 2015). Furthermore, platform-based on-demand mobility services have the potential to reduce motorised traffic in cities. On the other hand, there is a risk that such services will replace existing mobility services. From this perspective, ridesharing providers such as Uber not only compete with taxis, but also with public transport services.

In some countries, platform-based ridesharing services are increasingly integrated into the public transport system. For example, in many US cities it is possible to book public transport tickets directly via the Uber app (Conger 2019). In some cities, ridesharing platforms are even partially replacing public transport services. In this case, the cities subsidise rides so that passengers only pay an amount equivalent to the price of a bus ticket. Also in Germany, there have been considerations to integrate ridesharing services into the system of public transport or to improve the link between both types of transport (Daskalakis et al. 2019). A first step in this direction is the recent reform of the PBefG, which was adopted in March 2021 and which is intended to create a legal framework for "bundled on-demand transport services" (§ 50 PBefG). However, there is a risk that platform-based ridesharing services in the medium term could erode the economic basis of public transport if attractive routes and time slots are served by private transport providers, leaving only the less profitable connections for public transport.

The future development of the regulatory framework for local public transport must ensure that the functionality and competitiveness of local public transport is maintained and that municipalities do not lose control over public transport. Mandatory quality standards, such as the accessibility of mobility services, must also be ensured (see § 64c PBefG). Considering that local mobility is a service of general interest, attention must also be paid to an appropriate pricing policy. From this perspective, it is to be welcomed that the revised PBefG allows local authorities to define minimum transport charges for ridesharing services (§ 51a(2) PBefG). In this context, the practice of "surge pricing" applied by the ridesharing provider Uber should be viewed critically. As a result of surge pricing, the rider's fare can be many times higher in

times of high demand than the normal fare. From a purely economic point of view, such a pricing strategy based on the dynamic interplay of supply and demand appears efficient (Haucap et al. 2015). However, if ridesharing services are integrated into a framework of multimodal public transport, this form of dynamic price management can only be acceptable with considerable restrictions. In any case, upper limits would have to be set in order to avoid particularly sharp price increases in emergency situations (e.g. severe weather events) (Monopolies Commission 2015: 374). The new § 51a(2) PBefG, which allows local authorities to define maximum transport charges for platform-based mobility services, provides a legal basis for such restrictions.

3.2.2 HEALTHCARE

Another area of services of general interest in which digital platforms will play an increasingly important role in the future is public healthcare. As the digitisation of healthcare continues, the analysis of health data collected with the help of smartphone apps and wearables (e.g. Apple Watch, Fitbit, Amazon Halo) is becoming increasingly important (BMBF 2020). The recent acquisition of Fitbit, a manufacturer of smartwatches and fitness trackers, by Google shows how major platform operators are pushing powerfully into the field of data-based health services (Osterloh 2019). Despite warnings of privacy risks, the EU Commission approved the takeover of Fitbit in December 2020 (European Commission 2020c). It is uncertain whether the conditions regarding data use envisaged in the takeover process are sufficient. In August 2020, Amazon also presented its own fitness wristband called "Amazon Halo", which not only measures skin temperature, but is also supposed to analyse the wearer's voice and thus recognise their emotions (Hemmersmeier 2019).

Health apps and wearables undoubtedly can make an important contribution to improving medical care. In the future, it may no longer be necessary to visit a doctor's office for every medical examination. Instead, wearables could be used for a digital monitoring of chronic diseases and therapies (Böning et al. 2019). A step in this direction is the German "Digital Care Act", which came into force in December 2019 and allows doctors to prescribe health apps for example to help patients take their medication regularly or to document blood sugar levels (BMG 2020). The costs incurred for the health apps will be covered by the public health insurance. As a result, smartphone apps and wearables will become an integral part of a decentralised eHealth infrastructure.

While these developments have clear advantages for patient care, they also create new risks. Through the integration of smartphone apps and wearables into the infrastructure of health care, the provision of general medical care is becoming increasingly dependent on the dominant digital companies. This became very clear in the summer of 2020 when the German federal government sought to introduce a COVID-19 tracing app and realized that it was dependent on the support of two US corporations: Apple and Google (Ramge and Mayer-Schönberger 2020). The two digital companies, which have a duopoly in the worldwide market for smartphone operating systems with their systems iOS and Android (Statista 2020a), control the access to millions of smartphones. On

the one hand, the Apple App Store and the Google Play Store constitute competitive bottlenecks through which Apple and Google control which apps can be installed on iOS and Android smartphones. On the other hand, Apple and Google control the interface between the tracing app and the smartphone and thus control the technical basis for the COVID-19 tracing app. The interface provided by Apple and Google is a prerequisite for the Bluetooth app to function smoothly.

The two US corporations used their position of power to influence how the COVID-19 tracing app was designed. An initially planned "centralised model", under which the IDs of contact persons were to be stored in a central database, was blocked by Apple, citing data protection concerns (Hurtz 2020). As a result, a "decentralised model" had to be chosen. It is a matter of controversy among experts which of the two models would be preferable from an epidemiological perspective or a data protection perspective (European Parliament 2020; Köver 2020). However, the balancing of data protection and health protection is a political question that should not be determined by a US corporation, but rather should be discussed politically and decided by the democratically elected legislature.

3.2.3 EDUCATION

Digital platforms are also becoming increasingly important in the field of education at school and university level (Jude et al. 2020). Since 2014, for example, Google has offered a wide range of cloud-based software tools with its "Google Workspace for Education", which can be used free of charge for teaching in schools and universities. The tools include apps for collaboration and communication (e.g. Gmail, Google Drive, Google Docs, Google Calendar, Google Classroom). The online learning platform "Google Classroom" offers users a kind of digital classroom in which students and teachers can communicate with each other and work on school exercises. The learning platform also has a connection to the video conferencing service Google Meet. According to Google's own information, as of April 2020, the Google Classroom learning platform was used by more than 100 million students worldwide (Google 2020a). It is expected that the use of digital learning platforms in schools and universities will continue to increase as a consequence of the COVID-19 pandemic.

Google's free services for schools and students are somewhat ambivalent (Hulverscheidt 2017). On the one hand, such services can make an important contribution to the development of a digital education infrastructure. On the other hand, the use of digital learning platforms in education can only be acceptable if they are in compliance with applicable data protection requirements (LfDI Rheinland-Pfalz 2020). In this respect, some scepticism is in order. In the US, "Google Classroom" has come under criticism after it became known that Google collected data from the Gmail accounts of students, which can be used for advertising purposes outside the Classroom application. After this was reported in the press, this practice was discontinued (Barr 2014). Irrespective of data protection concerns, it may seem problematic that teachers and students have to set up a Google user account in order

to use Google Classroom. In doing so, they take their first step into the Google ecosystem. Once the students are familiar with the use of the various Google services, lock-in effects can quickly occur that could make it difficult to switch to other providers later on. Similar lock-in effects could occur on the side of educational institutions if teachers have adjusted their teaching material to the specific technical requirements of a certain digital classroom system.

Even more problematic is the potential influence of platform operators on the content conveyed via a digital education platform. As recent reports show, this is not only a theoretical risk. According to some reports, Zoom, a video conferencing platform which is also used by many universities in Europe, in October 2020 allegedly prevented a webinar on the Middle East conflict planned by New York University from taking place at which a controversial speaker was to appear (Lytvynenko 2020). Regardless of how one may think about the content of the specific event, it is very problematic from the perspective of academic freedom when a private platform operator decides which university events are acceptable or not.

3.3 DIGITAL PLATFORMS AS SERVICES OF GENERAL INTEREST

Considering how far digital platforms have extended their influence on almost all areas of life, the question arises whether the services of Google, Facebook and Amazon have become indispensable in the digital society and could be considered as services of general interest. As explained above (see section 2), search engines like Google and communication platforms like Facebook nowadays have become essential for ensuring social participation (Schlüter 2017). The key role of social networks for social participation was recently highlighted by the German Federal Supreme Court (BGH) in its decision on the antitrust case against Facebook. There, the BGH emphasised "that, at least for a subset of consumers, access to the social network Facebook determines to a considerable extent their participation in social life, so that they cannot be expected to do without it." (BGH, decision of 23.6.2020, KVR 26/19, para. 102).

Similarly, digital mapping services such as Google Maps and Apple Maps form an indispensable part of the basic digital infrastructure. They link the digital world with the physical world and provide the geographical data which serves as the basis for a variety of smart city services (McQuire 2019). Just think what would happen if Google were to shut down its search engine and mapping service overnight – considering this hypothesis makes it clear how intimately these platforms are interwoven with our digital everyday life (Podszun 2020: 48). Even the German national emergency warning app "NINA" provided by the Federal Office of Civil Protection and Disaster Assistance (Bundesamt für Bevölkerungsschutz und Katastrophenhilfe, BBK) uses the map services Google Maps and Apple Maps. As the BBK website explains: "Most users are familiar with the map applications of the operating system manufacturers Google and Apple. In addition, they offer a powerful map application that many users can also use simultaneously in the event of an incident." (BBK 2020).

Maybe online retail platforms could also be counted among the indispensable digital infrastructures. During the first weeks of the COVID-19 pandemic in spring 2020, it became apparent that e-commerce platforms such as Amazon played an important role in supplying the population with essential goods (Bensinger 2020). At the same time, it became clear that it is problematic when a private platform operator decides which products are considered "essential goods" and given priority in a time of crisis (Emont 2020; Dannemann/Busch/Schulte-Nölke 2020).

The role of digital platforms as indispensable and thus ultimately systemically relevant infrastructures has now been officially acknowledged by the European legislator in Directive (EU) 2016/1148 concerning measures for a high common level of security of network and information systems across the Union (NIS Directive). The Directive, which defines uniform minimum requirements for cybersecurity and reporting obligations in the event of cybersecurity incidents, explicitly include search engines, online marketplaces and cloud computing services in its list of critical infrastructures (Annex III Directive (EU) 2016/1148).

Against this background, it is probably no exaggeration to say that large digital platforms have a certain systemic relevance for the functioning of our digital society. In some cases, digital platforms even assume state-like tasks, for example in the area of identity management. For example, it is now quite common practice that users can log in to other services with their Facebook account, a practice commonly known as "social login". In these cases, the Facebook account serves as a kind of digital identity card issued by Facebook. This is rather problematic as the issuer of this digital identity card can largely evade democratic control (Dolata 2019: 199).

4

CURRENT REGULATORY STRATEGIES

A number of legislative proposals aimed at adapting the regulatory framework for digital platforms are currently being discussed at both national and European level. The legal policy debate in Germany focused on the reform of the German Act against Restraints of Competition (Gesetz gegen Wettbewerbsbeschränkungen, GWB), the so-called "GWB Digitisation Act" (also referred to as the "10th GWB amendment"), which came into force in January 2021. Another important building block for the future regulatory framework is the new German State Media Treaty, which came into force in November 2020. At the European level, proposals for a Digital Markets Act and a Digital Services Act were presented by the EU Commission in December 2020 as part of the Digital Services Act Package.

The German GWB Digitisation Act essentially aims at strengthening the rules on abuse of market power under competition law. In addition, the existing instruments of competition law, which focus on a case-by-case ex post control, are supplemented by new instruments that bear more resemblance with ex ante regulation. Indeed, one could argue that the 10th GWB amendment is a first step towards a market structure-related ex ante control of platform markets. At the EU level, the proposal for a Digital Markets Act also aims at supplementing competition rules on abuse of market power with ex ante rules for gatekeeper platforms. The planned Digital Services Act, on the other hand, focuses on liability rules for online intermediaries and introduces a system of asymmetric due diligence obligations for digital platforms and other online intermediaries that takes into account the type and size of the providers of intermediary services.

In the following section, the current reform initiatives for platform regulation in Germany (4.1) and at European level (4.2) will be briefly outlined. It will be analysed to what extent they take into account the infrastructural function of digital platforms. It should already be noted here that the key role of platforms in the area of services of general interest is not sufficiently taken into account neither in the GWB Digitisation Act nor in the proposals of the EU Commission within the framework of the Digital Services Act Package. This is not surprising as the reform projects primarily address platform regulation from a competition perspective. But at the same

time it shows that an essential aspect of the "platformisation" of the economy and the society is largely ignored in the current policy debate.

4.1 PLATFORM REGULATION IN GERMANY

4.1.1 MODERNISING THE LAW ON ABUSE OF MARKET POWER

In Germany, the focus of legal policy reforms has so far been on an adjustment of competition law, in particular on modernising the rules on the abuse of market power. In essence, the reforms focus on competition as an instrument of disempowerment in digital markets (Schweitzer 2020: 44). Based on the recommendations of the German Monopolies Commission (Monopolkommission 2015), the first steps towards a reform of competition law were already taken in 2017 as part of the 9th GWB amendment with the aim of better addressing the market power of digital platforms (Kersting/ Podszun 2017). The revised law made it clear that a "market" can also exist in the case of "free" services, e.g. social media or search engines (§ 18(2a) GWB). In addition, a number of new criteria for assessing market power in multi-sided markets and networks were included into the GWB. Furthermore, access to competition-relevant data was explicitly included among the criteria for assessing market power (§ 18(3a)(4) GWB).

The 10th GWB amendment, which came into force in January 2021, provides for further changes in the area of competition law. The amendment takes up a number of proposals made in the study commissioned by the German Ministry for Economic Affairs and Energy (BMWi) on the "Modernising the Law on Abuse of Market Power" (Schweitzer et al. 2018) and the final report of the "Commission Competition Law 4.0" (BMWi 2019), also appointed by the BMWi.

One of the new features is the introduction of a platform-specific concept of market dominance that also takes into account the "intermediation power" of digital platforms (§ 18(3b) GWB). This shall make it possible to better address from a competition law angle the characteristic intermediary

and control function of platforms. In addition, the infrastructure function of platforms shall be taken into account by a revised version of the "essential facilities" doctrine (§ 19(2)(4) GWB). The new provision makes clear, among other things, that platforms and application programming interfaces (APIs) can also constitute essential facilities in digital markets. A refusal to grant access to these essential facilities can amount to an abuse of a dominant position. The revised law also clarifies that the refusal to grant access to competition-relevant data can also constitute an abuse of a dominant position. The provisions on the abuse of relative market power (§ 20 GWB) are also revised. This shall enable the competition authorities to take action below the level of market dominance. These amendments to the law aim, among other things, to prevent a "tipping" of platform markets towards a market structure in which the market power of a platform can no longer be contested in the long term (§ 20(3a) GWB).

In addition, the procedural rules of competition law will be reformed in order to speed up administrative proceedings before the Federal Cartel Office so that the Office can react more quickly to the dynamic development of digital markets. However, the much-discussed question whether the rules of merger control should also be updated in order to prevent so-called "killer acquisitions" by digital conglomerates with a strong market position has not been taken up in the 10th GWB amendment (cf. Bundesrat Printed Paper 568/20, p. 60).

4.1.2 FROM COMPETITION LAW TO REGULATION

The 10th GWB amendment not only strengthens the existing competition law instruments for the control of abuse of market power but also introduces a new regulatory tool specifically targeting large digital companies with "paramount cross-market significance" for competition (§ 19a GWB). The new provision shall enable the Federal Cartel Office to more effectively control large digital platforms which not only have a dominant position in a specific market, but are able to expand their business activities to more and more markets and, in this way, create large platform ecosystems.

Unlike the other provisions of the GWB regarding the control of abuse of market power, § 19a GWB applies a threshold for intervention that applies a cross-market approach. A dominant position on an individual market is not a mandatory requirement, but is merely one of several indications in addition to, among others, vertical integration, financial strength and access to competition-relevant data. In particular, the cross-market approach shall take into consideration the conglomerate structures and digital ecosystems that are a characteristic feature of the business model of large digital platforms.

If the Federal Cartel Office determines that an undertaking is of paramount cross-market significance (§ 19a(1) GWB), it may preventively prohibit that undertaking from engaging in certain practices which are particularly harmful to competition. The catalogue of practices that can be prohibited preventively includes, among others, engaging in self-preferencing, impeding the interoperability of products and services or the portability of data, as well as hindering competitors in their business activities by using data collected on the platform (§ 19a(2) GWB).

In substance, § 19a GWB introduces a hybrid between competition law and regulation ("kartellrechtsnahe Regulierung") for large digital companies, which have a special responsibility for the functioning of markets (Podszun 2020: 70; see also Monopolies Commission 2015: 163). It is the first step towards ex ante regulation of companies that "occupy a central strategic position in digital markets" (Bundesrat Printed Paper 568/20, p. 80). In this regard, the approach shows certain parallels to the regulation of network industries (see in more detail section 5.2.).

4.1.3 STATE MEDIA TREATY

Another important element of the future regulatory framework for digital platforms is the State Media Treaty (Medienstaatsvertrag, MStV), which entered into force in November 2020 and replaces the State Treaty on Broadcasting. The provisions of the MStV address the structural changes of the media landscape in the platform society. In contrast to the reform of the GWB, the focus is not on issues of competition policy, but rather on media policy. In this perspective, the MStV aims at safeguarding the diversity of media and public opinion (Müller-Terpitz 2020; Liesem 2020).

The role of Google, Facebook and other digital platforms as influential information intermediaries is addressed in § 91 et seq. MStV which contain special provisions for media intermediaries. The term "media intermediary" covers those online services which aggregate, select and present journalistic content of third parties in a generally accessible manner without combining them into an own offering (§ 2 no. 16 MStV).¹ The rules on media intermediaries also apply to internet search engines and social networks.

For the purposes of this study on issues of digital infrastructure §§ 93, 94 MStV, are of particular interest as they stipulate requirements for transparency and non-discrimination for media intermediaries. The provisions only apply to platforms with a certain degree of market power. According to the threshold defined in 91(2) no. 1 MStV the transparency requirements and the prohibition of discrimination only apply to media intermediaries that reach at least one million users per month in Germany on a six month average.

The transparency requirements in § 93 MStV stipulate that providers of media intermediaries must keep information available on the criteria for the inclusion and retention of content on the platform as well as on "the central criteria for aggregation, selection and presentation of content and their weighting, including information on the functioning of the algorithms used, in comprehensible language". Changes to the criteria must also be disclosed without delay. Thus, in substance, § 93 MStV contains a requirement of algorithmic transparency with regard to the ranking algorithms used by the platform.

Furthermore, § 94 MStV contains a prohibition of discrimination for media intermediaries, which is linked to the trans-

¹ Platforms that combine different media offerings into an own offering, e.g. video-on-demand platforms such as Netflix, Apple TV+, Amazon Prime Video, are defined by the State Media Treaty as "media platforms" (§ 2 no. 14 MStV). For these platforms, § 78 et seq. MStV provide, among other things, access and transparency requirements.

parency criteria of § 93 MStV. Under this provision discrimination is deemed to exist if “without objectively justified reason, there is a systematic deviation from the criteria to be published pursuant to § 93(1) to (3) in favour of or to the detriment of a specific offer” or “these criteria systematically hinder offers directly or indirectly in an unfair manner”. These provisions are complemented by information and investigation powers of the state media authorities (§ 95 MStV and § 56 MStV).

4.2 PLATFORM REGULATION AT THE EUROPEAN LEVEL

After initially pursuing a strategy of regulatory restraint with regard to digital platforms, the European Commission took a first important step towards EU platform regulation in 2019 with the enactment of the Platform-to-business (P2B) Regulation (EU) 2019/1150 (Busch 2019a). However, the P2B Regulation is only the first building block of a more comprehensive European regulatory architecture (see 4.2.1). Parallel to the reform initiatives in Germany, further steps to modernise the regulatory framework for digital platforms are currently being undertaken at the European level. In December 2020, the European Commission presented its legislative proposals as part of the “Digital Services Act Package” (see 4.2.2 and 4.2.3).

4.2.1 P2B REGULATION

The P2B Regulation, which has been applicable since July 2020, formulates a catalogue of fairness and transparency rules that digital platform operators must observe in relation to business users (Busch 2019a). The Regulation has a very broad scope of application (Art. 1). It applies in particular to the relationship between operators of online retail platforms and third-party traders who offer their products to consumers. It also covers app stores and platforms for services (e.g. hotel booking platforms) and online comparison platforms. Some provisions of the P2B Regulation also apply to internet search engines (e.g. Google, Bing). It is important to note that the application of the P2B Regulation does not require any specific level of market power.

In substance, the P2B Regulation concerns three regulatory areas: (1) the prohibition of certain unfair practices (e.g. blocking of user accounts or change of general terms and conditions without prior notice); (2) transparency with regard to rankings and certain business practices (e.g. data collection and use of data, preferential treatment of own products, parity clauses); (3) effective measures for dispute resolution (e.g. complaint management systems, mediation). More far-reaching proposals for regulation, as suggested by the European Parliament (including an EU-wide ban of parity clauses and a right of access to data) ultimately did not make it into the final text of the P2B Regulation.

4.2.2 DIGITAL MARKETS ACT

The draft for a Digital Markets Act (DMA) (COM(2020)842) unveiled on 15 December 2020 aims at supplementing the

existing rules of EU competition law with a new ex ante regulation for digital “gatekeepers”. In doing so, the DMA follows the advice given by the report “Competition Policy for the Digital Era” (Crémer et al. 2019) prepared on behalf of the European Commission. Further preparatory work has been provided by studies of the “EU Observatory on the Online Platform Economy” published in September 2020. As outlined in Art. 1(1) DMA, the key objective of the Regulation is to ensure “contestable and fair markets in the digital sector”. For this purpose, the DMA stipulates a catalogue of prohibitions and restrictions for large digital companies.

The new rules of conduct shall apply to certain core platform services provided by digital gatekeepers (including online search engines, online intermediation services, online social networking services, video-sharing platforms, operating systems, cloud computing services). According to Art. 3(1) DMA, only those providers of platform services that meet three criteria fall under the term “gatekeeper”: (1) The company must have a significant impact on the internal market. This requirement is presumed to be fulfilled if the annual turnover equals at least 6.5 billion euros in the European Economic Area (EEA) or the average market capitalisation is at least 65 billion euros. Furthermore, the company must offer a core platform service in at least three member states. (2) The company must also hold a strong position as an intermediary (“important gateway”). This means that a large number of users are connected via the platform. This is presumed if the platform has at least 45 million active end-users per month and more than 10,000 active business users per year in the EU. (3) Finally, the strong position of the platform company must exist over a certain duration (“entrenched and durable position”). This is presumed if the first two criteria are met in each of the last three financial years.

If a platform fulfils the above criteria, it is obliged to notify this to the European Commission. After a review procedure regulated in more detail in Art. 3 DMA and which provides for a number of exceptions the European Commission will designate the platform as a “gatekeeper” and thus determine that it is subject to special ex ante regulatory framework and must therefore comply with the obligations listed in Art. 5 and 6 DMA. These provisions stipulate no less than 18 prohibitions and restrictions for gatekeeper platforms. They prohibit inter alia the combining of user data from different platform services unless the users have expressly given their consent (Art. 5(a) DMA). As a consequence, Facebook’s practice of combining user data from Instagram, Whatsapp and Facebook would be illegal. The German Federal Cartel Office had prohibited, already in 2019, the use Facebook’s terms and conditions that would allow such a practice (BKartA, decision of 6.2.2019, B6-22/16 - Facebook). The DMA also requires gatekeepers to ensure the interoperability of their services (Art. 6(f) DMA) and to ensure effective portability of user data (Art. 6(h) DMA). In addition, gatekeepers must grant their business users access to the data generated by their activities on the platform (Art. 6(i) DMA). Gatekeeper platforms are also prohibited from giving a preferential treatment to their own products in rankings (Art. 6(d) DMA). These requirements clearly go beyond the P2B Regulation, which only requires transparency with regard to data access and self-preference (Busch 2019a).

For the effective enforcement of the gatekeeper obligations the DMA contains a number of instruments including extensive powers of investigation and interim measures. In case of a violation of the DMA, the European Commission can impose penalty payments and fines of up to 10% of the company's annual worldwide turnover (Art. 26(1) DMA). In the case of systematic violations, even a break-up of the gatekeeper is possible as *ultima ratio* (Art. 16(1) DMA).

Compared to the quite ambitious proposals for *ex ante* regulation, the draft DMA falls short of expectations in other areas. For example, the European Commission's original plans for the introduction of a "New Competition Tool" has been retained only in a much weakened form. Originally, it was envisaged that the Commission would be able to carry out market investigations independent of specific cases and intervene in the market even below the threshold of market dominance (European Commission 2020; Käseberg 2020). This was meant as a tool for effectively addressing structural competition problems at an early stage which cannot be remedied with the existing rules of competition law, in particular the risk of "tipping" of a market (European Commission 2020a). However, the DMA now only provides for a "market investigation" (Art. 15 DMA) in connection with the designation of gatekeeper status.

4.2.3 DIGITAL SERVICES ACT

The proposal for a Digital Services Act (DSA) (COM(2020)825), also unveiled on 15 December 2020, is the second pillar of the "Digital Services Act Package" (European Commission 2020b). On the one hand, the proposal aims at a reform of the liability rules for online intermediary services, which today are still regulated by the twenty years old E-Commerce Directive (2000/31/EC). In this regard, the DSA takes over the hosting exemption from Art. 14 E-Commerce Directive. According to this provision, providers of hosting services, including platforms, are in principle not liable for illegal content posted online by users, as long as they have no actual knowledge of the illegal content and, if they obtain knowledge, act expeditiously to remove the content (Art. 5(1) DSA). The rule from Art. 15 E-Commerce Directive, according to which platform operators are not subject to a general monitoring duty has also been included in the new proposal (Art. 7 DSA).

The provisions on platform liability are supplemented by a comprehensive catalogue of due diligence obligations, which differentiate between providers of intermediary services according to size and level of risk. In particular, all platforms are obliged to set up an easily accessible and user-friendly notice and action mechanism that enables users to report illegal content so that it can be removed from the platform (Art. 14 DSA). At the same time, all platforms are obliged to provide users with a statement of reasons for decisions to delete content and disable user accounts (Art. 15 DSA). Users can appeal against the platform's decision within the framework of an internal complaints procedure (Art. 17 DSA). The decision of the platform operator on the complaint can then be challenged in an out-of-court dispute resolution procedure (Art. 18 DSA). Furthermore, operators of online marketplaces are obliged to verify the identity of traders offering goods and services via the marketplace (Art. 22 DSA). This

rule shall make it easier to track down sellers of illegal products.

For platforms that have at least 45 million monthly active users in the EU and thus reach about 10% of the EU population ("very large online platforms"), Art. 25 et seq. DSA stipulate additional obligations regarding "systemic risks". Such systemic risks include the dissemination of illegal content and threats to the fundamental rights of platform users (e.g. the restriction of freedom of expression and information and the risk of discrimination). To combat these risks, the European Commission's proposal relies on a model of regulated self-regulation. Very large online platforms shall conduct an annual self-assessment of systemic risks annually (Art. 26 DSA) and take measures to mitigate such risks (Art. 27 DSA), for example by adapting their content moderation procedure and recommender algorithms. The effectiveness of the measures shall be verified by an independent audit (Art. 28 DSA). These regulations are complemented *inter alia* by transparency requirements for recommender algorithms and online advertising (Art. 29, 30 DSA).

The proposal also contains a chapter with detailed provisions regarding the enforcement of the due diligence rules (Art. 38 et seq. DSA). In particular, the proposal requires Member States to designate an authority as "Digital Services Coordinator" who will be responsible for enforcing the DSA. Furthermore, the establishment of a "European Board of Digital Services", composed of representatives of the Digital Services Coordinators, shall improve the cooperation between national authorities for the cross-border enforcement of the DSA (Art. 47 f. DSA). For the monitoring of very large online platforms, the DSA also gives the European Commission a specific right of intervention (Art. 51 DSA).

In an initial assessment of the Commission's proposal, two aspects stand out: First, the European Commission seems to have great confidence in the self-supervision of platform operators. Second, the proposal focuses on procedural fairness ("due process") in the relationship between platforms and platform users. The P2B Regulation, which also contains detailed provisions on complaint-handling and out-of-court dispute resolution seems to have served as a model in this regard. Apparently, there is an emerging "procedural turn" in European platform regulation – with a focus on fair platform procedure rather than substantive due diligence obligations (Busch 2020a).

However, it seems doubtful whether due process requirements are sufficient for ensuring adequate protection of platform users. Procedural rules alone cannot replace protection through liability rules, for example in the case of damage caused by defective products. In this regard, the European Commission's proposal does not meet the demands of the European Parliament, which had already taken a position in October 2020 and called for more ambitious rules on responsibility – and also liability – of digital platforms (European Parliament 2020).

5

INFRASTRUCTURE REGULATION IN THE PLATFORM SOCIETY: OUTLINE OF A FUTURE REGULATORY FRAMEWORK

5.1 “PLATFORMISATION” – MORE THAN JUST A COMPETITION PROBLEM

The overview of current regulatory strategies at the German and European level shows that the rise of digital platforms is primarily viewed as a problem of competition policy in the ongoing political debate. "Platform power" is equated with "market power". As a consequence, the solution is sought in a reform of the existing competition law framework. Both the German GWB Digitisation Act and the European proposal for a Digital Markets Act follow this pattern of thinking. The introduction of an ex ante regulation of gatekeeper platforms (§ 19a GWB) in the context of the 10th GWB amendment, which is to be welcomed in principle, does not change the limitation of the regulatory objective to competition policy. The new rules only expand the toolbox of the Federal Cartel Office, but they do not change the conceptual framework for addressing platform power. This competition law approach is complemented by a reform of media law in the new German State Media Treaty, which focuses on the power over public opinion wielded by digital platforms.

However, the focus of the regulatory discourse on "market power" and "opinion power" of digital platforms is too narrow. The "platformisation" of the economy and society cannot be understood solely as a competition problem. The influence of major platforms now reaches much deeper into the infrastructure of our digital society. Platforms such as Amazon, Google and Facebook, but also digital start-ups that are later bought up by the large digital conglomerates, are extending their reach into areas of life where social participation, democracy and the provision of essential services to citizens are at stake. This socio-political and infrastructural problem is inadequately addressed by the current initiatives to reform the framework of competition law at the German and European level. As the example of the German State Media Treaty shows, the framework of competition law must be supplemented by additional regulations that also take into account other relevant regulatory objectives.

While the State Media Treaty addresses the "opinion power" of platforms and aims to safeguard the diversity of media and public opinion, specific regulation of the "infra-

structural power" (Van Dijck et al. 2019: 9) of digital platforms have been lacking so far. In this respect, there is a glaring gap in the emerging regulatory framework for the platform society that needs to be closed. Competition and media law need to be complemented by a new type of "platform infrastructure law" that covers digital platforms as societal infrastructures and increasingly important actors in the area of services of general interest.

The creation of such platform-related infrastructure law is part of the state's infrastructure responsibility. The constitutional mandate for infrastructure policy obliges the state to create an appropriate regulatory framework for the provision of infrastructural services (Dörr 2014: 337). This is an integral part of the state's responsibility in the area of services of general interest in the platform society.

The societal and political debate on how this objective can best be achieved is in many respects still at a very early stage. In this perspective, the final part of this study will identify some possible starting points for further developing of the current regulatory framework. In doing so, the focus will primarily be on those problem areas that have not yet been sufficiently addressed by the current regulatory initiatives at the German and European level.

5.2 REGULATION OF NETWORK INDUSTRIES AS A MODEL

The regulation of network infrastructures (e.g. telecommunications, energy) can serve as a possible model for a platform infrastructure law that, in addition to addressing market power and opinion power, also takes into account the infrastructural power of digital platforms and their growing importance in the area of services of general interest (Rahman 2018; Krisch and Plank 2018; Bostoen 2020). Considering the role of platforms as fundamental infrastructures of the digital society described in the first two parts of this study and their increasing importance in the area of services of general interest, the parallel to network infrastructures seems evident. One could argue that platform-based infrastructure services, such as online search engines and digital mapping services,

have become services "which are generally regarded as indispensable" (§ 11(1) sentence 3 German Postal Act) or "the provision of which has become indispensable to the public as a basic service" (§ 78(1) German Telecommunications Act). From this perspective, services such as Google Search and Google Maps come close to services for which the legislator has imposed a universal service obligation.

Furthermore, in many cases of platform infrastructure services the conditions for regulation along the lines of energy or telecommunications law may be fulfilled. According to § 10(2) German Telecommunications Act, a regulatory intervention is justified in markets "which are characterised by significant and persistent barriers to entry, which do not tend towards effective competition in the longer term and in which the application of general competition law alone is not sufficient to address the market failure in question". The three criteria mentioned in Section 10(2) Telecommunications Act are likely to be fulfilled in a number of platform markets (see Podszun 2020: 47).

A further argument in favour of using the regulation of network industries as a model is that network regulation is not limited to competition objectives but takes a broader approach. While competition law focusses primarily on safeguarding the functioning of competition in markets, network regulation combines the policy goals of safeguarding competition and securing supply and could also take into account other policy objectives, such as cybersecurity and data protection.

5.3 PERSONAL SCOPE OF PLATFORM INFRASTRUCTURE LAW

It needs to be clarified to which platforms the rules of a platform infrastructure law should apply. In contrast to the rules on abuse of market power under competition law, which are linked to the existence of a dominant market position, the regulatory model outlined here is linked to the infrastructural function of the respective platform. The crucial question is whether a platform provides fundamental infrastructures for essential goods and services that belong to the area of services of general interest. This is likely to be the case, for example, for the internet search engine Google Search and the map service Google Maps, or for important social networks such as Facebook.

The classification of a platform as a fundamental infrastructure for services of general interest is not static, but can change depending on the development of individual areas of services of general interest. One example is the area of healthcare. With the increasing integration of wearables and health apps into the decentralized infrastructures of public healthcare, the operators of platforms for wearables and health apps are in a sense growing into the role of infrastructure providers. The same can be true for operators of mobility platforms if they turn themselves into an integral part of public transport services.

Linking infrastructure regulation to the function of a platform as a provider of fundamental infrastructures for the use of services of general interest also means that the regulatory requirements do not primarily depend on the size of a plat-

form, but rather on its infrastructural function in the context of services of general interest. For example, even a smaller mobility platform that is integrated into the framework of public transport services would be obliged to provide barrier-free mobility services.

5.4 ENSURING FAIR ACCESS TO DIGITAL SERVICES OF GENERAL INTEREST

Starting from the premise that a number of digital platforms have become fundamental infrastructures of the digital society, it cannot be left to the discretion of the respective platform operators whether and under what conditions citizens have access to the platform's services. Services of general interest must be affordable for the general public and generally accessible (Dörr 2014: 339). In the area of network industries, a nationwide provision of services at reasonable conditions is essentially ensured by two regulatory instruments: the universal service concept and the regulation of user charges. These instruments could also be used – with the necessary adjustments – for the regulation of digital infrastructure platforms.

5.4.1 UNIVERSAL SERVICE OBLIGATION

An essential aspect of regulation in the telecommunications sector is the guarantee of a nationwide provision of telecommunications services stipulated in Art. 87f of the German Constitution. In particular, it shall be ensured that rural areas are not cut off from the network for cost reasons. This is the purpose of the universal service regime under §§ 78 et seq. of the German Telecommunications Act (Kühling 2004: 583 ff.; Fetzer 2013: 264 ff.). This approach can be transferred *mutatis mutandis* to digital infrastructure platforms. For example, when Google Maps assumes an infrastructural function by integrating information about public transport services into its mapping service or by displaying COVID-19 risk areas (Donath 2020), it must be ensured that this information is not only made available for selected regions or urban areas. The same applies to mobility platforms that are integrated into existing public transport services. It would hardly be compatible with the universal service concept if the platform-based mobility services were limited to individual districts that are particularly lucrative from the perspective of the platform operator. Furthermore, it would have to be ensured that platform-based services that constitute a service of general interest are barrier-free and equally accessible to different demographic groups. The requirements for the accessibility of ridesharing services provided for in the recently revised German German Passenger Transport Act (§ 64c PBefG) are therefore to be welcomed. The need for regulatory action in this field is also illustrated by an ongoing lawsuit against the ridesharing provider Lyft, which was admitted before a US federal court in California in November 2020 for a violation of the Americans with Disabilities Act. The lawsuit accuses Lyft of not providing a sufficient number of wheelchair accessible vehicles in San Francisco (Flood 2020).

New challenges for the concept of universal service could also arise from the increasing personalisation of platform-

based services. This could lead to gaps in the provision of services of general interest – not with regard to specific geographic areas, but with regard to specific demographic groups (Schweitzer 2020: 64). For example, a need for regulation could arise if essential functions of an infrastructural health app are only offered to people whose data profile is interesting for advertisers. Such a business model would hardly be compatible with the model of non-discriminatory access to services of general interest in the area of healthcare. In this respect, one could consider an obligation of the platform operator to offer access under conditions that are reasonable, non-discriminatory and transparent, following the model of § 17(1) of the German Energy Industry Act (Energiewirtschaftsgesetz, EnWG) that grants users an entitlement to a connection to the gas and electricity grid.

5.4.2 DATA AND PRICE REGULATION

Another regulatory instrument, which is intended to safeguard competition and ensure supply in the area of network industries, is the regulation of user charges. Price regulation can apply, on the one hand, to network access charges (whole-sale charges) on the supply side and, on the other hand, to retail charges on the demand side (Kühling 2004: 284 f.). In this context, regulation of retail charges serves to ensure socially acceptable prices and supply conditions (Fehling 2010: 1114).

At first glance, price regulation may seem difficult with regard to digital platforms as many platforms offer their services without any monetary counter-performance. However, this does not mean that the services of platforms such as Google Search or Facebook are "free" for their users. Instead of monetary prices, users pay with their personal data or with their attention for (personalised) advertising. This does not mean that price regulation is unnecessary in these cases. It merely changes its focus. If the charges paid by users are provided in the form of data, regulation of charges actually means regulation of data usage through data protection law. In this sense, data protection law affects the monetization model of digital platforms (Golland 2019).

Therefore, digital infrastructure platforms that control access to services of general interest bear a special responsibility for data protection. In fact, one could ask whether it is compatible with the concept of public services of general interest if fundamental services that are necessary for the functioning of our digital society can only be accessed by disclosing personal data. From this perspective, it would be problematic if certain platform-based services of general interest were only available to citizens who have a Google or Facebook user account.

Based on Art. 10(3) of the draft for a Charter of Digital Fundamental Rights of the European Union, one could postulate a right to non-personalised use of digital services of general interest. A similar concept is the idea of "right to data collection-free products", which has been suggested by some legal scholars (Becker 2017; Eskens 2019). Another option would be to impose a stricter regime of data protection for the collection and use of data in the context of services of general interest.

Where users pay a monetary price for using a digital infrastructure platform, other forms of price regulation could

be considered. For example, such regulation could define a maximum for the calculation of dynamic prices (e.g. surge pricing for ridesharing platforms) or public interest-oriented restrictions regarding the personalisation of prices.

5.5 INFRASTRUCTURE PLATFORMS AND FUNDAMENTAL RIGHTS

With the increasing influence of digital platforms on how citizens experience social life and exercise their fundamental rights, the responsibility of platform operators for fundamental rights is also increasing (Wagner 2020). This has been acknowledged – albeit only in a rather hidden place – in the European Commission's proposal for a Digital Services Act (DSA). In this respect, Art. 12(2) DSA requires platform operators to act in a diligent, objective and proportionate manner when they impose any restrictions on their services (e.g. by deleting content or blocking user accounts) and to pay due regard to the fundamental rights of the platform users. For operators of private infrastructure platforms, which assume a central role in the area of services of general interest, this principle is of particular importance. From this perspective, one could consider imposing state-like direct fundamental rights obligations on infrastructure platform operators.

This approach would be in line with the earlier case law of the German Federal Constitutional Court (BVerfG). As early as 2011, the Court affirmed that private undertakings have a fundamental rights obligation equivalent to that of a public entity, provided that they "determine the conditions of public communication and thus fulfill a function that was previously assigned to the state – such as ensuring postal and telecommunications services – as part of its duty to provide services of general interest" (BVerfG, 22 February 2011, 1 BvR 699/06, BVerfGE 128, 226, para. 59 – Fraport). The "Stadionverbot" decision of 2018 further develops this case law and clarifies that "the inevitability of situations, the imbalance between the involved parties, the social significance of certain services or the social power of one side can also play a decisive role for the intensity of the fundamental rights obligation of private actors" (BVerfG, 11 April 2018, 1 BvR 3080/9, BVerfGE 148, 267, para. 33 – Stadionverbot).

These considerations can be applied also to operators of digital infrastructures with a particular social, political or economic significance for which there are no viable alternatives from a user perspective (Schweitzer 2020: 5; see also Michl 2019). It will primarily be for the courts to decide how to further specify the contours of such an enhanced fundamental rights obligation of platforms such as Amazon (in relation to traders), Facebook or Google. In this regard, in June 2020, the German Federal Supreme Court (BGH) made it clear in its decision on the antitrust proceedings against Facebook that the fundamental right of informational self-determination sets limits for the conditions of use of a communication platform (BGH, 23 June 2020, KVR 26/19, para. 124; see Lepsius 2020: 567). Fundamental rights obligations of digital infrastructure platforms could also provide a basis for claims to access digital spaces for discourse and interaction.

Furthermore, fundamental procedural rights and considerations of due process could play an increasingly important

role for the implementation of substantive fundamental rights. Platform operators are not only acting as private rule-makers in the virtual spaces they have created (Schweitzer 2019), but are also increasingly playing a judicial role in deciding conflicts between different platform users. For these "platform procedures", essential principles of due process must be observed (Van Loo 2020). This applies a fortiori when the platform operator decides on its own behalf, for example on the delisting of products or the blocking of a user account on the platform. In order to create legal certainty for platform users and operators, it could be advisable to define the essential requirements for such a "platform procedure" by law. The Commission's proposal for a Digital Services Act (DSA), which places a special focus on requirements of due process seems to follow this approach (see Art. 17 et seq. DSA).

5.6 RESPONSIBILITY FOR NON-COMPETITION RELATED POLICY OBJECTIVES

The operators of digital platforms which can be regarded as fundamental infrastructures of the digital society not only have a special responsibility for competition and security of supply. Infrastructure platforms also bear a prominent legal and social responsibility for the implementation of other non-competition related policy goals. So far, this dimension of platform regulation has been discussed mainly for aspects of data protection and cybersecurity (cf. Podszun 2020: 81).

The special responsibility of digital platforms for ensuring cybersecurity has also been acknowledged by the Directive (EU) 2016/1148 concerning measures for a high common level of security of network and information systems across the Union (NIS Directive), which provides for uniform minimum requirements in the area of cybersecurity and reporting obligations in the event of cybersecurity incidents for search engines, online marketplaces and cloud services (see already 3.3). In this respect, however, there is still a need for further regulatory action. For example, the scope of the NIS Directive should be extended to other digital services, especially social media platforms (cf. VZBV 2020). In view of the dynamic development of digital infrastructures, it should also be considered whether cybersecurity regulations need to be further developed with regard to digital assistants, smart home applications and wearables.

However, the responsibility of digital platforms is not limited to questions of data protection and cybersecurity. The growing importance of digital platforms should also be taken into account with regard to other non-competition related regulatory goals. This applies, for example, to the implementation of a housing policy oriented towards the common good. For example, local authorities are dependent on the cooperation of platforms such as Airbnb when enforcing bans on the misappropriation of housing. In this context, platforms can play an important role as "regulatory intermediaries" in supporting local authorities in enforcing regulatory requirements for short-term rentals (Busch 2020). Furthermore, in the current debate on corporate due diligence in supply chains and the planned German Supply Chain Act, the question also arises which responsibility online marketplaces such as Amazon have for the compliance of third-party traders with environmental and human rights standards.

5.7 ALGORITHMIC TRANSPARENCY

The selection and sorting function of digital platforms is essentially fulfilled through algorithmically controlled systems. This applies to the results displayed by an internet search engine, the news feed of a social media platform and the personalised product recommendations on an online retail platform. The much-heard claim for algorithmic transparency is therefore of particular importance for digital platforms (see AlgorithmWatch 2020).

The most recent layer of regulation contains some – not well coordinated – regulations on transparency of algorithmic systems used by digital platforms, for example in the P2B Regulation (for online intermediation services and search engines) and in the German State Media Treaty (for media intermediaries). The EU Consumer Rights Directive, which was amended in 2019, also contains transparency requirements for rankings of traders and products on online marketplaces. These individual regulations should be better coordinated with each other in order to avoid duplications and contradictions. The European Commission's proposal for a Digital Services Act (DSA) rather exacerbates this problem by stipulating additional transparency requirements for recommender systems (Art. 29(1) DSA), which partly overlap with the already existing regulations.

Furthermore, it is necessary to close regulatory gaps, for example with regard to navigation services such as Google Maps or Waze, which have so far not been covered by the above-mentioned regulations on algorithmic transparency. The inclusion of navigation services is all the more urgent because the algorithms used by these systems have far-reaching effects on the use of transport infrastructures (Van der Graaf 2018). In this perspective, the design of these systems is of high relevance for public values.

5.8 REGULATORY OVERSIGHT FOR INFRASTRUCTURE PLATFORMS

In addition to the substantive aspects of a future platform infrastructure law outlined above, there are also questions regarding the institutional framework of infrastructure-related platform regulation. Such institutional aspects play a key role in the European Commission's proposal for a Digital Services Act (cf. Art. 38 et seq. DSA). However, since the DSA does not sufficiently address issues of services of general interest, the new intervention rights of the EU Commission with regard to very large online platforms (Art. 51 DSA) do not provide a convincing answer from an infrastructural perspective. With regard to digital infrastructures of general interest, an institutional framework at the national level seems to be necessary.

These considerations are related to proposals suggested in the White Paper on Digital Platforms published in 2017 by the German Federal Ministry for Economic Affairs and Energy (BMWi). The White Paper proposes the establishment of a Digital Agency to complement the existing powers of the Federal Network Agency and the Federal Cartel Office with regard to market monitoring and law enforcement in the platform economy (BMWi 2017: 97ff.; see also Fetzer 2017). The coalition agreement of March 2018 also contains a man-

date to examine the possibility of establishing a digital agency for the task of "platform regulation or market monitoring" (CDU, CSU and SPD 2018: 61).

As an alternative to creating a new authority, it could be considered to establish a new division within the Federal Cartel Office, which would provide special expertise regarding the infrastructural aspects of digital platforms. In this respect, the new division for consumer protection at the Federal Cartel Office, which was created in 2017 in the context of the 9th GWB amendment, could serve as a model.

6

CONCLUSION

The rules applicable to operators of essential infrastructures and providers of services of general interest in the digital society should not be left solely to market forces and self-regulation. The current reform of competition law at the German and European level is in this respect a necessary step towards ensuring workable competition in the platform economy. However, a regulatory approach that focuses solely on competition policy is too narrow. Considering the central role played by digital platforms in various areas of services of general interest, a broader regulation is necessary to ensure fair access to services of general interest in the platform society.

The current pandemic has made it very clear that some digital platforms have grown into the role of systemic infrastructures. This role comes with a special legal and social responsibility for platform operators. The responsibility of platforms to act in the public interest should be enshrined in law. In this respect, the current pandemic could serve as a "tipping point of consciousness" (Käseberg 2020) and lead to a redefinition of the relationship between state and market in the emerging platform society.

Abbreviations

API	Application Programming Interface
AWS	Amazon Web Services
BBK	Bundesamt für Bevölkerungsschutz und Katastrophenhilfe (Federal Office for Civil Protection and Disaster Assistance)
BGH	Bundesgerichtshof (Federal Supreme Court)
BMWi	Bundesministerium für Wirtschaft und Energie (Federal Ministry for Economic Affairs and Energy)
BVerfG	Bundesverfassungsgericht (Federal Constitutional Court)
DSA	Digital Services Act
DMA	Digital Markets Act
GWB	Gesetz gegen Wettbewerbsbeschränkungen (Act against Restraints of Competition)
MStV	Medienstaatsvertrag (State Media Treaty)
P2B	Platform-to-Business
PBefG	Personenbeförderungsgesetz (Passenger Transport Act)

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